

Radial grippers DHRS

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Radial grippers DHRS

Key features

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At a glance

General information

- Lateral gripper jaw support for high torque loads
- Self-centring
- Gripper jaw centring options
- Max. repetition accuracy
- Gripping force retention
- Internal fixed flow control
- Wide range of options for mounting on drive units

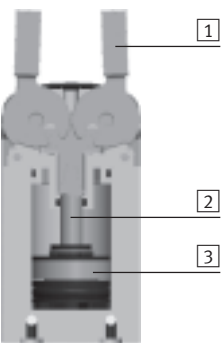
- Sensor technology:
 - Adaptable position sensor for the small gripper sizes
 - Integratable proximity sensors for the medium and large gripper sizes

Flexible range of applications

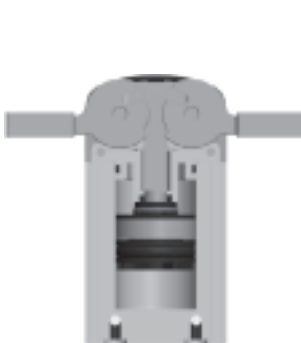
- Can be used as a double-acting and single-acting gripper
- Compression spring for supplementary or retaining gripping forces
- Suitable for external and internal gripping

The technology in detail

Gripper closed



Gripper open



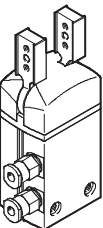
- 1 Gripper jaw
- 2 Slotted guide plate
- 3 Piston with magnet

Note

Gripper selection
sizing software
→ www.festo.com

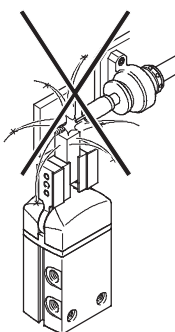
Supply ports

At the side

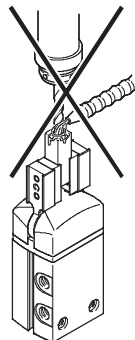


Note

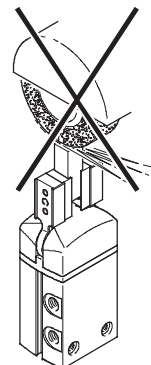
These grippers are not designed for the following or similar sample applications:



- Welding spatter



- Machining
- Aggressive media



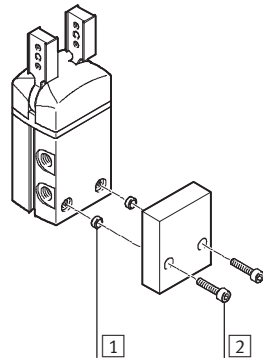
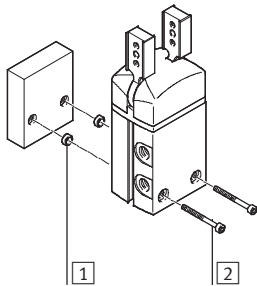
- Grinding dust

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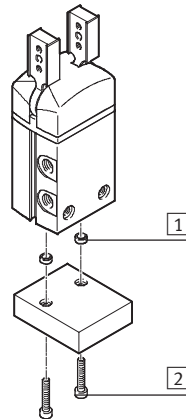
Key features and type codes

Mounting options

At the side

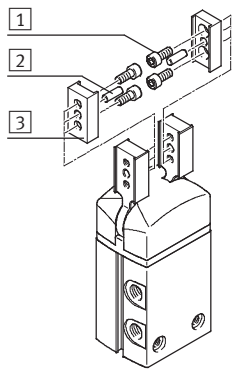


From underneath



- 1 Centring sleeves
- 2 Mounting screws

Mounting options for external gripper fingers



- 1 Mounting screws
- 2 Centring pins
- 3 Gripper fingers

Type codes

| | | | | | | | | |
|---------------------------------|----------------------|------|---|----|---|---|---|--|
| | | DHRS | — | 16 | — | A | — | |
| Type | | | | | | | | |
| DHRS | Radial gripper | | | | | | | |
| Size | | | | | | | | |
| Position sensing | | | | | | | | |
| A | Via proximity sensor | | | | | | | |
| Gripping force retention | | | | | | | | |
| NC | Closing | | | | | | | |

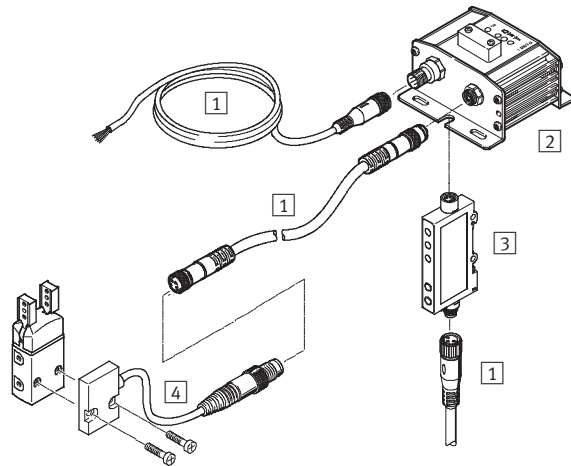
Radial grippers DHRS

Peripherals overview

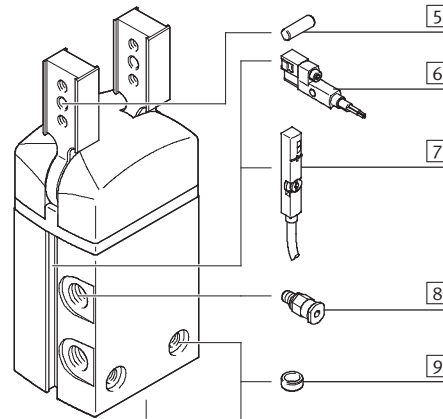
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Peripherals overview

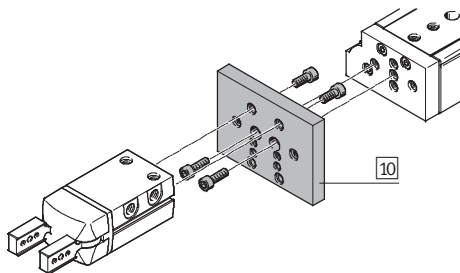
DHRS-10



DHRS-16 ... 40



System product for handling and assembly technology

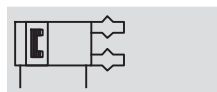


| Accessories | | |
|--|---|-----------------|
| Type | Brief description | → Page/Internet |
| 1 Connecting cable NEBU | For connecting evaluation unit and signal converter | 19 |
| 2 Evaluation unit SMH-AE1 | <ul style="list-style-type: none"> For evaluating signals for position sensor SMH-S1 For size 10 | 19 |
| 3 Signal converter SVE4 | <ul style="list-style-type: none"> For evaluating signals for position sensor SMH-S1 For size 10 | 19 |
| 4 Position sensor SMH-S1 | <ul style="list-style-type: none"> Adaptable and integratable sensor technology, for sensing the piston position For size 10 | 19 |
| 5 Centring pin | For centring the gripper fingers on the gripper jaws | – |
| 6 Proximity sensor SMT-8G | <ul style="list-style-type: none"> For sensing the piston position Proximity sensor does not project past the housing For size 16 ... 40 | 20 |
| 7 Position transmitter SMAT-8M | <ul style="list-style-type: none"> Continuously senses the position of the piston. Has an analogue output with an output signal in proportion to the piston position For size 16 ... 40 | 20 |
| 8 Push-in fitting QS | For connecting compressed air tubing with standard O.D. | quick star |
| 9 Centring sleeve ZBH | <ul style="list-style-type: none"> For centring the gripper during mounting The scope of delivery of the gripper includes 2 centring sleeves | 19 |
| 10 Adapter kit HMSV, HAPG, HAPS, HMVA | Connecting plate between drive and gripper | 14 |

Radial grippers DHRS

Technical data

Function
Double-acting
DHRS-...-A



-N- Size
10 ... 40 mm
-T- Opening angle
180°

Function – Variants
Single-acting or
with gripping force retention ...
... closing DHRS-...-NC



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Spare_parts_service

| General technical data | | | | | |
|--|---------------------------------------|----------------------|----|----|----|
| Size | 10 | 16 | 25 | 32 | 40 |
| Design | Forced motion sequence | | | | |
| Mode of operation | Double-acting | | | | |
| Gripper function | Radial | | | | |
| Guide | Plain-bearing guide | | | | |
| Gripping force retention | – | NC | NC | NC | NC |
| Number of gripper jaws | 2 | | | | |
| Opening angle per gripper jaw [°] | 90 | | | | |
| Pneumatic connection | M3 | M3 | M5 | G¼ | G¼ |
| Repetition accuracy ¹⁾ [mm] | ≤ 0.1 | | | | |
| Max. interchangeability [mm] | ≤ ±0.2 | | | | |
| Max. operating frequency [Hz] | 4 | | 3 | | 2 |
| Rotational symmetry [mm] | < Ø 0.2 | | | | |
| Position sensing | Via position sensor | Via proximity sensor | | | |
| Type of mounting | Via through-hole and centring sleeve | | | | |
| | Via female thread and centring sleeve | | | | |
| Mounting position | Any | | | | |

1) 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 | | | | | | |
|--|--|---|------------|----|----|----|
| Size | | 10 | 16 | 25 | 32 | 40 |
| Min. operating pressure | | | | | | |
| DHRS-...-A | | [bar] | 2 | | | |
| DHRS-...-A-NC | | [bar] | – | 4 | | |
| Max. operating pressure | | [bar] | 8 | | | |
| Operating medium | | Filtered compressed air, lubricated or unlubricated | | | | |
| Ambient temperature ¹⁾ | | [°C] | +5 ... +60 | | | |
| Corrosion resistance class CRC ²⁾ | | 1 | | | | |

1) Note operating range of proximity sensors

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

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

| Weight [g] | | | | | |
|---------------|----|-----|-----|-----|-----|
| Size | 10 | 16 | 25 | 32 | 40 |
| DHRS-...-A | 44 | 114 | 270 | 480 | 829 |
| DHRS-...-A-NC | – | 118 | 277 | 490 | 844 |

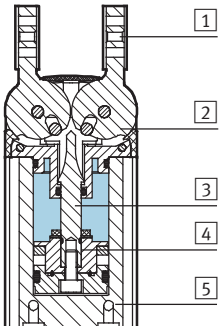
Radial grippers DHRS

Technical data

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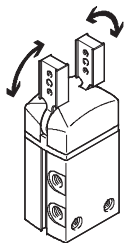
Materials

Sectional view



| Radial gripper | | |
|----------------|---------------------|---------------------------------------|
| 1 | Gripper jaw | High-alloy stainless steel |
| 2 | Cover cap | Polyamide |
| 3 | Slotted guide plate | Tempered steel |
| 4 | Piston | Polyacetal |
| 5 | Housing | Hard anodised wrought aluminium alloy |
| – | Seals | Nitrile rubber |
| – | Note on materials | Free of copper and PTFE |
| – | | RoHS-compliant |

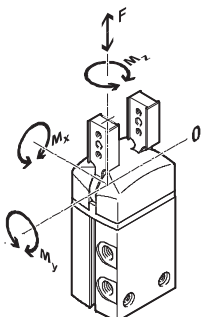
Total gripping torque [Ncm] at 6 bar



The gripping torque is not constant within the opening angle → 10.

| Size | | 10 | 16 | 25 | 32 | 40 |
|------------|---------|----|----|-----|-----|-----|
| DHRS-...-A | Opening | 21 | 62 | 233 | 423 | 725 |
| | Closing | 15 | 55 | 215 | 390 | 660 |

Static characteristic load values at the gripper jaws

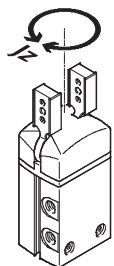


The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional applied loads due to the workpiece or external gripper fingers and acceleration forces occurring during

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

| Size | | 10 | 16 | 25 | 32 | 40 |
|-------------------------------|------|-----|-----|-----|-----|-----|
| Max. permissible force F_z | [N] | 30 | 40 | 75 | 120 | 200 |
| Max. permissible torque M_x | [Nm] | 0.8 | 1.3 | 3.2 | 6.2 | 14 |
| Max. permissible torque M_y | [Nm] | 0.8 | 1.3 | 3.2 | 6.2 | 14 |
| Max. permissible torque M_z | [Nm] | 0.8 | 1.3 | 3.2 | 6.2 | 14 |

Mass moment of inertia [kgm²x10⁻⁴]



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

| Size | 10 | 16 | 25 | 32 | 40 |
|---------------|------|------|------|------|------|
| DHRS-...-A | 0.03 | 0.14 | 0.69 | 1.66 | 4.18 |
| DHRS-...-A-NC | – | 0.15 | 0.71 | 1.69 | 4.24 |

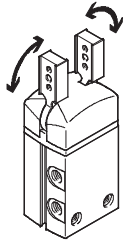
Radial grippers DHRS

Technical data

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Opening and closing times [ms] at 6 bar

Without external gripper fingers



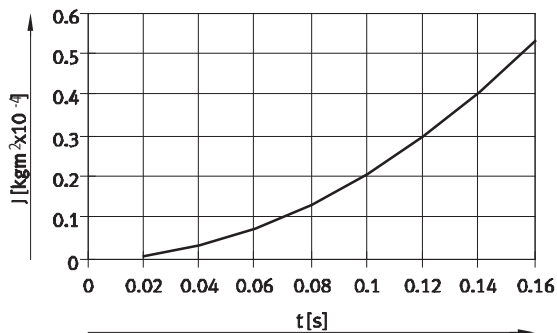
The indicated opening and closing times [ms] were measured at room temperature at an operating pressure of 6 bar with horizontally mounted grippers without additional gripper

fingers (average values). The grippers must be throttled for greater applied loads. Opening and closing times must then be adjusted accordingly.

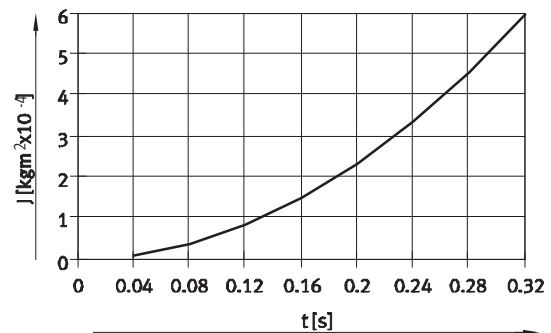
| Size | | 10 | 16 | 25 | 32 | 40 |
|----------------------------------|---------|----|----|-----|-----|-----|
| Without external gripper fingers | | | | | | |
| DHRS-...-A | Opening | 35 | 61 | 102 | 111 | 113 |
| | Closing | 91 | 63 | 105 | 119 | 142 |
| DHRS-...-A-NC | Opening | – | 75 | 150 | 131 | 151 |
| | Closing | – | 43 | 96 | 88 | 110 |

Opening and closing times t to be set at 6 bar as a function of mass moment of inertia of the gripper fingers

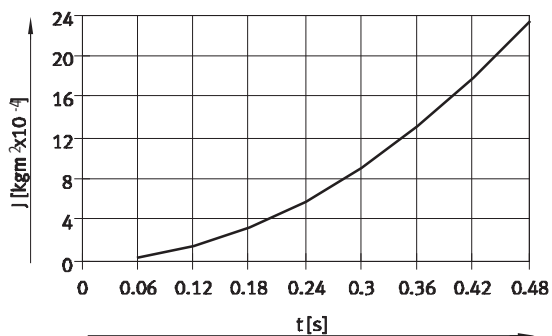
DHRS-10



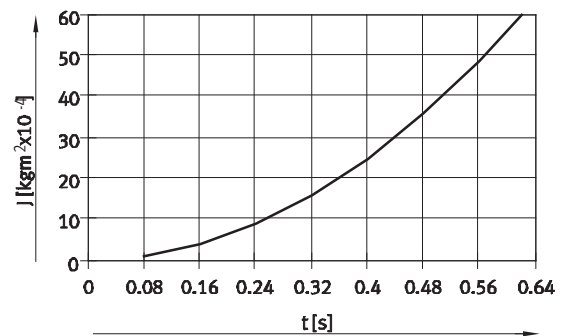
DHRS-16



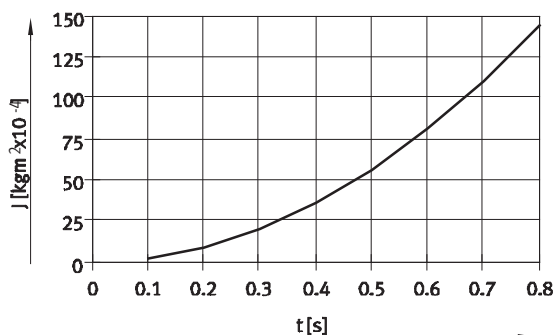
DHRS-25



DHRS-32



DHRS-40



Radial grippers DHRS

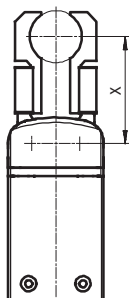
Technical data

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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.

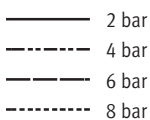
The gripping torque is not constant within the opening angle $\rightarrow 10^\circ$.



Note

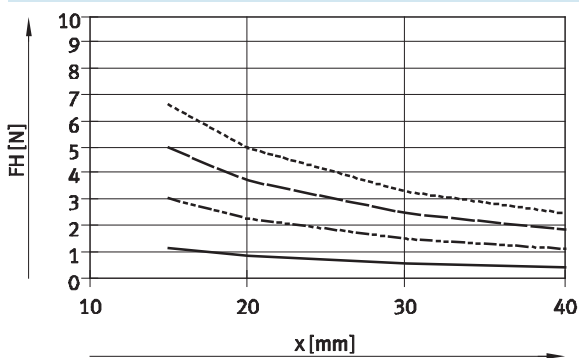
Gripper selection
sizing software

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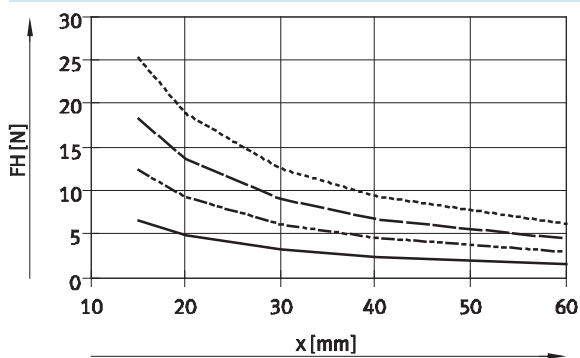


External gripping (closing)

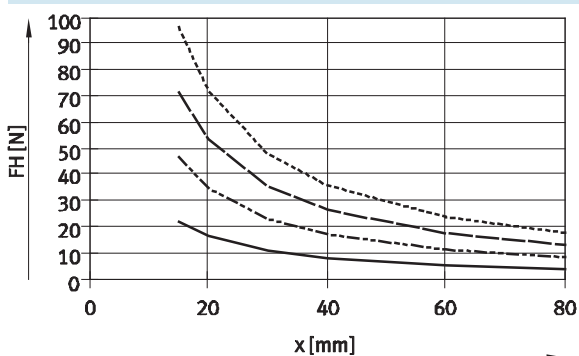
DHRS-10



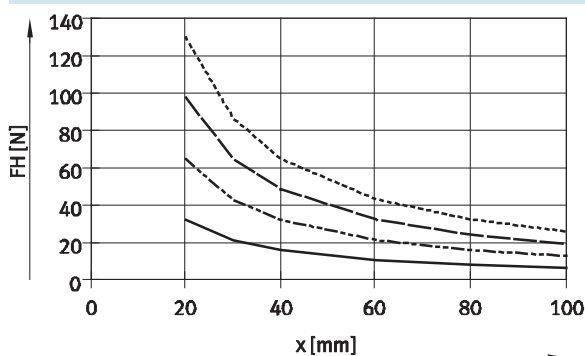
DHRS-16



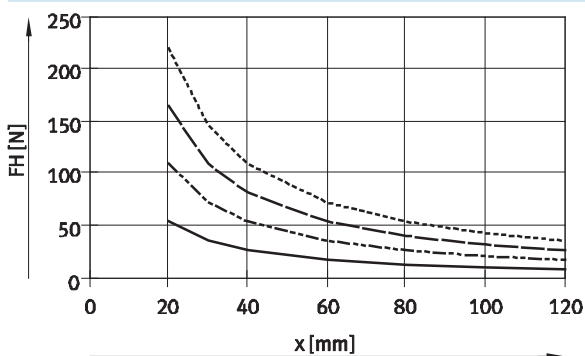
DHRS-25



DHRS-32



DHRS-40



Radial grippers DHRS

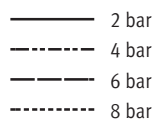
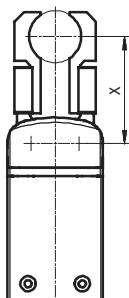
Technical data

FESTO

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.

The gripping torque is not constant within the opening angle $\rightarrow 10$.



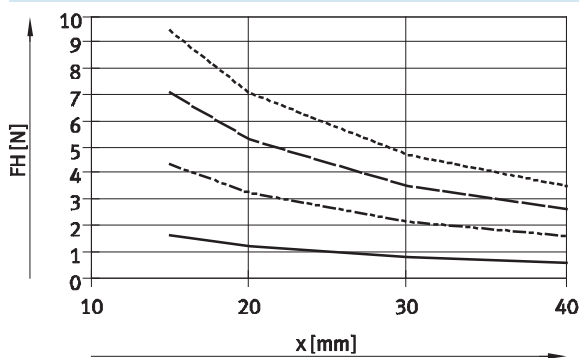
Note

Gripper selection
sizing software

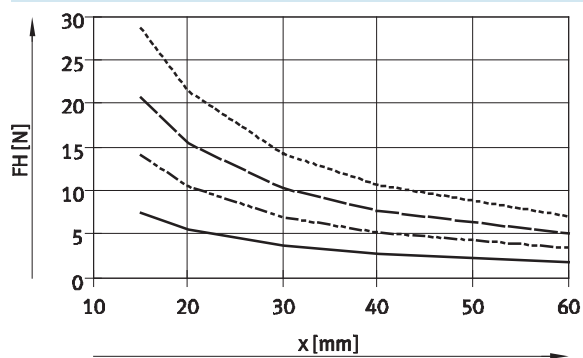
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Internal gripping (opening)

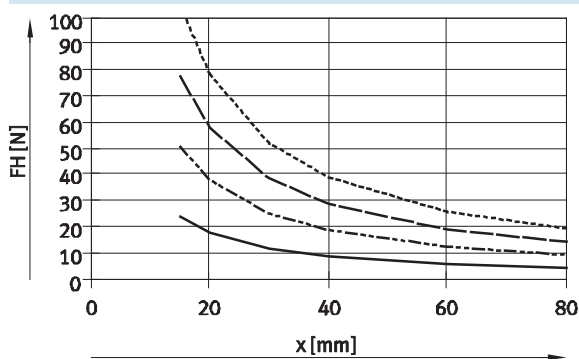
DHRS-10



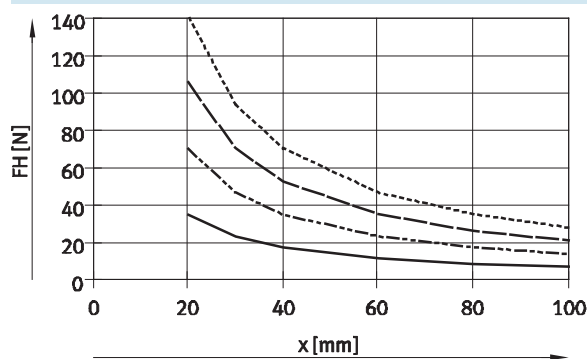
DHRS-16



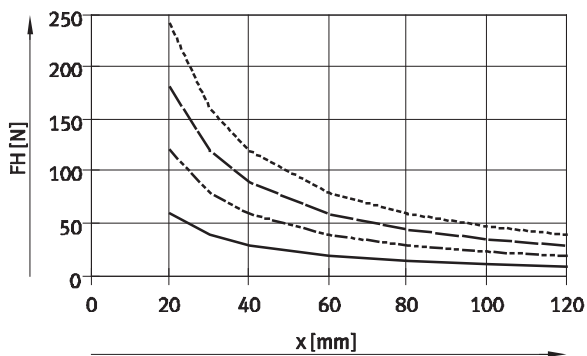
DHRS-25



DHRS-32



DHRS-40



Radial grippers DHRS

Technical data

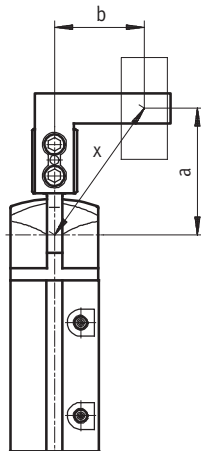
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Gripping force F_H per gripper jaw at 6 bar as a function of lever arm x and eccentricity a and b

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 (→ 8/9) using the calculated value x .



Calculation example

Given:

Distance $a = 25$ mm

Distance $b = 20$ mm

To be calculated:

The gripping force at 6 bar, with a DHRS-16, used as an external gripper

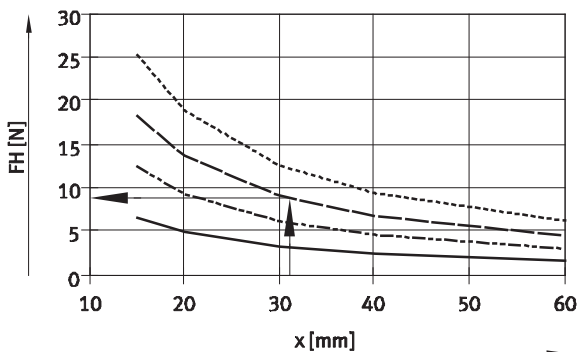
Procedure:

Calculating the lever arm x

$$x = \sqrt{25^2 + 20^2}$$

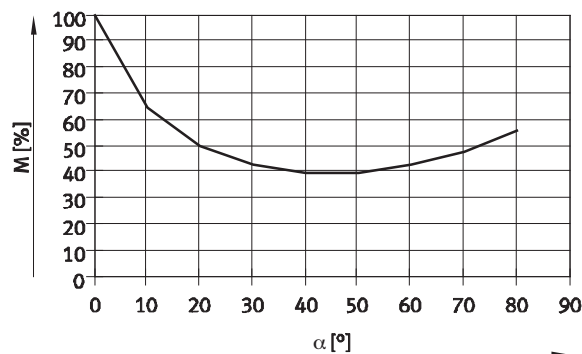
$$x = 32$$
 mm

The graph (→ 8) gives a value of $F_H = 8$ N for the gripping force.



Torque curve M as a function of opening angle α

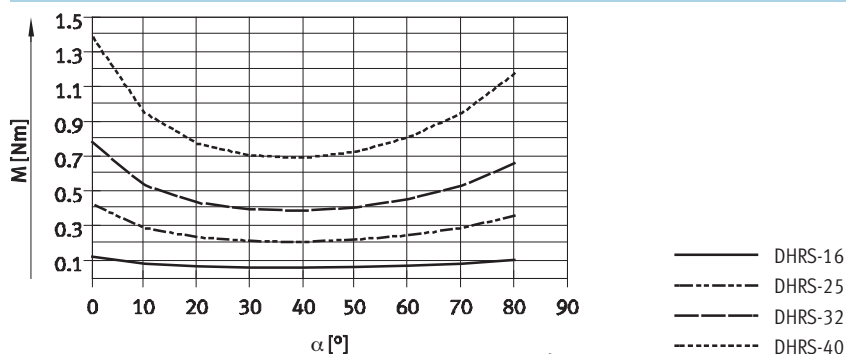
The drive principle of the gripper jaws means that the torque is not constant within the opening angle. The percentage of torque available in each case can be seen in the graph. An opening angle of 0° means a parallel gripper jaw position.



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Technical data

Spring torque M_F as a function of opening angle α



Determination of the actual gripping torques $M_{Grtotal}$ for DHRS-...-NC as a function of application

The radial gripper with integrated spring type DHRS-...-NC (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 torque $M_{Grtotal}$ (per gripper jaw), the data from the graphs for the gripping force F_H (→ 8/9), the

torque curve (→ 10) and the spring torque M_F (→ 11) must be combined accordingly.

$$M_{Gr} = F_H \cdot x \cdot M \text{ [%]}$$

M_{Gr} Gripping torque
 F_H Gripping force
 x Lever arm
 M Torque curve

Application

Single-acting

- Gripping with spring force:
 $M_{Grtotal} = M_F$
- Gripping with pressure force:
 $M_{Grtotal} = M_{Gr} - M_F$

Supplementary gripping force

- Gripping with pressure and spring force:
 $M_{Grtotal} = M_{Gr} + M_F$

Gripping force retention

- Gripping with spring force:
 $M_{Grtotal} = M_F$

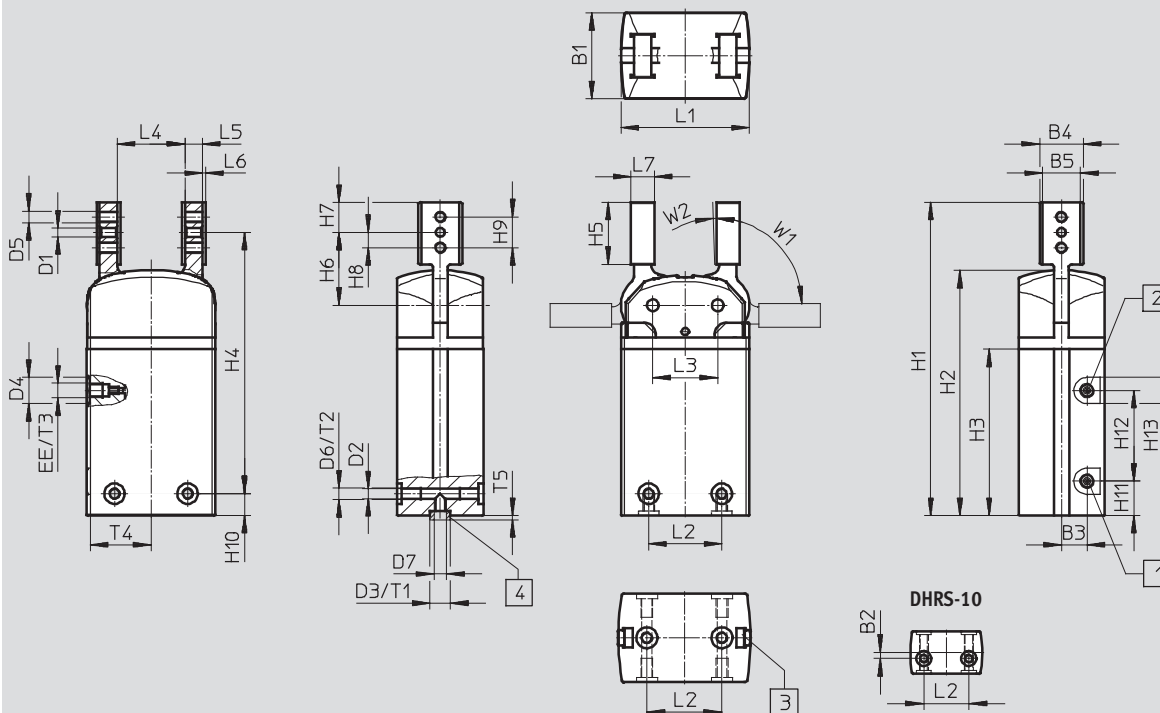
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Dimensions

Download CAD Data → www.festo.com/us/cad



- 1 Supply port, opening
- 2 Supply port, closing
- 3 Slot for proximity sensor
- 4 Centring sleeves ZBH
(2 included in the scope of delivery)

| Size | B1 | B2 ¹⁾ | B3 | B4 | B5 | D1 | D2 | D3 | D4 | D5 |
|------|-------|------------------|------|-----|-----------------|---------|-----------|------------|----|------|
| [mm] | ±0.05 | | | | +0.03/ +0.01 | Ø H8 | Ø +0.1 | Ø H8/h7 | Ø | |
| 10 | 14 | 2 | 2 | 8.5 | 6.5 | 2 | 2.4 | 5 | 7 | M2.5 |
| 16 | 19 | – | 5.8 | 14 | 10 | 2 | 2.5 | 5 | – | M3 |
| 25 | 29.5 | – | 8.75 | 15 | 13 | 3 | 3.3 | 7 | 9 | M4 |
| 32 | 38 | – | 11 | 16 | 14 | 4 | 5.1 | 9 | 15 | M5 |
| 40 | 49 | – | 11 | 24 | 20 | 5 | 6.4 | 12 | 15 | M6 |

| Size | D6 | D7 | EE | H1 | H2 | H3 | H4 | H5 | H6 |
|------|----|------|------|-------|-------|------|-------|------|-------|
| [mm] | | Ø | | | | | ±0.25 | ±0.2 | ±0.05 |
| 10 | M3 | 3.2 | M3 | 60.8 | 46 | 30.8 | 42.25 | 13.8 | 14.95 |
| 16 | M3 | 3.2 | M3 | 88.2 | 70.5 | 49 | 73.70 | 16.5 | 19.7 |
| 25 | M4 | 5.3 | M5 | 107.2 | 84 | 57 | 89.45 | 21.2 | 24.95 |
| 32 | M6 | 6.4 | G1/8 | 128.5 | 96.2 | 65 | 103.5 | 29.5 | 32 |
| 40 | M8 | 10.3 | G1/8 | 140 | 108.4 | 71.5 | 108.7 | 29.5 | 33.7 |

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

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| Size [mm] | H7 -0.1 | H8 | H9 | H10 ²⁾ | H11 | H12 | H13 | L1 ±0.05 | L2 ¹⁾ | L3 ±0.02 |
|--------------|------------|------|------|-------------------|-------|-----|-----|-------------|------------------|-------------|
| 10 | 6.25 | 4 | 8 | 12.3 | 8.8 | 16 | 7 | 24 | 15 | 12.4 |
| 16 | 7 | 4 | 8 | 7.5 | 12.25 | 23 | 7 | 33.4 | 16 | 17 |
| 25 | 10.25 | 5.25 | 10.5 | 7.5 | 11.8 | 31 | 9 | 44 | 25 | 22.2 |
| 32 | 14 | 7 | 14 | 11 | 20 | 25 | 15 | 51 | 29 | 25.8 |
| 40 | 13.8 | 8 | 16 | 17.5 | 9 | 46 | 15 | 59 | 33 | 30 |

| Size [mm] | L4 | L5 ±0.05 | L6 | L7 | T1 +0.1 | T2 +1 | T3 +0.5 | T4 | T5 -0.3 | W1 ±2° | W2 +3° |
|--------------|------|-------------|-----|----|------------|----------|------------|------|------------|-----------|-----------|
| 10 | 12 | 4 | 0.5 | 5 | 1.2 | through | 3.5 | 11.6 | 1.2 | 90 | 2 |
| 16 | 21 | 4 | 1 | 6 | 1.2 | 5.8 | 4.5 | 16 | 1.2 | 90 | 2 |
| 25 | 23.2 | 6 | 1 | 8 | 1.6 | 6.4 | 4.5 | 21 | 1.4 | 90 | 2 |
| 32 | 24.8 | 8 | 1 | 10 | 2.1 | 12.9 | 6.5 | 24 | 1.9 | 90 | 2 |
| 40 | 29.6 | 10 | 1 | 12 | 2.6 | 13.4 | 6 | 28.4 | 2.4 | 90 | 2 |

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

2) Tolerance for centring hole -0.05 mm, tolerance for thread ±0.1 mm

| Ordering data | | | | | |
|---------------|---|------------------|--|--|---------------------|
| Size [mm] | Double-acting without compression spring | | | Single-acting or with gripping force retention | |
| | Part No. | Type | | Closing Part No. | Type |
| 10 | 1310159 | DHRS-10-A | | - | |
| 16 | 1310160 | DHRS-16-A | | 1310161 | DHRS-16-A-NC |
| 25 | 1310162 | DHRS-25-A | | 1310163 | DHRS-25-A-NC |
| 32 | 1310164 | DHRS-32-A | | 1310165 | DHRS-32-A-NC |
| 40 | 1310166 | DHRS-40-A | | 1310167 | DHRS-40-A-NC |

Radial grippers DHRS

Accessories



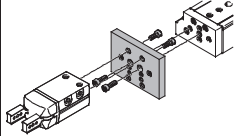
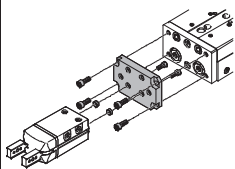
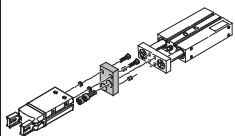
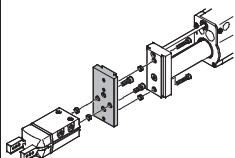
FESTO

Adapter kit
HMSV, HAPG, HAPS, 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/us/cad | | |
|---|-------------------|---------|---|---|--|----------|---------|
| Combination | Drive | Gripper | | | Adapter kit | | |
| | Size | Size | Mounting option | | CRC ¹⁾ | Part No. | Type |
| | | |  |  | | | |
| DGSL/DHRS | DGSL | DHRS | | | HMSV | | |
|  | 8, 10 | 10 | ■ | ■ | 2 | 548784 | HMSV-54 |
| | 12, 16 | 16 | ■ | ■ | | 548785 | HMSV-55 |
| | 20, 25 | 25, 32 | ■ | ■ | | 548786 | HMSV-56 |
| | | | | | | | |
| SLT/DHRS | SLT | DHRS | | | HAPS | | |
|  | 10 | 10 | ■ | – | 2 | 178448 | HAPS-2 |
| | 16 | 16 | ■ | – | | 178449 | HAPS-3 |
| | 20 | 25 | ■ | – | | 178450 | HAPS-4 |
| | 25 | 32 | ■ | – | | 178451 | HAPS-5 |
| | | | | | | | |
| DPZ/DHRS | DPZ | DHRS | | | HAPG | | |
|  | 10, 16 | 16 | ■ | – | 2 | 163250 | HAPG-1 |
| | 16 | 25 | ■ | – | | 163251 | HAPG-2 |
| | 20 | 25 | ■ | – | | 163252 | HAPG-3 |
| | 25, 32 | 32 | ■ | – | | 163253 | HAPG-4 |
| | | | | | | | |
| HMP/DHRS | HMP | DHRS | | | HMSV | | |
|  | Direct mounting | | | | | | |
| | 16, 20 | 16 | ■ | ■ | 2 | 177666 | HMSV-20 |
| | 16, 20, 25 | 25 | ■ | ■ | | 177761 | HMSV-21 |
| | 16, 20, 25, 32 | 32 | ■ | ■ | | 177762 | HMSV-22 |
| | 25 | 40 | ■ | ■ | | 177763 | HMSV-23 |
| | 32 | 40 | ■ | ■ | | 177764 | HMSV-24 |
| | Dovetail mounting | | | | | | |
| | 16, 20 | 16 | ■ | ■ | 2 | 177767 | HMSV-27 |
| | 16, 20, 25 | 25 | ■ | ■ | | 177768 | HMSV-28 |
| | 16, 20, 25, 32 | 32 | ■ | ■ | | 177769 | HMSV-29 |
| | 25 | 40 | ■ | ■ | | 177770 | HMSV-30 |
| | 32 | 40 | ■ | ■ | | 178211 | HMSV-31 |

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.

Radial grippers DHRS



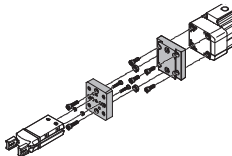
Accessories

Adapter kit
HMSV, HAPG, HAPS, 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/us/cad | | |
|---|-------------------------------------|---------|---|---|--|----------|---------------|
| Combination | Drive | Gripper | | | Adapter kit | | |
| | Size | Size | Mounting option | | CRC ¹⁾ | Part No. | Type |
| | | |  |  | | | |
| DGP-..., DGE-..., DGEA/DHRS | DG... | DHRS | | | HMVA, HAPG, HMSV | | |
|  | Direct mounting | | | | | | |
| | 18 ²⁾ , 25 ³⁾ | 10 | ■ | ■ | 2 | 196788 | HMVA-DLA18/25 |
| | | | | | | 192706 | HAPG-37-S1 |
| | 40 ³⁾ | 10 | ■ | ■ | | 196790 | HMVA-DLA40 |
| | | | | | | 192706 | HAPG-37-S1 |
| | 18 ²⁾ , 25 ³⁾ | 16 | ■ | ■ | | 196788 | HMVA-DLA18/25 |
| | | | | | | 192705 | HAPG-36-S1 |
| | 40 ³⁾ | 16 | ■ | ■ | | 196790 | HMVA-DLA40 |
| | | | | | | 192705 | HAPG-36-S1 |
| | 18 ²⁾ , 25 ³⁾ | 25 | ■ | ■ | 2 | 196788 | HMVA-DLA18/25 |
| | | | | | | 193922 | HAPG-37-S4 |
| | 40 ³⁾ | 25 | ■ | ■ | | 196790 | HMVA-DLA40 |
| | | | | | | 193922 | HAPG-37-S4 |
| | Dovetail mounting | | | | | | |
| | 18 ²⁾ , 25 | 16 | ■ | ■ | 2 | 196788 | HMVA-DLA18/25 |
| | | | | | | 177767 | HMSV-27 |
| | 40 | 16 | ■ | ■ | | 196790 | HMVA-DLA40 |
| | | | | | | 177767 | HMSV-27 |
| | 18 ²⁾ , 25 | 25 | ■ | ■ | | 196788 | HMVA-DLA18/25 |
| | | | | | | 177768 | HMSV-28 |
| | 40 | 25 | ■ | ■ | | 196790 | HMVA-DLA40 |
| | | | | | | 177768 | HMSV-28 |
| | 40 | 32 | ■ | ■ | 2 | 196790 | HMVA-DLA40 |
| | | | | | | 177769 | HMSV-29 |
| | 40 | 40 | ■ | ■ | | 196790 | HMVA-DLA40 |
| | | | | | 177770 | HMSV-30 | |

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...

Radial grippers DHRS

Accessories



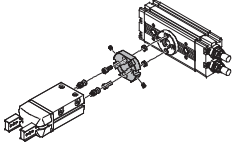
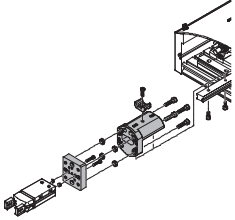
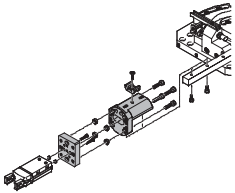
FESTO

Adapter kit
HMSV, HAPG, HAPS, 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/us/cad | | |
|---|--------------------|-------------|---|---|--|----------|-------------|
| Combination | Drive | Gripper | Mounting option | | Adapter kit | | |
| | Size | Size | | | CRC ¹⁾ | Part No. | Type |
| | | |  |  | | | |
| DRQD/DHRS | DRQD-...-FW | DHRS | | | | | |
|  | 6, 8, 12 | 10 | ■ | ■ | 2 | 187568 | HAPG-34 |
| | 16 ²⁾ | 10 | ■ | ■ | | 187566 | HAPG-SD2-12 |
| | 16 ²⁾ | 16 | ■ | ■ | | 184477 | HAPG-SD2-1 |
| | 16 ²⁾ | 25 | ■ | ■ | | 184478 | HAPG-SD2-2 |
| | 20 ²⁾ | 25 | ■ | ■ | | 184479 | HAPG-SD2-3 |
| | 20 ²⁾ | 32 | ■ | ■ | | 184480 | HAPG-SD2-4 |
| | 25 ³⁾ | 25 | ■ | ■ | | 184482 | HAPG-SD2-6 |
| | 25 ³⁾ | 32 | ■ | ■ | | 184483 | HAPG-SD2-7 |
| | 32 ³⁾ | 32 | ■ | ■ | | 184485 | HAPG-SD2-9 |
| | 32 ³⁾ | 40 | ■ | ■ | | 184486 | HAPG-SD2-10 |
| | 40, 50 | 40 | ■ | ■ | | 526027 | HAPG-SD2-21 |
| | DRQD-...ZW | DHRS | | | | | |
| | 16 | 16 | ■ | ■ | 2 | 163267 | HAPG-18 |
| | 16 | 25 | ■ | ■ | | 163268 | HAPG-19 |
| | 20 | 25 | ■ | ■ | | 163269 | HAPG-20 |
| | 20 | 32 | ■ | ■ | | 163270 | HAPG-21 |
| | 25 | 32 | ■ | ■ | | 163271 | HAPG-22 |
| HSP/DHRS | HSP | DHRS | | | | | |
|  | 12 | 10 | ■ | — | 2 | 192709 | HAPG-60-S1 |
| | 16 | 10 | ■ | — | | 540881 | HAPG-70-B |
| | 16 | 16 | ■ | — | | 192706 | HAPG-37-S1 |
| | 16 | 16 | ■ | — | | 540882 | HAPG-71-B |
| | 25 | 16 | ■ | — | | 192705 | HAPG-36-S1 |
| | 25 | 16 | ■ | — | | 540882 | HAPG-71-B |
| | 25 | 25 | ■ | — | | 192705 | HAPG-36-S1 |
|  | 12, 16 | 10 | ■ | — | 2 | 540883 | HAPG-72-B |
| | 12, 16 | 16 | ■ | — | | 192706 | HAPG-37-S1 |
| | 12, 16 | 16 | ■ | — | | 540882 | HAPG-71-B |
| | 12, 16 | 16 | ■ | — | | 192705 | HAPG-36-S1 |

- 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.
- Possible in combination with DRQD-...-E422 (flanged shaft with energy through-feed).
- Possible in combination with DRQD-...-E444 (flanged shaft with energy through-feed).

Radial grippers DHRS



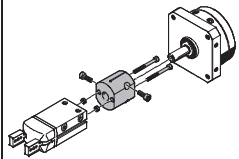
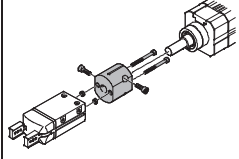
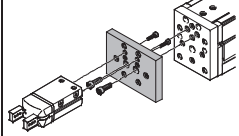
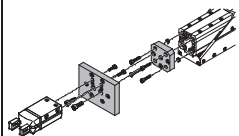
Accessories

Adapter kit
HMSV, HAPG, HAPS, 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/us/cad | |
|---|---------------|-----------------|---|---|--|-----------------|
| Combination | Drive Size | Gripper Size | Mounting option | | Adapter kit CRC ¹⁾ | Part No. Type |
| | | |  |  | | |
| DSM/DHRS | DSM-...-FW | DHRS | | | HAPG | |
|  | 6, 8, 10 | 10 | ■ | ■ | 2 | 187568 HAPG-34 |
| | DSM-... | DHRS | | | HAPG | |
| | 12 | 16 | ■ | ■ | 2 | 163266 HAPG-17 |
| | 16 | 16 | ■ | ■ | | 163267 HAPG-18 |
| | 16 | 25 | ■ | ■ | | 163268 HAPG-19 |
| | 25 | 25 | ■ | ■ | | 163269 HAPG-20 |
| | 25 | 32 | ■ | ■ | | 163270 HAPG-21 |
| | 32 | 32 | ■ | ■ | | 163271 HAPG-22 |
| DSL/DHRS | DSL | DHRS | | | HAPG | |
|  | 16 | 16 | ■ | ■ | 2 | 163266 HAPG-17 |
| | 20 | 16 | ■ | ■ | | 163267 HAPG-18 |
| | 20 | 25 | ■ | ■ | | 163268 HAPG-19 |
| | 25 | 25 | ■ | ■ | | 163269 HAPG-20 |
| | 25 | 32 | ■ | ■ | | 163270 HAPG-21 |
| | 32 | 32 | ■ | ■ | | 163271 HAPG-22 |
| EGSL/DHRS | EGSL | DHRS | | | HMSV | |
|  | 35 | 10 | ■ | ■ | 2 | 548784 HMSV-54 |
| | 45, 55 | 16 | ■ | ■ | | 1088262 HMSV-70 |
| | 75 | 25, 32 | ■ | ■ | | 548785 HMSV-55 |
| | | | | | | 548786 HMSV-56 |
| EGSA/DHRS | EGSA | DHRS | | | HMSV | |
|  | 50 | 16 | ■ | ■ | 2 | 560017 HMSV-61 |
| | | | | | | 548785 HMSV-55 |
| | 60 | 16 | ■ | ■ | | 560019 HMSV-63 |
| | | | | | | 177666 HMSV-20 |
| | 60 | 25, 32 | ■ | ■ | | 560018 HMSV-62 |
| | | | | | | 548786 HMSV-56 |

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.

Radial grippers DHRS

Accessories



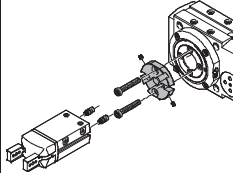
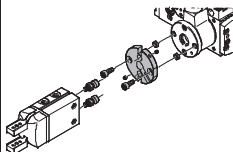
FESTO

Adapter kit
HMSV, HAPG, HAPS, 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/us/cad | | |
|--|---------------|-----------------|---|---|--|----------|-------------|
| Combination | Drive Size | Gripper Size | Mounting option | | Adapter kit | | |
| | | |  |  | CRC ¹⁾ | Part No. | Type |
| | | | | | | | |
| ERMB/DHRS | ERMB | DHRS | | | HAPG | | |
|  | 20 | 25 | ■ | ■ | 2 | 184479 | HAPG-SD2-3 |
| | 25 | 25 | ■ | ■ | | 184482 | HAPG-SD2-6 |
| | 20 | 32 | ■ | ■ | | 184480 | HAPG-SD2-4 |
| | 25 | 32 | ■ | ■ | | 184483 | HAPG-SD2-7 |
| | 32 | 32 | ■ | ■ | | 184485 | HAPG-SD2-9 |
| | 32 | 40 | ■ | ■ | | 184486 | HAPG-SD2-10 |
| | | | | | | | |
| EHMB/DHRS | EHMB | DHRS | | | HAPG | | |
|  | 20 | 32 | ■ | ■ | 2 | 184485 | HAPG-SD2-9 |
| | 20 | 40 | ■ | ■ | | 184486 | HAPG-SD2-10 |
| | 25, 32 | 40 | ■ | ■ | | 526027 | HAPG-SD2-21 |
| | | | | | | | |

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

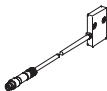
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Radial grippers DHRS

Accessories

| Ordering data | | | | | | |
|---|------------------|--|---------------|---------------|---------------|------------------|
| | For size [mm] | Description | Weight [g] | Part No. | Type | PU ¹⁾ |
| Centring sleeve ZBH Technical data → Internet: zbh | | | | | | |
|  | 10, 16 | For centring the gripper during mounting | 1 | 189652 | ZBH-5 | 10 |
| | 25 | | 1 | 186717 | ZBH-7 | |
| | 32 | | 1 | 150927 | ZBH-9 | |
| | 40 | | 1 | 189653 | ZBH-12 | |

1) Packaging unit

| Ordering data | | | | |
|---|----------|---------------|---------------|---------------------|
| Type | For size | Weight [g] | Part No. | Type |
| Position sensor SMH-S1 Technical data → Internet: smh-s1 | | | | |
|  | 10 | 20 | 175712 | SMH-S1-HGR10 |



Signal converter/evaluation unit for position sensor SMH-S1



Signal converter SVE4

- Converts analogue signals into switching points
- Switching function freely programmable with teach-in
- Threshold value, hysteresis or window comparator

Evaluation unit SMH-AE1

- Converts analogue signals into switching points
- With 3 potentiometers for setting 3 switching points



| Ordering data | | | | | | | |
|---|----------|--------------------|-------------------|------------------|------------|-----------------------------------|---------------------|
| Type | For size | Input connection | Output connection | Switching output | Weight [g] | Part No. | Type |
| Signal converter SVE4 | | | | | | Technical data → Internet: sve4 | |
|  | 10 | Socket M8x1, 4-pin | Plug M8x1, 4-pin | 2x PNP | 19 | 544216 | SVE4-HS-R-HM8-2P-M8 |
| | | | | 2x NPN | | 544219 | SVE4-HS-R-HM8-2N-M8 |
| | | | | | | | |
| Evaluation unit SMH-AE1 | | | | | | Technical data → Internet: smh-ae | |
|  | 10 | Socket M8x1, 4-pin | Plug M12x1, 5-pin | 3x PNP | 170 | 175708 | SMH-AE1-PS3-M12 |
| | | | | 3x NPN | | 175709 | SMH-AE1-NS3-M12 |
| | | | | | | | |


| Ordering data – Connecting cables | | | | |
|--|-------------------------------|------------------------------|---------------------|---|
| | Electrical connection, left | Electrical connection, right | Cable length [m] | Part No. Type |
| Connection between position sensor and signal converter/evaluation unit Technical data → Internet: nebu | | | | |
|  | Straight socket, M8x1, 4-pin | Straight plug, M8x1, 4-pin | 2.5 | 554035 NEBU-M8G4-K-2.5-M8G4 |
| Connection between evaluation unit and controller | | | | |
|  | Straight socket, M12x1, 5-pin | Cable, open end, 5-wire | 2.5 | 541330 NEBU-M12G5-K-2.5-LE5 |
| | | | 5 | 541331 NEBU-M12G5-K-5-LE5 |


Radial grippers DHRS

Accessories

FESTO

| Ordering data – Connecting cables | | | | Technical data → Internet: nebu | |
|---|------------------------------|------------------------------|------------------|---------------------------------|---------------------|
| | Electrical connection, left | Electrical connection, right | Cable length [m] | Part No. | Type |
| Connection between signal converter and controller | | | | | |
|  | Straight socket, M8x1, 4-pin | Cable, open end, 4-wire | 2.5 | 541342 | NEBU-M8G4-K-2.5-LE4 |
| | | | 5 | 541343 | NEBU-M8G4-K-5-LE4 |
|  | Angled socket, M8x1, 4-pin | Cable, open end, 4-wire | 2.5 | 541344 | NEBU-M8W4-K-2.5-LE4 |
| | | | 5 | 541345 | NEBU-M8W4-K-5-LE4 |



| Proximity sensor for size 16 ... 40 | | | | | |
|---|-----------------------------------|---|------------------|--------------------------------|---------------------------------|
| 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 |

| Proximity sensor for size 16 ... 40 | | | | | |
|---|-----------------------------------|---|---------------------|---------------------------------|----------------------------|
| Ordering data – Position transmitters for T-slot | | | | Technical data → Internet: smat | |
| | Type of mounting | Electrical connection, connection direction | Analogue output [V] | Cable length [m] | Part No. Type |
|  | Insertable in the slot from above | Plug M8x1, 3-pin, lateral | 0 ... 10 | 0.3 | 553744 SMAT-8M-U-E-0,3-M8D |

Note

Mode of operation:

The position transmitter continuously senses the position of the piston. It has an analogue output with an output signal in proportion to the piston position.

| 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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