

Vacuum generator VAD, VAK

FESTO



Characteristics

At a glance

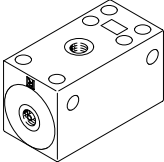
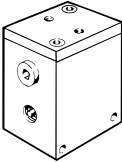
- Vacuum generators with sturdy aluminium housing for direct connection of a suction cup.
- Compressed air flowing from 1 to 3 generates a vacuum at port 2 in accordance with the ejector principle.
 - The low exhaust air noise during blowing can be further dampened by using a silencer in port 3.
 - Workpieces can be picked up in any position. When the compressed air is switched off, suction stops and the vacuum breaks down.
 - During suction with vacuum generator VAK, a volume of approx. 32 cubic centimetres is filled with compressed air. This creates an ejector pulse when the input pressure is switched off, reliably releasing the workpiece from the suction cup.
 - Max. switching frequency approx. 10 Hz at 6 bar and with approx. 1 m of suction line.

Diagrams Link [vad](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

Series

[VAD]	Vacuum generator	[VAK]	Vacuum generator with ejector pulse
	• Workpieces can be drawn in in any position • Sturdy and insensitive to external influences • No moving parts, maintenance-free • Connecting thread and mounting holes available		• Fast and reliable removal of drawn-in parts by pressure surges from the pre-filled volume • Sturdy construction • Optional silencer

Pneumatic connection

For individual fittings that are fastened via a female thread.

Type code

001	Series	
VAD	Vacuum generator	
VAK	Vacuum generator with ejector pulse	

002	Pneumatic connection	
1/8	Female thread G1/8	
1/4	Female thread G1/4	
3/8	Female thread G3/8	
M5	Female thread M5	

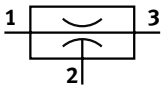
Datasheet

General technical data

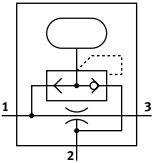
Pneumatic connection, port 1	M5	G1/8	G1/4	G3/8
Pneumatic connection, port 3	M5	G1/8	G1/4	G3/8
Vacuum connection	M5	G1/8	G1/4	G3/8
Nominal size, Laval nozzle	0.5 mm	0.8 mm	1 mm	1.5 mm
Integrated function ¹⁾	–		Ejector pulse, pneumatic	–
Type of mounting	With through-hole			
Design	T-shape			
Ejector characteristic	High vacuum			
Max. vacuum	80%			
Mounting position	optional			

1) Only applies to VAK

Function – without ejector pulse (VAD)



Function – with ejector pulse (VAK)



Operating and environmental conditions

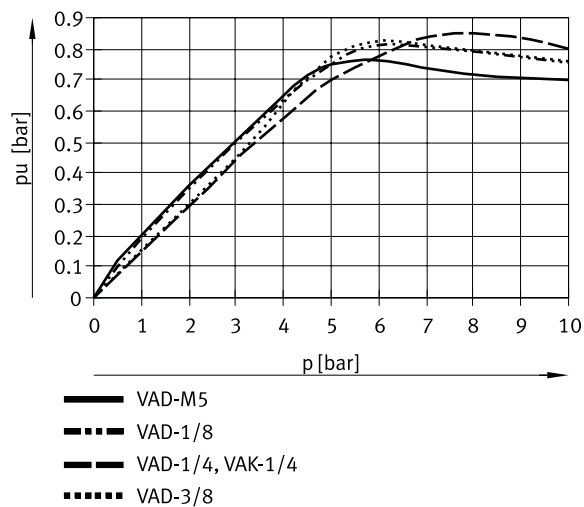
Operating pressure	1.5 ... 10 bar
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	-20 ... 80°C
Media temperature	-20 ... 80°C

Materials

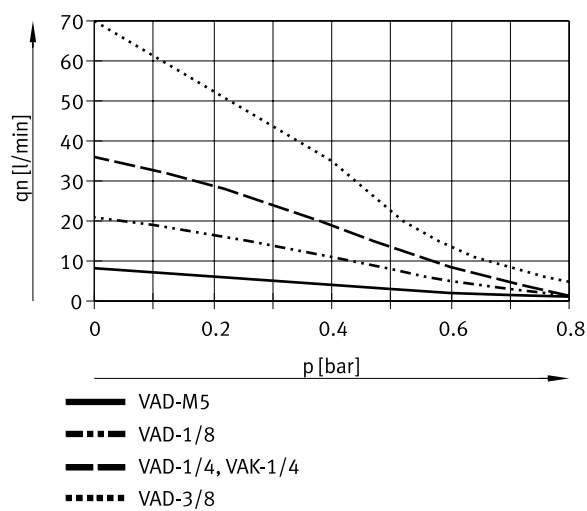
Material housing	Die-cast aluminium
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Datasheet

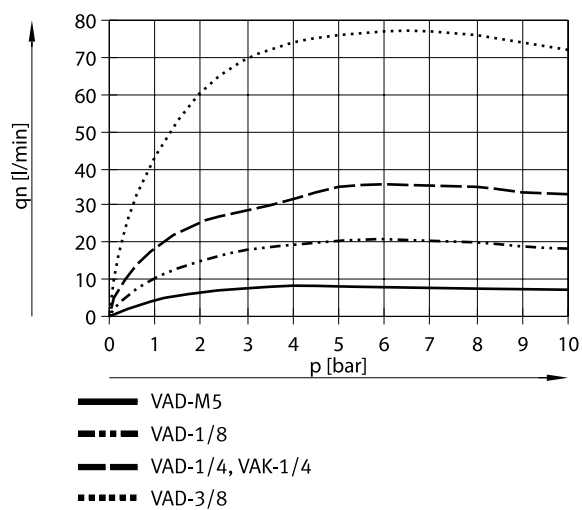
Vacuum Δp as a function of operating pressure p



Suction capacity q_n as a function of vacuum p

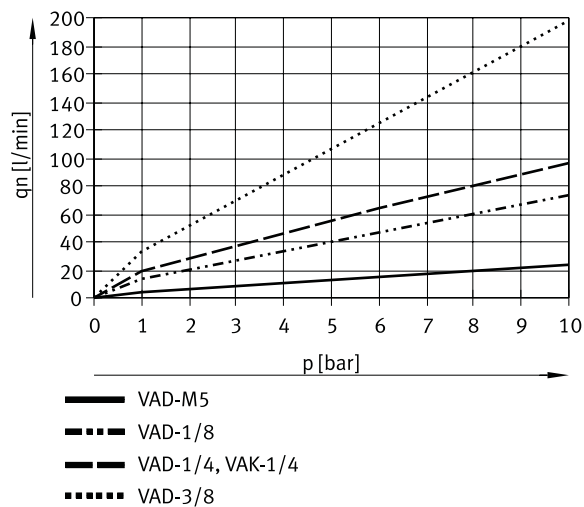


Suction capacity q_n as a function of operating pressure p

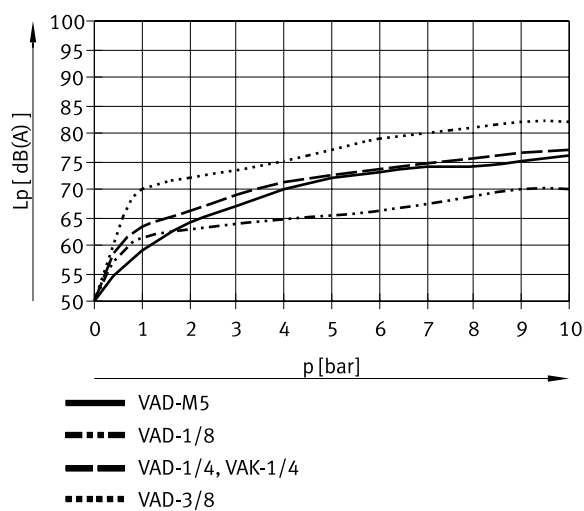


Datasheet

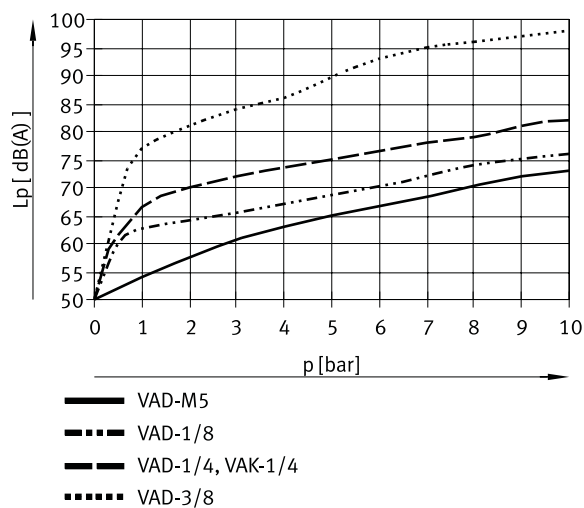
Air consumption q_n as a function of operating pressure p



Sound pressure level L_p as a function of operating pressure p (with silencer)

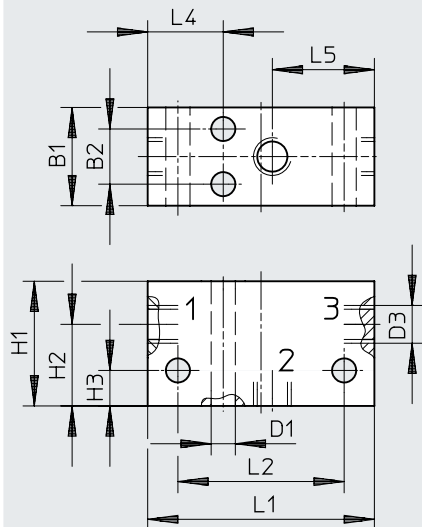


Sound pressure level L_p as a function of operating pressure p (without silencer)



Dimensions

Dimensions – VAD-M5

[Download CAD data](#) www.festo.com


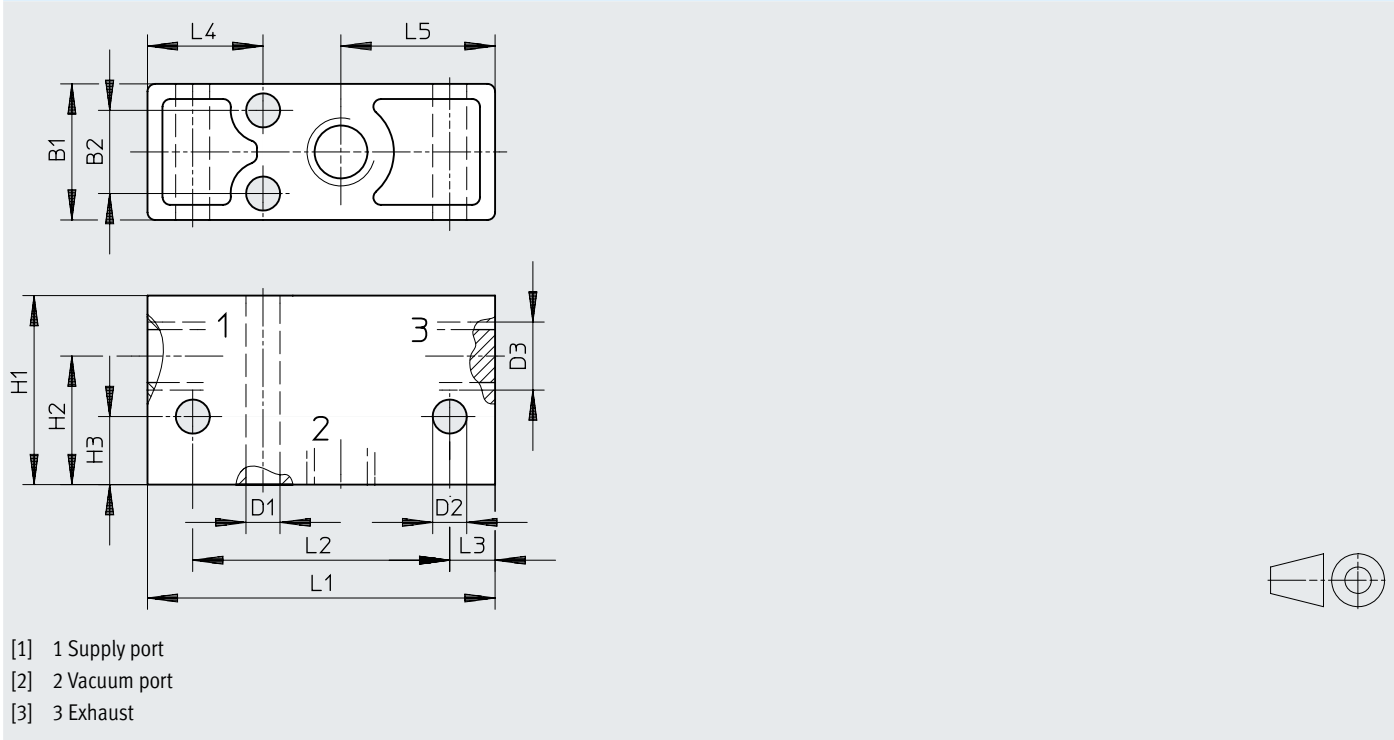
- [1] 1 Supply port
- [2] 2 Vacuum port
- [3] 3 Exhaust



	B1	B2	D1 Ø	D3	H1	H2	H3	L1	L2	L4	L5
VAD-M5	13	7,3	3,2	M5	16,5	10,8	4,7	30	22	10	13,5

Dimensions

Dimensions – VAD-1/8 Download CAD data www.festo.com

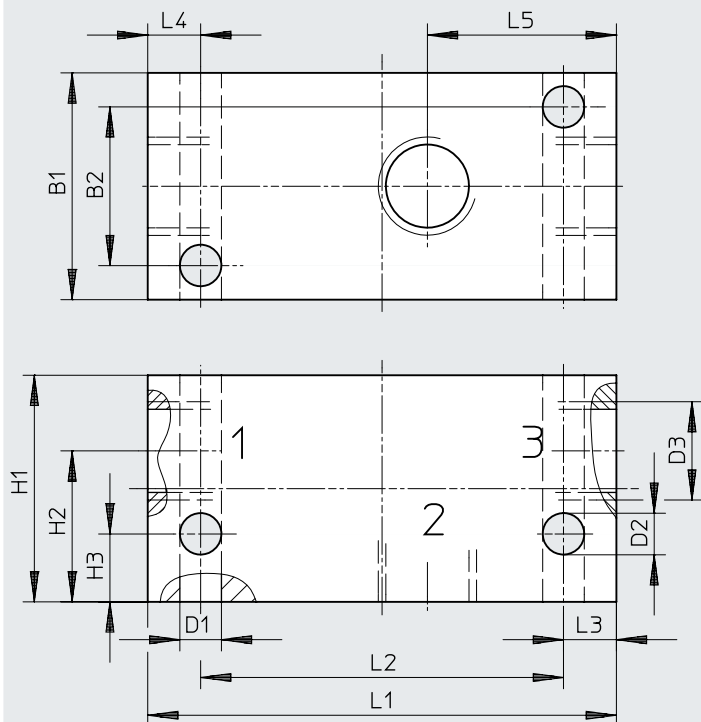


	B1	B2	D1 Ø	D2 Ø	D3	H1	H2	H3	L1	L2	L3	L4	L5
VAD-1/8	18	11	4,5	4,5	G1/8	25	17	9	46	34	6	15,3	20,4

Dimensions

Dimensions – VAD-1/4

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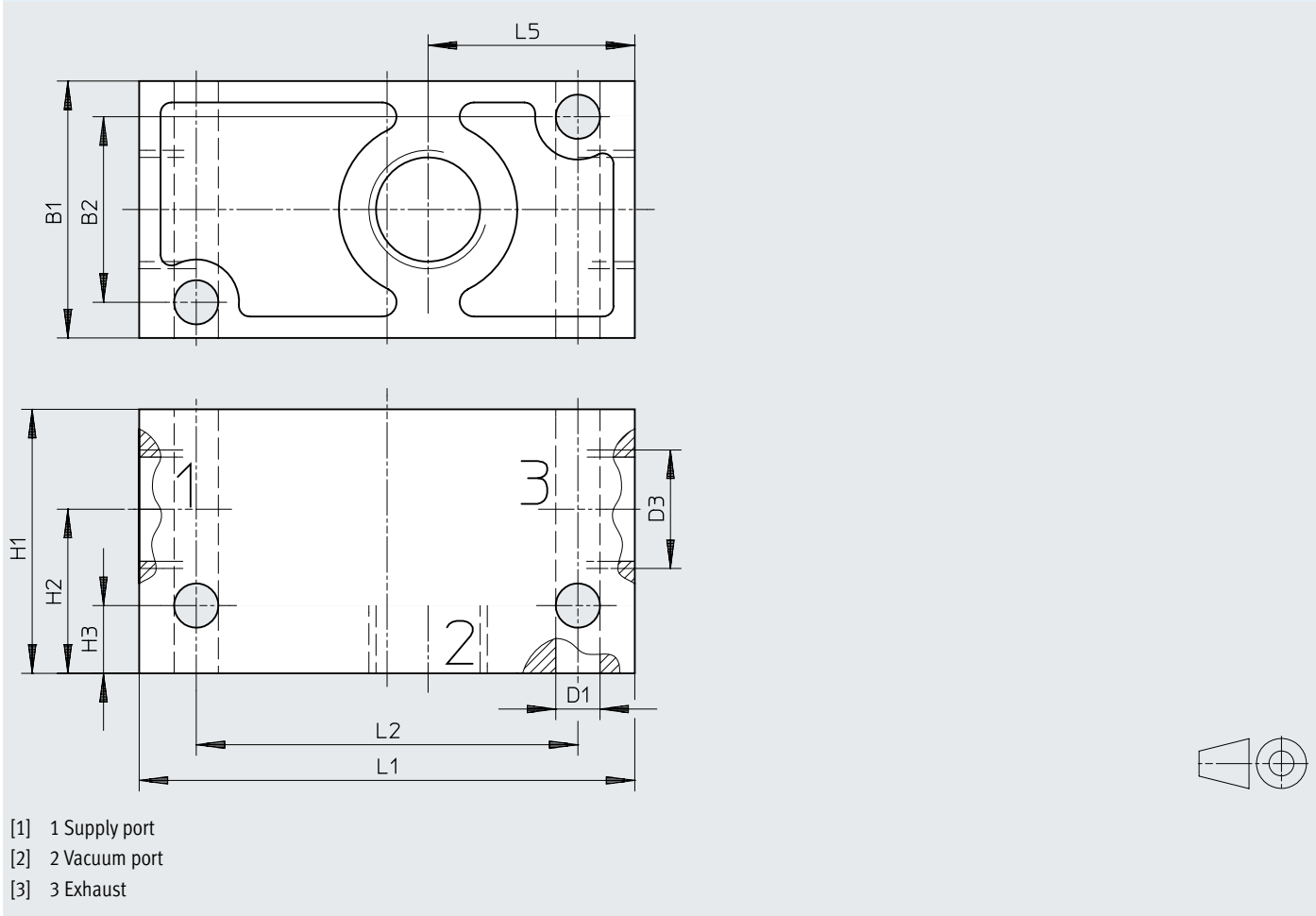
- [1] 1 Supply port
- [2] 2 Vacuum port
- [3] 3 Exhaust



	B1	B2	D1 Ø	D2 Ø	D3	H1	H2	H3	L1	L2	L3	L4	L5
VAD-1/4	30	21	5,5	5,5	G1/4	30	20	9	62	48	7	7	25

Dimensions

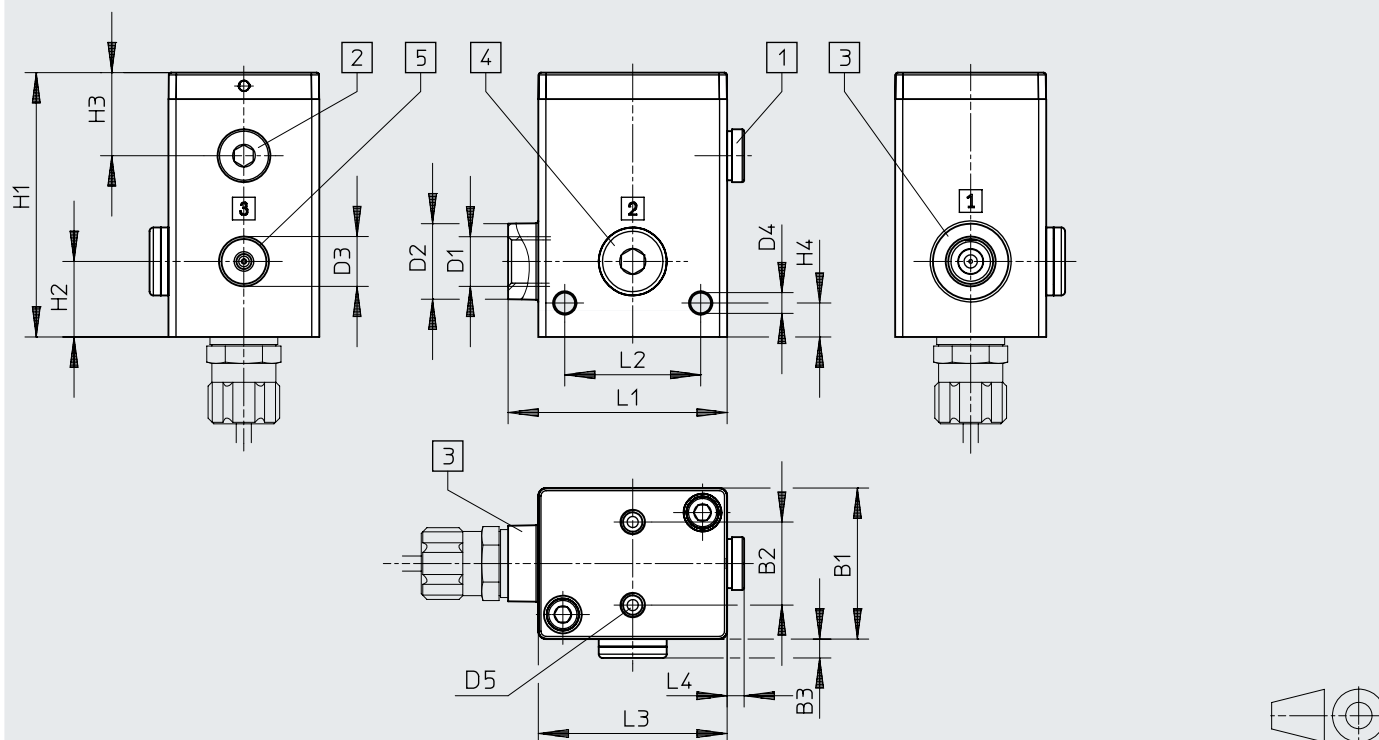
Dimensions – VAD-3/8 Download CAD data www.festo.com



	B1	B2	D1 Ø	D3	H1	H2	H3	L1	L2	L5
VAD-3/8	36	26	6,2	G3/8	37	23	9,5	69,5	53,5	29

Dimensions

Dimensions – VAK-1/4

Download CAD data www.festo.com

- [1] Alternative connection 2
- [2] Connection for additional volume
- [3] 1 Supply port
- [4] 2 Vacuum port
- [5] 3 Exhaust

	B1	B2 ±0,1	B3	D1	D2 Ø	D3	D4 Ø	D5	H1	H2	H3	H4 ±0,1	L1	L2 ±0,1	L3	L4
VAK-1/4	40	22	5	G1/4	20	G1/4	5,5	M6	70	~20	22	9	58	36	50	4,5

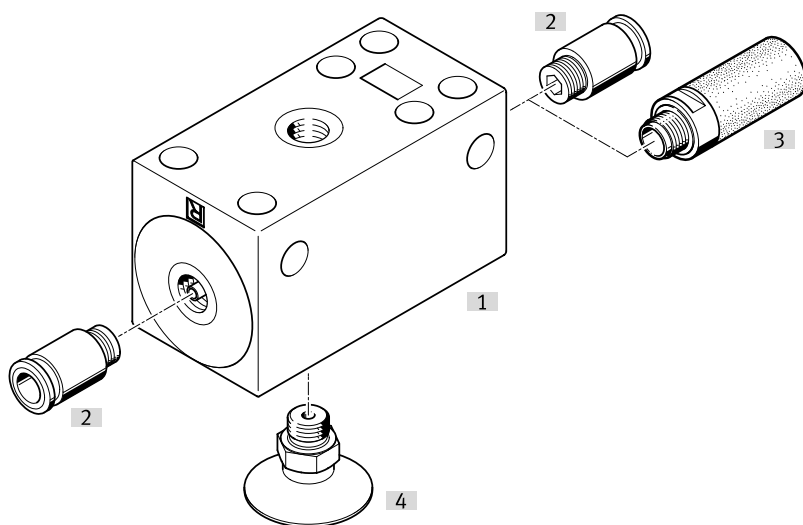
Ordering data

Ordering data – Without ejector pulse				
	Pneumatic connection, port 1	Nominal size, Laval nozzle	Part no.	Type
	M5	0.5 mm	19293	VAD-M5
	G1/8	0.8 mm	14015	VAD-1/8
	G1/4	1 mm	9394	VAD-1/4
	G3/8	1.5 mm	19294	VAD-3/8

Ordering data – With ejector pulse				
	Pneumatic connection, port 1	Nominal size, Laval nozzle	Part no.	Type
	G1/4	1 mm	6890	VAK-1/4

Peripherals

Peripherals overview



Accessories		→ Link
Type/order code	Description	
[1] Vacuum generator VAD		vad
[2] Push-in fitting QS		qs
[3] Silencers U/UC		u
[4] Suction cups VAS/VASB		vas
Suction gripper ESG	Not shown	esg
Suction cup holder ESH	Not shown	esh
Suction cup with connection ESS	Not shown	ess