

## One-way flow control valves VFOF

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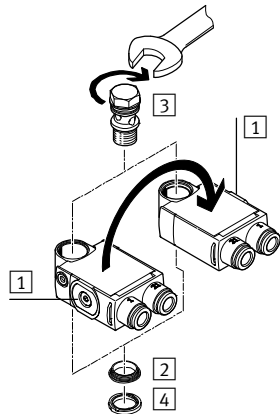
# One-way flow control valves VFOF

Key features and product range overview



## Features

- Minimal height
- High flow rate
- Can be rotated horizontally through 360° in assembled state
- Actuation direction **1** can be changed by repositioning the housing
- Greater functionality thanks to function combinations



### Note

The following sequence must be observed when assembling the individual components:

- 1) Press thrust ring **2** into the housing until it fits tightly.
- 2) Insert hollow bolt **3** into the opening.
- 3) Push sealing ring OK **4** over the thread of the hollow bolt.

## Product range overview

| Function                    | Valve function                            | Design | Type | Pneumatic connection 1 | Pneumatic connection 2 | qn <sup>1)</sup><br>[l/min] | Adjusting element | → Page/<br>Internet |
|-----------------------------|-------------------------------------------|--------|------|------------------------|------------------------|-----------------------------|-------------------|---------------------|
| One-way flow control valves | Function combination                      |        |      |                        |                        |                             |                   |                     |
|                             | Exhaust air one-way flow control function |        | VFOF | QS-6, QS-8             | G1/8, G1/4             | 240 ... 590                 | Internal hex      | 3                   |

1) Standard nominal flow rate in flow control direction.

# One-way flow control valves VFOF, function combination

Type codes

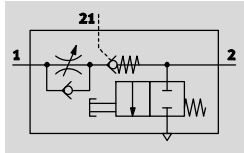
|                               |                                                      |      |   |   |   |   |    |   |   |     |   |    |
|-------------------------------|------------------------------------------------------|------|---|---|---|---|----|---|---|-----|---|----|
|                               |                                                      | VFOF | - | L | E | - | BA | H | - | G18 | - | Q6 |
| <b>Type</b>                   |                                                      |      |   |   |   |   |    |   |   |     |   |    |
| VFOF                          | One-way flow control valve, flat design              |      |   |   |   |   |    |   |   |     |   |    |
| <b>Design</b>                 |                                                      |      |   |   |   |   |    |   |   |     |   |    |
| L                             | L-shaped outlet                                      |      |   |   |   |   |    |   |   |     |   |    |
| <b>Valve function</b>         |                                                      |      |   |   |   |   |    |   |   |     |   |    |
| E                             | Exhaust air one-way flow control function            |      |   |   |   |   |    |   |   |     |   |    |
| <b>Additional function</b>    |                                                      |      |   |   |   |   |    |   |   |     |   |    |
| BA                            | Piloted non-return function, manual exhaust function |      |   |   |   |   |    |   |   |     |   |    |
| <b>Adjusting element</b>      |                                                      |      |   |   |   |   |    |   |   |     |   |    |
| H                             | Internal hex                                         |      |   |   |   |   |    |   |   |     |   |    |
| <b>Pneumatic connection 2</b> |                                                      |      |   |   |   |   |    |   |   |     |   |    |
| G18                           | Thread G1/8                                          |      |   |   |   |   |    |   |   |     |   |    |
| G14                           | Thread G1/4                                          |      |   |   |   |   |    |   |   |     |   |    |
| <b>Pneumatic connection 1</b> |                                                      |      |   |   |   |   |    |   |   |     |   |    |
| Q6                            | Push-in connector QS-6                               |      |   |   |   |   |    |   |   |     |   |    |
| Q8                            | Push-in connector QS-8                               |      |   |   |   |   |    |   |   |     |   |    |

# One-way flow control valves VFOF, function combination

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Technical data

One-way flow control function  
Exhaust air



-  Standard nominal flow rate  
240 ... 590 l/min
-  Temperature range  
-10 ... +60 °C
-  Operating pressure  
0.2 ... 10 bar



The one-way flow control valve VFOF-LE-BAH is a valve with a function combination consisting of an exhaust air one-way flow control function and a piloted non-return function with manual exhaust function. The exhaust air one-way flow control

function is used to manually adjust the advance/return speed of the piston rod of a pneumatic drive. The flow control function is realised by means of an adjustable annular gap in the housing. This gap can be

increased or decreased by turning the regulating screw with internal hex. The piloted non-return function can be used for a temporary intermediate stop. If a pilot signal is applied, exhaust air flow control is active. If no

pilot signal is applied, the valve shuts off the exhaust air from the drive and the drive stops temporarily. The integrated manual exhaust function can be used to manually vent a pneumatic drive.

| General technical data                         |     |                                           |                                         |         |
|------------------------------------------------|-----|-------------------------------------------|-----------------------------------------|---------|
| Valve function                                 |     | Exhaust air one-way flow control function |                                         |         |
| Pneumatic connection 2                         |     | G½/8                                      | G¼                                      |         |
| Pneumatic connection 1                         |     | QS-6                                      | QS-8                                    |         |
| Pilot air connection 21                        |     | QS-6                                      | QS-8                                    |         |
| Adjusting element                              |     | Internal hex                              |                                         |         |
| Actuation type                                 |     | Manual                                    |                                         |         |
| Type of actuation, piloted non-return function |     | Pneumatic                                 |                                         |         |
| Manual exhaust function                        |     | Non-detenting                             |                                         |         |
| Type of mounting                               |     | Screw-in                                  |                                         |         |
| Mounting position                              |     | Any                                       |                                         |         |
| Switching time                                 | Off | [ms]                                      | 9                                       | 11      |
|                                                | On  | [ms]                                      | 6                                       | 8       |
| Nominal tightening torque                      |     | [Nm]                                      | 3 ±20%                                  | 11 ±20% |
| Perm. actuation torque for regulating screw    |     | [Nm]                                      | 1                                       |         |
| Rotatability                                   |     | [°]                                       | 360 (continuous rotation not permitted) |         |

| Operating and environmental conditions       |                                                                                            |             |
|----------------------------------------------|--------------------------------------------------------------------------------------------|-------------|
| Operating pressure                           | [bar]                                                                                      | 0.2 ... 10  |
| Pilot pressure                               | [bar]                                                                                      | 2 ... 10    |
| Operating/pilot medium                       | Compressed air according to ISO 8573-1:2010 [7:4:4]                                        |             |
| Note on operating/pilot medium               | Lubricated operation possible (in which case lubricated operation will always be required) |             |
| Ambient temperature                          | [°C]                                                                                       | -10 ... +60 |
| Temperature of medium                        | [°C]                                                                                       | -10 ... +60 |
| Storage temperature                          | [°C]                                                                                       | -20 ... +70 |
| Corrosion resistance class CRC <sup>1)</sup> | 2                                                                                          |             |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

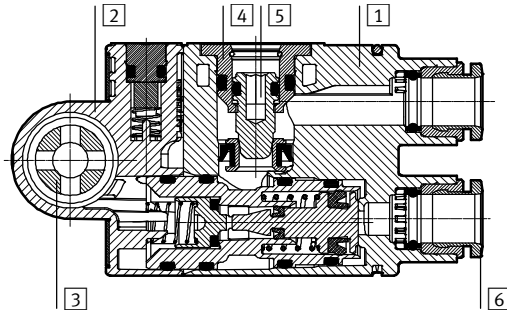
# One-way flow control valves VFOF, function combination

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Technical data

## Materials

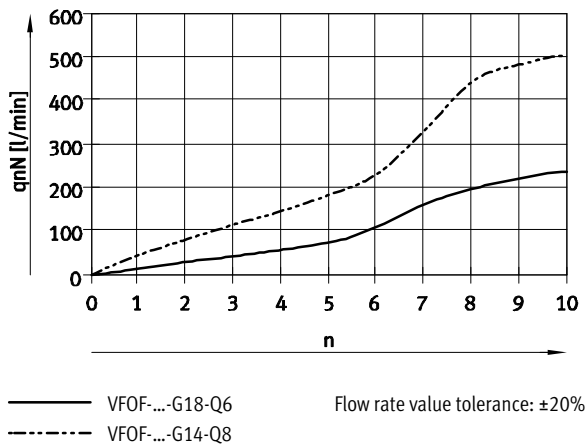
Sectional view



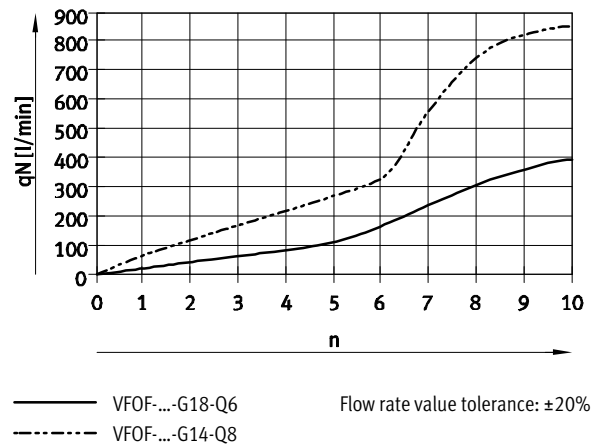
### One-way flow control valve

|                   |                  |                         |
|-------------------|------------------|-------------------------|
| 1                 | Housing          | PBT                     |
| 2                 | End cap          | PBT                     |
| 3                 | Hollow bolt      | Wrought aluminium alloy |
| 4                 | Sleeve           | Wrought aluminium alloy |
| 5                 | Regulating screw | Brass                   |
| 6                 | Releasing ring   | POM                     |
| -                 | Cover            | ES-BE                   |
| -                 | Seals            | NBR                     |
| Note on materials |                  | RoHS-compliant          |

Standard nominal flow rate  $q_{nN}$  in flow control direction at 6  $\rightarrow$  5 bar as a function of turns of the adjusting screw  $n$



Standard flow rate  $q_n$  in flow control direction at 6  $\rightarrow$  0 bar as a function of turns of the adjusting screw  $n$



Minimum pilot pressure  $p_{21}$  as a function of operating pressure  $p_1$



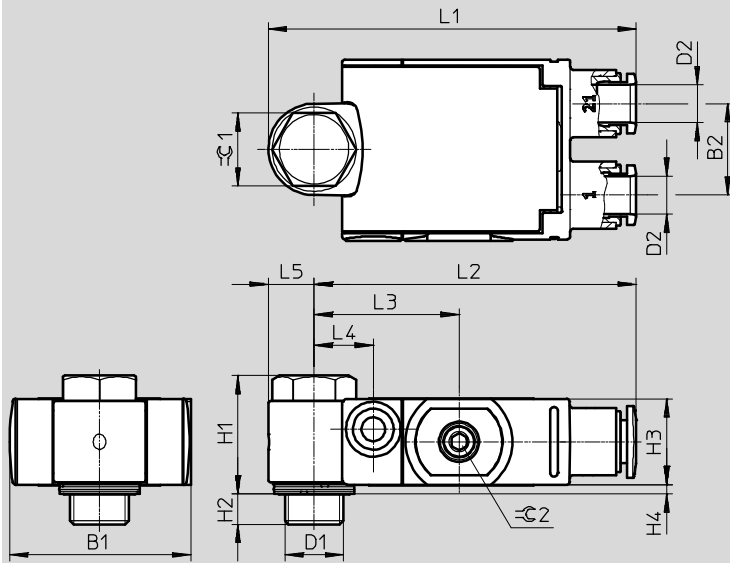
# One-way flow control valves VFOF, function combination

Technical data

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## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type            | Connection<br>D1 | Tubing O.D.<br>D2 | B1   | B2   | H1   | H2  | H3   | H4  | L1   | L2   | L3   | L4   | L5  | ∅ 1 | ∅ 2 |
|-----------------|------------------|-------------------|------|------|------|-----|------|-----|------|------|------|------|-----|-----|-----|
| VFOF-...-G18-Q6 | G $\frac{1}{8}$  | QS-6              | 29.5 | 15   | 19.4 | 5   | 14.1 | 1.5 | 60.3 | 52.8 | 23.8 | 9.7  | 7.5 | 12  | 2.5 |
| VFOF-...-G14-Q8 | G $\frac{1}{4}$  | QS-8              | 39.5 | 20.5 | 28.2 | 5.6 | 21   | 2   | 76.8 | 66.8 | 30   | 11.1 | 10  | 15  | 2.5 |

## Ordering data – Exhaust air one-way flow control function

|  | Pneumatic<br>connection |      | Pilot air<br>connec-<br>tion | Standard nominal flow rate q <sub>N</sub><br>at 6 bar → 5 bar |                                          | Standard flow rate q <sub>n</sub><br>at 6 bar → 0 bar |                                              | Weight | Part No.       | Type                      |
|--|-------------------------|------|------------------------------|---------------------------------------------------------------|------------------------------------------|-------------------------------------------------------|----------------------------------------------|--------|----------------|---------------------------|
|  |                         |      |                              | In flow con-<br>trol direction                                | In non-return<br>direction               | In flow con-<br>trol direction                        | In non-return<br>direction                   |        |                |                           |
|  | 2                       | 1    | 21                           | [l/min]                                                       | [l/min]                                  | [l/min]                                               | [l/min]                                      | [g]    |                |                           |
|  | G $\frac{1}{8}$         | QS-6 | QS-6                         | 240                                                           | 150 ... 230<br>120 ... 220 <sup>1)</sup> | 420                                                   | 400 ... 460<br>400 ... 460 <sup>1)</sup>     | 28.6   | <b>8001459</b> | <b>VFOF-LE-BAH-G18-Q6</b> |
|  | G $\frac{1}{4}$         | QS-8 | QS-8                         | 590                                                           | 315 ... 540<br>310 ... 540 <sup>1)</sup> | 940                                                   | 830 ... 1,000<br>840 ... 1,000 <sup>1)</sup> | 73.9   | <b>1927030</b> | <b>VFOF-LE-BAH-G14-Q8</b> |

1) Unactuated

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