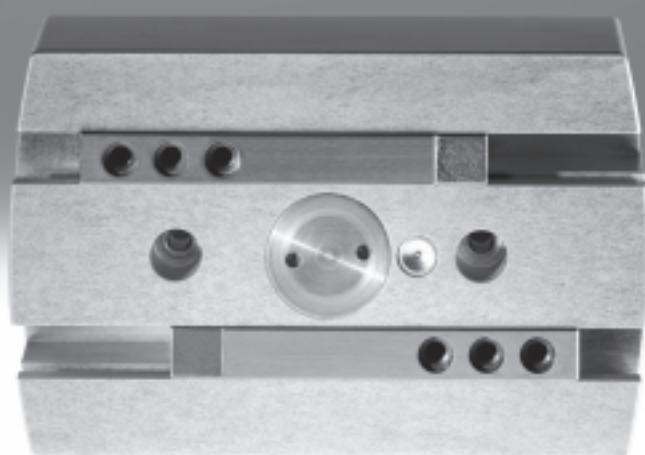


Parallel grippers HGPL, heavy-duty with long stroke

FESTO



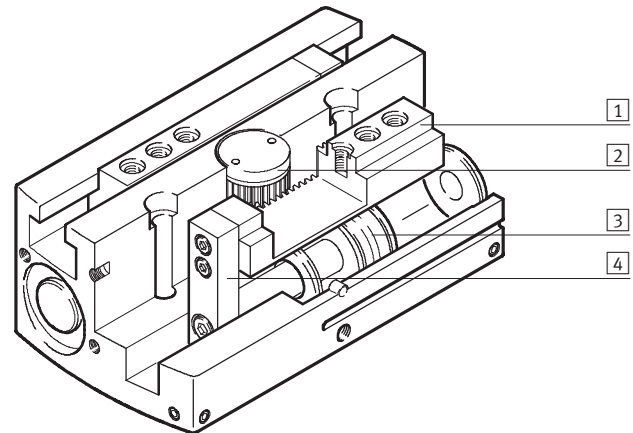
Parallel grippers HGPL, heavy-duty with long stroke

Key features

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At a glance

- Space-saving and suitable for high forces
 - Two parallel and opposing pistons move the gripper jaws directly and without loss of force
- Reliable
 - A pinion that synchronises the movement of both gripper jaws ensures controlled, precise and centred gripping
 - The space-saving design of the parallel gripper jaws permits a long guide length for the gripper jaws
- Sturdy
 - The T-slot in combination with a long guide length allows the gripper jaws to withstand high forces and torques
- Flexible range of applications
 - Double-acting gripper suitable for external and internal gripping
 - Versatile mounting options and compressed air connections
 - Opening stroke can be adjusted to optimise time



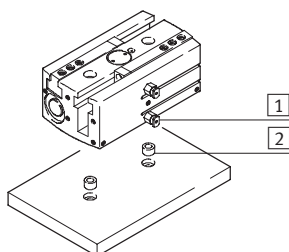
- | | |
|-------------------------|----------------------|
| 1 Gripper jaw | 3 Piston with magnet |
| 2 Synchronising element | 4 Moment compensator |

Note

Sizing software for gripper selection
→ www.festo.com

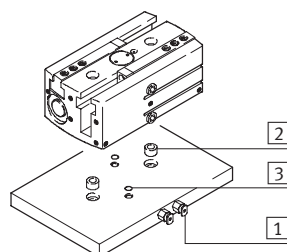
Wide range of supply ports

Direct
from the front



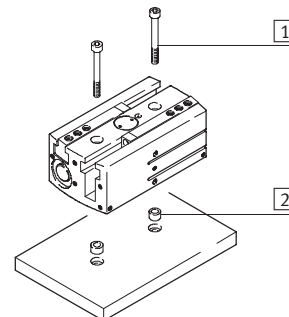
- | |
|--------------------|
| 1 Supply ports |
| 2 Centring sleeves |
| 3 O-rings |

Via adapter plate
from underneath



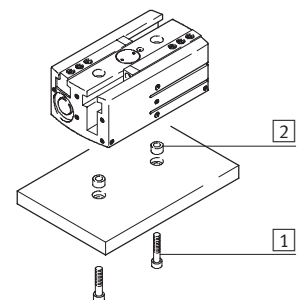
Mounting options

Direct mounting
from above



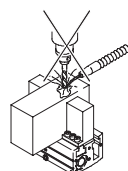
- | |
|--------------------|
| 1 Mounting screws |
| 2 Centring sleeves |

from underneath

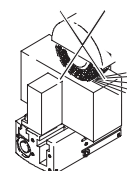


Note

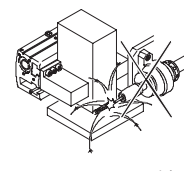
These grippers are not suitable for the following or similar application examples:



- Aggressive media
- Machining



- Grinding dust

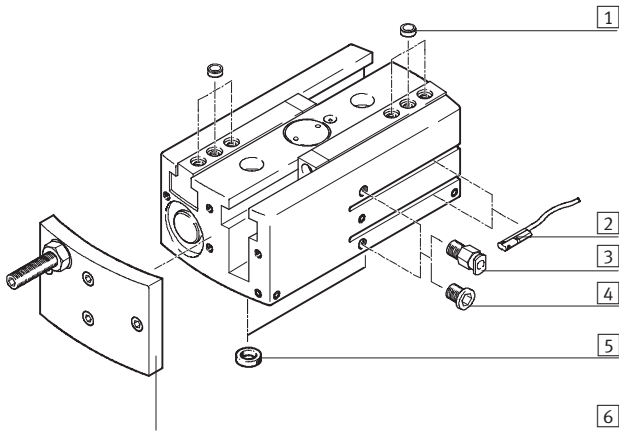


- Welding splashes

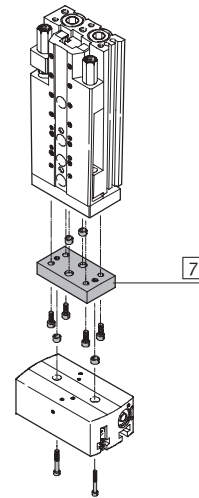
Parallel grippers HGPL, heavy-duty with long stroke

Peripherals overview and type codes

Peripherals overview



System product for handling and assembly technology



Accessories			
Type	Brief description		→ Page/Internet
1 Centring sleeve ZBH	- For centring gripper jaw blanks/gripper fingers on the gripper jaws 4 pieces included in the scope of delivery		14
2 Proximity sensor SME/SMT-10	- For sensing the piston position - For size 14 ... 40		15
2 Proximity sensor SME/SMT-8	- For sensing the piston position - For size 63		15
3 Push-in fitting QS	For connecting compressed air tubing with standard O.D.		quick star
4 Blanking plug B	For sealing supply ports when using ports at the front		14
5 Centring sleeve ZBH	- For centring the gripper when mounting 2 pieces included in the scope of delivery		14
6 Stroke reducing kit HGPL-HR-...	For reducing the opening stroke		13
7 –	Drive/gripper connections		adapter kit
– Gripper jaw blank BUB-HGPL	Blank specially matched to the gripper jaws for custom building of gripper fingers		14

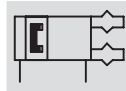
Type codes

		HGPL	–	14	–	40	–	A
Type								
HGPL	Parallel gripper							
Size								
Stroke [mm]								
Position sensing								
A	Via proximity sensor							

Parallel grippers HGPL, heavy-duty with long stroke

Technical data

Function
Double-acting
HGPL...-A



www.festo.com/en/Spare_parts_service

Wearing parts kits
→ 12



-  - Size
14 ... 63 mm
-  - Stroke
40 ... 300 mm

General technical data				
Size	14	25	40	63
Design	Synchronised pneumatic pistons Force-guided motion sequence			
Mode of operation	Double-acting T-shape			
Gripper function	Parallel			
Number of gripper jaws	2			
Stroke per gripper jaw [mm]	20, 40, 60, 80	20, 40, 60, 80	20, 40, 60, 80, 100	60, 100, 150
Pneumatic connection	M5			G1/8
Max. applied load per external gripper finger ¹⁾ [N]	0.8	2.5	4.2	9.4
Repetition accuracy ²⁾ [mm]	< 0.03			
Max. interchangeability [mm]	< 0.2			
Max. operating frequency [Hz]	< 1			
Rotational symmetry [mm]	< Ø 0.2			
Position sensing	Via proximity sensor			
Type of mounting	Via through-holes and centring sleeves Via female thread and centring sleeves			
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	
Operating pressure [bar]	3 ... 8
Operating medium	Filtered compressed air, lubricated or unlubricated
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.

Weight [g]		14	25	40	63
Stroke per gripper jaw	20 mm	305	1,015	2,560	–
	40 mm	440	1,400	3,300	–
	60 mm	595	1,780	4,165	10,460
	80 mm	720	2,200	4,800	–
	100 mm	–	–	5,340	13,800
	150 mm	–	–	–	18,100

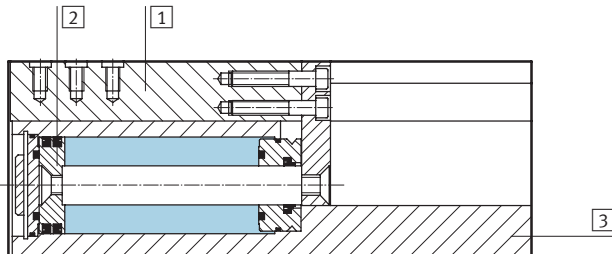
Parallel grippers HGPL, heavy-duty with long stroke

Technical data

FESTO

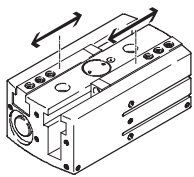
Materials

Sectional view



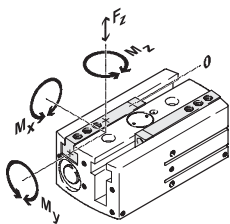
Parallel gripper		
1	Gripper jaw	Hardened steel, Citrox-coated
2	Piston	High-alloy steel
3	Housing	Wrought aluminium alloy, coated with CompCote
–	Seals	Nitrile rubber, polyurethane
–	Note on materials	Free of copper, PTFE and silicone RoHS-compliant

Measured gripping force [N] at 6 bar (→ also see graphs starting on page 7)



Size	14	25	40	63
Gripping force per gripper jaw				
Opening	63	206	519	1,233
Closing	79	256	608	1,371
Total gripping force				
Opening	126	412	1,038	2,466
Closing	158	512	1,216	2,742

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 (guide groove of the gripper jaws) must be taken into consideration for the calculation of torques.

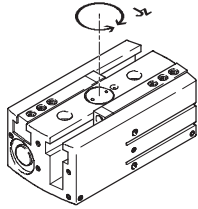
Size		14	25	40	63
Max. permissible force F_z	[N]	500	1,500	2,500	9,000
Max. permissible torque M_x	[Nm]	35	100	125	300
Max. permissible torque M_y	[Nm]	35	60	80	200
Max. permissible torque M_z	[Nm]	35	70	100	250

Parallel grippers HGPL, heavy-duty with long stroke

Technical data

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Mass moment of inertia [kgm²x10⁻⁴]



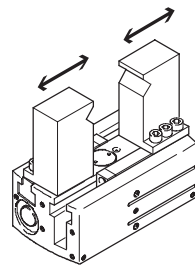
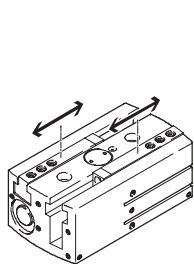
- Under the following conditions:
- The reference point is the central axis
 - Without external gripper fingers
 - In a load-free state

Size		14	25	40	63
Stroke per gripper jaw	20 mm	1.40	11.98	27.60	–
	40 mm	6.69	18.88	66.83	–
	60 mm	11.43	39.95	118.30	470.07
	80 mm	21.93	78.70	198.87	–
	100 mm	–	–	318.25	1,018.17
	150 mm	–	–	–	2,247.54

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	14				25				40					63			
Stroke	mm	20	40	60	80	20	40	60	80	20	40	60	80	100	60	100	150
Without external gripper fingers																	
Opening times		120	171	270	286	170	225	370	423	190	238	430	414	620	410	650	1,020
Closing times		110	163	230	270	150	230	370	418	180	205	430	438	690	330	600	850

Max. permissible opening and closing times with external gripper fingers as a function of force due to weight

Force due to weight of the gripper fingers	1 N	123	108	257	243	–	–	–	–	–	–	–	–	–	–	–	–
	2 N	174	136	364	343	–	–	–	–	–	–	–	–	–	–	–	–
	3 N	213	167	445	420	164	210	405	401	–	–	–	–	–	–	–	–
	4 N	246	192	514	485	190	243	468	463	–	–	–	–	–	–	–	–
	5 N	–	–	–	–	212	272	523	518	196	260	469	478	676	–	–	–
	6 N	–	–	–	–	–	–	–	–	215	284	514	524	741	–	–	–
	7 N	–	–	–	–	–	–	–	–	232	307	555	565	800	–	–	–
	8 N	–	–	–	–	–	–	–	–	248	328	593	604	856	–	–	–
	9 N	–	–	–	–	–	–	–	–	–	–	–	–	–	323	587	832
	10 N	–	–	–	–	–	–	–	–	–	–	–	–	–	340	619	877
	11 N	–	–	–	–	–	–	–	–	–	–	–	–	–	357	649	919
	12 N	–	–	–	–	–	–	–	–	–	–	–	–	–	373	678	960

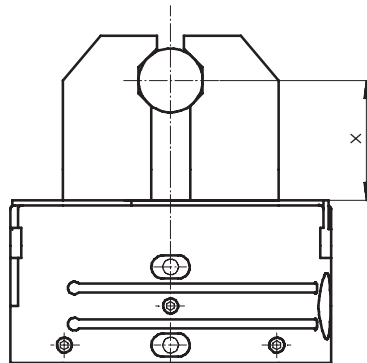
Parallel grippers HGPL, heavy-duty with long stroke

Technical data

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

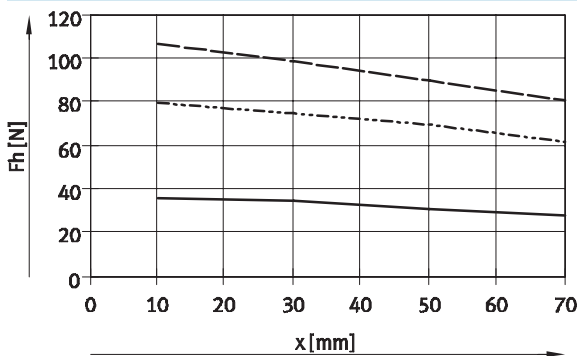
The gripping forces as a function of operating pressure and lever arm can be determined from the following graphs.



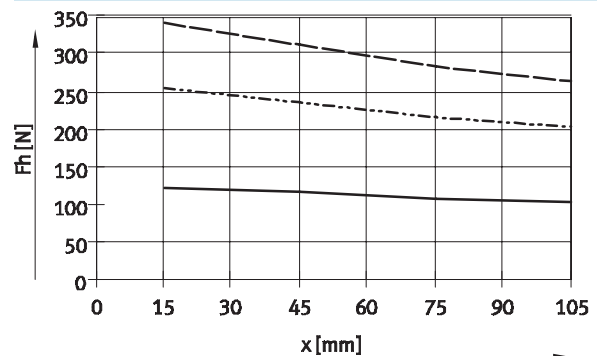
Gripping force F_h per gripper jaw as a function of operating pressure and lever arm x

External gripping (closing)

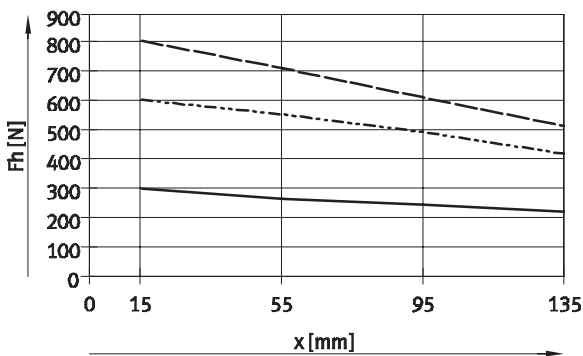
HGPL-14



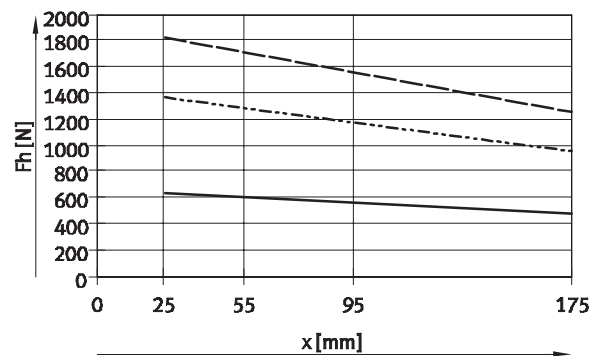
HGPL-25



HGPL-40



HGPL-63



— 3 bar
- - - 6 bar
- · - 8 bar

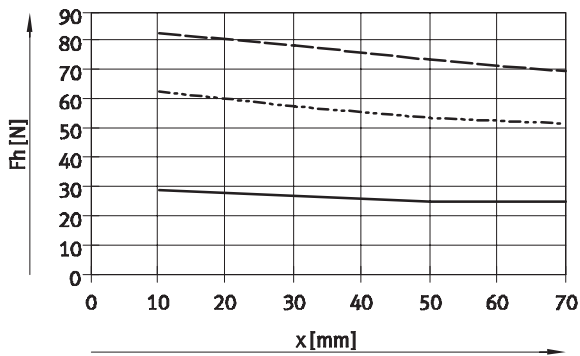
Parallel grippers HGPL, heavy-duty with long stroke

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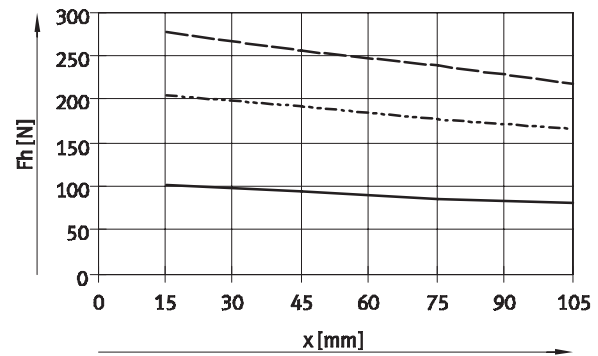
Technical data

Gripping force F_h per gripper jaw as a function of operating pressure and lever arm x
Internal gripping (opening)

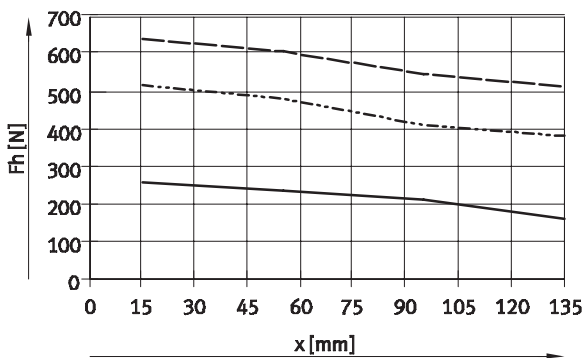
HGPL-14



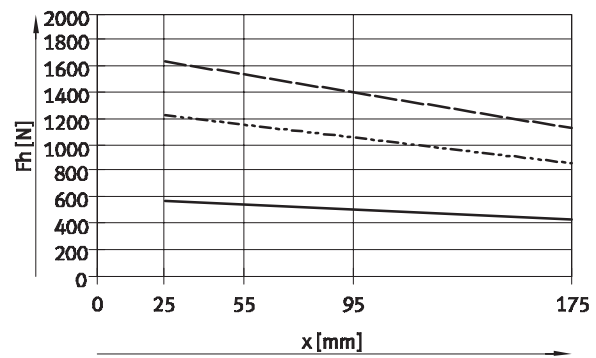
HGPL-25



HGPL-40



HGPL-63



— 3 bar
- - - 6 bar
- · - 8 bar

Parallel grippers HGPL, heavy-duty with long stroke

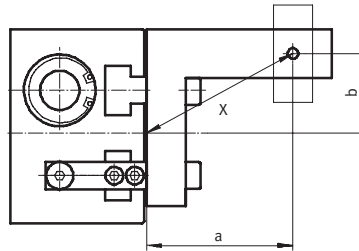
Technical data

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

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

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

The gripping force F_h can be read from the graphs (→ 7) 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 HGPL-25,
used as an external gripper

Procedure:

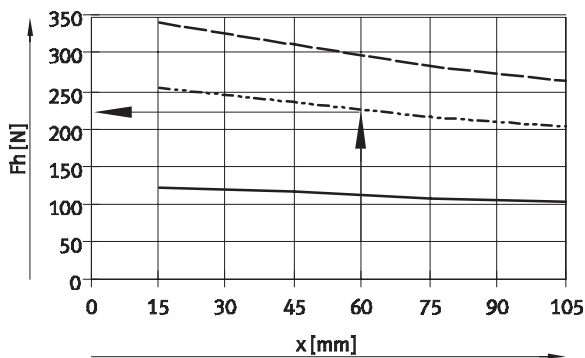
Calculating the lever arm x

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

$$x = 60$$
 mm

The graph (→ 7) shows a value of

$F_h = 225$ N for the gripping force.



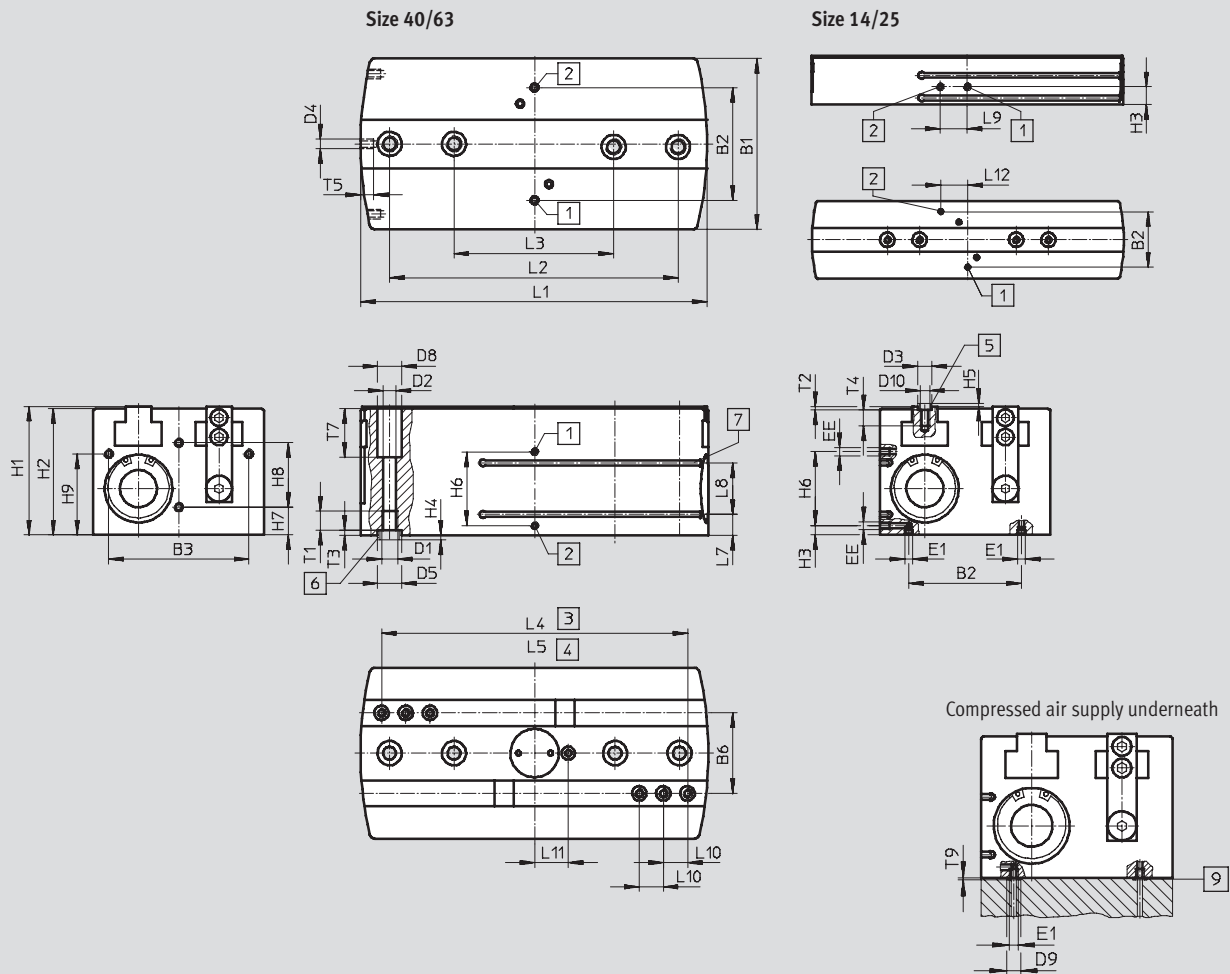
Parallel grippers HGPL, heavy-duty with long stroke

Technical data

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Dimensions

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



- | | | |
|---|--|-------------------------------|
| 1 Supply port, opening, either on the side or underneath (bottom connection sealed on delivery) | 3 Gripper jaw open | 9 O-ring for parallel gripper |
| 2 Supply port, closing, either on the side or underneath (bottom connection sealed on delivery) | 4 Gripper jaw closed | HGPL-14: Ø 3x1.5 |
| | 5 Centring sleeves ZBH (4 included in the scope of delivery) | HGPL-25: Ø 5x1.5 |
| | 6 Centring sleeves ZBH (2 included in the scope of delivery) | HGPL-40: Ø 5x1.5 |
| | 7 Slot for proximity sensor | HGPL-63: Ø 12x1.5 |

Parallel grippers HGPL, heavy-duty with long stroke

Technical data

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Type	B1 ±0.05	B2 ±0.1	B3 ±0.1	B6 ±0.01	D1	D2 ∅ +0.1	D3 ∅ H8/h7	D4	D5 ∅ H8/h7	D8 ∅ H13	D9	D10	EE	E1
HGPL-14	48	34.5	37	22	M5	4.2	5	M3	9	7.4	6	M3	M5	M3
HGPL-25	80	60	65	38	M6	5.1	7	M5	9	10	8	M5	M5	M5
HGPL-40	106	70	87	50	M10	8.5	9	M6	15	15	8	M6	M5	M5
HGPL-63	154	116	130	78	M12	10.4	15	M8	15	16.5	15	M10	G½	G½

Type	H1	H2	H3	H4	H5	H6	H7	H8	H9	L1	L2 ±0.02 ¹⁾ ±0.1 ²⁾	L3 ±0.02 ¹⁾ ±0.1 ²⁾	L4				
		±0.1	±0.1	−0.3	−0.3	±0.1	±0.1	±0.1	±0.1	±0.1			±0.5				
HGPL-14-20	30	29	11	1.9	1.2	−	10	12	18	76.3	−	36	62				
HGPL-14-40										113.6							
HGPL-14-60										153.6	100			60	102		
HGPL-14-80										193.6						182	
HGPL-25-20	50	49	18	1.9	1.4	−	18	20	30	86	−	64					
HGPL-25-40										126			60				104
HGPL-25-60										166	100			144			
HGPL-25-80										206					184		
HGPL-40-20	80	78.5	6	2.9	1.9	46	17.5	40	50.5	96	−	66				70	
HGPL-40-40										136			100				110
HGPL-40-60										176				180			
HGPL-40-80										216	190						
HGPL-40-100										256					200		
HGPL-63-60	121.5	120	14	2.9	2.9	60	30	58	74.8	190.8		−	100	160			
HGPL-63-100										270.8		200			240		
HGPL-63-150										370.8	300	340					

Type	L5 ±0.5	L7 ±0.1	L8 ±0.1	L9 ±0.2	L10 ±0.02 ¹⁾ ±0.1 ²⁾	L11 ±0.5	L12 ±0.1	T1 min.	T2 +0.1	T3 +0.1	T4 min.	T5 min.	T7 +0.1	T9
HGPL-14-20	22	4	14	16.8	8	9	16.8	12.5	1.3	2.1	5.5	6	10	1
HGPL-14-40								12			5			
HGPL-14-60								12.5			5.5			
HGPL-14-80								12			5			
HGPL-25-20	24	11	14	20	10	17.5	20	12.5	1.6	2.1	8.5	7	17	1
HGPL-25-40								12			8			
HGPL-25-60								12.5			8.5			
HGPL-25-80								12			8			
HGPL-40-20	30	13	32	—	15	20.5	—	15.5	2.1	3.1	10.5	8	30	1
HGPL-40-40						21		15			10			
HGPL-40-60								15.5			10.5			
HGPL-40-80								15			10			
HGPL-40-100								15.5			10.5			
HGPL-63-60	40	28.5	30	—	22	29	—	18	3.1	3.1	17.5	8	45	1
HGPL-63-100														
HGPL-63-150														

- 1) For centring
2) For through-hole

Parallel grippers HGPL, heavy-duty with long stroke

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Technical data

Ordering data			
Size [mm]	Stroke [mm]	Double-acting without compression spring	
		Part No.	Type
14			
	20	567820	HGPL-14-20-A
	40	535852	HGPL-14-40-A
	60	567821	HGPL-14-60-A
	80	535853	HGPL-14-80-A
25			
	20	567822	HGPL-25-20-A
	40	535854	HGPL-25-40-A
	60	567823	HGPL-25-60-A
	80	535855	HGPL-25-80-A
40			
	20	567824	HGPL-40-20-A
	40	535856	HGPL-40-40-A
	60	567825	HGPL-40-60-A
	80	535857	HGPL-40-80-A
	100	567826	HGPL-40-100-A
63			
	60	567827	HGPL-63-60-A
	100	567828	HGPL-63-100-A
	150	567829	HGPL-63-150-A

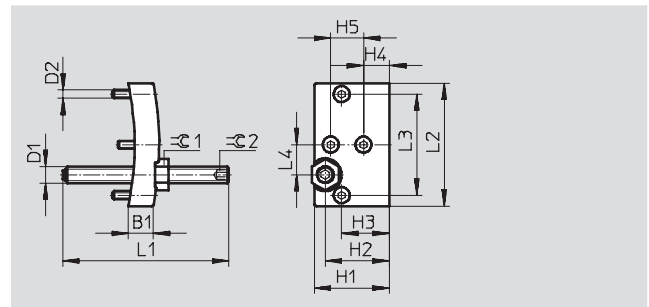
Ordering data – Wearing parts kits		
Size [mm]	Part No.	Type
14	701585	HGPL-14-A
25	701586	HGPL-25-A
40	701587	HGPL-40-A
63	752917	HGPL-63-A

Parallel grippers HGPL, heavy-duty with long stroke

Accessories

Stroke reducing kit HGPL-HR

Material:
Aluminium
Free of copper, PTFE and silicone



Dimensions and ordering data								
For size	B1	D1	D2	H1	H2	H3	H4	H5
[mm]	±0.1			±0.1	±0.1	±0.1	±0.1	±0.1
14	9	M6	M3	27.5	23.5	17.5	9.5	12
25	12	M8	M5	47.5	37.5	29.5	17.5	20
40	18	M12	M6	77	63	50	17	40
63	19	M12	M8	118.5	94.5	74.5	29.5	58

For size	L1	L2	L3	L4	≈G1	≈G2	Weight	Part No.	Type
[mm]	±1	±0.1	±0.1	±0.1			[g]		
14	61	45	37	11	10	3	45	539092	HGPL-HR-14
25	61	77	65	19	13	4	150	539093	HGPL-HR-25
40	61	103	87	25	19	6	455	539094	HGPL-HR-40
63	81	151	130	39	19	6	1,060	567831	HGPL-HR-63

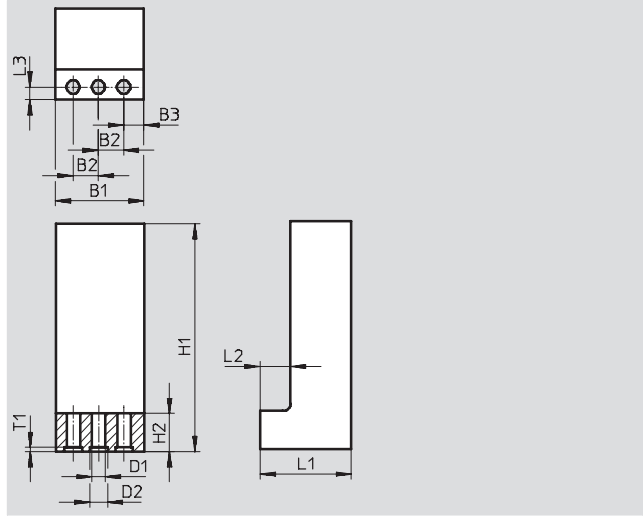
Parallel grippers HGPL, heavy-duty with long stroke

Accessories

FESTO

Gripper jaw blank BUB-HGPL
(scope of delivery: 2 pieces)

Material:
Aluminium
Free of copper, PTFE and silicone



Dimensions and ordering data							
For size	B1	B2	B3	D1	D2	H1	H2
[mm]	±0.1	+0.02		Ø +0.1	Ø H8	±0.1	
14	25	8	4	3.2	5	80	11
25	35	10	8	5.3	7	120	15
40	50	15	10	6.4	9	150	18
63	68	22	12	10.5	15	200	20

For size	L1	L2	L3	T1	Weight per blank [g]	Part No.	Type
[mm]	±0.1	+0.1	+0.1	+0.1			
14	20.5	8	3.3	1.3	75	537316	BUB-HGPL-14
25	36	12	5	1.6	295	537317	BUB-HGPL-25
40	49.5	16.5	8	2.1	720	537318	BUB-HGPL-40
63	77	27	12	3.1	1,960	567830	BUB-HGPL-63

Ordering data					
	For size [mm]	Weight [g]	Part No.	Type	PU ¹⁾
Centring sleeve for the gripper jaws ZBH			Technical data → Internet: zbh		
	14	1	189652	ZBH-5	10
	25	1	186717	ZBH-7	
	40	1	150927	ZBH-9	
	63	3	191409	ZBH-15	
Centring sleeve for the gripper ZBH			Technical data → Internet: zbh		
	14, 25	1	150927	ZBH-9	10
	40, 63	3	191409	ZBH-15	
Blanking plug B			Technical data → Internet: blanking plug		
	14, 25, 40	2	174308	B-M5-B	10
	63	5	3568	B-1/8	

1) Packaging unit

Parallel grippers HGPL, heavy-duty with long stroke

Accessories

FESTO

Proximity sensors for size 14 ... 40

Ordering data – Proximity sensors for C-slot, magneto-resistive						Technical data → Internet: smt
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in slot from above, flush with cylinder profile	PNP	Cable, 3-wire, in-line	2.5	525915	SMT-10F-PS-24V-K2,5L-OE
			Plug M8x1, 3-pin, in-line	0.3	525916	SMT-10F-PS-24V-K0,3L-M8D
			Cable, 3-wire, angled	2.5	526674	SMT-10F-PS-24V-K2,5Q-OE
			Plug M8x1, 3-pin, angled	0.3	526675	SMT-10F-PS-24V-K0,3Q-M8D
	Insertable in slot lengthwise	PNP	Plug M8x1, 3-pin, in-line	0.3	173220	SMT-10-PS-SL-LED-24
			Cable, 3-wire, in-line	2.5	173218	SMT-10-PS-KL-LED-24

Ordering data – Proximity sensors for C-slot, magnetic reed

Ordering data – Proximity sensors for C-slot, magnetic reed						Technical data → Internet: sme
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in slot from above, flush with cylinder profile	Contacting	Plug M8x1, 3-pin, in-line	0.3	525914	SME-10F-DS-24V-K0,3L-M8D
			Cable, 3-wire, in-line	2.5	525913	SME-10F-DS-24V-K2,5L-OE
			Plug M8x1, 3-pin, angled	0.3	526671	SME-10F-DS-24V-K0,3Q-M8D
			Cable, 3-wire, angled	2.5	526670	SME-10F-DS-24V-K2,5Q-OE
	Insertable in slot lengthwise	Contacting	Plug M8x1, 3-pin, in-line	0.3	173212	SME-10-SL-LED-24
			Cable, 3-wire, in-line	2.5	173210	SME-10-KL-LED-24

Ordering data – Proximity sensors for C-slot, magneto-resistive

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

Proximity sensors for size 63

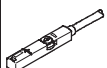
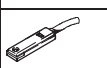
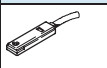
Ordering data – Proximity sensors for T-slot, magneto-resistive					Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in slot from above, flush with cylinder profile	PNP	Cable, 3-wire	2.5	543867	SMT-8M-PS-24V-K-2,5-OE
			Plug M8x1, 3-pin	0.3	543866	SMT-8M-PS-24V-K-0,3-M8D
			Plug M12x1, 3-pin	0.3	543869	SMT-8M-PS-24V-K-0,3-M12
		NPN	Cable, 3-wire	2.5	543870	SMT-8M-NS-24V-K-2,5-OE
			Plug M8x1, 3-pin	0.3	543871	SMT-8M-NS-24V-K-0,3-M8D
	Insertable in slot lengthwise, flush with cylinder profile	PNP	Cable, 3-wire	2.5	175436	SMT-8-PS-K-LED-24-B
			Plug M8x1, 3-pin	0.3	175484	SMT-8-PS-S-LED-24-B
N/C contact						
	Insertable in slot from above, flush with cylinder profile	PNP	Cable, 3-wire	7.5	543873	SMT-8M-PO-24V-K7,5-OE

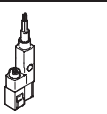
Parallel grippers HGPL, heavy-duty with long stroke

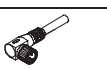
Accessories

FESTO

Proximity sensors for size 63

Ordering data – Proximity sensors for T-slot, magnetic reed					Technical data → Internet: sme	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2,5-OE
				5.0	543863	SME-8M-DS-24V-K-5,0-OE
			Cable, 2-wire	2.5	543872	SME-8M-ZS-24V-K-2,5-OE
			Plug M8x1, 3-pin	0.3	543861	SME-8M-DS-24V-K-0,3-M8D
	Insertable in slot lengthwise, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	150855	SME-8-K-LED-24
			Plug M8x1, 3-pin	0.3	150857	SME-8-S-LED-24
N/C contact						
	Insertable in slot lengthwise, flush with cylinder profile	Contacting	Cable, 3-wire	7.5	160251	SME-8-O-K-LED-24

Ordering data – Proximity sensors for T-slot, magneto-resistive					Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in slot lengthwise	PNP	Cable, 3-wire, angled	2.5	547859	SMT-8G-PS-24V-E-2,5Q-OE
			Plug M8x1, 3-pin, angled	0.3	547860	SMT-8G-PS-24V-E-0,3Q-M8D

Ordering data – Connecting cables				Technical data → Internet: nebu	
	Electrical connection, left-hand end	Electrical connection, right-hand end	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
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541363	NEBU-M12G5-K-2.5-LE3
			5	541364	NEBU-M12G5-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
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541367	NEBU-M12W5-K-2.5-LE3
			5	541370	NEBU-M12W5-K-5-LE3

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Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,

Call: 1.800.99.FESTO (1.800.993.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

Email: customer.service@us.festo.com

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Call: 1.866.GO.FESTO (1.866.463.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

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Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786)

Fax: 1.877.FX.FESTO (1.877.393.3786)

Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton

North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston

120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago

1441 East Business Center Drive
Mt. Prospect, IL 60056, USA

Dallas

1825 Lakeway Drive, Suite 600
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Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326, USA

New York

395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley

4935 Southfront Road, Suite F
Livermore, CA 94550, USA

United States



USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: info@festo-usa.com

www.festo.com/us

Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: festo.canada@ca.festo.com

www.festo.ca

Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,
54020 Tlalneapantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: festo.mexico@mx.festo.com

www.festo.com/mx

Central USA

Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480



Western USA

Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286



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