Bernoulli gripper OGGB

Key features

General

Purpose

The Bernoulli gripper OGGB is ideally suited to transporting thin, extremely delicate and brittle workpieces.

Advantages

- Minimised workpiece contact, gentle workpiece handling
- Low energy costs thanks to minimised air consumption
- Maximum workpiece loads thanks to high suction forces
- Low-noise
- Reliable separation of porous and air-permeable materials
- Minimal assembly and installation

Applications

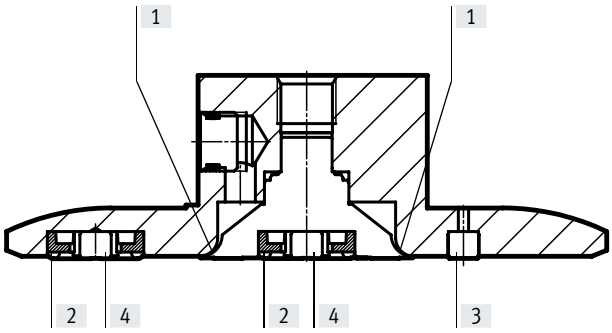
- Photovoltaics (solar cell and wafer transport)
- Thin film solutions
- Film transport
- Flat panel
- Thin glass panes
- Electronic circuit boards
- Flexible parts with large surface areas
- Air-permeable workpieces
- Separation of thin and porous materials
- Workpieces with textured surface

Note

Complete coverage with the gripper is recommended when handling thin, delicate workpieces (e.g. films).

Functional principle

The incoming compressed air flows radially through the gripper and flows back out between the workpiece and gripper surface. The air is routed through a very thin gap [1] between the gripper body and the core of the gripper, thus greatly accelerating its speed. The high outflow speeds generate a vacuum between the gripper and the workpiece.
Spacers hold the workpiece at a distance to ensure that the air can flow off smoothly.
Vacuum generation according to the Bernoulli principle enables a wide range of workpieces to be gripped gently and with very little contact.



Versions

The gripper is available in three sizes. Two different materials can be chosen for the spacers for each size. With the first variant, all the spacers (ring shape [2] and knobs [3]) are made from POM. The second variant has ring-shaped spacers [2] made from POM and knobs ([3] and [4]) made from NBR. This second variant can absorb higher lateral forces than the POM variant and the NBR spacers can be replaced if they wear out.
Each gripper has two connection options for compressed air: one connection on the top and one alternative connection on the side. The plug screw included is used to seal unused connections and is pre-assembled on the side as standard.

Type codes

001	Series	
OGGB	Bernoulli grippers	

002	Suction cup size	
60	60 mm diameter	
100	100 mm diameter	
140	140 mm diameter	

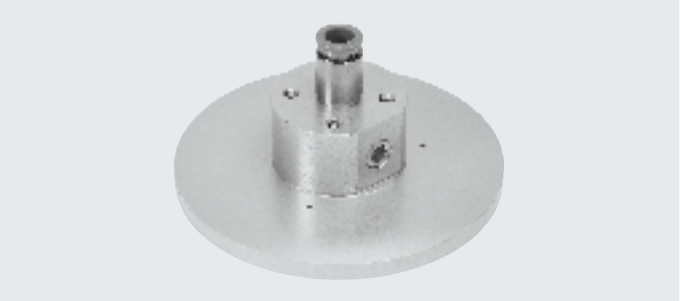
003	Pneumatic connection	
G18	G1/8	

004	Number of connections	
2	2 connections	

005	Stop	
	Standard	
Q	For high lateral forces	

Data sheet

- Ø - Diameter
  60, 100, 140 mm
- Temperature range
  0 ... +60°C



General technical data				
Gripper Ø	[mm]	60	100	140
Pneumatic connection		G1/8	G1/8	G1/8
Alternative connections		G1/8	G1/8	G1/8
Connection position		On top/at side		
Type of mounting		With female thread		
Mounting position		Any		

Operating and environmental conditions		
Operating pressure	[bar]	0 ... 6
Nominal operating pressure	[bar]	1
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium		Lubricated operation not possible
Ambient temperature	[°C]	0 ... +60
Temperature of medium	[°C]	0 ... +60
Corrosion resistance class CRC[1)]		2

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Performance data							
Spacer		Standard			For high lateral forces		
Gripper Ø	[mm]	60	100	140	60	100	140
Air consumption at nominal operating pressure 1 bar	[l/min]	110					
Holding force at nominal operating pressure 1 bar	[N]	10	7	7	7	6	6
Lateral force at nominal operating pressure 1 bar	[N]	1	1	1	15	12	12
Noise level at nominal operating pressure 1 bar	[dB (A)]	65					
Sound power level at nominal operating pressure 1 bar	[dB (A)]	78					

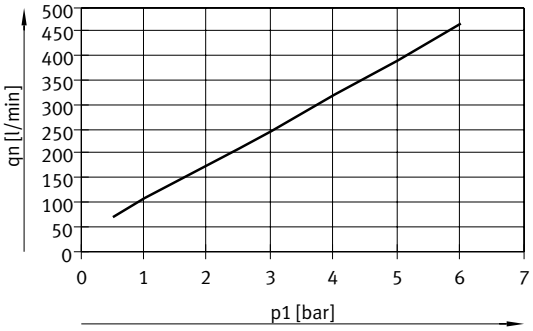
Materials		
Spacer	Standard	For high lateral forces
Housing	Anodised wrought aluminium alloy	
Spacer	POM	
	–	NBR
Note on materials	RoHS-compliant	

Data sheet

Holding force F as a function of operating pressure p1

OGGB-100/140-G18-2-Q
OGGB-60-G18-2-Q, OGGB-100/140-G18-2
OGGB-60-G18-2

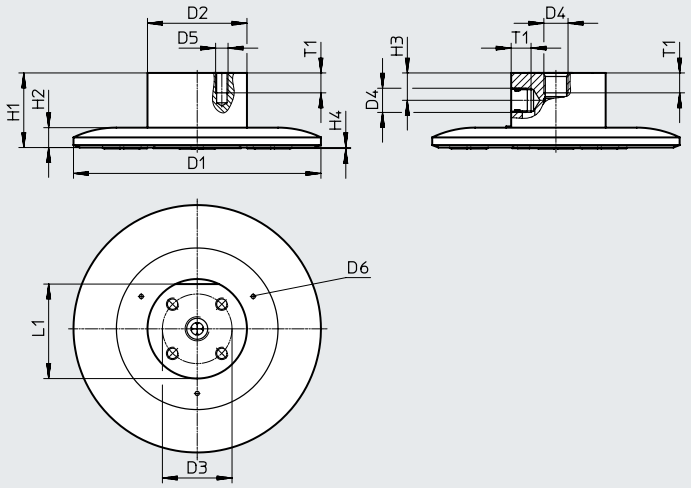
Air consumption qn as a function of operating pressure p1



OGGB-60/100/140

Dimensions

Download CAD data ➔ www.festo.com



Type	D1 ø	D2 ø	D3 ø	D4 ø	D5	D6 ø	H1	H2	H3	H4	L1	T1
OGGB-60	59.5	40	28	G1/8	M5	1.7	30	8	11	0.4	38	8
OGGB-100	99.5											
OGGB-140	139.5											

Ordering data

Gripper ø [mm]	Pneumatic connection	Weight [g]	Part no.	Type
Standard				
60	G1/8	119	**574563**	**OGGB-60-G18-2**
100	G1/8	210	**574565**	**OGGB-100-G18-2**
140	G1/8	348	**574567**	**OGGB-140-G18-2**
For high lateral forces				
60	G1/8	119	**574564**	**OGGB-60-G18-2-Q**
100	G1/8	210	**574566**	**OGGB-100-G18-2-Q**
140	G1/8	348	**574568**	**OGGB-140-G18-2-Q**