

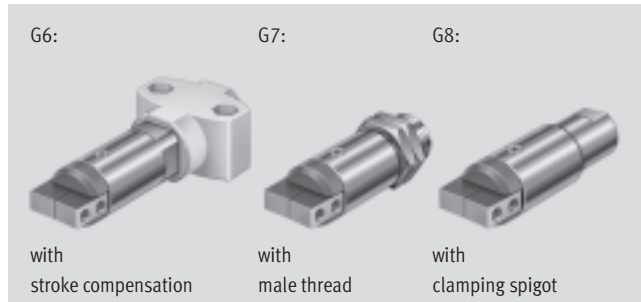


- Miniaturised and optimised for assembly tasks
- Versatile

Angle grippers HGWM, micro

Key features

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At a glance

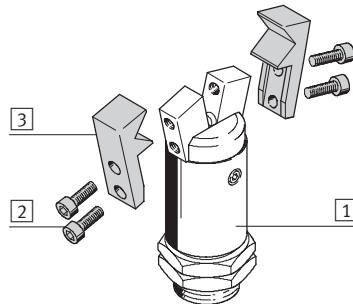
- Compact, handy design
- With open or closed gripper jaws
- Versatility thanks to externally adaptable gripper fingers
- Wide range of options for attaching drive units
- With stroke compensation after installation
- Mounting options:
 - Clamping spigot
 - Male thread



Gripper selection software
www.festo.com/en/engineering

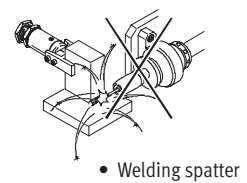
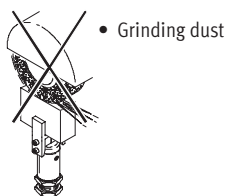
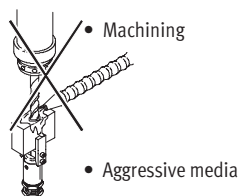
Mounting options for external gripper fingers (customer-specific)

- 1 Angle gripper
- 2 External gripper fingers
- 3 Mounting screws



- - Note

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

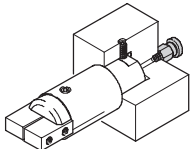
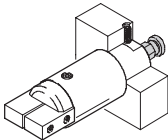
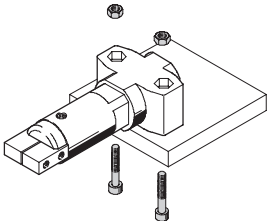
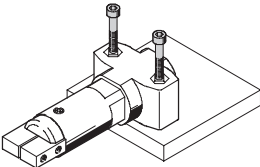


Angle grippers HGWM, micro

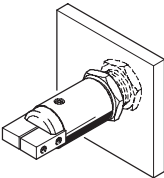
Key features



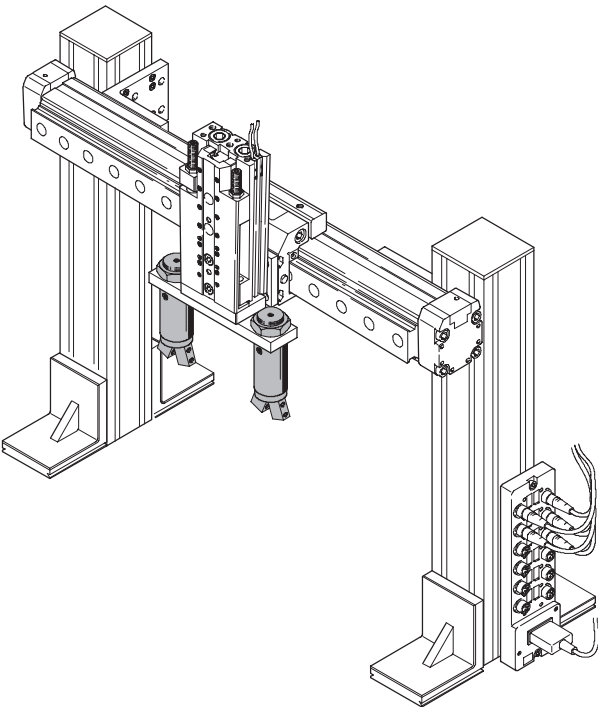
Mounting options			
With through-holes	With through-holes, screws and retaining nuts	With set screw Direct air supply	Integrated air supply



With male thread and lock nut



System product for handling and assembly technology



	→ Page
Drives	Volume 1
Grippers	Volume 1
Adapters	Volume 5
Basic mounting components	Volume 5
Installation components	Volume 5
Axes	Volume 5
Motors	Volume 5

Angle grippers HGWM, micro



Type codes

		HGWM	–	12	–	EO	–	G8
Type								
HGWM	Angle gripper							
Size								
Gripper jaw position								
EO	Open							
EZ	Closed							
Mounting options								
G6	With stroke compensation							
G7	With male thread							
G8	With clamping spigot							

Angle grippers HGWM, micro

Technical data

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Function

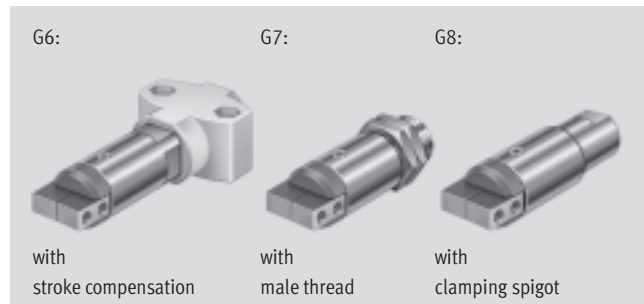
Single-acting
with open gripper jaws
HGWM-...-EO-G...



with closed gripper jaws
HGWM-...-EZ-G...



Size
8 ... 12 mm



General technical data				
Size		8		12
Constructional design		Wedge-shaped drive		
Mode of operation		Single-acting		
Gripper function		Angle		
Number of gripper jaws		2		
Opening angle (±2°)	Gripper jaws open	Open	[°]	20
		Closed	[°]	4
	Gripper jaws closed	Open	[°]	14
		Closed	[°]	4
Spring resetting torque ¹⁾	Gripper jaws open	[Ncm]		0.5
	Gripper jaws closed	[Ncm]		0.55
Pneumatic connection		M3		
Repetition accuracy ^{2) 3)}		[mm]		< 0.02
Max. operating frequency		[Hz]		4
Position sensing		Without		
Type of mounting	HGWM-...-E...-G6		With internally threaded cap screws	
	HGWM-...-E...-G7		With lock nut	
	HGWM-...-E...-G8		Clamped	

- 1) Spring resetting force between the gripper jaws
- 2) End position drift under constant conditions of use with 100 consecutive strokes in the direction of movement of the gripper jaws
- 3) The indicated values are only valid when gripping with compressed air, not with spring force

Operating and environmental conditions		
Min. operating pressure	[bar]	2
Max. operating pressure	[bar]	8
Operating medium	Filtered compressed air, lubricated or unlubricated (grade of filtration 40µm)	
Ambient temperature	[°C]	+5 ... +60
Corrosion resistance class CRC ¹⁾	2	

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Weights [g]		
Size	8	12
With stroke compensation	23	75
With male thread	14	52
With clamping spigot	13	45

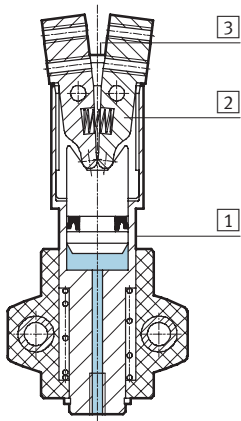
Angle grippers HGWM, micro

Technical data

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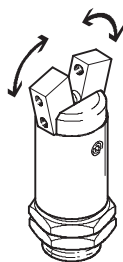
Materials

Sectional view



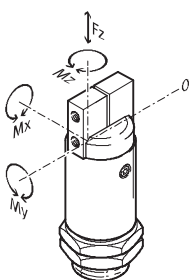
Angle gripper		
[1]	Body	Stainless steel
[2]	Gripper jaw	Stainless steel
[3]	Cover cap	Polyacetate
–	Note on materials	Copper, PTFE and silicone-free

Total gripping torque [Ncm] at 6 bar



Size	8		12	
	HGPM-...EO-...	HGPM-...EZ-...	HGPM-...EO-...	HGPM-...EZ-...
Total gripping torque				
Opening	–	24	–	76
Closing	22	–	64	–

Characteristic load values at the gripper jaws



The indicated permissible forces and torques apply to a single gripper jaw. Static forces and torques relate to additional applied loads caused by

the workpiece or external gripper fingers, as well as forces which occur during handling. The zero co-ordinate

line (gripper jaws point of rotation) must be taken into consideration for the calculation of torques.

Size		8		12	
Max. permissible force F_z	[N]	7		20	
Max. permissible torque M_x	[Ncm]	20		40	
Max. permissible torque M_y	[Ncm]	20		40	
Max. permissible torque M_z	[Ncm]	20		40	

Angle grippers HGWM, micro

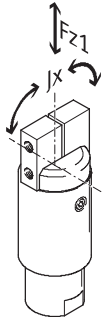
Technical data

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Handling units
Angle grippers

7.4

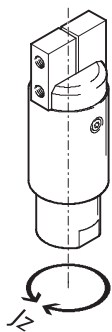
Applied load [N] and mass moment of inertia [$\text{kgm}^2 \times 10^{-4}$] per external gripper finger



Size	8	12
Applied load $F_{z1}^{1)}$	< 0.04	< 0.1
Mass moment of inertia $J_x^{1)}$	< 0.025	< 0.056

1) Valid for unthrottled operation

Mass moment of inertia [$\text{kgm}^2 \times 10^{-4}$]

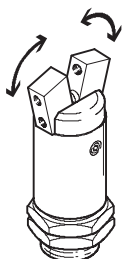


Mass moment of inertia [$\text{kgm}^2 \times 10^{-4}$]
for angle grippers in relation to the
central axis without external gripper
fingers.

Size	8	12
With stroke compensation	0.00705	0.0421
With male thread	0.00315	0.0267
With clamping spigot	0.00252	0.02154

Opening and closing times [ms] at 6 bar

Without external gripper fingers



The indicated opening and closing
times [ms] have been measured at
room temperature and 6 bar operat-
ing pressure with vertically mounted

gripper and without external gripper
fingers. Load is increased if external
gripper fingers are attached. This
means that kinetic energy is also

increased, as this is determined by
gripper finger mass moment of inertia
and angular velocity.

Size		8	12
HGPM-...EO-...	Opening	2.7	3.7
	Closing	1.2	1.8
HGPM-...EZ-...	Opening	1	1.7
	Closing	2.5	2.8

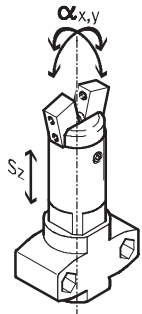
Angle grippers HGWM, micro

Technical data

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Gripper jaw backlash

Without external gripper fingers

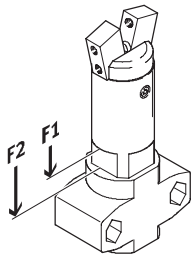


With angle grippers, backlash occurs between the gripper jaws and the guide element due to the plain-bearing guide. The backlash values listed

in the table have been calculated based upon the traditional accumulative tolerance method and usually do not occur with mounted grippers.

Size	8	12
Gripper jaw backlash s_z [mm]	< 0.03	
Gripper jaw angular backlash α_x, α_y [°]	< 0.5	

Spring displacement forces [N]



Theoretical actuating force due to stroke compensation for design variant with stroke compensation.

Size	8	12
Spring displacement forces F_1	4	10
Spring displacement forces F_2	6	23

Angle grippers HGWM, micro

Technical data

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Application example



Handling units
Angle grippers

7.4

Angle grippers HGWM, micro

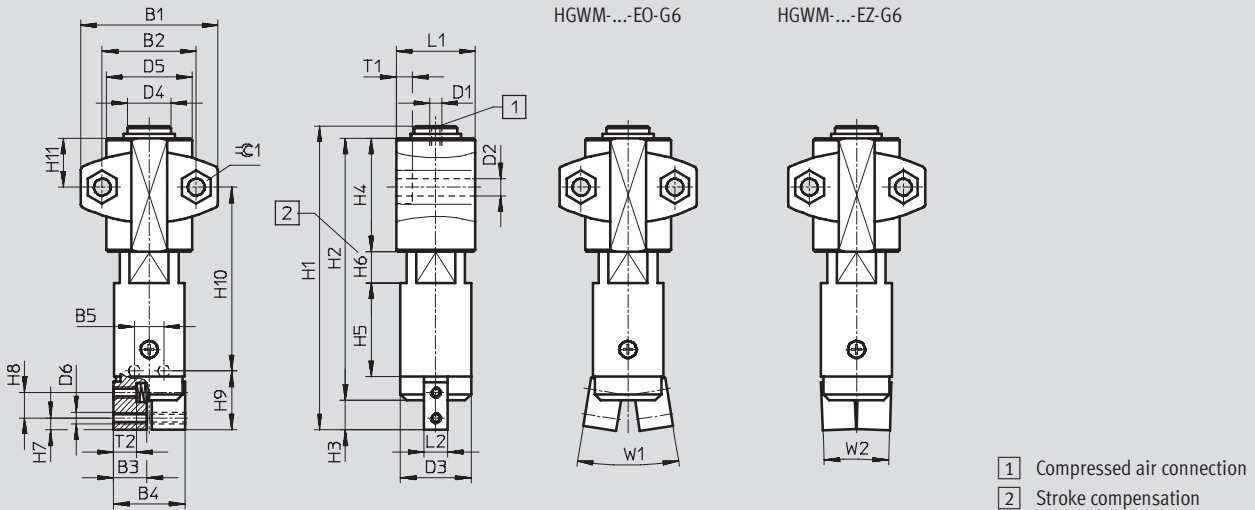
Technical data

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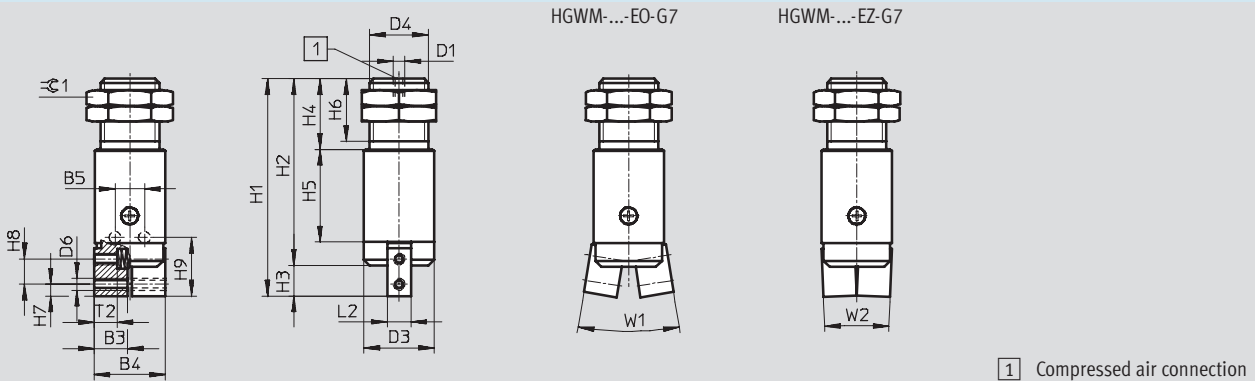
Dimensions

Download CAD data → www.festo.com/en/engineering

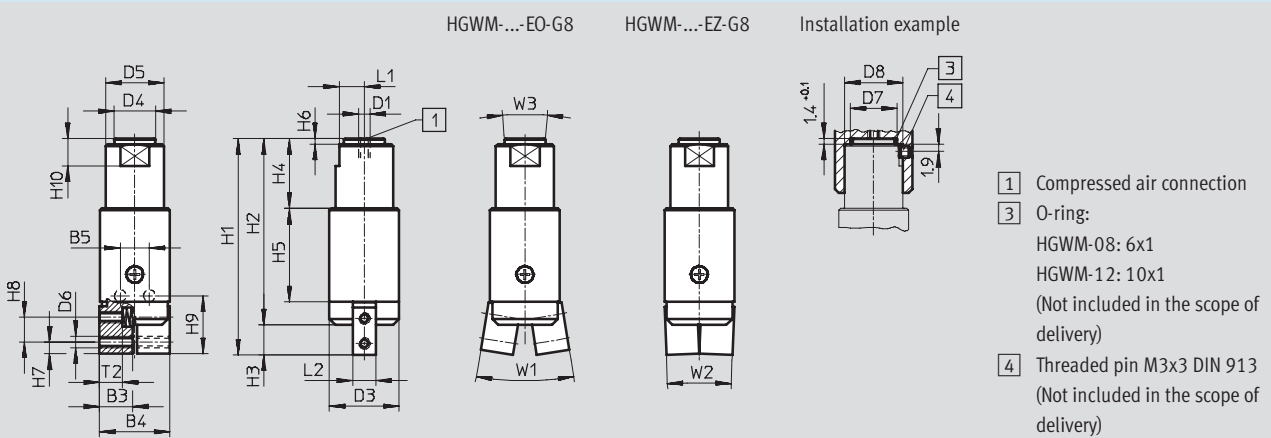
With stroke compensation – HGWM-...-E...-G6



With male thread – HGWM-...-E...-G7



With clamping spigot – HGWM-...-E...-G8



Angle grippers HGWM, micro

Technical data

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Type	B1 ±0.1	B2 ±0.25	B3	B4 ±0.3	B5	D1	D2 Ø +0.1	D3 Ø +0.1	D4 Ø	D5 Ø	D6
HGWM-08-EO-G6	24	15	5.5	11.8	5 ±0.02	M3	3.4	12	8 -0.02/-0.05	15 ±0.5	M2
HGWM-08-EZ-G6											
HGWM-12-EO-G6	35	24	8.5	18.2	7.5 -0.05	M3	4.5	18	11 -0.02/-0.05	22 ±0.5	M3
HGWM-12-EZ-G6											
HGWM-08-EO-G7	-	-	5.5	11.8	5 ±0.02	M3	-	12	M10x1	-	M2
HGWM-08-EZ-G7											
HGWM-12-EO-G7	-	-	8.5	18.2	7.5 -0.05	M3	-	18	M15x1.5	-	M3
HGWM-12-EZ-G7											
HGWM-08-EO-G8	-	-	5.5	11.8	5 ±0.02	M3	-	12	6.6 -0.03	10 h8	M2
HGWM-08-EZ-G8											
HGWM-12-EO-G8	-	-	8.5	18.2	7.5 -0.05	M3	-	18	10.6 -0.03	15 h8	M3
HGWM-12-EZ-G8											

Type	D7 Ø +0.1	D8 +0.1	H1 +0.25	H2	H3	H4	H5 +0.1	H6	H7	H8	H9 +0.1
HGWM-08-EO-G6	-	-	54	47 ±0.3	5 ±0.2	22-0.3	16	0 ... 5 +0.6/-0.3	2	4.3	10
HGWM-08-EZ-G6											
HGWM-12-EO-G6	-	-	77.5	67 ±0.3	7.5	29-0.3	24	0 ... 8 +0.6/-0.3	3	6.5	15
HGWM-12-EZ-G6											
HGWM-08-EO-G7	-	-	37	32 +0.3/-0.2	5 ±0.2	12	16	11	2	4.3	10
HGWM-08-EZ-G7											
HGWM-12-EO-G7	-	-	55.5	48 +0.3/-0.2	7.5	18	24	16	3	6.5	15
HGWM-12-EZ-G7											
HGWM-08-EO-G8	8	10	37	32 +0.3/-0.2	5 ±0.2	12	16	1.4 -0.1	2	4.3	10
HGWM-08-EZ-G8											
HGWM-12-EO-G8	12	15	55.5	48 +0.3/-0.2	7.5	18	24	1.4 -0.1	3	6.5	15
HGWM-12-EZ-G8											

Type	H10	H11 ±0.3	L1	L2 -0.02	T1 -0.2	T2 ¹⁾	W1 ±2°	W2 ±2°	W3 ±2°	≈G1
HGWM-08-EO-G6	32.4 ±0.6	9.5	14.2 -0.2	4	3	3.4 ±0.2	20°	4°	-	5.7
HGWM-08-EZ-G6						-	14°			
HGWM-12-EO-G6	47 ±0.6	12.5	20.2 -0.2	6	4	5.9	18.5°	3.5°	-	7.5
HGWM-12-EZ-G6						-	14°			
HGWM-08-EO-G7	-	-	-	4	-	3.4 ±0.2	20°	4°	-	12
HGWM-08-EZ-G7						-	14°			
HGWM-12-EO-G7	-	-	-	6	-	5.9	18.5°	3.5°	-	19
HGWM-12-EZ-G7						-	14°			
HGWM-08-EO-G8	5	-	4.5 -0.05	4	-	3.4 ±0.2	20°	4°	8°	-
HGWM-08-EZ-G8						-	14°			
HGWM-12-EO-G8	7	-	6.5 -0.05	6	-	5.9	18.5°	3.5°	8°	-
HGWM-12-EZ-G8						-	14°			

1) Do not exceed max. thread screw-in depth

Handling units
Angle grippers


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Angle grippers HGWM, micro

Technical data and accessories

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Ordering data						
Single-acting	Size [mm]	Mounting options				
		With stroke compensation		With male thread		With clamping spigot
		Part No.	Type	Part No.	Type	Part No. Type
Gripper jaws open	8	185 693	HGWM-08-EO-G6	185 694	HGWM-08-EO-G7	185 695 HGWM-08-EO-G8
	12	185 699	HGWM-12-EO-G6	185 700	HGWM-12-EO-G7	185 701 HGWM-12-EO-G8
Gripper jaws closed	8	185 696	HGWM-08-EZ-G6	185 697	HGWM-08-EZ-G7	185 698 HGWM-08-EZ-G8
	12	185 702	HGWM-12-EZ-G6	185 703	HGWM-12-EZ-G7	185 704 HGWM-12-EZ-G8

Accessories	
For angle grippers with clamping flange	
Adapter kits A08 and A12	
	In combination with semi-rotary drives DRQD-6 to 12 → 1 / 4.2-24 Adapter kits for drive/gripper combinations → Volume 5