

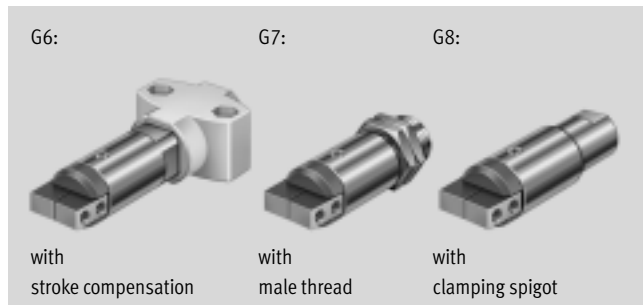
## Angle grippers HGWM, micro

**FESTO**




# Angle grippers HGWM, micro

Key features



## At a glance

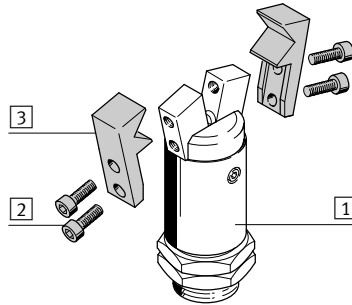
- Compact, handy design
- With open or closed gripper jaws
- Versatility thanks to externally adaptable gripper fingers
- Wide range of options for attaching drive units
- With stroke compensation after installation
- Mounting options:
  - Clamping spigot
  - Male thread


-  - Note

Sizing software  
Gripper selection  
➔ [www.festo.com](http://www.festo.com)

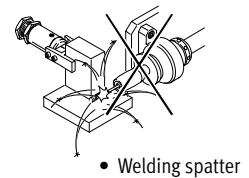
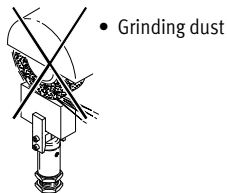
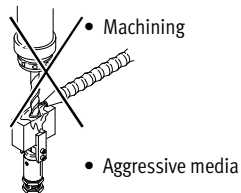
## Mounting options for external gripper fingers (customer-specific)

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



-  - Note

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

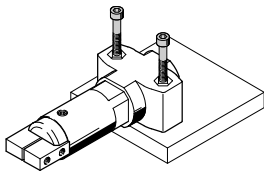


# Angle grippers HGWM, micro

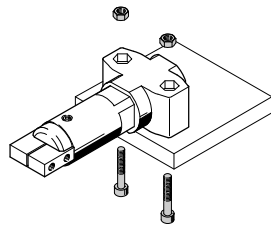
Key features

## Mounting options

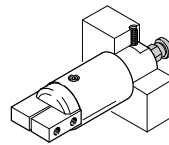
With through-holes



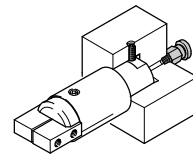
With through-holes, screws and retaining nuts



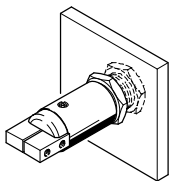
With set screw  
Direct air supply



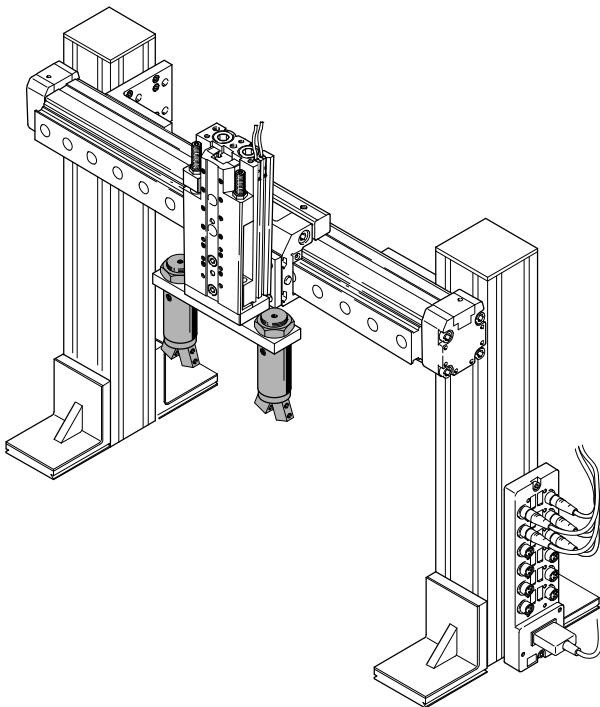
Integrated air supply



With male thread and lock nut



## System product for handling and assembly technology



	→ Page/Internet
Drives	drive
Grippers	gripper
Adapters	adapter kit
Basic mounting components	basic component
Installation components	installation component
Axes	axes
Motors	motor

# 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

### Function

Single-acting  
with open gripper jaws

HGWM-...-EO-G...

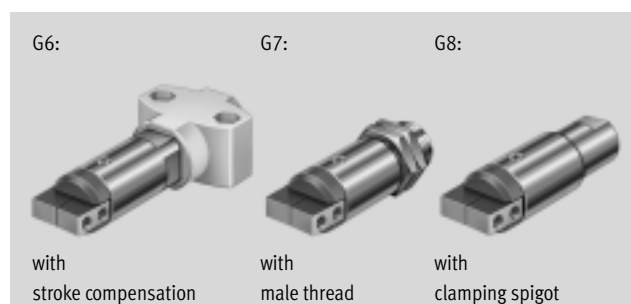


with closed gripper jaws

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	18.5
		Closed	[°]	4	3.5
	Gripper jaws closed	Open	[°]	14	14
		Closed	[°]	4	4
Spring resetting torque <sup>1)</sup>	Gripper jaws open	[Ncm]	0.5	1.3	
	Gripper jaws closed	[Ncm]	0.55	1.5	
Pneumatic connection	M3				
Repetition accuracy <sup>2) 3)</sup>	[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	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]	
Ambient temperature	[°C]	+5 ... +60
Corrosion resistance class CRC <sup>1)</sup>	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

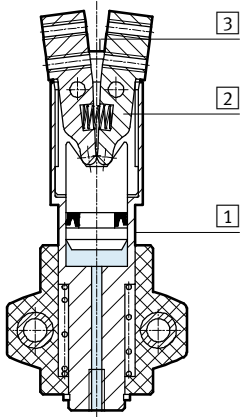
# Angle grippers HGWM, micro

Technical data

FESTO

## Materials

Sectional view



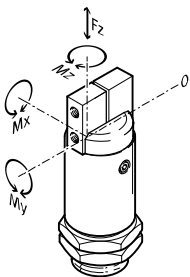
Angle gripper		
1	Body	Stainless steel
2	Gripper jaw	Stainless steel
3	Cover cap	Polyacetate
-	Note on materials	Copper, PTFE and silicone-free Conforms to RoHS

## Total gripping torque [Ncm] at 6 bar



Size	8		12	
	HGWM-...EO-...	HGWM-...EZ-...	HGWM-...EO-...	HWPM-...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

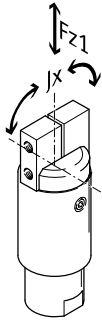
line (gripper jaws point of rotation) must be taken into consideration for the calculation of torques.

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

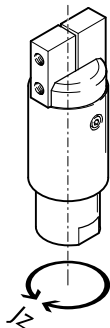
## Applied load [N] and mass moment of inertia [ $\text{kgm}^2 \times 10^{-4}$ ] per external gripper finger



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 [ $\text{kgm}^2 \times 10^{-4}$ ]

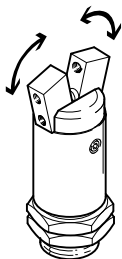


Mass moment of inertia [ $\text{kgm}^2 \times 10^{-4}$ ] for angle grippers in relation to the central axis without external gripper fingers.

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 operating 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.

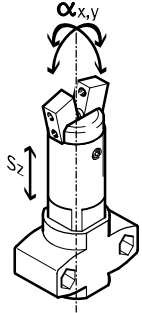
Size		8	12
HGWM-...EO-...	Opening	2.7	3.7
	Closing	1.2	1.8
HGWM-...EZ-...	Opening	1	1.7
	Closing	2.5	2.8

# Angle grippers HGWM, micro

Technical data

## Gripper jaw backlash

Without external gripper fingers

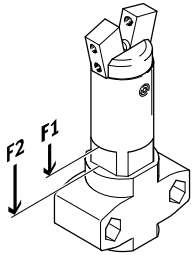


With angle grippers, backlash occurs between the gripper jaws and the guide element due to the plain-bearing guide. The backlash values listed

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 $\alpha_x, \alpha_y$ [°]	< 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

FESTO

## Application example



# Angle grippers HGWM, micro

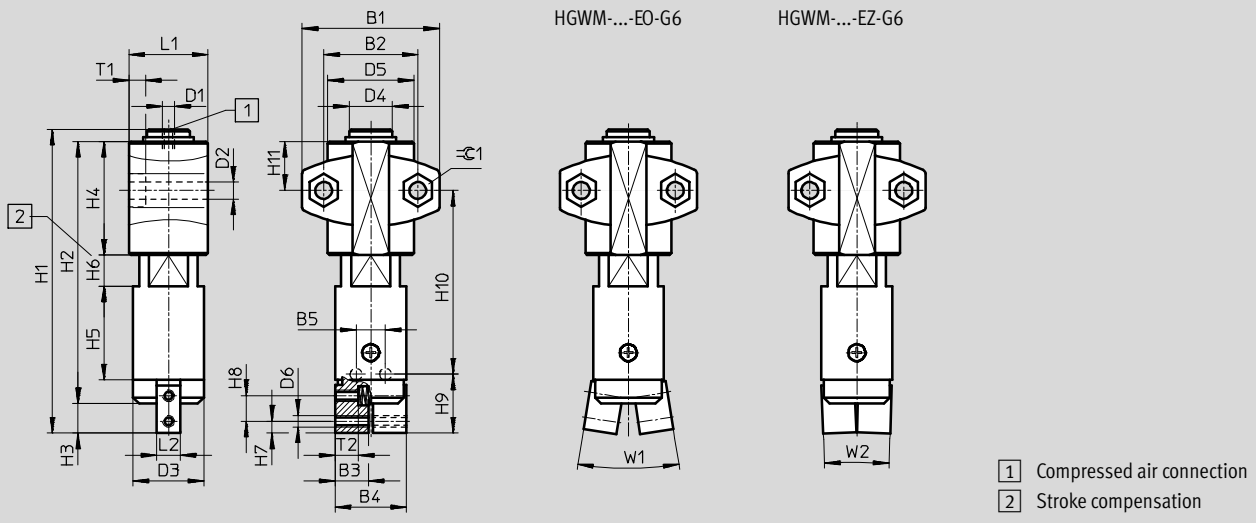
Technical data

FESTO

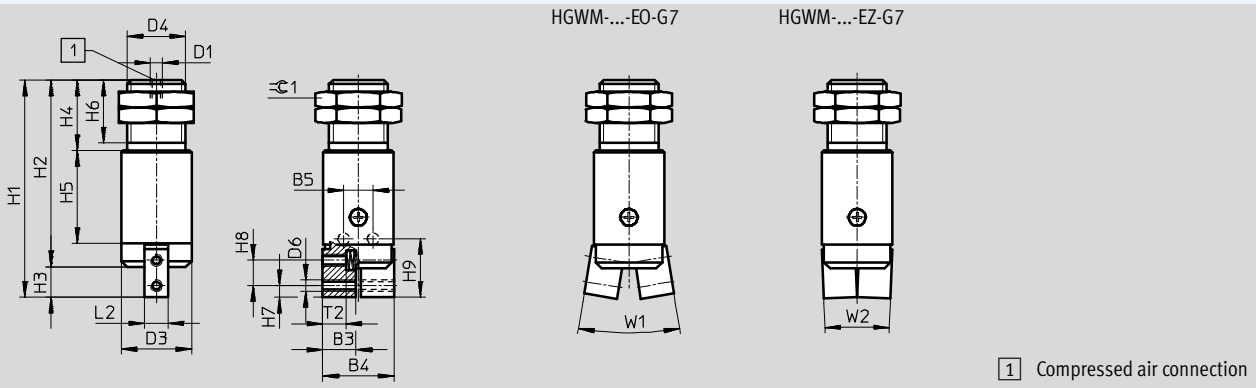
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

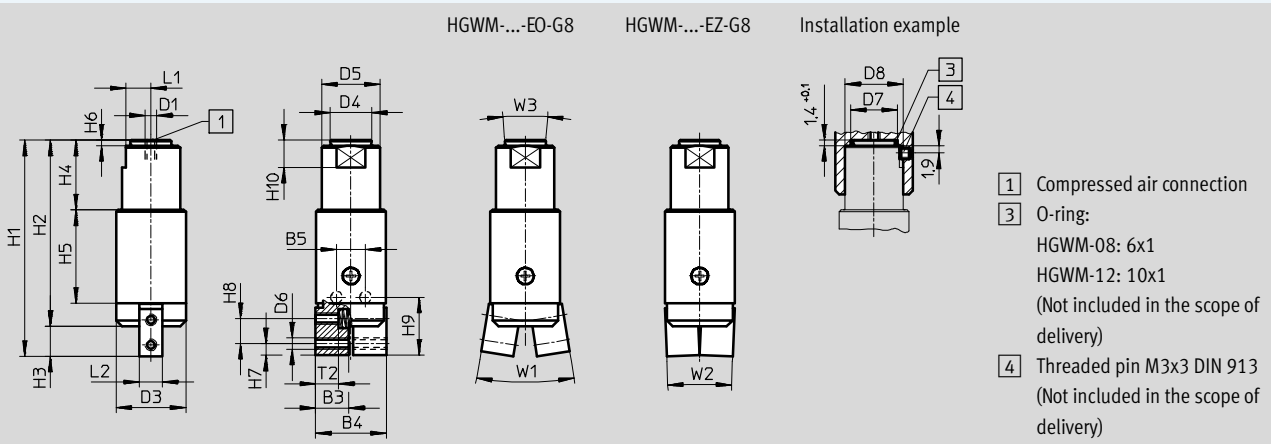
With stroke compensation – HGWM-...-E...-G6



With male thread – HGWM-...-E...-G7



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



# Angle grippers HGWM, micro

Technical data

FESTO

Type	B1 ±0.1	B2 ±0.25	B3	B4 ±0.3	B5	D1	D2 ∅ +0.1	D3 ∅ +0.1	D4 ∅	D5 ∅	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 ∅ +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 <sup>1)</sup>	W1 ±2°	W2 ±2°	W3 ±2°	∠C1
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°	4°		
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°	4°		
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°	4°		

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

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