



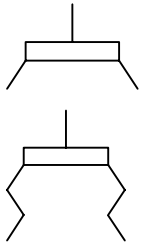
- Suction retention of workpieces with smooth, impervious surfaces
- Silicone suction cups are approved in the manufacture of food products
- Bellows suction cups can adapt to suit uneven, curved and inclined surfaces
- Excellent thermal resistance

# Suction grippers

Key features

## Product overview

Suction gripper and suction cup



Festo vacuum suction grippers offer outstanding functionality and quality.

An extensive range of modular suction cups in different shapes, materials and sizes, plus a wide selection of suction cup holders, angle and height compensators and filters within the

modular suction gripper system, provide users with a huge range of possible combinations for a wide variety of applications.

## Suction grippers ESG

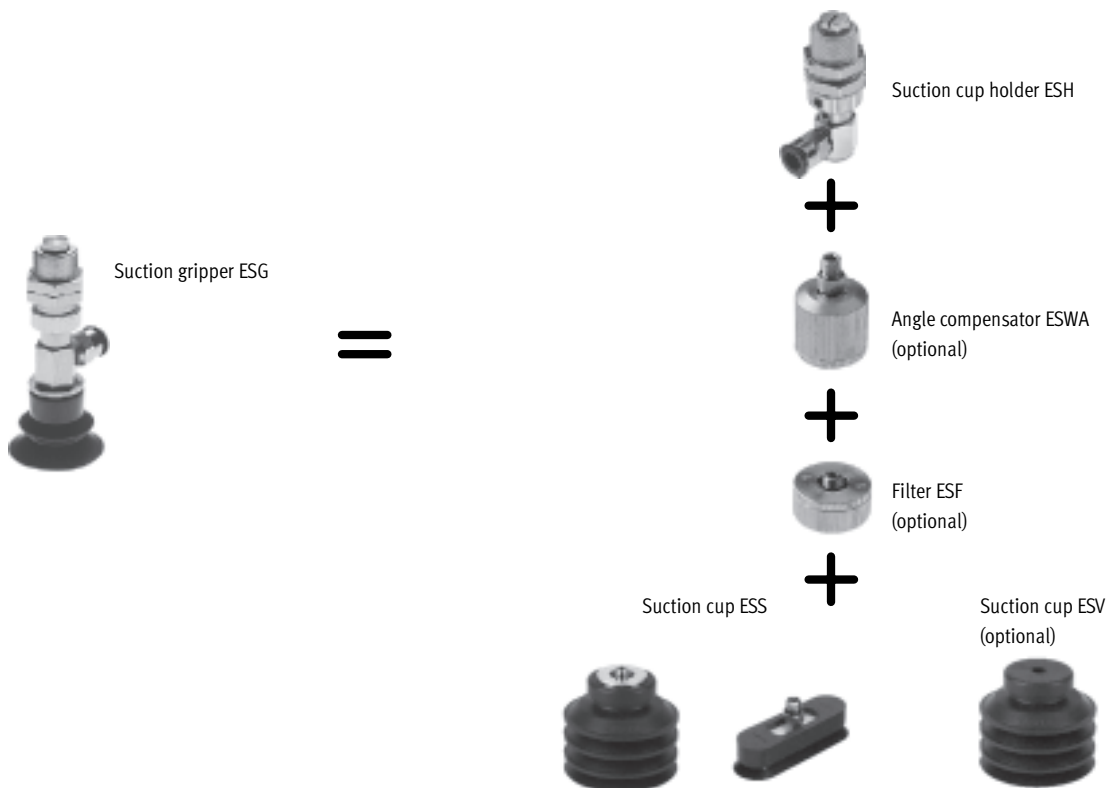
→ 6 / 2.1-6

Modular products with over 2000 variants

- The ideal solution for the transport of workpieces of different weights, surfaces and shapes
- Choose from:
  - 15 suction cup diameters
  - 5 different materials – including antistatic types
  - 5 suction cup shapes
  - Various suction cup holders
  - Optional accessories (filters and angle compensators)
- Wide range of variants
- A suitable solution for every task
- Wide range to suit applications with various temperature ranges and workpiece surfaces
- Suction cups made from silicone are approved for use in the food industry

Suction grippers as a complete solution

Suction grippers made from individual components



# Suction grippers

Key features

FESTO

## Suction cups VAS/VASB

→ 6 / 2.1-76

Sturdy and reliable

- The ideal solution for the transport of workpieces of different weights, surfaces and shapes
- Choose from:
  - 15 suction cup diameters: standard, extra deep and bellows designs
  - 2 suction cup shapes: round and oval
  - 5 suction cup materials: nitrile rubber, antistatic nitrile rubber, polyurethane, silicone and viton for use in a wide variety of applications
- Wide range to suit applications with various temperature ranges and workpiece surfaces
- Suction cups made from silicone are approved for use in the food industry
- All tubing connector sizes correspond to a holder size



# Suction cups VAS/VASB

Features



## Suction cups with fixed connecting thread

- VAS: 1 ... 125 mm diameter  
VASB: 8 ... 125 mm diameter
- Suction retention of workpieces with smooth, impervious surfaces
- Bellows suction cups can adapt to suit uneven, curved and inclined surfaces

- Nitrile rubber (NBR)**
- Minimal markings left on shiny surfaces
- Polyurethane (PUR)**
- Long service life
  - Gentle handling with soft suction cup material

- Silicone (SI)**
- Excellent thermal resistance
  - Approved for use in the food industry



## Accessories

Vacuum security valve ISV

6 / 3.1-3

- Vacuum does not dissipate when any of several suction cups arranged in parallel fail to maintain contact
- Saves compressed air and energy



Height compensator VAL

6 / 4.1-6

- Gentle handling of the workpieces by compensating for tolerance differences in the workpiece thickness.



Elbow fitting LJK

6 / 4.1-8

- Redirection of air connection
- Swivel joint rotatable 360°



Adapter AD

6 / 4.1-17

- For connection of suction cup with piston rod thread, for example

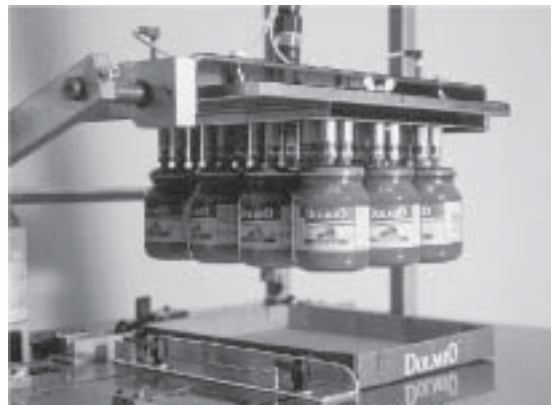


Suction grippers

2.1

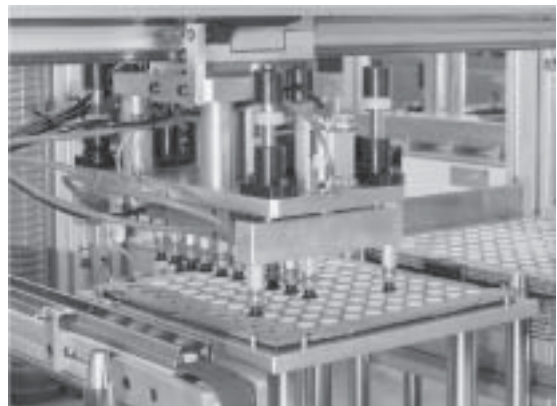
## Vacuum technology can be used in a wide range of applications

- Lifting
- Placing
- Moving
- Insertion
- Conveying
- Gripping
- Holding
- Loading
- Clamping
- Transporting
- Repositioning
- Turning



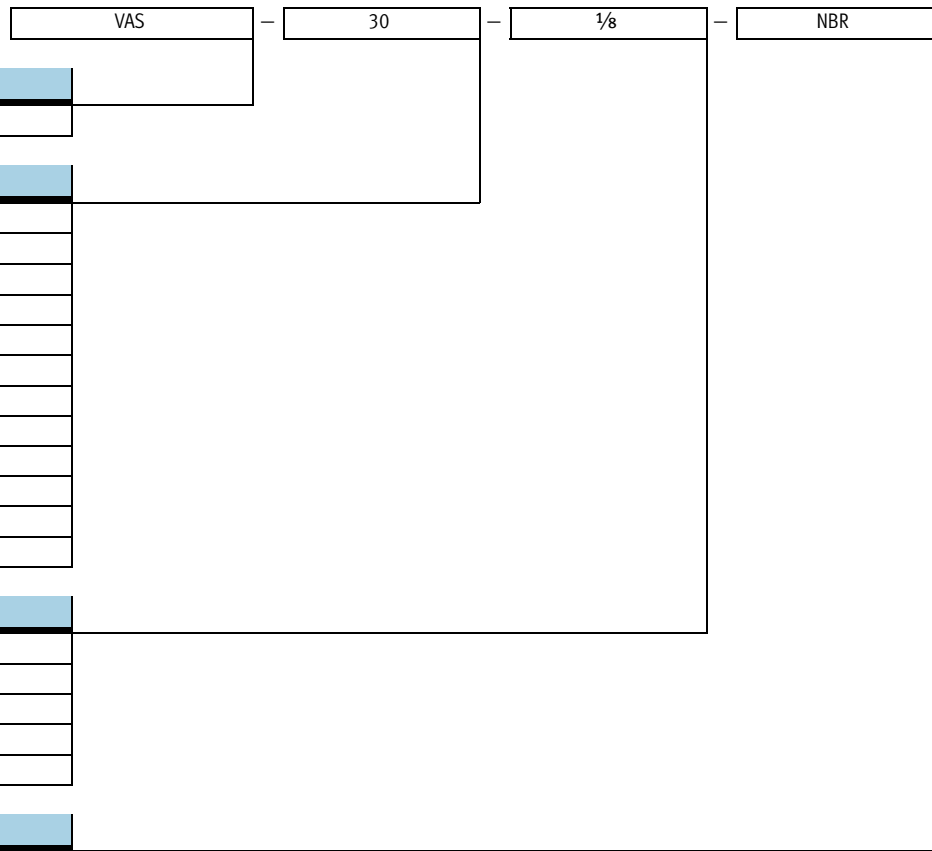
Flexible automation technology is an important field of application for vacuum technology:

- Small, mid-sized and large series manufacturing
- Assembly
- Conveyor and packaging technology



# Suction cups VAS

Type code




Type	
VAS	Suction cup

Suction cup Ø [mm]	
1	1
2	2
5	5
8	8
10	10
15	15
30	30
40	40
55	55
75	75
100	100
125	125

Connection sizes	
M3	M3 thread
M5	M5 thread
1/8	G1/8 thread
1/4	G1/4 thread
3/8	G3/8 thread


Materials	
NBR	Nitrile rubber
PUR	Polyurethane
SI	Silicone


-  - Note  
Possible combinations can be found in the ordering data.

# Suction cups VAS

Technical data



-  - Temperature range  
-20 ... +200 °C

-  - Diameter  
1 ... 125 mm



General technical data										
Suction cup Ø [mm]	Design	Vacuum port	Type of mounting	Nominal size [mm]	Effective suction cup Ø [mm]	Shore hardness	Breakaway force at 70% vacuum [N]	Weight		
								NBR [g]	PUR [g]	SI [g]
1	Vacuum port on top, round, standard	M3	Screw-in thread	0.4	0.8	55±5	0.035	1	-	-
2		M3		1	1.6	55±5	0.14	11	-	-
5		M5		1.5	4	55±5	0.9	2	-	-
8		M5 <sup>1)</sup>		2	5.5	73	1.6	4	4	2
10		M5		2	8	73	4.5	3	3	3
15		G <sup>1</sup> / <sub>8</sub>		3	12	73	7.9	11	11	6
30		G <sup>1</sup> / <sub>8</sub>		3	25	73	34	13	13	7
40		G <sup>1</sup> / <sub>4</sub>		4	32	73	56	26	27	13
55		G <sup>1</sup> / <sub>4</sub>		4	44	73	106	32	32	16
75		G <sup>1</sup> / <sub>4</sub>		4	60	73	197	76	78	36
100		G <sup>1</sup> / <sub>4</sub>		4	85	73	397	138	142	67
125		G <sup>3</sup> / <sub>8</sub>		7	105	73	606	152	148	148

1) VAS-8-M5-S: Barbed fittings for 3 mm plastic tubing, lateral connection

Ambient conditions			
Variant	VAS-...-NBR	VAS-...-PUR	VAS-...-SI
Operating medium	Atmospheric air		
Ambient temperature [°C]	-20 ... +80	-20 ... +60	-40 ... +200
Corrosion resistance CRC <sup>1)</sup>	2		

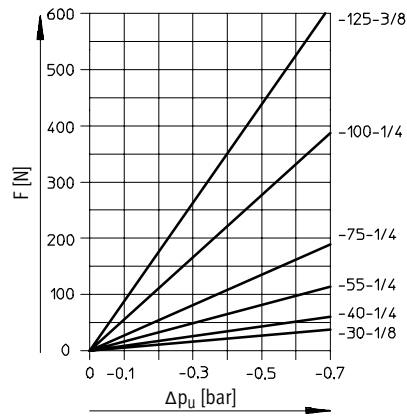
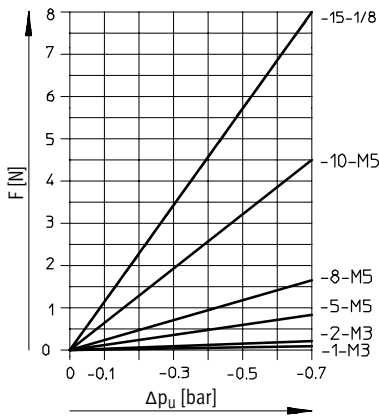
1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

# Suction cups VAS

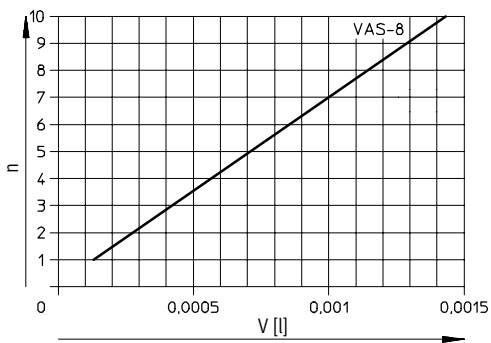
Technical data

## Theoretical suction force F as a function of vacuum $p_u$

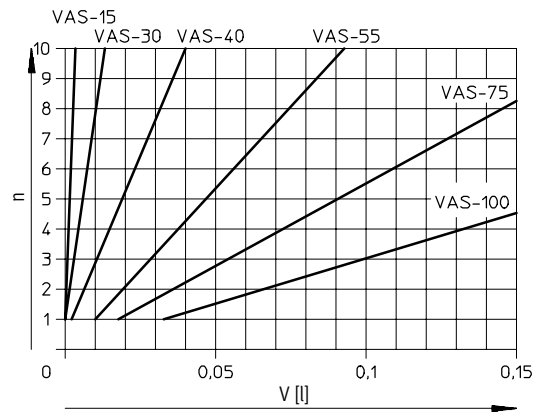


## Suction cup volume

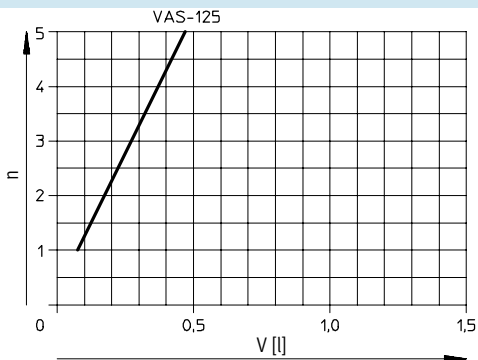
VAS-8



VAS-15 ... 100



VAS-125



# Suction cups VAS

Technical data

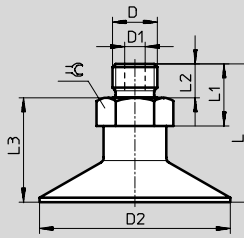
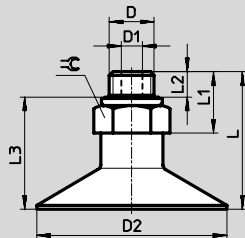
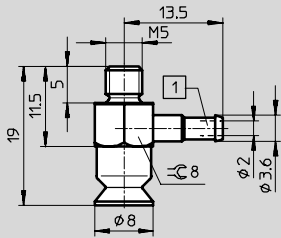


## Dimensions

VAS-8-M5-S

VAS-...-NBR/-PUR

VAS-...-SI



1) Barbed fitting for 3 mm plastic tubing

Type	D	D1 ∅	D2 ∅	L	L1	L2	L3	⊖
<b>VAS-...-NBR</b>								
VAS-1-M3-NBR <sup>1)</sup>	M3	0.9	1	7.4	5.8	3.8	3.6	4.5
VAS-2-M3-NBR <sup>1)</sup>	M3	1	2	9.8	5.8	3.8	6	4.5
VAS-5-M5-NBR	M5	1.5	5	16.5	11.5	4	13	8
VAS-8-M5-NBR	M5	2	8	19.2	11.5	4	15.7	8
VAS-10-M5-NBR	M5	2	10	19.2	11.5	4	15.7	8
VAS-15-1/8-NBR	G1/8	3	15	20	12	4.7	15.3	13
VAS-30-1/8-NBR	G1/8	3	30	21.5	12	4.7	16.8	13
VAS-40-1/4-NBR	G1/4	4	40	32.5	19	5.8	24.7	17
VAS-55-1/4-NBR	G1/4	4	55	35.5	19	5.8	27.7	17
VAS-75-1/4-NBR	G1/4	4	75	29	18	5.8	21.2	17
VAS-100-1/4-NBR	G1/4	4	100	29	18	5.8	21.2	17
VAS-125-3/8-NBR	G3/8	7	125	36	20	6	30	19
<b>VAS-...-PUR</b>								
VAS-8-M5-PUR	M5	2	8	19.2	11.5	4	15.7	8
VAS-10-M5-PUR	M5	2	10	19.2	11.5	4	15.7	8
VAS-15-1/8-PUR	G1/8	3	15	20	12	4.7	15.3	13
VAS-30-1/8-PUR	G1/8	3	30	21.5	12	4.7	16.8	13
VAS-40-1/4-PUR	G1/4	4	40	31.5	19	5.8	23.7	17
VAS-55-1/4-PUR	G1/4	4	55	34.5	19	5.8	26.7	17
VAS-75-1/4-PUR	G1/4	4	75	29	18	5.8	21.2	17
VAS-100-1/4-PUR	G1/4	4	100	29	18	5.8	21.2	17
VAS-125-3/8-PUR	G3/8	7	125	36	20	6	30	19
<b>VAS-...-SI</b>								
VAS-8-M5-SI <sup>1)</sup>	M5	2	8	19.2	11.5	5	14.2	8
VAS-10-M5-SI	M5	2	10	19.2	11.5	5	14.2	8
VAS-15-1/8-SI	G1/8	3	15	20	12	6.5	13.5	13
VAS-30-1/8-SI	G1/8	3	30	21.5	12	6.5	15	13
VAS-40-1/4-SI	G1/4	4	40	30.5	17	8	22.5	17
VAS-55-1/4-SI	G1/4	4	55	33.5	17	8	25.5	17
VAS-75-1/4-SI	G1/4	4	75	28	14	8	20	17
VAS-100-1/4-SI	G1/4	4	100	28.5	14.5	8	20.5	17
VAS-125-3/8-SI	G3/8	7	125	36	16.5	9	27	19

1) Sealing rings are not included in the scope of delivery.



# Suction cups VAS

Technical data

FESTO

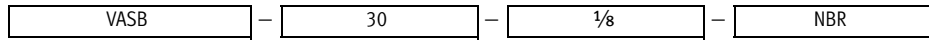
Ordering data							
Suction cup Ø [mm]	Screw-in thread	Nitrile rubber		Polyurethane		Silicone	
		Part No.	Type	Part No.	Type	Part No.	Type
1	M3	173 437	VAS-1-M3-NBR	–	–	–	–
2	M3	173 438	VAS-2-M3-NBR	–	–	–	–
5	M5	173 439	VAS-5-M5-NBR	–	–	–	–
8	M5	34 588	VAS-8-M5-NBR	36 135	VAS-8-M5-PUR	160 988	VAS-8-M5-SI
10	M5	173 440	VAS-10-M5-NBR	173 441	VAS-10-M5-PUR	173 442	VAS-10-M5-SI
15	G1/8	36 142	VAS-15-1/8-NBR	36 136	VAS-15-1/8-PUR	158 973	VAS-15-1/8-SI
30	G1/8	34 587	VAS-30-1/8-NBR	36 137	VAS-30-1/8-PUR	158 974	VAS-30-1/8-SI
40	G1/4	36 143	VAS-40-1/4-NBR	36 138	VAS-40-1/4-PUR	158 975	VAS-40-1/4-SI
55	G1/4	36 144	VAS-55-1/4-NBR	36 139	VAS-55-1/4-PUR	158 976	VAS-55-1/4-SI
75	G1/4	36 145	VAS-75-1/4-NBR	36 140	VAS-75-1/4-PUR	160 989	VAS-75-1/4-SI
100	G1/4	34 586	VAS-100-1/4-NBR	36 141	VAS-100-1/4-PUR	160 990	VAS-100-1/4-SI
125	G3/8	152 605	VAS-125-3/8-NBR	152 606	VAS-125-3/8-PUR	160 991	VAS-125-3/8-SI
Lateral outlet							
8	M5	–	–	12 612	VAS-8-M5-S	–	–
Free of copper, PTFE and silicone							
8	M5	183 508	VAS-8-M5-NBR-CT	183 511	VAS-8-M5-PUR-CT	–	–
15	G1/8	183 509	VAS-15-1/8-NBR-CT	183 512	VAS-15-1/8-PUR-CT	–	–
30	G1/8	183 510	VAS-30-1/8-NBR-CT	183 513	VAS-30-1/8-PUR-CT	–	–

Suction grippers

2.1

# Bellows suction cups VASB

Type code




Type	
VASB	Bellows suction cup

Suction cup Ø [mm]	
8	8
15	15
30	30
40	40
55	55
75	75
100	100
125	125

Connection sizes	
M5	M5 thread
1/8	G1/8 thread
1/4	G1/4 thread
3/8	G3/8 thread


Materials	
NBR	Nitrile rubber
PUR	Polyurethane
SI	Silicone


-  - Note  
Possible combinations can be found in the ordering data.

# Bellows suction cups VASB

Technical data



-  - Temperature range  
-20 ... +200 °C

-  - Diameter  
8 ... 125 mm



General technical data										
Suction cup ∅ [mm]	Design	Vacuum port	Type of mounting	Nominal size [mm]	Effective suction cup ∅ [mm]	Shore hardness	Breakaway force at 70% vacuum [N]	Weight		
								NBR [g]	PUR [g]	SI [g]
8	Vacuum port on top, round, bellows, 1.5 convolutions	M5	Screw-in thread	2	5.5	73	1.6	4	4	2
15		G1/8		3	12	73	7.9	11	11	6
30		G1/8		3	25	73	34	15	15	9
40		G1/4		4	32	73	56	30	30	16
55		G1/4		4	44	73	106	42	42	26
75		G1/4		4	60	73	197	95	95	53
100		G1/4		4	85	73	397	170	170	95
125		G3/8		7	105	73	606	207	194	194

Ambient conditions			
Variant	VAS-...-NBR	VAS-...-PUR	VAS-...-SI
Operating medium	Atmospheric air		
Ambient temperature [°C]	-20 ... +80	-20 ... +60	-40 ... +200
Corrosion resistance CRC <sup>1)</sup>	2		

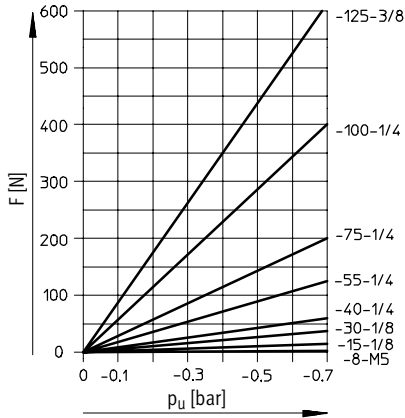
1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

# Bellows suction cups VASB

Technical data

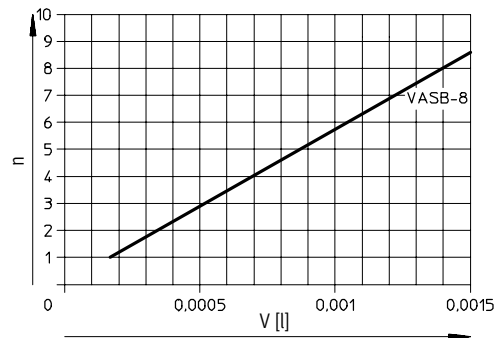


## Theoretical suction force F as a function of vacuum $p_u$

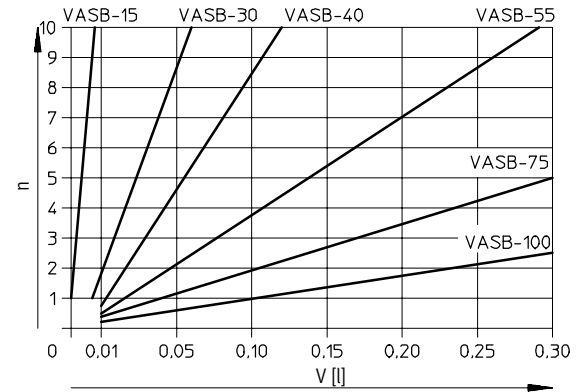


## Suction cup volume

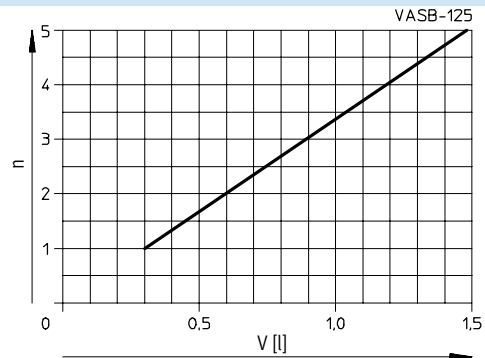
VASB-8



VASB-15 ... 100



VASB-125



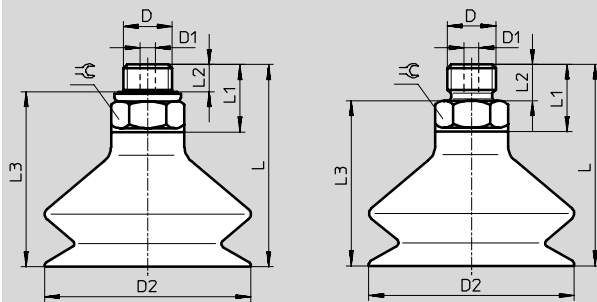
# Bellows suction cups VASB

Technical data

## Dimensions

VASB-...-NBR/VASB-...-PUR

VASB-...-SI



Type	D	D1 Ø	D2 Ø	L	L1	L2	L3	☞
<b>VASB-...-NBR</b>								
VASB-8-M5-NBR	M5	0.5	8	22.5	11.5	3.5	19	8
VASB-15-1/8-NBR	G1/8	3	15	25.5	12	4.7	20.8	13
VASB-30-1/8-NBR	G1/8	3	30	34	12	4.7	29.3	13
VASB-40-1/4-NBR	G1/4	4	40	43	16	5.8	37.2	17
VASB-55-1/4-NBR	G1/4	4	55	52	16	5.8	46.2	17
VASB-75-1/4-NBR	G1/4	4	75	43.5	16	5.8	37.7	17
VASB-100-1/4-NBR	G1/4	4	100	43.5	16	5.8	37.7	17
VASB-125-3/8-NBR	G3/8	7	125	60	20	6	54	19
<b>VASB-...-PUR</b>								
VASB-8-M5-PUR	M5	0.5	8	22.5	11.5	3.5	19	8
VASB-15-1/8-PUR	G1/8	3	15	25.5	12	4.7	20.8	13
VASB-30-1/8-PUR	G1/8	3	30	34	12	4.7	29.3	13
VASB-40-1/4-PUR	G1/4	4	40	43	16	5.8	37.2	17
VASB-55-1/4-PUR	G1/4	4	55	52	16	5.8	46.2	17
VASB-75-1/4-PUR	G1/4	4	75	43.5	16	5.8	37.7	17
VASB-100-1/4-PUR	G1/4	4	100	43.5	16	5.8	37.7	17
VASB-125-3/8-PUR	G3/8	7	125	60	20	6	54	19
<b>VASB-...-SI</b>								
VASB-8-M5-SI <sup>1)</sup>	M5	2	8	22.5	11.5	5	17.5	8
VASB-15-1/8-SI	G1/8	3	15	25.5	12	6.5	19	13
VASB-30-1/8-SI	G1/8	3	30	34	12	6.5	27.5	13
VASB-40-1/4-SI	G1/4	4	40	43	17	8	35	17
VASB-55-1/4-SI	G1/4	4	55	52	17	8	44	17
VASB-75-1/4-SI	G1/4	4	75	43.5	14	8	35.5	17
VASB-100-1/4-SI	G1/4	4	100	43.5	14	8	35.5	17
VASB-125-3/8-SI	G3/8	7	125	60	16.5	9	51	19

1) Sealing rings are not included in the scope of delivery.

# Bellows suction cups VASB

FESTO

Technical data

Ordering data							
Suction cup Ø [mm]	Screw-in thread	Nitrile rubber		Polyurethane		Silicone	
		Part No.	Type	Part No.	Type	Part No.	Type
8	M5	35 410	VASB-8-M5-NBR	35 417	VASB-8-M5-PUR	160 992	VASB-8-M5-SI
15	G1/8	35 411	VASB-15-1/8-NBR	35 418	VASB-15-1/8-PUR	158 977	VASB-15-1/8-SI
30	G1/8	35 412	VASB-30-1/8-NBR	35 419	VASB-30-1/8-PUR	158 978	VASB-30-1/8-SI
40	G1/4	35 413	VASB-40-1/4-NBR	35 420	VASB-40-1/4-PUR	158 979	VASB-40-1/4-SI
55	G1/4	35 414	VASB-55-1/4-NBR	35 421	VASB-55-1/4-PUR	158 980	VASB-55-1/4-SI
75	G1/4	35 415	VASB-75-1/4-NBR	35 422	VASB-75-1/4-PUR	160 993	VASB-75-1/4-SI
100	G1/4	35 416	VASB-100-1/4-NBR	35 423	VASB-100-1/4-PUR	160 994	VASB-100-1/4-SI
125	G3/8	152 609	VASB-125-3/8-NBR	152 610	VASB-125-3/8-PUR	160 995	VASB-125-3/8-SI
Free of copper, PTFE and silicone							
8	M5	183 514	VASB-8-M5-NBR-CT	183 517	VASB-8-M5-PUR-CT	-	
15	G1/8	183 515	VASB-15-1/8-NBR-CT	183 518	VASB-15-1/8-PUR-CT	-	
30	G1/8	183 516	VASB-30-1/8-NBR-CT	183 519	VASB-30-1/8-PUR-CT	-	

Suction grippers

2.1