



- Simple, compact, robust design
- Quick and reliable setting down of parts via an ejector pulse from a pre-filled reservoir
- 4 nominal sizes:
0.5 ... 1.5 mm
- No wearing parts
- Free of copper and PTFE

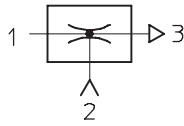
Vacuum generators

Key features

FESTO

Product overview

Vacuum generator



All Festo vacuum generators have a single-stage design and operate according to the venturi principle. The product families described below

have been designed for a wide range of applications. The different performance classes of the individual

product families make it possible to select vacuum generators tailored to suit specific requirements.

Standard and inline ejectors

VN-...

Technical data → Internet: vn



- Nominal size
0.45 ... 3 mm
- Max. vacuum
93%
- Temperature range
0 ... +60 °C
- A range of extremely effective generators suitable for use directly in the workplace
- Available as straight or T-shaped housing
- Low space requirement
- Low-cost
- No wearing parts
- Extremely fast evacuation time
- Vacuum switch (optional)
- Optional with additional functions:
 - integrated eject pulse
 - electric control for vacuum ON/OFF
 - combination of eject pulse and control

VAD-.../VAK-...

→ 6



- Nominal size
0.5 ... 1.5 mm
- Max. vacuum
80%
- Temperature range
-20 ... +80 °C
- Range of vacuum generators with sturdy aluminium casing
- VAK-...: Built-in reservoir
- VAD-...: Connection for additional external reservoir
- Maintenance-free
- VAK-...: Reliable setting down of workpieces

Vacuum generators

Key features

FESTO

Compact ejectors

VADM-...VADMI-...

Technical data → Internet: vadm



- Nominal size
0.45 ... 3 mm
- Max. vacuum
84%
- Temperature range
0 ... +60 °C
- Compact design
- Minimal installation work required
- Short response times
- Built-in solenoid valve (on/off)
- VADMI-...: Additional built-in solenoid valve for ejector pulse
- Filter with display
- Air-saving circuit (optional)
- Vacuum switch (optional)
- Reliable setting down of workpieces

VAD-M-.../VAD-M-I-...

Technical data → Internet: vad-m



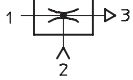
- Nominal size
0.7 ... 2 mm
- Max. vacuum
85%
- Temperature range
0 ... +40 °C
- Compact design
- Minimal installation work required
- Short response times
- Built-in solenoid valve (on/off)
- VAD-M-I-...: Additional built-in solenoid valve for ejector pulse
- Reliable setting down of workpieces

Vacuum generators VAD/VAK

Key features

FESTO

At a glance



- Vacuum generation via ejector principle
- Mounting holes in metal housing
- Connecting thread for the suction cup

Compressed air flowing from 1 to 3 generates a vacuum at port 2 in accordance with the ejector principle.

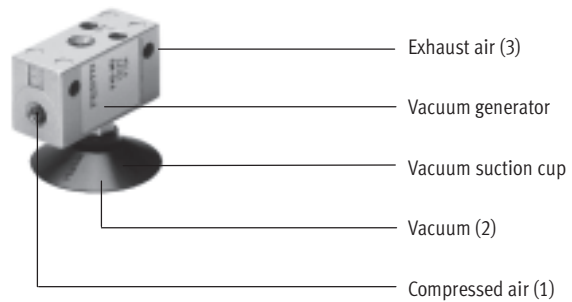
The low noise levels which occur during exhaust can be further reduced with a silencer at port 3.

Workpieces can be picked up in any position. When the compressed air is turned off, the suction process ends and the vacuum dissipates. During the suction process, the vacuum generator VAK fills a reservoir of approx. 32 cm³ with compressed

air, which creates an ejector pulse when the input pressure is switched off and reliably releases the workpiece from the suction cup. Max. switching frequency approx. 10 Hz at 6 bar and with approx. 1 m suction line.

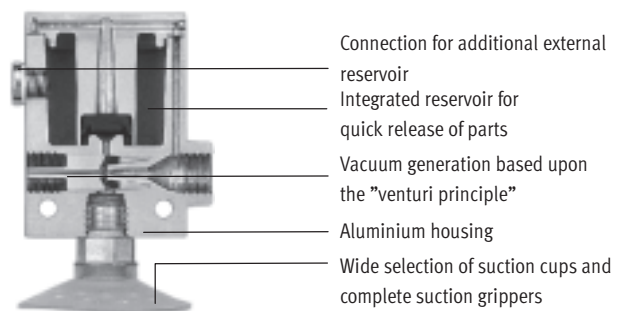
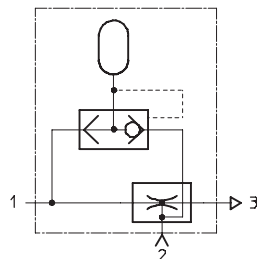
Vacuum generator VAD-... without ejector pulse

- Workpieces can be picked up in any position.
- Sturdy and resistant to environmental factors
- Easy to install
- No moving parts, maintenance-free
- Connecting threads and mounting holes available



Vacuum generator VAK-... with ejector pulse

- Quick and reliable setting down of parts via an ejector pulse from a pre-filled reservoir
- Robust vacuum generator for a broad field of applications
- Optional silencer

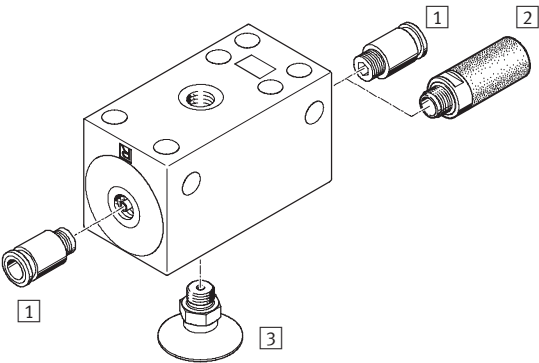


Vacuum generators VAD/VAK

Peripherals overview and type codes



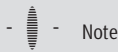
Peripherals overview



Mounting attachments and accessories		→ Page/Internet
1	Push-in fitting QS	qs
2	Silencer U/UC	u
3	Suction cups VAS/VASB	vas
–	Suction gripper ESG	esg
–	Suction cup holder ESH	esh
–	suction cup ESS	ess

Type codes

		VAD	–	M5
Type				
VAD	Vacuum generator			
VAK	Vacuum generator			
Connection sizes				
M5	Thread M5			
1/8	Thread G1/8			
1/4	Thread G1/4			
3/8	Thread G3/8			



Note

Possible combinations can be found in the ordering data.

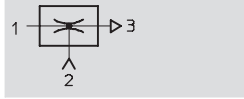
Vacuum generators VAD/VAK

FESTO


Technical data

Function

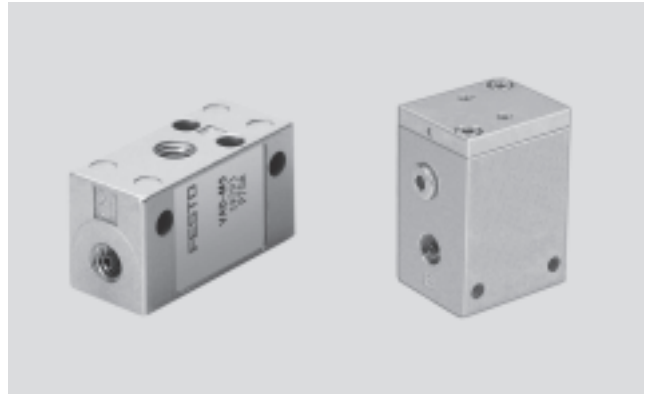
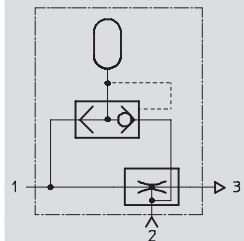
VAD-...



-  - Temperature range
-20 ... +80 °C

-  - Operating pressure
1.5 ... 10 bar

VAK-...



General technical data						
Type	VAD-...				VAK-...	
Size	M5	G1/8	G1/4	G3/8	G1/4	
Design	Block-shaped					
Operating medium	Lubricated and unlubricated compressed air					
Mounting position	Any					
Ejector features	High vacuum					
Type of mounting	Via through-holes					
Pneumatic connection	M5	G1/8	G1/4	G3/8	G1/4	
Nominal size of laval nozzle	[mm]	0.5	0.8	1.0	1.5	1.0
Max. vacuum	[%]	80				
Operating pressure	[bar]	1.5 ... 10				

Ambient conditions		VAD/VAK
Variant		
Ambient temperature	[°C]	-20 ... +80
Corrosion resistance	CRC ¹⁾	2
Note on material	Free of copper, PTFE and silicone	

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.

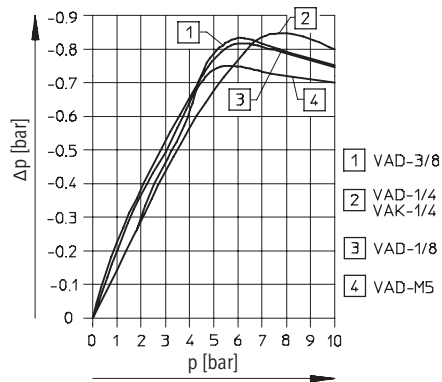
Weights [g]					
Type	VAD-...				VAK-...
Size	M5	G1/8	G1/4	G3/8	G1/4
VAD-.../VAK-...	14	40	90	155	265

Vacuum generators VAD/VAK

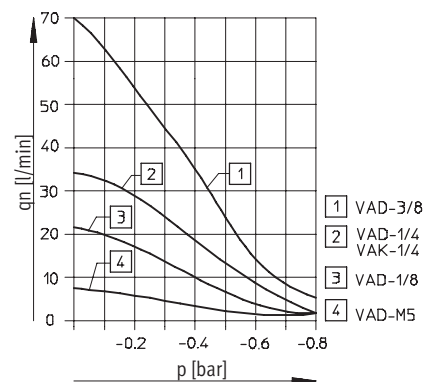
Technical data

FESTO

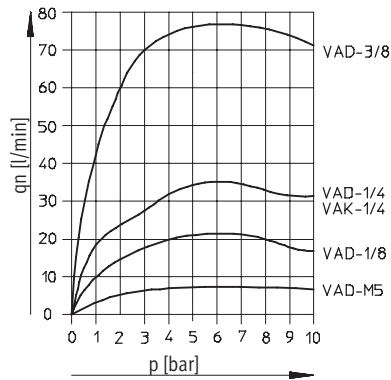
Vacuum Δp as a function of operating pressure p



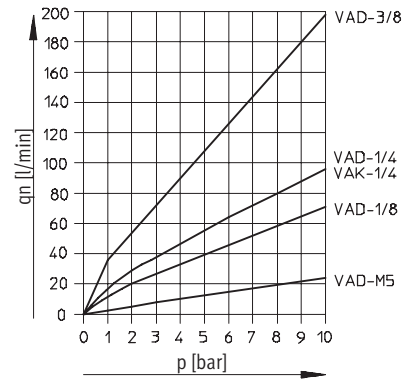
Suction capacity q_n as a function of vacuum p



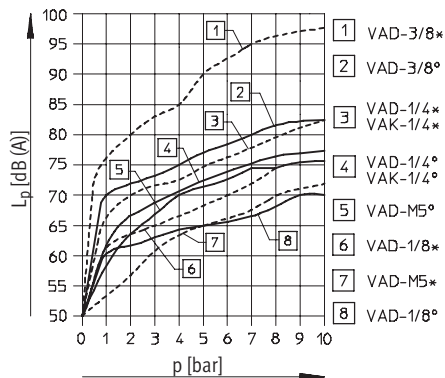
Suction capacity q_n as a function of operating pressure p



Air consumption q_n as a function of operating pressure p



Noise level L_p as a function of operating pressure p



* = without silencer; ° = with silencer

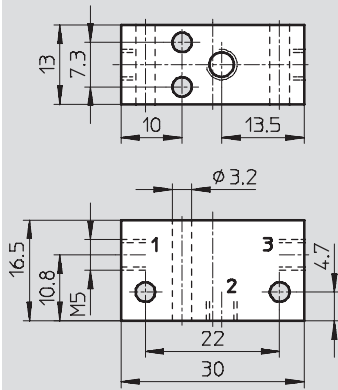
Vacuum generators VAD/VAK

Technical data

FESTO

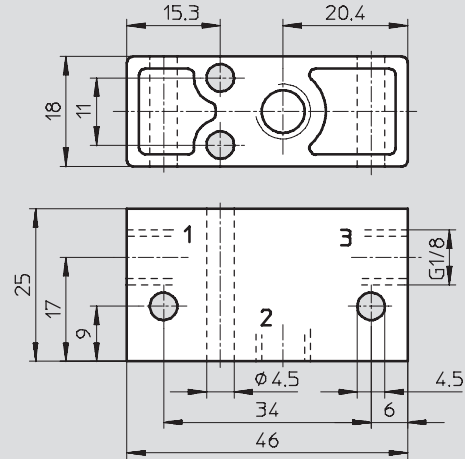
Dimensions

VAD-M5

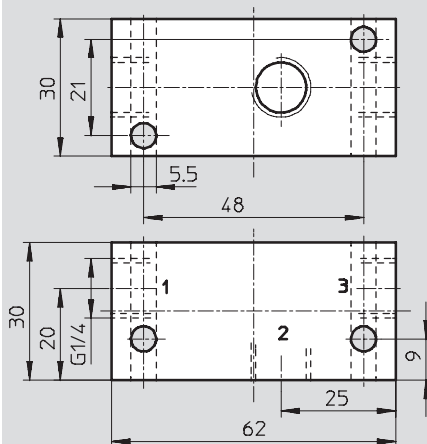


- 1 Compressed air connection
- 2 Vacuum port
- 3 Exhaust

VAD-1/8

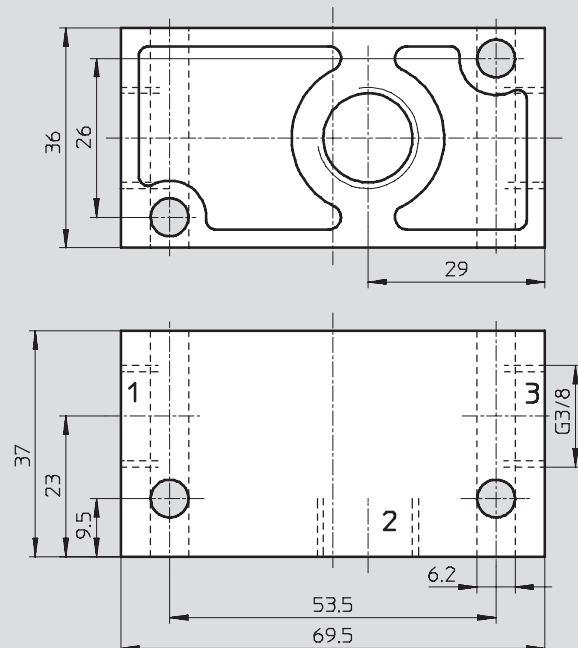


VAD-1/4



- 1 Compressed air connection
- 2 Vacuum port
- 3 Exhaust

VAD-3/8



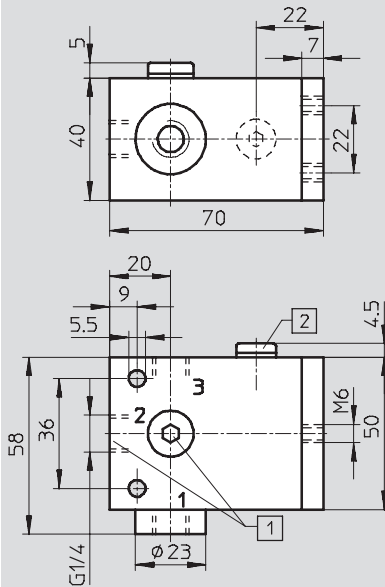
Vacuum generators VAD/VAK

Technical data

FESTO

Dimensions

VAK-1/4



- 1 Alternative connection 2
- 2 Connection for additional reservoir

- 1 Compressed air connection
- 2 Vacuum port
- 3 Exhaust

Response time [s] as a function of vacuum [bar] at 6 bar operating pressure and 1 l volume

Type	Vacuum			
	0.2	0.4	0.6	0.8
VAD-M5				
Evacuation	1.3	3.53	8.18	26.6 ¹⁾
Air supply	2.8	3.8	4.65	5.45
VAD-1/8				
Evacuation	0.51	1.38	3.41	11.67
Air supply	0.89	1.3	1.64	1.98
VAD-1/4				
Evacuation	0.29	0.745	1.69	4.04 ¹⁾
Air supply	0.61	0.89	1.12	1.32
VAD-3/8				
Evacuation	0.142	0.35	0.817	2.72
Air supply	0.265	0.372	0.46	0.536 ¹⁾
VAK-1/4				
Evacuation	0.29	0.745	1.69	4.04 ¹⁾
Air supply	0.61	0.89	1.12	1.32

1) At 0.75 bar vacuum.

Ordering data

Pneumatic connection	Part No.	Type
Without ejector pulse		
M5	19 293	VAD-M5
G1/8	14 015	VAD-1/8
G1/4	9 394	VAD-1/4
G3/8	19 294	VAD-3/8
With ejector pulse		
G1/4	6 890	VAK-1/4