

Parallel grippers HGPD, sealed

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Parallel grippers HGPD, sealed

Key features

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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

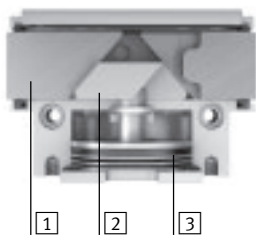
with forced motion sequence. This also guarantees synchronous movement of the gripper jaw. The ground gripper jaws and slideway ensure a virtually backlash-free movement.

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

Position sensing/force control

With position transmitter SMAT-8M



Infinite position sensing possible

- Analogue output 0 ... 10 V

With proportional pressure regulator VPPM



Infinite adjustment of the gripping force possible

- Setpoint input
 - 0 ... 10 V
 - 4 ... 20 mA

With proximity sensor SMT-8G/-10G



Multiple positions can be sensed:

- Open
- Closed
- Workpiece gripped

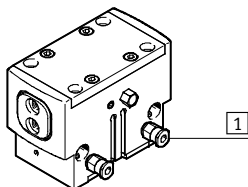
Parallel grippers HGPS, sealed

Key features

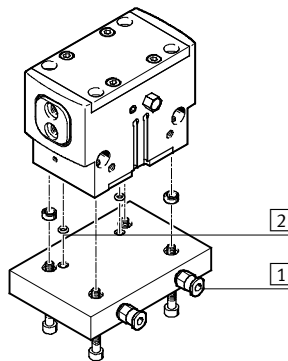
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Wide range of supply ports

Direct
From the front

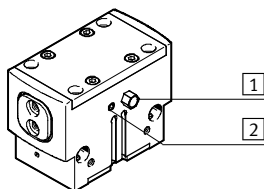


Via adapter plate
From underneath



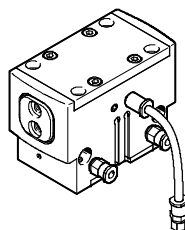
- 1 Supply ports
- 2 O-rings

Other ports



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

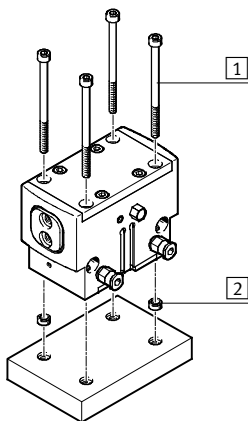
Use in harsh ambient conditions



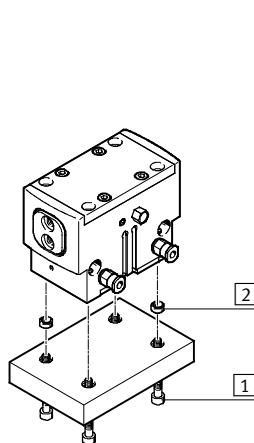
When using the gripper in damp environments or with liquid/gaseous media, make sure that the filter is installed in a neutral environment. The same applies to unused supply ports when operating the gripper as a single-acting gripper.

Mounting options

Direct mounting
From above



Via adapter plate
From underneath

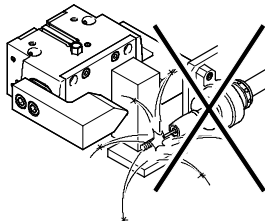


- 1 Mounting screws
- 2 Centring sleeves

Note

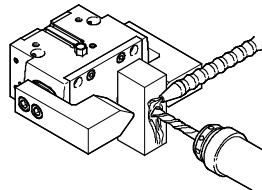
These grippers are not suitable or are of limited suitability for the following sample applications:

Not suitable for:

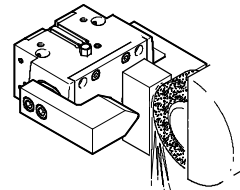


- Welding spatter

Of limited suitability for:



- Aggressive media only possible after consultation with Festo



- Grinding dust

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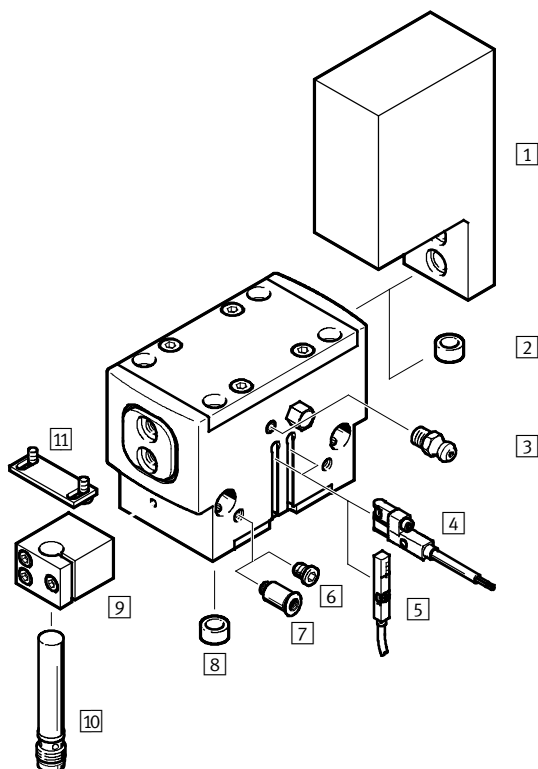
Type codes and peripherals overview

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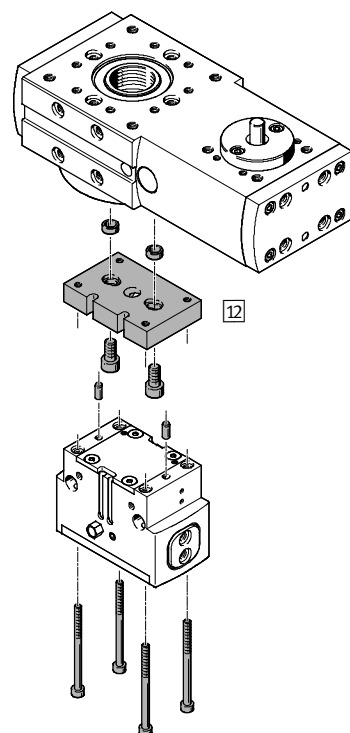
Type codes

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

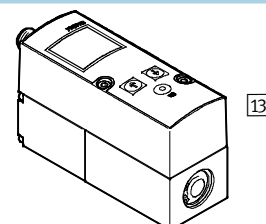
Peripherals overview



System product for handling and assembly technology



Proportional pressure regulator VPPM



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Peripherals overview

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Accessories		
Type	Brief description	→ Page/Internet
1 Gripper jaw blank BUB-HGPL	Blank specially matched to the gripper jaws for custom fabrication of gripper fingers	20
2 Centring pin/sleeve ZBS/ZBH	- 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	- For sensing the piston position - Proximity sensor does not project past the housing at the bottom	22
5 Position transmitter SMAT-8M	- Continuously senses the position of the piston. Has an analogue output with an output signal in proportion to the piston position. - For size 40 ... 80	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	23
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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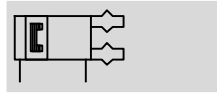
Technical data

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Function

Double-acting

HGPD-...-A



Size
16 ... 80 mm

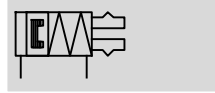
Total stroke
6 ... 40 mm

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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. applied load per external gripper finger ¹⁾	[N]	0.25	0.57	1.38	2.78	4.45	8.13	13.4	21.7
Stroke per gripper jaw	[mm]	3	4	6	8	10	12	16	20
Pneumatic connection		M5	M5	M5	M5	M5	G1/8	G1/8	G1/4
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]	≤ 0.03	≤ 0.04		≤ 0.05				
Max. interchangeability	[mm]	≤ ±0.2							
Max. operating frequency	[Hz]	≤ 3				≤ 2			
Rotational symmetry	[mm]	< Ø 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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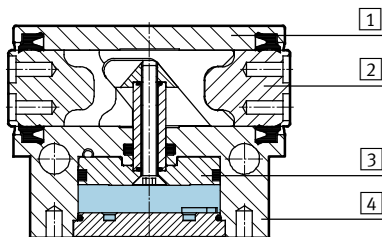
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Weight [g]								
Size	16	20	25	35	40	50	63	80
HGPS-...-A	100	163	327	572	1,044	1,766	3,365	6,252
HGPS-...-A-G	117	182	361	682	1,223	2,150	3,998	7,484

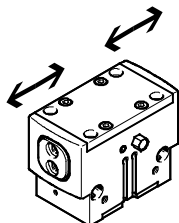
Materials

Sectional view



Parallel gripper		
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



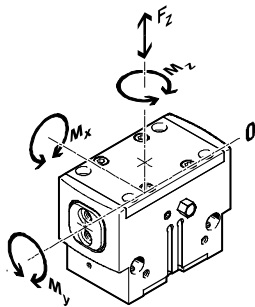
Size	16	20	25	35	40	50	63	80
Gripping force per gripper jaw								
HGPS-...-A	Opening	54	80	144	291	315	472	1,961
	Closing	47	75	133	267	267	447	1,858
Total gripping force								
HGPS-...-A	Opening	107	159	288	581	630	944	1,935
	Closing	94	150	266	534	598	894	3,716

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Characteristic load values at the gripper jaws



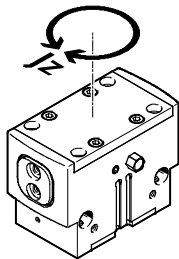
The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional applied loads due to the workpiece or external gripper fingers and

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

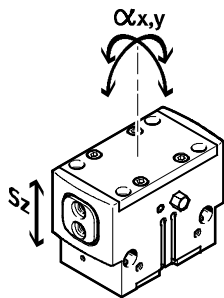
Mass moment of inertia [kgcm²]



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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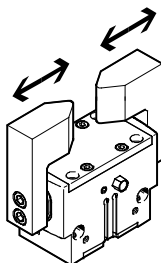
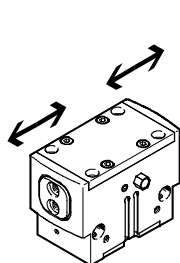
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Opening and closing times [ms] at 6 bar

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 applied loads. Opening and closing times must then be adjusted accordingly.

Size		16	20	25	35	40	50	63	80
Without external gripper fingers									
HGPL-...-A	Opening	15	28	29	33	73	90	150	214
	Closing	17	31	35	37	77	100	162	218
HGPL-...-A-G1	Opening	15	13	24	31	73	85	170	235
	Closing	32	25	51	62	157	176	328	353
HGPL-...-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 applied load)									
HGPL-...	0.5 N	20	—	—	—	—	—	—	—
	1 N	28	26	—	—	—	—	—	—
	2 N	40	37	30	—	—	—	—	—
	3 N	—	46	37	34	—	—	—	—
	4 N	—	—	43	40	46	—	—	—
	5 N	—	—	—	55	52	—	—	—
	6 N	—	—	—	—	57	—	—	—
	8 N	—	—	—	—	66	125	—	—
	10 N	—	—	—	—	—	133	—	—
	12 N	—	—	—	—	—	140	—	—
	15 N	—	—	—	—	—	—	183	—
	18 N	—	—	—	—	—	—	201	—
	20 N	—	—	—	—	—	—	211	259
	22 N	—	—	—	—	—	—	—	272
	24 N	—	—	—	—	—	—	—	284

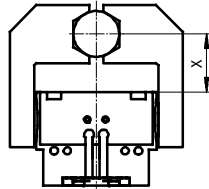
Parallel grippers HGPD, sealed

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.

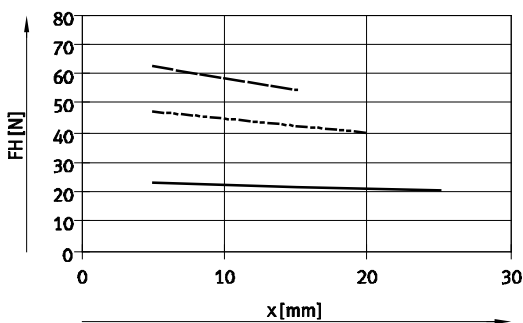


— 3 bar
- - - 6 bar
- · - 8 bar

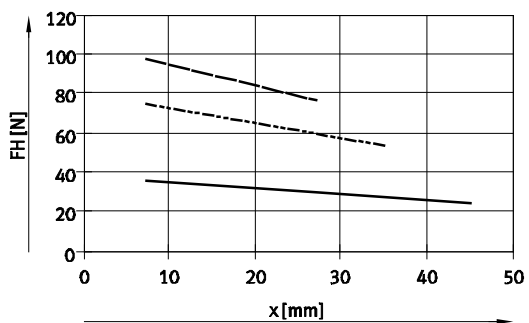
Note
Gripper selection
sizing software
→ www.festo.com

External gripping (closing)

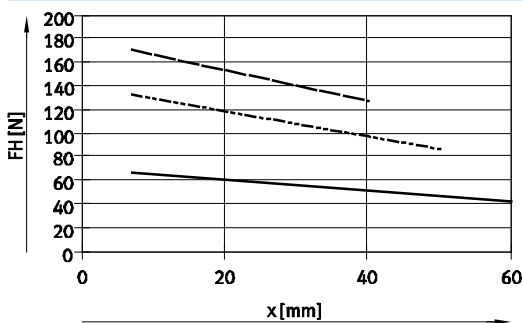
HGPD-16-A



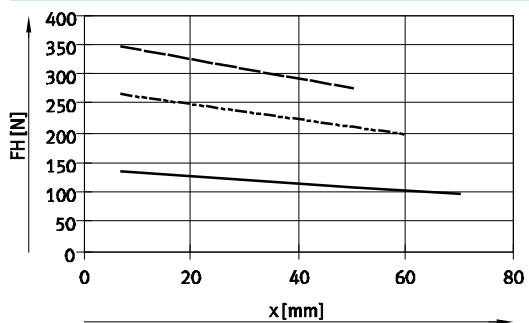
HGPD-20-A



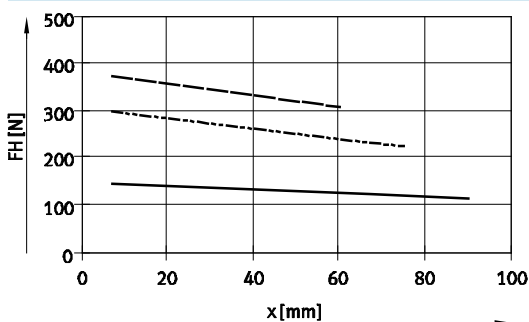
HGPD-25-A



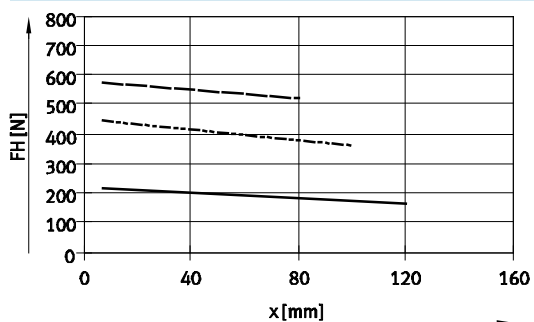
HGPD-35-A



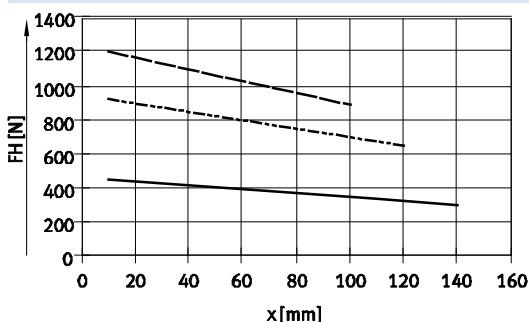
HGPD-40-A



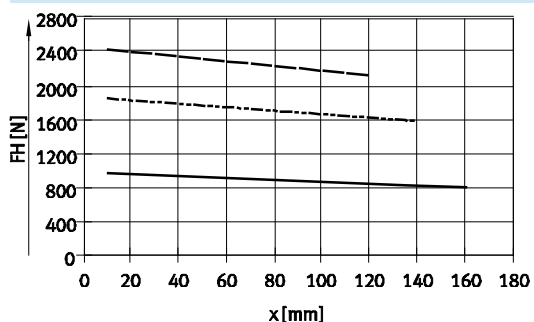
HGPD-50-A



HGPD-63-A



HGPD-80-A



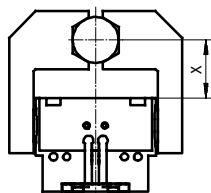
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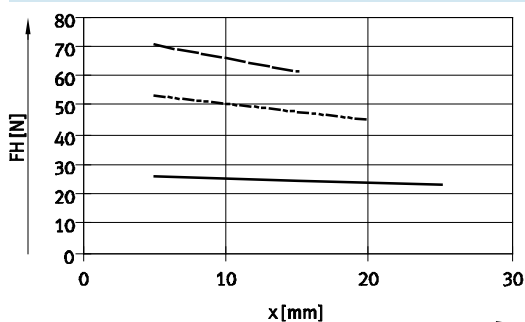


— 3 bar
- - - 6 bar
- · - 8 bar

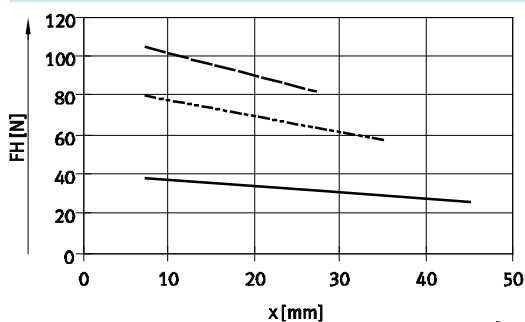
Note
Gripper selection
sizing software
→ www.festo.com

Internal gripping (opening)

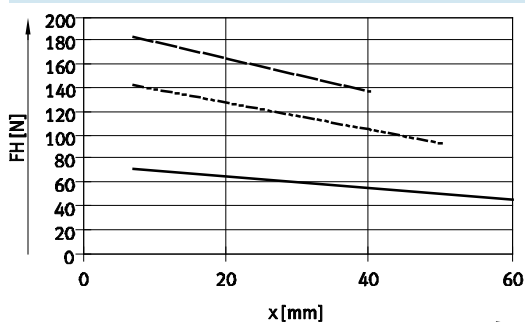
HGPД-16-A



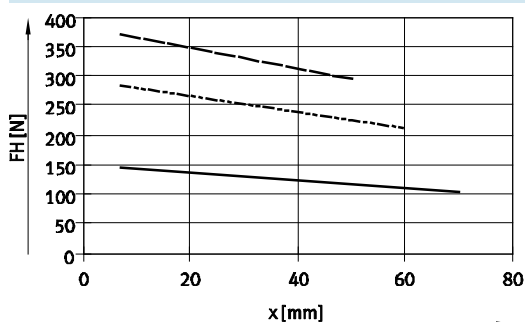
HGPД-20-A



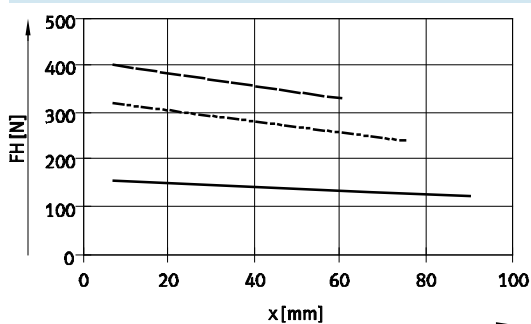
HGPД-25-A



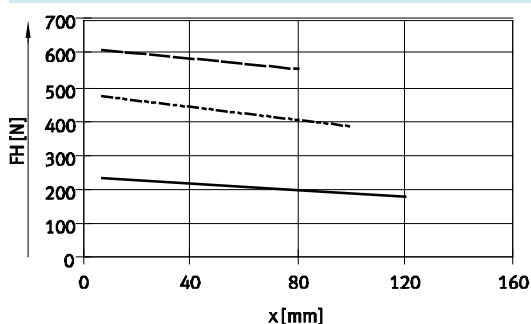
HGPД-35-A



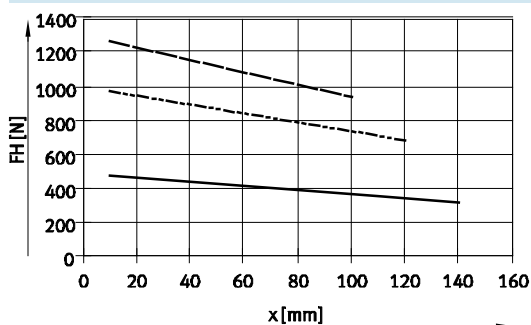
HGPД-40-A



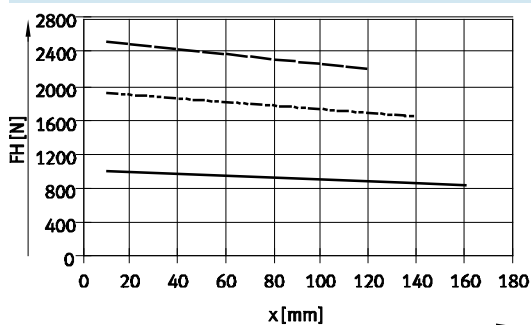
HGPД-50-A



HGPД-63-A



HGPД-80-A



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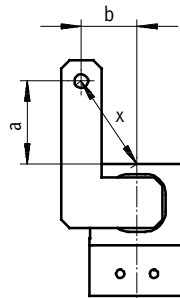
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Gripping force F_H per gripper jaw at 6 bar as a function of lever arm x and eccentricity a and b

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 (→ 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

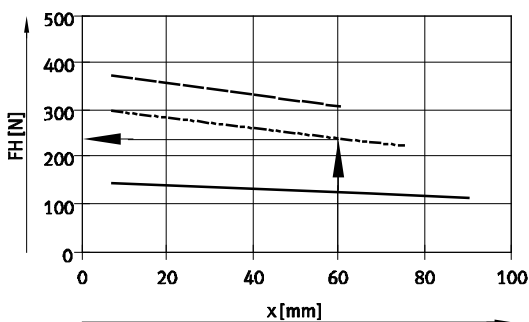
Procedure:

Calculating the lever arm x

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

$$x = 60 \text{ mm}$$

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



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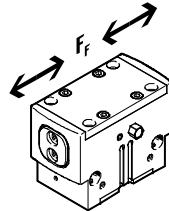
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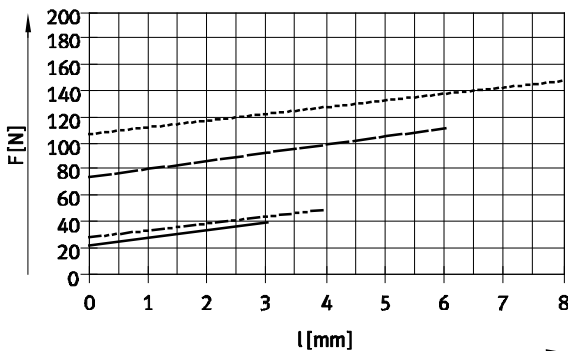
Spring force F_F as a function of size and gripper jaw stroke l

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.

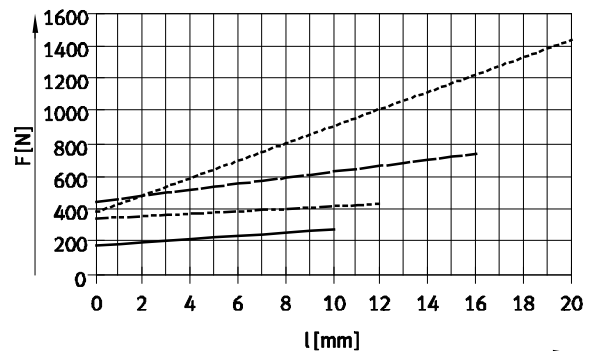


Size 16 ... 35



— 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_{Total} .

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

Gripping force retention	Size	F_{Total} 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_{Total} 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),

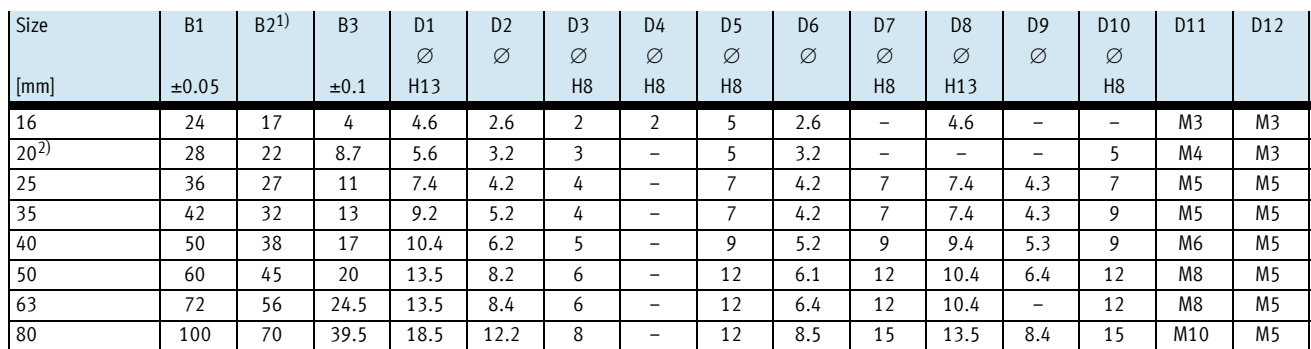
the gripping force (F_H) and spring force (F_{Total}) must be combined accordingly.

Application forces per gripper finger

Single-acting	Supplementary gripping force	Gripping force retention
- Gripping with spring force: $F_{Gr} = F_{Total}$ - Gripping with pressure force: $F_{Gr} = F_H - F_{Total}$	Gripping with pressure and spring force: $F_{Gr} = F_H + F_{Total}$	Gripping with spring force: $F_{Gr} = F_{Total}$

Technical data

Download CAD data → www.festo.com



- 1) Tolerance for centring hole ± 0.02 mm
Tolerance for thread ± 0.1 mm
- 2) Dowel pins **3** must be used when mounted from below.

Parallel grippers HGPD, sealed

Technical data

FESTO

Size [mm]	D13	D14	D15	D16 Ø h7	D17 Ø	D18 Ø +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	M1½	M6	M3	12	10.3	8	G1½	M5	77.5	102.5	32	57	15	30
63	M1½	M8	M3	12	10.3	8	G1½	M5	94	124	39	69	18	26
80	M1½	M10	M3	15	12.4	8	G1¼	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	-G ±0.1	±0.05		±0.1
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 HGPB, sealed

Technical data

FESTO

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

Parallel grippers HGPS, sealed

Accessories

FESTO

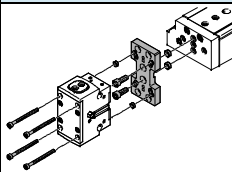
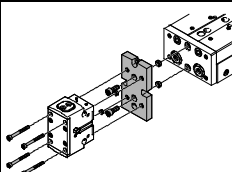
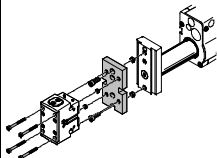
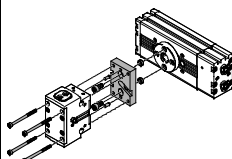
Adapter kit
HMSV, HAPG, DHAA

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	Gripper			Adapter kit		
	Size	Size	Mounting option		CRC ¹⁾	Part No.	Type
							
DGSL/HGPD	DGSL	HGPD			HAPG, DHAA		
	8, 10	16, 20	■	■	2	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	SLT	HGPD			HAPG, DHAA		
	6	16	–	■	2	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	HMP	HGPD			HAPG, DHAA		
	16	25	–	■	2	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	DRQD	HGPD			HAPG, DHAA		
	12, 16	16	■	■	2	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 HGPB, sealed

Accessories

FESTO

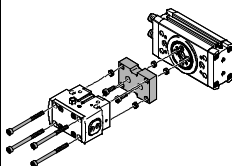
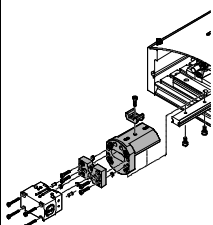
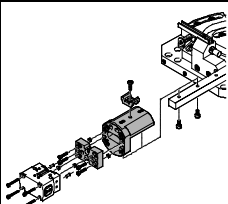
Adapter kit
HMSV, HAPG, DHAA

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	Gripper		Adapter kit		
	Size	Size	Mounting option		CRC ¹⁾	Part No. Type
						
DRRD/HGPD	DRRD	HGPD			DHAA	
	16	16	■	■	2	2091914 DHAA-G-Q11-16-B12-16
	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
HSP/HGPD	HSP	HGPD			HAPG, DHAA	
	12	16	■	—	2	564957 DHAA-G-G6-8-B8-16
	16	16, 20	■	—		540881 HAPG-70-B
						564957 DHAA-G-G6-8-B8-16
						540882 HAPG-71-B
						564957 DHAA-G-G6-8-B8-16
25	16, 20	■	—	540883 HAPG-72-B		
HSW/HGPD	HSW	HGPD			HAPG, DHAA	
	12, 16	16	■	—	2	564957 DHAA-G-G6-8-B8-16
	16	20	■	—		540882 HAPG-71-B
						564957 DHAA-G-G6-8-B8-16
						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 HGP, sealed

Accessories

FESTO

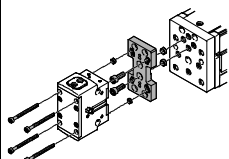
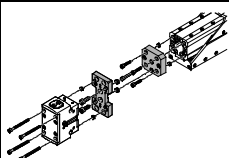
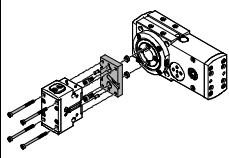
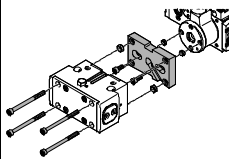
Adapter kit
HMSV, HAPG, DHAA

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	Gripper			Adapter kit		
	Size	Size	Mounting option		CRC ¹⁾	Part No.	Type
							
EGSL/HGPD	EGSL	HGPD			HAPG, DHAA		
	45, 55	25	■	■	2	564952	DHAA-G-G6-16-B8-25
	75	25, 35	■	■		537175	HAPG-79
	75	40	■	■		564951	DHAA-G-G6-20-B8-40
EGSA/HGPD	EGSA	HGPD			HMSV, HAPG, DHAA		
	50	16, 20	■	■	2	564954	DHAA-G-G6-16-B8-16
						560017	HMSV-61
	50	25	■	■		564952	DHAA-G-G6-16-B8-25
						560017	HMSV-61
	60	25	■	■		560018	HAPG-79
					537175	HMSV-62	
ERMB/HGPD	ERMB	HGPD			HAPG, DHAA		
	20	25	■	■	2	537181	HAPG-SD2-25
	20, 25	35	■	■		537173	HAPG-SD2-23
	25, 32	40	■	■		537184	HAPG-SD2-26
	32	50	■	■		564956	DHAA-G-Q5-32-B8-50
EHMB/HGPD	EHMB	HGPD			HAPG, DHAA		
	20	40	■	■	2	537184	HAPG-SD2-26
	20, 25, 32	50	■	■		564956	DHAA-G-Q5-32-B8-50
	25, 32	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.

Parallel grippers HGPB, sealed

Accessories

FESTO

Gripper jaw blank BUB-HGPB

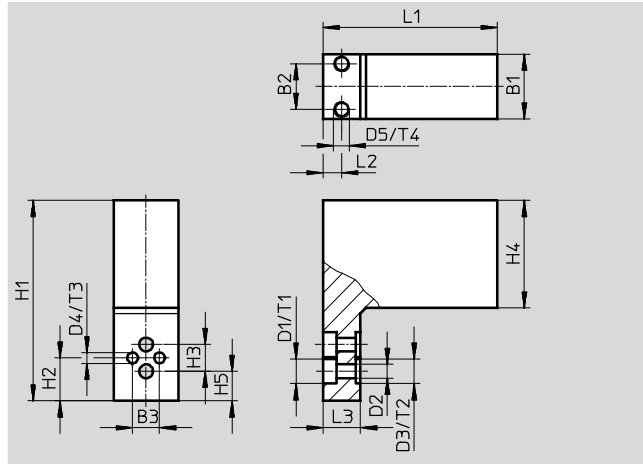
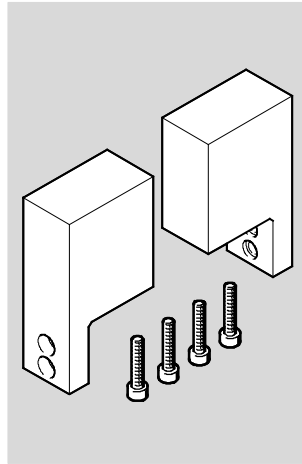
(scope of delivery: 2 pieces)

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	Ø H13	Ø H13	Ø H8	Ø 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-HGPB-16
20	3.1	1.3	–	5	57	1180948	BUB-HGPB-20
25	4.2	1.6	–	5	138	1180949	BUB-HGPB-25
35	6.2	2.1	–	5	278	1180950	BUB-HGPB-35
40	6.2	2.1	–	5	445	1180951	BUB-HGPB-40
50	6.2	2.6	–	5	814	1180952	BUB-HGPB-50
63	8.2	2.6	–	5	1,340	1180953	BUB-HGPB-63
80	10.2	3.1	–	5	2,170	1180954	BUB-HGPB-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

FESTO

Accessories

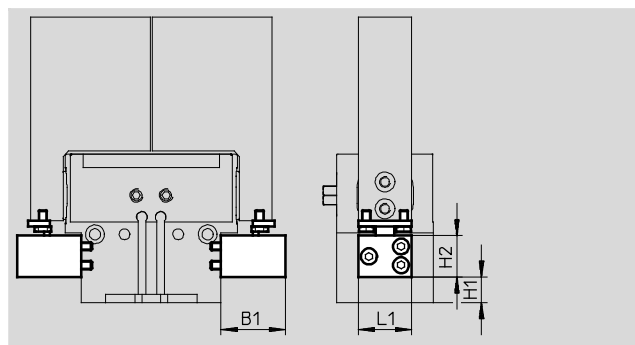
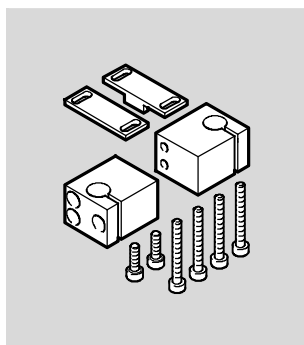
Sensor bracket DASI

(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 HGPB, 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

Proximity sensor for size 40 ... 80

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, in-line	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.

Parallel grippers HGPD, sealed

Accessories

FESTO

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