

Suction cups VAS/VASB

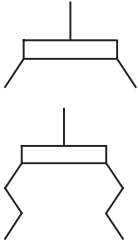


# Suction cups

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

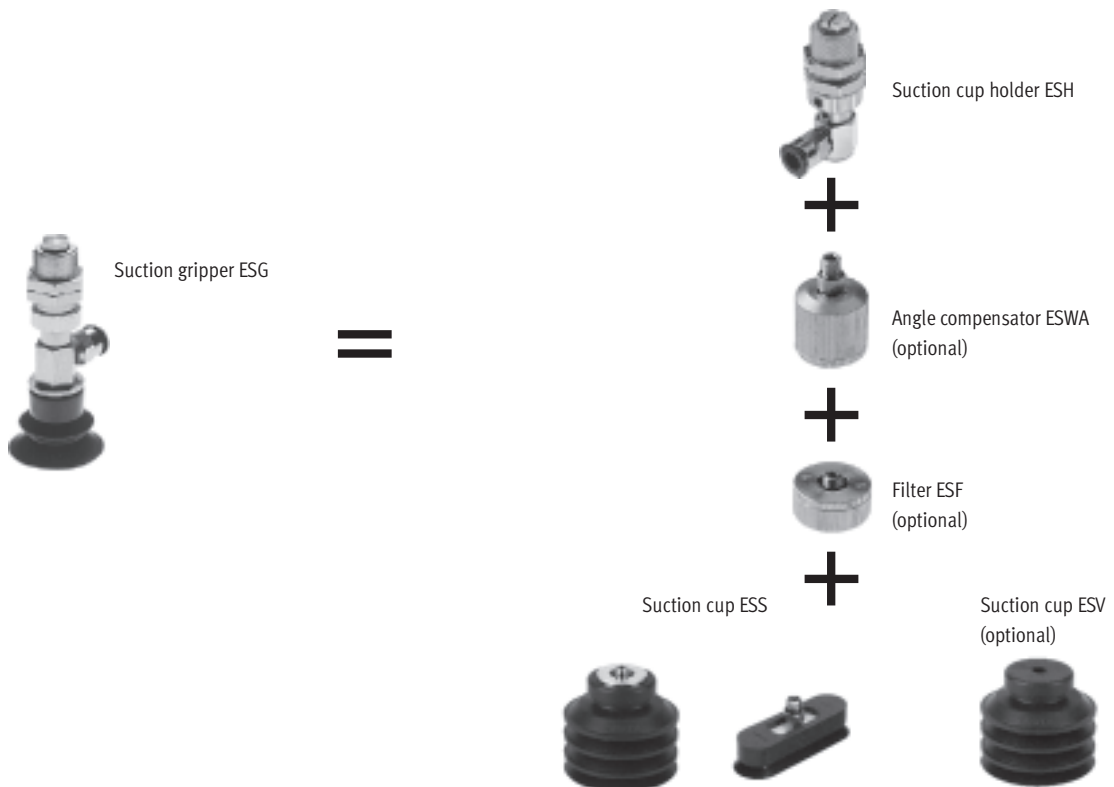
Technical data → Internet: esg

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 cups

Key features

FESTO

## Suction cups VAS/VASB

→ 6

Sturdy and reliable

- The ideal solution for the transport of workpieces of different weights, surfaces and shapes
- Choose from:
  - 12 suction cup diameters
  - 2 suction cup shapes: round and bellows design
  - 3 suction cup materials: nitrile rubber, polyurethane and silicone 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

Technical data → Internet: isv

- 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

Technical data → Internet: val

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



### Elbow fitting LJK

Technical data → Internet: ljk

- Redirection of air connection
- Swivel joint rotatable 360°



### Adapter AD

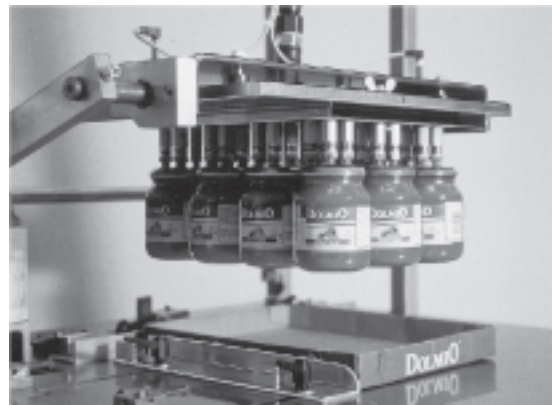
Technical data → Internet: ad

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



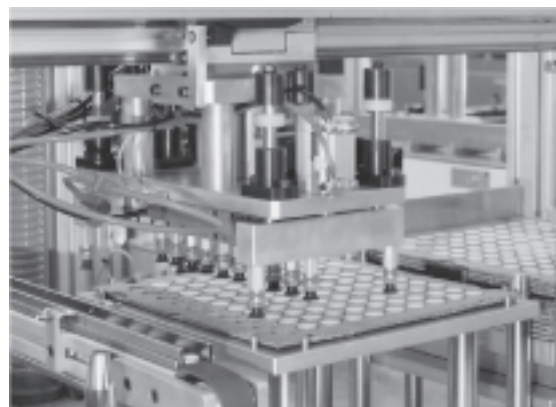
## Vacuum technology can be used in a wide range of applications

- 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

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Function



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

-  - Diameter  
1 ... 125 mm



General technical data									
Suction cup Ø [mm]	Vacuum port	Nominal size [mm]	Design	Type of mounting	Effective suction cup Ø [mm]	Breakaway force at 70% vacuum [N]	Weight		
							NBR [g]	PUR [g]	SI [g]
1	M3	0.4	Vacuum port on top, round, standard	Screw-in thread	0.8	0.035	1	-	-
2	M3	1			1.6	0.14	11	-	-
5	M5	1.5			4	0.9	2	-	-
8	M5 <sup>1)</sup>	2			5.5	1.6	4	4	2
10	M5	2			8	4.5	3	3	3
15	G1/8	3			12	7.9	11	11	6
30	G1/8	3			25	34	13	13	7
40	G1/4	4			32	56	26	27	13
55	G1/4	4			44	106	32	32	16
75	G1/4	4			60	197	76	78	36
100	G1/4	4			85	397	138	142	67
125	G3/8	7			105	606	152	148	148

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

Material designs – Suction cup			
Variant	VAS-...-NBR	VAS-...-PUR	VAS-...-SI
Shore hardness	73 (55±5) <sup>1)</sup>	62	60 ±5
Information on suction cup materials	NBR	TPE-U(PU)	VMQ (silicone)
Information on threaded plug materials	Die-cast zinc Brass <sup>2)</sup> Wrought aluminium alloy <sup>3)</sup>	Die-cast zinc Brass <sup>2)</sup> Wrought aluminium alloy <sup>3)</sup>	Wrought aluminium alloy
Note on materials	-		Contains paint wetting impairment substances

1) Value in brackets for suction cup-Ø 1 ... 5 mm

2) Only with suction cup with M5 vacuum port

3) Only with suction cup-Ø 125 mm

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		

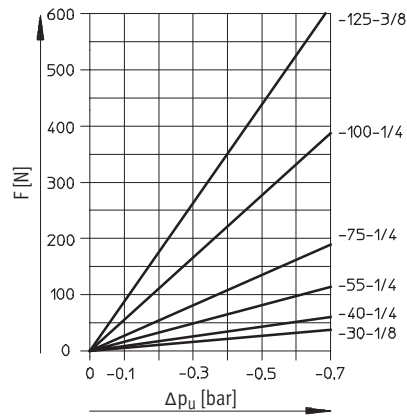
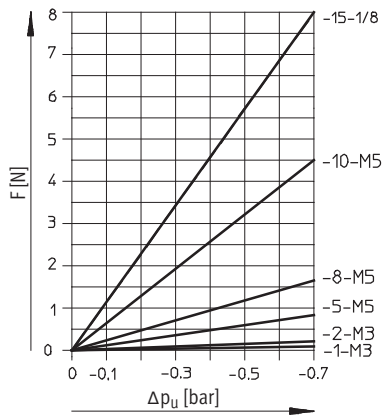
1) Corrosion resistance class 2 according to Festo standard 940 070

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

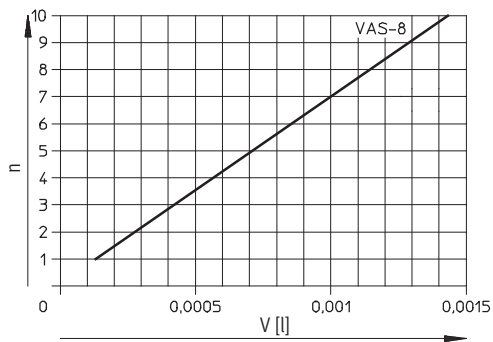
Technical data

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

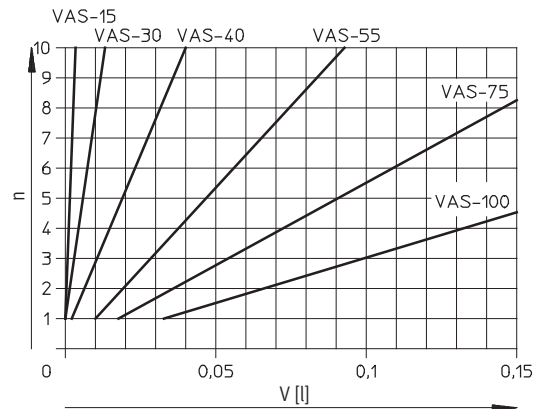


## Suction cup volume

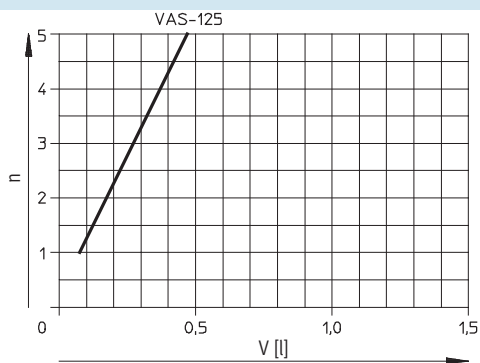
VAS-8



VAS-15 ... 100



VAS-125



# Suction cups VAS

Technical data

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Dimensions	VAS-8-M5-S	VAS-...-NBR/-PUR	VAS-...-SI
<p>1 Barbed fitting for 3 mm plastic tubing</p>	<p>2 Sealing ring</p>		

Type	D	D1 Ø	D2 Ø	L	L1	L2	L3	⊕
<b>VAS-...-NBR</b>								
VAS-1-M3-NBR <sup>1)</sup>	M3	0.9	1	7.4	5.8	4	3.4	4.5
VAS-2-M3-NBR <sup>1)</sup>	M3	1	2	9.8	5.8	4	5.8	4.5
VAS-5-M5-NBR	M5	1.5	5	16.5	10	3.5	13	8
VAS-8-M5-NBR	M5	2	8	19	11.3	3.5	15.5	8
VAS-10-M5-NBR	M5	2	10	19.2	11.5	3.5	15.7	8
VAS-15-1/8-NBR	G1/8	3	15	20.2	12	4.7	15.5	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	30.5	17	5.8	24.7	17
VAS-55-1/4-NBR	G1/4	4	55	28	17	6.2	21.8	17
VAS-75-1/4-NBR	G1/4	4	75	28	17	6.2	21.8	17
VAS-100-1/4-NBR	G1/4	4	100	28	17	6.2	21.8	17
VAS-125-3/8-NBR	G3/8	7	125	36	20	6.5	30	19
<b>VAS-...-PUR</b>								
VAS-8-M5-PUR	M5	2	8	19.7	12	4.3	15.5	8
VAS-10-M5-PUR	M5	2	10	19.2	11.5	3.5	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	29.5	17	6.2	23.3	17
VAS-55-1/4-PUR	G1/4	4	55	32.5	17	6.2	26.3	17
VAS-75-1/4-PUR	G1/4	4	75	28	17	6.2	21.8	17
VAS-100-1/4-PUR	G1/4	4	100	28	17	6.2	21.8	17
VAS-125-3/8-PUR	G3/8	7	125	36	20	8.2	27.8	19
<b>VAS-...-SI</b>								
VAS-8-M5-SI	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	173437	VAS-1-M3-NBR	–	–	–	–
2	M3	173438	VAS-2-M3-NBR	–	–	–	–
5	M5	173439	VAS-5-M5-NBR	–	–	–	–
8	M5	34588	VAS-8-M5-NBR	36135	VAS-8-M5-PUR	160988	VAS-8-M5-SI
10	M5	173440	VAS-10-M5-NBR	173441	VAS-10-M5-PUR	173442	VAS-10-M5-SI
15	G1/8	36142	VAS-15-1/8-NBR	36136	VAS-15-1/8-PUR	158973	VAS-15-1/8-SI
30	G1/8	34587	VAS-30-1/8-NBR	36137	VAS-30-1/8-PUR	158974	VAS-30-1/8-SI
40	G1/4	36143	VAS-40-1/4-NBR	36138	VAS-40-1/4-PUR	158975	VAS-40-1/4-SI
55	G1/4	36144	VAS-55-1/4-NBR	36139	VAS-55-1/4-PUR	158976	VAS-55-1/4-SI
75	G1/4	36145	VAS-75-1/4-NBR	36140	VAS-75-1/4-PUR	160989	VAS-75-1/4-SI
100	G1/4	34586	VAS-100-1/4-NBR	36141	VAS-100-1/4-PUR	160990	VAS-100-1/4-SI
125	G3/8	152605	VAS-125-3/8-NBR	152606	VAS-125-3/8-PUR	160991	VAS-125-3/8-SI
Lateral outlet							
8	M5	–	–	12612	VAS-8-M5-S	–	–

# Bellows suction cups VASB

Type code

FESTO


VASB - 30 - 1/8 - NBR

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

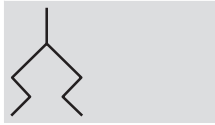
Materials	
NBR	Nitrile rubber
PUR	Polyurethane
SI	Silicone



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

# Bellows suction cups VASB

Technical data

Function



-  - Temperature range  
-20 ... +200 °C
-  - Diameter  
8 ... 125 mm



General technical data									
Suction cup Ø [mm]	Vacuum port	Nominal size [mm]	Design	Type of mounting	Effective suction cup Ø [mm]	Breakaway force at 70% vacuum [N]	Weight		
							NBR [g]	PUR [g]	SI [g]
8	M5	2	Vacuum port on top, round, bellows, 1.5 convolutions	Screw-in thread	5.5	1.6	4	4	2
15	G $\frac{1}{8}$	3			12	7.9	11	11	6
30	G $\frac{1}{8}$	3			25	34	15	15	9
40	G $\frac{1}{4}$	4			32	56	30	30	16
55	G $\frac{1}{4}$	4			44	106	42	42	26
75	G $\frac{1}{4}$	4			60	197	95	95	53
100	G $\frac{1}{4}$	4			85	397	170	170	95
125	G $\frac{3}{8}$	7			105	606	207	194	194

Material designs – Suction cup			
Variant	VASB-...-NBR	VASB-...-PUR	VASB-...-SI
Shore hardness	73	62	60 ±5
Information on suction cup materials	NBR	TPE-U(PU)	VMQ (silicone)
Information on threaded plug materials	Die-cast zinc Wrought aluminium alloy <sup>1)</sup>	Die-cast zinc Wrought aluminium alloy <sup>1)</sup>	Wrought aluminium alloy
Note on materials	-		Contains paint wetting impairment substances

1) Only with suction cup-Ø 125 mm

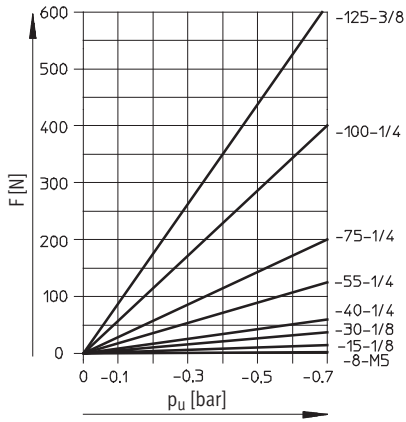
Ambient conditions			
Variant	VASB-...-NBR	VASB-...-PUR	VASB-...-SI
Operating medium	Atmospheric air		
Ambient temperature [°C]	-20 ... +80	-20 ... +60	-40 ... +200
Corrosion resistance CRC <sup>1)</sup>	2		

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

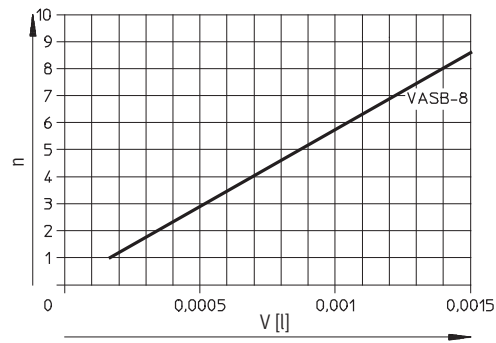
Technical data

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

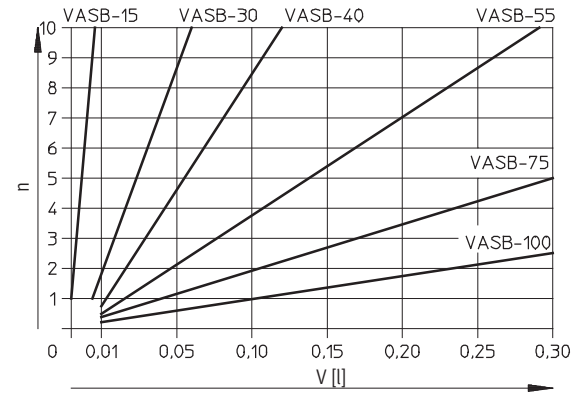


## Suction cup volume

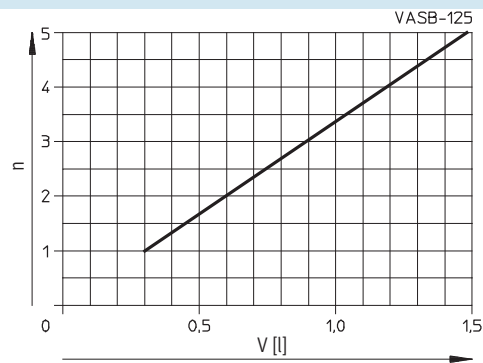
VASB-8



VASB-15 ... 100



VASB-125



# Bellows suction cups VASB

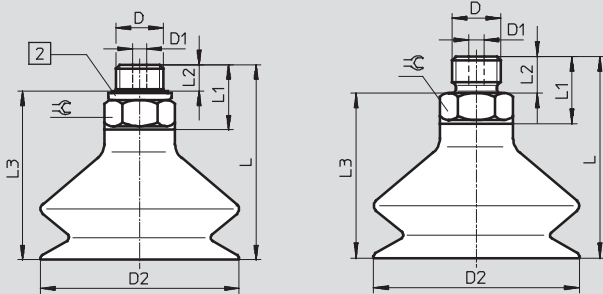
Technical data

FESTO

## Dimensions

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

VASB-...-SI



2) Sealing ring

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	17	5.8	37.2	17
VASB-55-1/4-NBR	G1/4	4	55	52	17	5.8	46.2	17
VASB-75-1/4-NBR	G1/4	4	75	43.5	17	5.8	37.7	17
VASB-100-1/4-NBR	G1/4	4	100	43.5	17	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	17	5.8	37.2	17
VASB-55-1/4-PUR	G1/4	4	55	52	17	5.8	46.2	17
VASB-75-1/4-PUR	G1/4	4	75	43.5	17	5.8	37.7	17
VASB-100-1/4-PUR	G1/4	4	100	43.5	17	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	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

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	35410	VASB-8-M5-NBR	35417	VASB-8-M5-PUR	160992	VASB-8-M5-SI
15	G $\frac{1}{8}$	35411	VASB-15- $\frac{1}{8}$ -NBR	35418	VASB-15- $\frac{1}{8}$ -PUR	158977	VASB-15- $\frac{1}{8}$ -SI
30	G $\frac{1}{8}$	35412	VASB-30- $\frac{1}{8}$ -NBR	35419	VASB-30- $\frac{1}{8}$ -PUR	158978	VASB-30- $\frac{1}{8}$ -SI
40	G $\frac{1}{4}$	35413	VASB-40- $\frac{1}{4}$ -NBR	35420	VASB-40- $\frac{1}{4}$ -PUR	158979	VASB-40- $\frac{1}{4}$ -SI
55	G $\frac{1}{4}$	35414	VASB-55- $\frac{1}{4}$ -NBR	35421	VASB-55- $\frac{1}{4}$ -PUR	158980	VASB-55- $\frac{1}{4}$ -SI
75	G $\frac{1}{4}$	35415	VASB-75- $\frac{1}{4}$ -NBR	35422	VASB-75- $\frac{1}{4}$ -PUR	160993	VASB-75- $\frac{1}{4}$ -SI
100	G $\frac{1}{4}$	35416	VASB-100- $\frac{1}{4}$ -NBR	35423	VASB-100- $\frac{1}{4}$ -PUR	160994	VASB-100- $\frac{1}{4}$ -SI
125	G $\frac{3}{8}$	152609	VASB-125- $\frac{3}{8}$ -NBR	152610	VASB-125- $\frac{3}{8}$ -PUR	160995	VASB-125- $\frac{3}{8}$ -SI