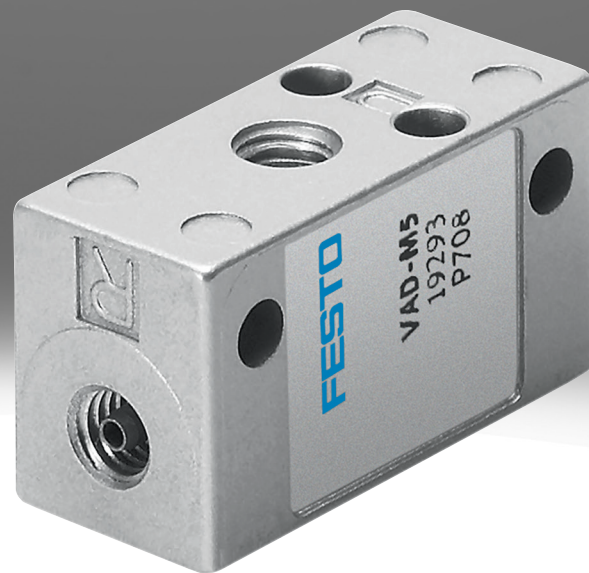


Vacuum generator VAD, VAK

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

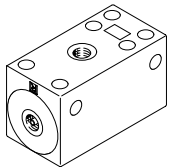
[Link](#) [vad](#)



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

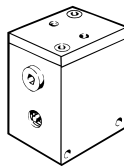
Series

[VAD] Vacuum generator



- 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

[VAK] Vacuum generator with ejector pulse



- 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 |
|-----|----------------------|
| M5 | Female thread M5 |
| 1/8 | Female thread G1/8 |
| 1/4 | Female thread G1/4 |
| 3/8 | Female thread G3/8 |

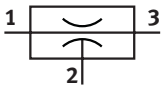
Datasheet

General technical data

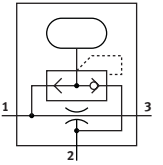
| | | | | |
|-----------------------------------|-------------------|--------|--------------------------|--------|
| Pneumatic connection, port 1 | M5 | G1/8 | G1/4 | G3/8 |
| Pneumatic connection, port 3 | M5 | G1/8 | G1/4 | G3/8 |
| Vacuum connection | M5 | G1/8 | G1/4 | G3/8 |
| Nominal size, Laval 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

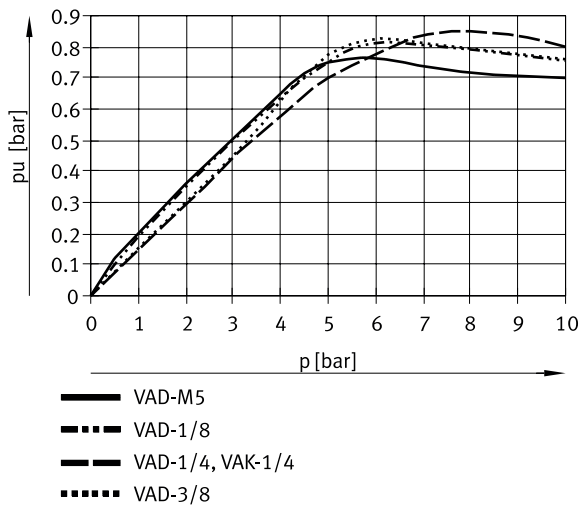
| | |
|------------------------------------|--|
| Operating pressure | 1.5 ... 10 bar |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on operating and pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) |
| Ambient temperature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

Materials

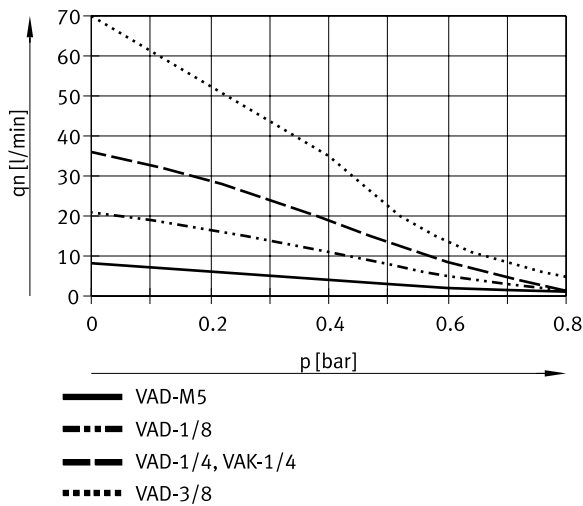
| | |
|------------------------|--------------------|
| Material housing | Die-cast aluminium |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Datasheet

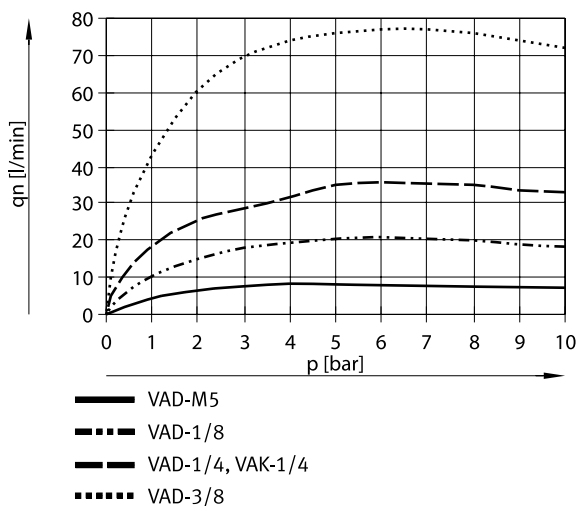
Vacuum Δp as a function of operating pressure p



Suction capacity q_n as a function of vacuum p

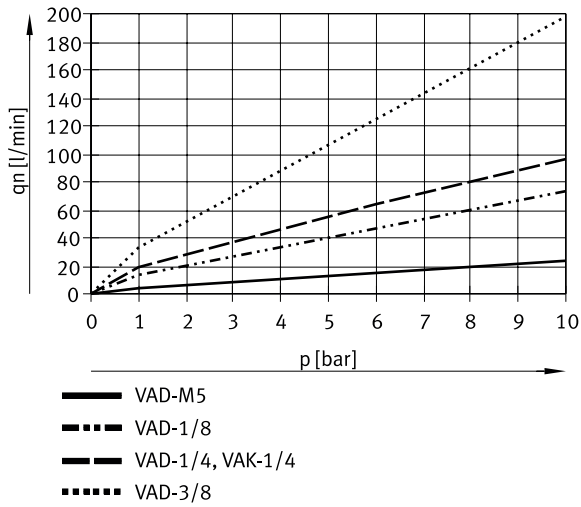


Suction capacity q_n as a function of operating pressure p

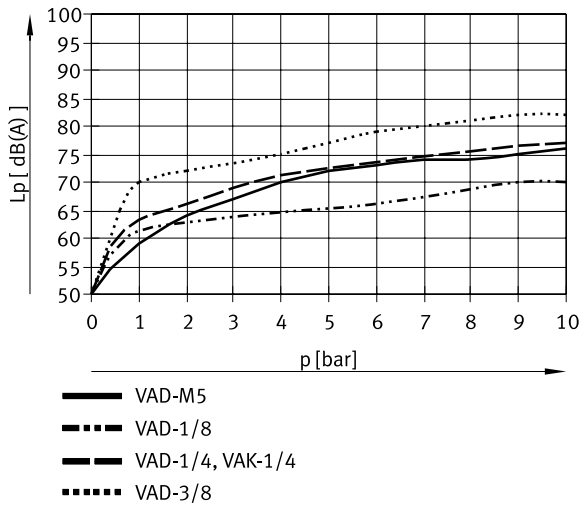


Datasheet

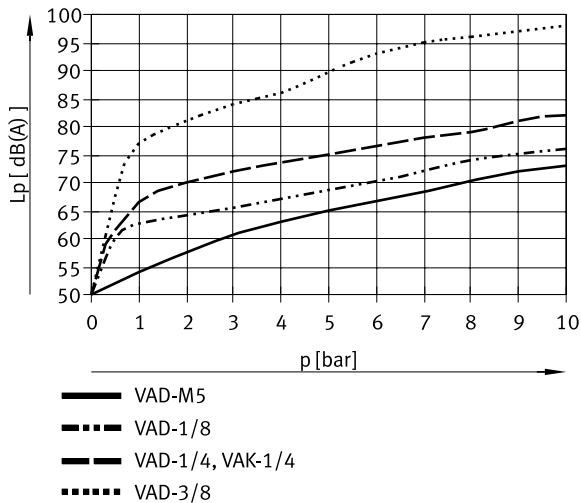
Air consumption q_n as a function of operating pressure p



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



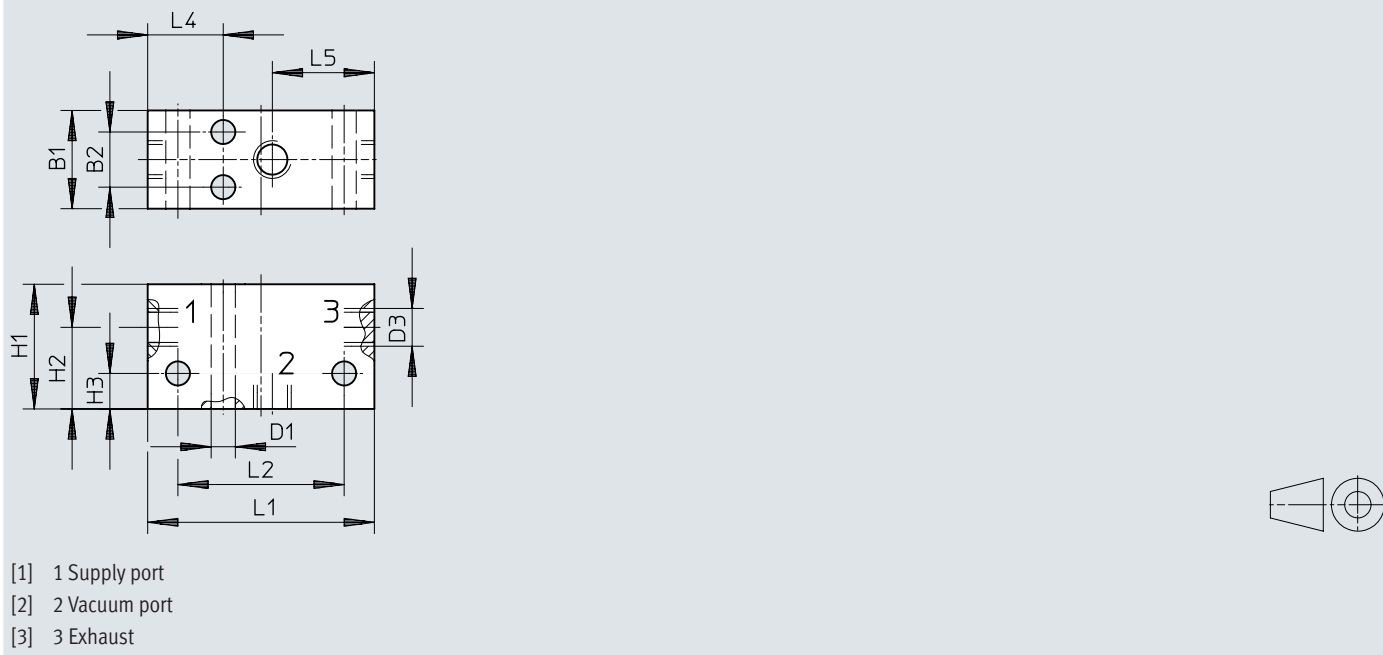
Sound pressure level L_p as a function of operating pressure p (without silencer)



Dimensions

Dimensions – VAD-M5

Download CAD data www.festo.com

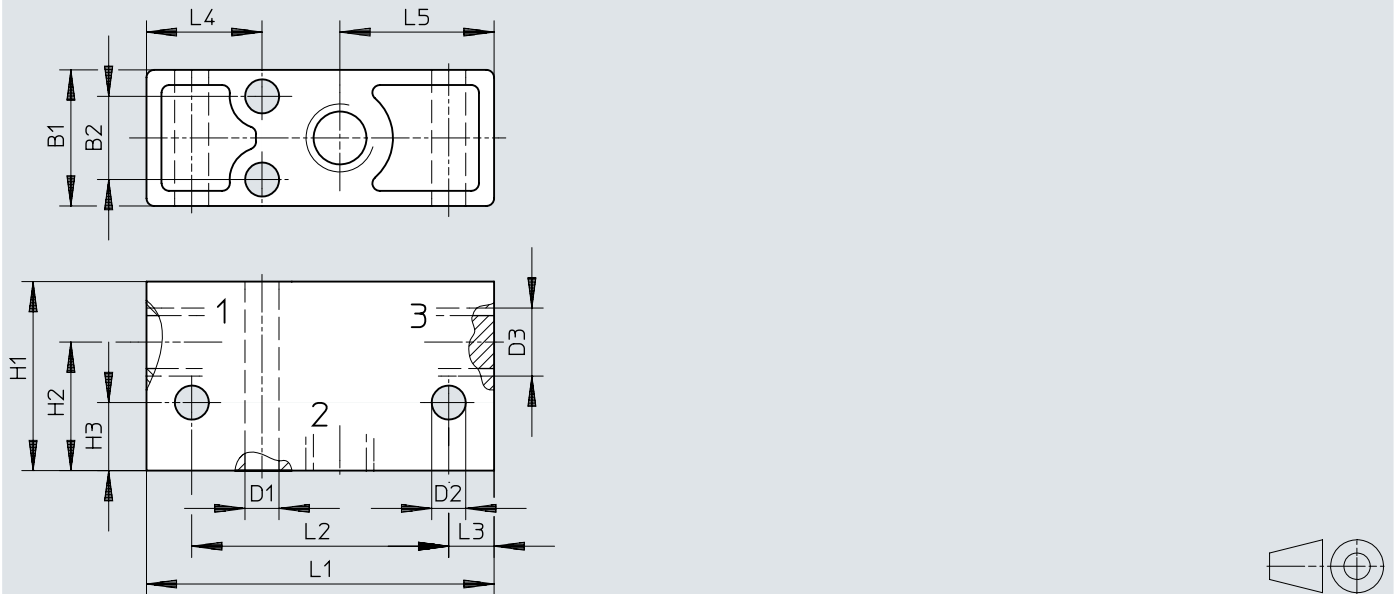


| | B1 | B2 | D1 ∅ | D3 | H1 | H2 | H3 | L1 | L2 | L4 | L5 |
|--------|----|-----|---------|----|------|------|-----|----|----|----|------|
| VAD-M5 | 13 | 7,3 | 3,2 | M5 | 16,5 | 10,8 | 4,7 | 30 | 22 | 10 | 13,5 |

Dimensions

Dimensions – VAD-1/8

Download CAD data www.festo.com



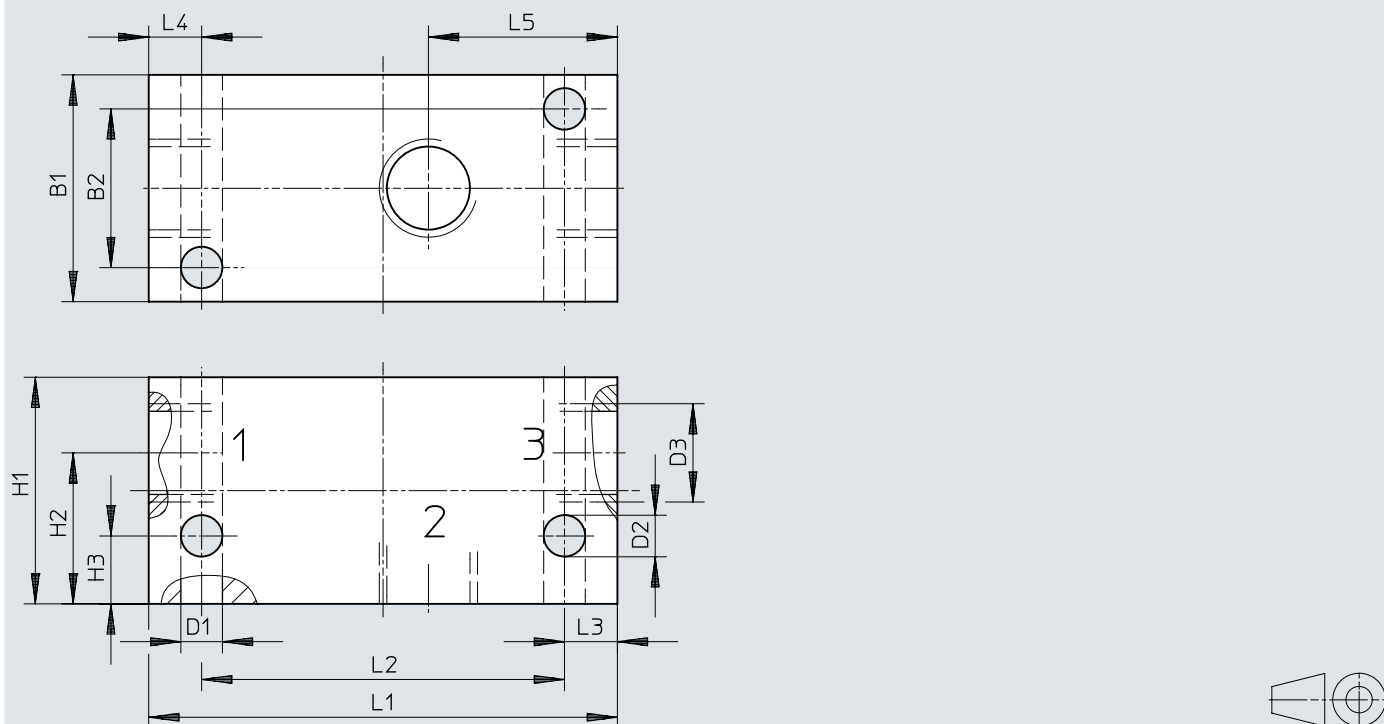
- [1] 1 Supply port
- [2] 2 Vacuum port
- [3] 3 Exhaust

| | B1 | B2 | D1 ∅ | D2 ∅ | 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

Download CAD data www.festo.com



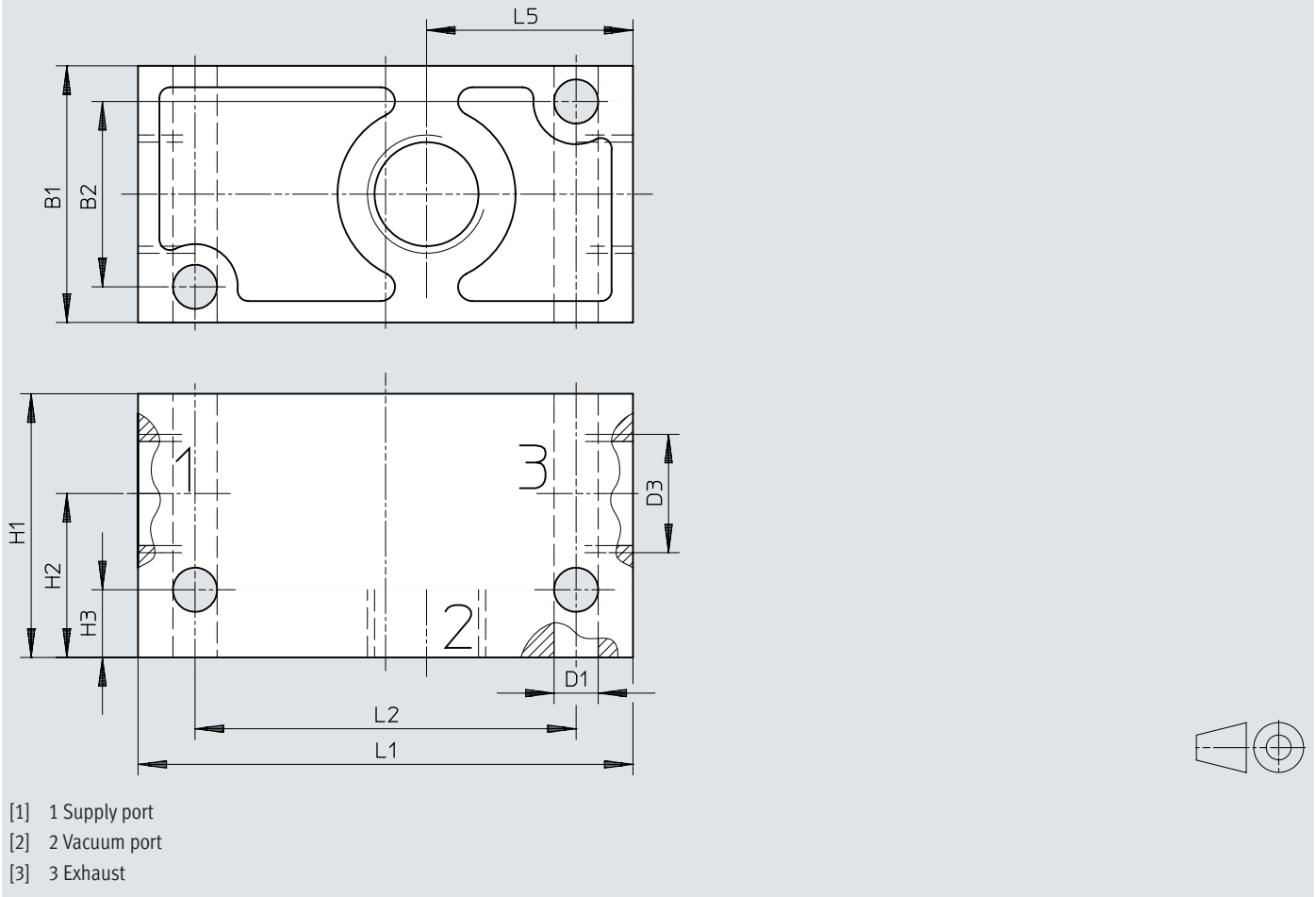
- [1] 1 Supply port
- [2] 2 Vacuum port
- [3] 3 Exhaust

| | B1 | B2 | D1 ∅ | D2 ∅ | 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

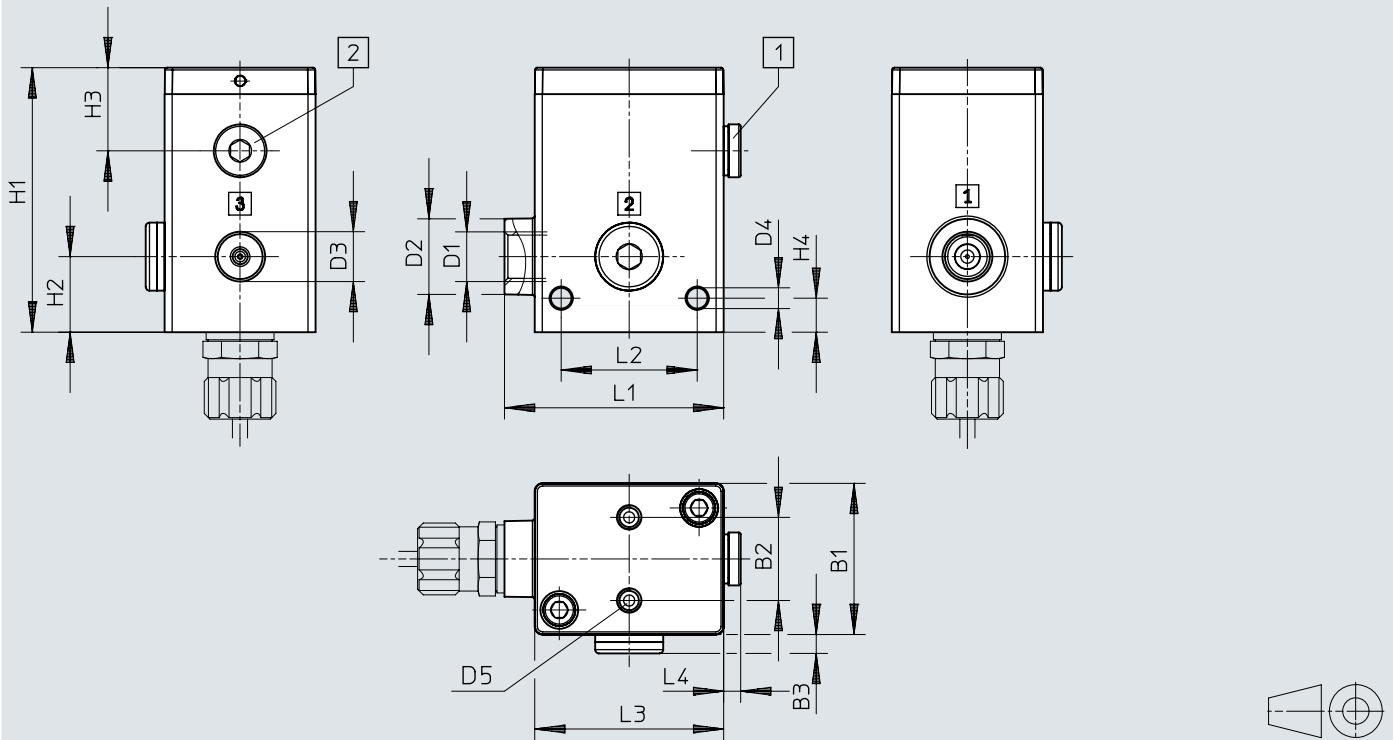


| | B1 | B2 | D1 ∅ | D3 | H1 | H2 | H3 | L1 | L2 | L5 |
|---------|----|----|---------|------|----|----|-----|------|------|----|
| VAD-3/8 | 36 | 26 | 6,2 | G3/8 | 37 | 23 | 9,5 | 69,5 | 53,5 | 29 |

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 ∅ | D3 | D4 ∅ | 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 |

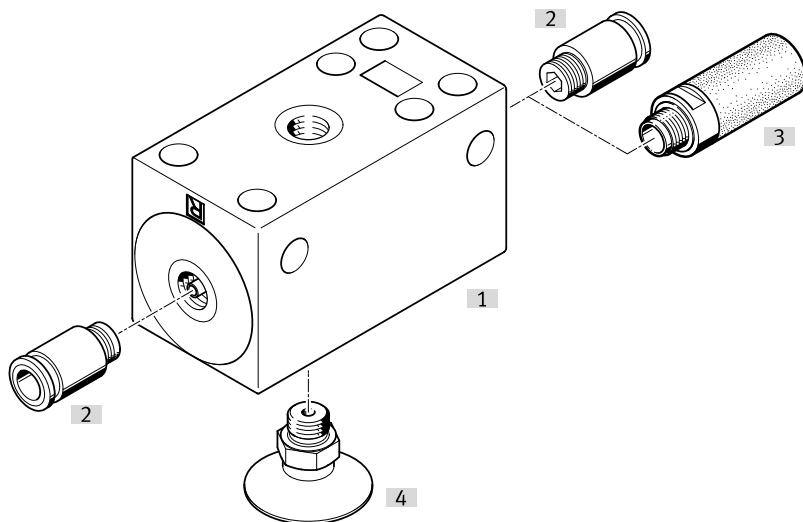
Ordering data

| 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 U/UC | | vas |
| Suction gripper ESG | Without illustration | esg |
| Suction cup holder ESH | Without illustration | esh |
| Suction cup ESS | Without illustration | ess |