Vacuum generators VAD/VAK

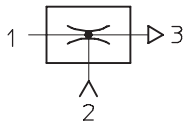
FESTO

Vacuum generators

Key features

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-... Datenblätter ➔ 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 / 1.1-6

- 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

Compact ejectors

VADM-...VADMI-... Datenblätter ➔ 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-... Datenblätter ➔ Internet: vad-m

- Nominal size
  0.7 ... 2 mm
- Max. vacuum
  85%
- Temperature range
  0 ... +40 °C

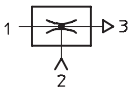
- Compact design
- Minimal installation work required
- Short response times
- Built-in solenoid valve (on/off)

- VAD-M-I-...: Additional built-in solenoid valve for ejector pulse
- Reliable setting down of workpieces

Vacuum generators VAD/VAK

Key features

At a glance



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

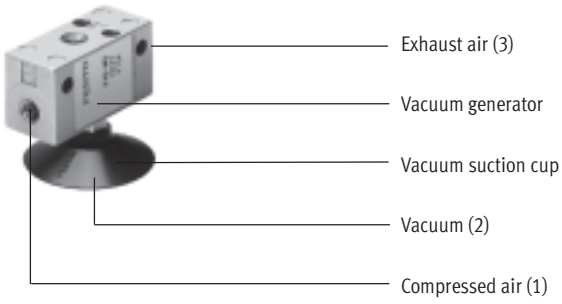
Compressed air flowing from 1 to 3 generates a vacuum at port 2 in accordance with the ejector principle.

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 cm^3 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.

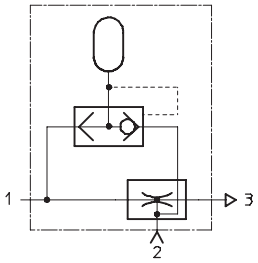
Vacuum generator VAD-... without ejector pulse

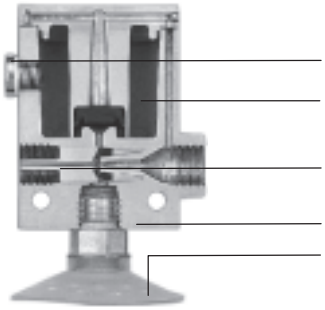
- Workpieces can be picked up in any position.
- Sturdy and resistant to environmental factors
- Easy to install
- No moving parts, maintenance-free
- Connecting threads and mounting holes available



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

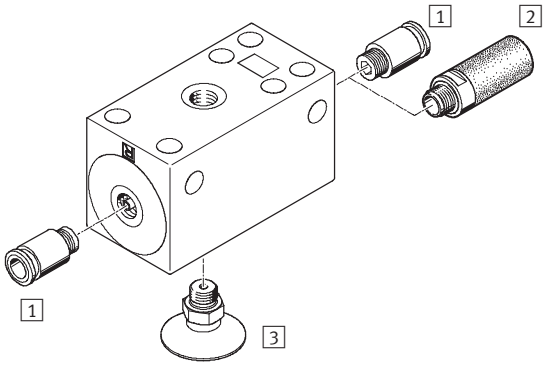




Vacuum generators VAD/VAK

Peripherals overview and type codes

Peripherals overview



Mounting attachments and accessories		➔ Seite/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.

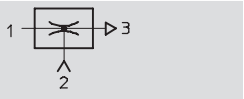
Vacuum generators VAD/VAK

Technical data

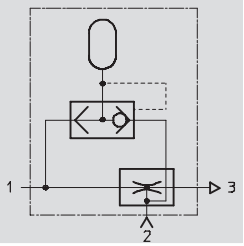
FESTO

Function

VAD-...



VAK-...



Temperature range
–20 ... +80 °C

Operating pressure
1.5 ... 10 bar

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

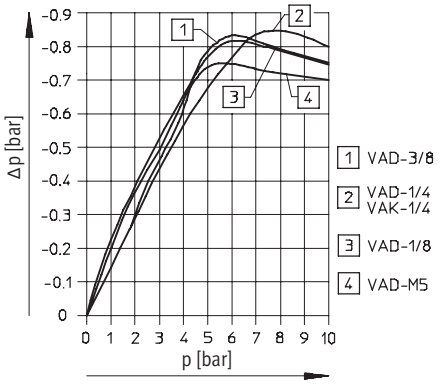
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

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

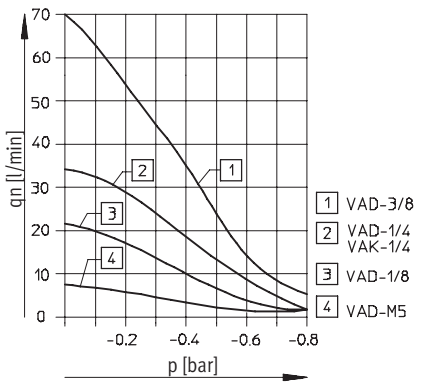
Vacuum generators VAD/VAK

Technical data

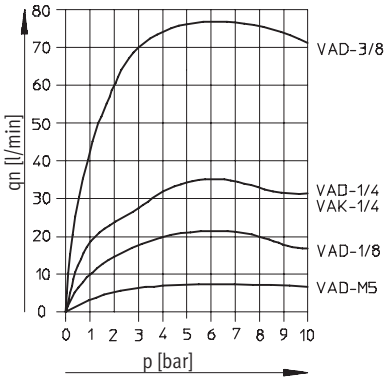
Vacuum Δp as a function of operating pressure p



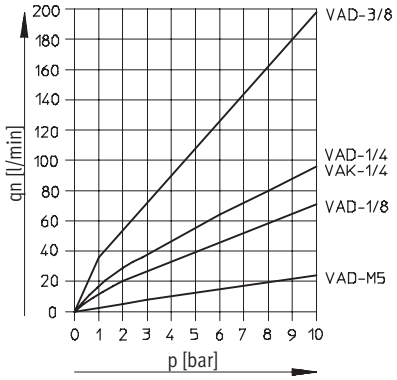
Suction capacity qn as a function of vacuum p



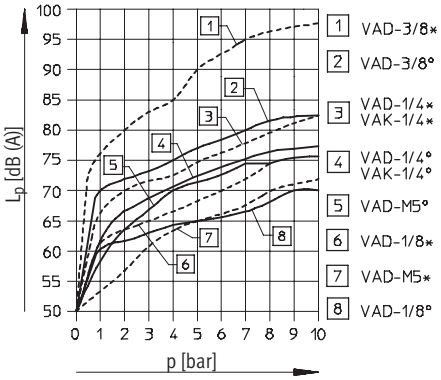
Suction capacity qn as a function of operating pressure p



Air consumption qn as a function of operating pressure p



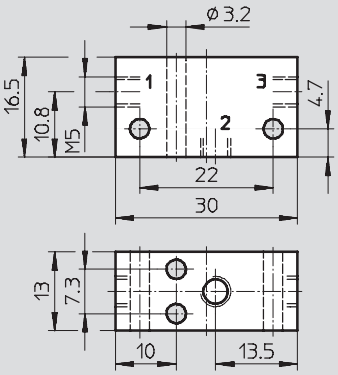
Noise level L_p as a function of operating pressure p



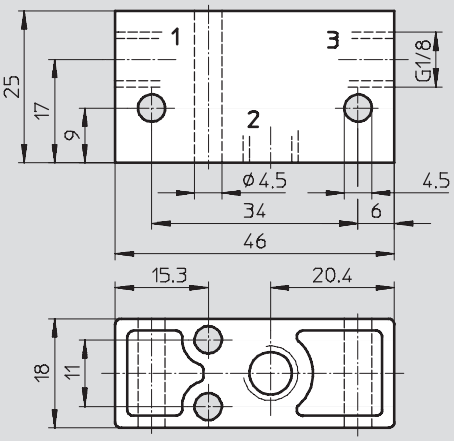
* = without silencer; ° = with silencer

Dimensions

VAD-M5

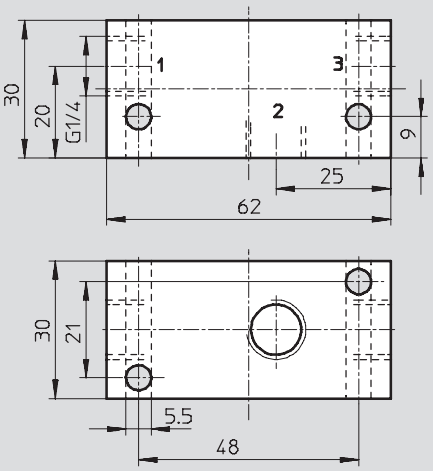


VAD-⅛

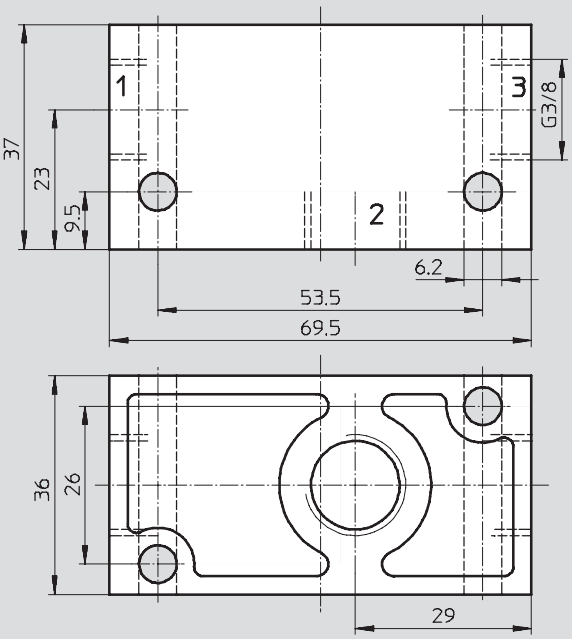


1 Compressed air connection
2 Vacuum port
3 Exhaust

VAD-¼



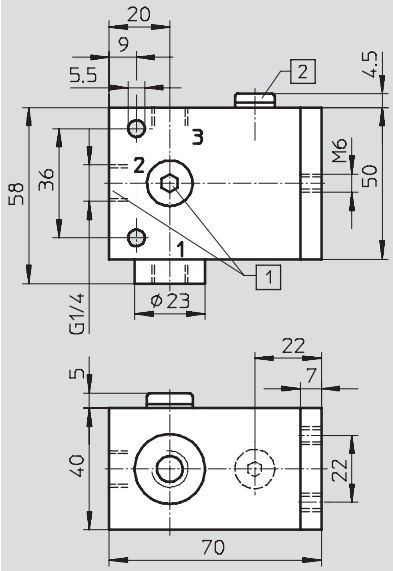
VAD-⅜



1 Compressed air connection
2 Vacuum port
3 Exhaust

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**

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A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.

Custom Automation Components
Complete custom engineered solutions

Custom Control Cabinets
Comprehensive engineering support and on-site services

Complete Systems
Shipment, stocking and storage services

The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.

Electromechanical
Electromechanical actuators, motors, controllers & drives

Pneumatics
Pneumatic linear and rotary actuators, valves, and air supply

PLCs and I/O Devices
PLC's, operator interfaces, sensors and I/O devices

Supporting Advanced Automation... As No One Else Can!
Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.

9001: CERTCC5-16248-2006-AQ-ESN-TGA
ISO 9001
ISO 14001
DNV
Certified Company
14001: CERTCC5-16248A-2006-AQ-ESN-TGA

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