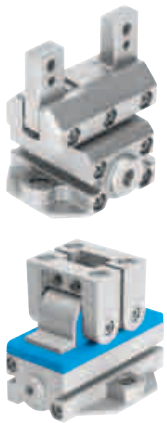


Front unit – gripping
Product selection overview

FESTO



A variety of gripper functions, designs and performance



Economical



Standard



Precise



Bellows



Micro



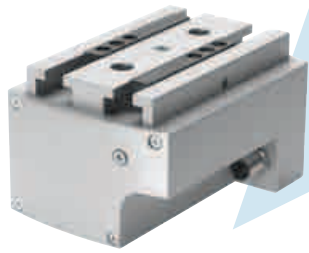
Vacuum



Sturdy



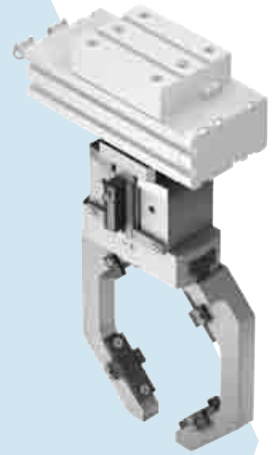
Vacuum



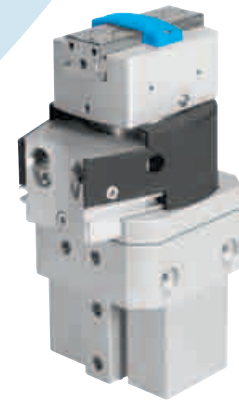
Electric



Adaptive



Gripper finger function combination



Function combination



Long stroke



Sealed



Parallel grippers

DHPS



HGPT-B/HGPT-B-F



HGPL



HGPC



		DHPS	HGPT-B	HGPT-B-F	HGPL	HGPC
Number of sizes		6	8	8	4	3
Total gripping force*	[N]	15 ... 485	106 ... 3,126	192 ... 6,550	126 ... 2,742	44 ... 126
Stroke per jaw	[mm]	2 ... 12.5	3 ... 25	1.5 ... 12.5	20 ... 150	3 ... 7
Opening and closing times**	[ms]	8 ... 150	8 ... 380	8 ... 380	110 ... 1,020	30 ... 90
Repetition accuracy	[mm]	≤0.02	±0.01 ... 0.025	±0.01 ... 0.025	≤0.03	≤0.05
Interchangeability	[mm]	≤ ±0.02	≤ ±0.02	≤ ±0.02	≤ ±0.02	≤ ±0.02
Max. torque load	[Nm]					
	Mx	50	180	180	300	5
	My	50	220	220	200	5
	Mz	50	170	170	250	5

HGPLE



HGPD



HGPP



HGPM



		HGPLE	HGPD	HGPP ¹⁾	HGPM
Number of sizes		1	8	6	2
Total gripping force*	[N]	120 ... 1,300	94 ... 3,922	80 ... 830	16 ... 35
Stroke per jaw	[mm]	40	3 ... 20	2...12.5	2, 3
Opening and closing times**	[ms]	1,000	15 ... 380	22 ... 173	2 ... 11
Repetition accuracy	[mm]	≤0.05	≤0.03 ... 0.05	≤0.01 ... 0.02	≤0.05
Interchangeability	[mm]	≤ ±0.02	≤ ±0.02	≤ ±0.02	≤ ±0.02
Max. torque load	[Nm]				
	Mx	100	170	50	0.5
	My	60	130	50	0.5
	Mz	70	110	50	0.5

Note: * At 6 bar ** At 6 bar and max. stroke

1) Stroke, gripping force and travel speed or opening/closing times are adjustable

Swivel gripper module HGDS



Number of sizes		3	<ul style="list-style-type: none"> • Very compact function combination for gripping and swivelling • Both functions can be controlled and moved individually and independently of each other. • Reliability due to integratable sensors for gripping and swivelling
Swivel angle	[°]	0 ... 210	
Torque*	[Nm]	0.85 ... 2.5	
Repetition accuracy	[°]	<0.2 ... <0.02	
Total gripping force**	[N]	84 ... 192	
Stroke per jaw	[mm]	2.5 ... 7	
Opening and closing times***	[ms]	40 ... 70	
Repetition accuracy	[mm]	±0.015	

Three-point grippers

DHDS



HGDT/HGDT-F



HGDD



		DHDS	HGDT	HGDT-F	HGDD	
Number of sizes		3	5	5	5	
Total gripping force*	[N]	87 ... 840	207 ... 2,186	444 ... 4,456	336 ... 2,829	
Stroke per jaw	[mm]	2.5 ... 6	3 ... 10	1.5 ... 5	4 ... 12	
Opening and closing times**	[ms]	26 ... 73	25 ... 246	20 ... 300	38 ... 246	
Repetition accuracy	[mm]	≤0.04	≤0.03	≤0.03	≤0.03/0.05	
Interchangeability	[mm]	≤ ±0.02	≤ ±0.02	≤ ±0.02	≤ ±0.02	
Max. torque load	[Nm]	Mx	24	80	80	100
		My	24	50	50	65
		Mz	24	60	60	75

Radial and angle grippers

DHRS



DHWS



HGRT



HGRC/HGWC



		DHRS	HHWS	HGRT	HGRC/HGWC	
Number of sizes		5	5	5	3	
Stroke per jaw	[mm]	15 ... 660	30 ... 1,497	158 ... 8,424	11 ... 144	
Opening angle per jaw	[°]	90	20	90	15, 40, 90	
Opening and closing times**	[ms]	35 ... 151	10 ... 106	185 ... 490	35 ... 170	
Repetition accuracy	[mm]	≤0.1	≤0.04	≤0.02	≤0.05	
Interchangeability	[mm]	≤ ±0.02	≤ ±0.02	≤0.2	≤ 0.2	
Max. torque load	[Nm]	Mx	14	13	...	8
		My	14	13	35	1.9
		Mz	14	13	10	6.7

Note: * At 6 bar ** At 6 bar and max. stroke






Adaptive gripper DHDG

	Number of sizes	3	<ul style="list-style-type: none"> • Positive locking and soft gripping with 80% less weight • Gripping of fragile or pressure-sensitive workpieces and food 	
	Opening angle (adjustable)	[°]		-8 ... 40
	Dead weight	[g]		130 ... 460
	Temperature range	[°C]		5 ... 60
	Food compatibility (2002/72/EC, non-alcoholic food)			Unpainted gripper: yes Cylinder: no
	Gripper material			PA2200


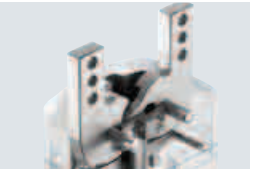


Bellows gripper DHEB


	Number of sizes	11	<ul style="list-style-type: none"> • Safe and gentle internal gripping • Bellows material EPDM for larger loads or silicone for higher temperatures • Leak test possible during transport • Gripping and transport of parts with a circular opening 	
	Guide value for max. payload	[kg]		0.08 ... 5.1
	Internal diameter, to be gripped	[mm]		8 ... 85
	Bellows stroke	[mm]		3.5 ... 25
	Operating pressure	[bar]		4/5 ... 8
	Opening/closing times at 6 bar	[ms]		10 ... 100





Guidance







	Guidance	Features/benefits	Product
	T-slot	<ul style="list-style-type: none"> • Great torque resistance for using long gripper jaws • Insensitive guide for long service life 	DHPS, DHDS
	T-slot, ground	<ul style="list-style-type: none"> • Ground-in gripper jaws for maximum precision • Large contact surface in the slot for maximum torque resistance • Sturdy guide for very tough ambient conditions 	HGPT, HGPL, HGPLE, HGDT
	Plain-bearing guide, ground	<ul style="list-style-type: none"> • Ground-in gripper jaws for maximum precision • Large contact surface in the slot for maximum torque resistance • Sturdy guide for very tough ambient conditions 	HGRT, DHRS, DHWS
	Ball bearing guide	<ul style="list-style-type: none"> • Preloaded ball bearing guide for excellent precision 	HGPP, HGPC
	Sealed guide	<ul style="list-style-type: none"> • Ground-in gripper jaws for maximum precision • Gripper kinematics fully encapsulated by the sealing ring for use in extremely harsh ambient conditions 	HGPD, HGDD


Guidance

	Guidance	Features/benefits	Product
	Slotted guide plate	<ul style="list-style-type: none"> • Robust and precise kinematics for a very high force transmission as well as a long service life • Ground-in slotted guide plate for synchronous movement of the jaws 	DHPS, DHDS
	Slotted guide plate, radial	<ul style="list-style-type: none"> • Robust kinematics for high force transmission • Optimised movement with slotted guide plate for maximum gripping force in closed finger position • Precise kinematics for long service life 	HGPT, HGPL, HGPLE, HGDT
	Lever	<ul style="list-style-type: none"> • Stable kinematics for a long service life • Simple power transmission for high process reliability 	HGRT, DHRS, DHWS
	Pinion	<ul style="list-style-type: none"> • Synchronisation of the gripper jaws via a pinion for central gripping • Ground pinion for process reliability and precise gripping. 	HGPP, HGPC

Vacuum generation			OVEM	VN	VN-P	
	Grid dimension	[mm]	20	10 ... 24	16	
	Vacuum max.	[%]	93	86 ... 93	93	
	Nominal width of laval nozzle	[mm]	0.45 ... 1.4	0.45 ... 3	0.45 ... 0.95	
	Vacuum generator characteristics	High vacuum		•	•	•
		High suction rate		•	•	•
	Ejector pulse		•	•	—	
	Vacuum on/off		•	o	—	
	Air-saving circuit		•	—	—	
	Monitoring workpiece transport		•	—	•	
	Monitoring evacuation time and ejector pulse		•	—	—	
Silencer/filter		•/•	o/—	o/—		
Explanation of symbols: • = Standard o = Optional — = Not available						

Suction cups VAS/VAS-B			Suction gripper ESG	Suction cup insert OASI
Suction cup shape	 Round	 Bellows suction cup, 1.5 convolutions	Consisting of: <ul style="list-style-type: none"> • Suction cup holders in six sizes, eight types and with three alternative connections • Optional angle compensator and filter 	<ul style="list-style-type: none"> • Suction gripper ESG with bellows and suction cup insert OASI for sucking up unstable or fragile workpieces 
Suction cup diameter [mm]	1 ... 125	8 ... 125		
Max. breakaway force at -0.7 bar [N]	0.035 ... 606	1.6 ... 606		
Range of application [°C]	Flat or slightly corrugated/curved surfaces	5 round or very curved workpieces		
Materials	Nitrile rubber (NBR)/anti-static			
	Polyurethane (PUR)			
	Silicone (SI)			

Suction cups ESS-.../ESV-...						
Suction cup shape	 Standard, round	 Extra deep, round	 Bell-shaped	 Bellows 1.5 convolutions	 Bellows 3.5 convolutions	 Oval
Suction cup diameter [mm]	2 ... 200	15 ... 100	30 ... 100	10 ... 80	10 ... 50	4x10 ... 30x90
Max. breakaway force at -0.7 bar [N]	0.1 ... 1,610	10 ... 440	36 ... 375	5 ... 215	4 ... 65	2 ... 135
Range of application	Flat or slightly corrugated/curved surfaces	Round or very curved workpieces	Flat or slightly corrugated/curved surfaces	Curved or angled surfaces up to 30°, flexible workpieces	Sensitive workpieces, simple height compensation	Narrow, oblong workpieces
Materials (other materials on request)	Fluoro elastomer (FPM)		Very high temperature resistance, resistant to acids (10%)			
	Nitrile rubber (NBR)/anti-static		Leaves very soft, minimal markings on shiny surfaces			
	Polyurethane (PUR)		Soft, gentle material, long service life			
	Silicone (SI)		High temperature resistance, for food industry			

Suction gripper OGGB			
	Diameter	[mm]	60, 100, 140
	Holding force	[N]	10
	Supply pressure	[bar]	0.1 ... 6 (optimally 1 ... 2)
<ul style="list-style-type: none"> • For low-contact gripping of sensitive, thin and pliable workpieces 			

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