

Check valves VBNF, piloted

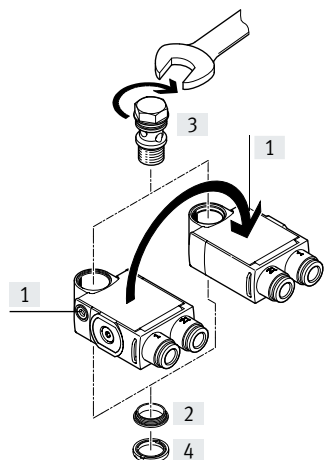
FESTO



Key features and product range overview

Key features

- Minimal height
- High flow rate
- Can be rotated horizontally by 360° in assembled state
- Universal actuation direction [1] by converting the housing

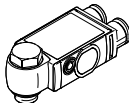



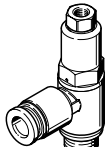
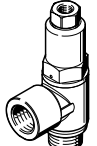


Note

When assembling the individual components, please note the following sequence:

- 1) Press thrust ring [2] into the housing for a positive fit.
- 2) Insert hollow bolt [3] into the opening.
- 3) Slide sealing ring OK [4] over the thread of the hollow bolt.

Product range overview

| Function | Valve function | Version | Type | Pneumatic connection 1 | Pneumatic connection 2 | qnN | → Page/ Internet | |
|------------------------|-----------------------------|---|------|--------------------------------|----------------------------------|----------------------------------|---------------------|------|
| | | | | | | [l/min] | | |
| Check valves | Flat design | | | | | | | |
| | Piloted non-return function |  | VBNF | QS-6, QS-8 | G1/8, G1/4 | 260 ... 620 | 3 | |
| | Compact design | | | | | | | |
| | Non-return function |  | H | | QS-4, QS-6, QS-8, QS-10, QS-12 | QS-4, QS-6, QS-8, QS-10, QS-12 | 136 ... 1715 | h-qs |
| | |  | | | M5, G1/8, G1/4, G3/8, G1/2, G3/4 | M5, G1/8, G1/4, G3/8, G1/2, G3/4 | 115 ... 5900 | h |
| | Non-return function |  | HA | | M5, R1/8, R1/4, R3/8, R1/2 | QS-4, QS-6, QS-8, QS-10, QS-12 | 138 ... 2230 | ha |
| HB | | | | QS-4, QS-6, QS-8, QS-10, QS-12 | M5, R1/8, R1/4, R3/8, R1/2 | 142 ... 2206 | hb | |
| Piloted checked valves | Compact design | | | | | | | |
| | Piloted non-return function |  | HGL | | QS-4, QS-6, QS-8, QS-10, QS-12 | M5, G1/8, G1/4, G3/8, G1/2 | 130 ... 1400 | hgl |
| | |  | | | M5, G1/8, G1/4, G3/8, G1/2 | M5, G1/8, G1/4, G3/8, G1/2 | 130 ... 1600 | hgl |

Type codes

| | | |
|-------------|-------------|--|
| 001 | Series | |
| VBNF | Check valve | |

| | | |
|----------|---------|--|
| 002 | Design | |
| L | L-shape | |

| | | |
|----------|-----------------------------|--|
| 003 | Non-return function | |
| B | Piloted non-return function | |

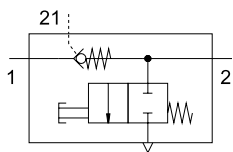
| | | |
|----------|--------------------------|--|
| 004 | Additional function 2 | |
| A | Exhaust function, manual | |




| | | |
|------------|------------------------|--|
| 005 | Pneumatic connection 1 | |
| G18 | G1/8 | |
| G14 | G1/4 | |

| | | |
|-----------|------------------------|--|
| 006 | Pneumatic connection 2 | |
| Q6 | Push-in connector 6 mm | |
| Q8 | Push-in connector 8 mm | |

Datasheet

Piloted non-return function



-  - Standard nominal flow rate
260 ... 620 l/min
-  - Temperature range
-10 ... +60°C
-  - Operating pressure
0.2 ... 10 bar



The check valve VBNF-LBA is a valve with a piloted non-return function and a manual exhaust function. The piloted non-return function can be used for a brief intermediate stop. The

exhaust air can escape when a control signal is applied. If no control signal is applied, the valve shuts off the exhaust air from the drive and the drive stops temporarily.

By actuating the integrated manual exhaust function, it is possible to manually exhaust the pneumatic drive.

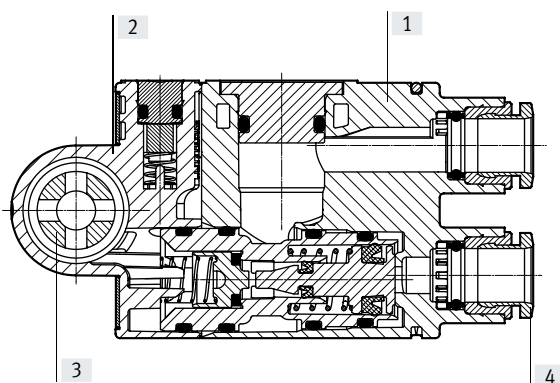
| General technical data | | | |
|---|------|---|---------|
| Valve function | | Piloted non-return function | |
| Pneumatic connection 2 | | G1/8 | G1/4 |
| Pneumatic connection 1 | | QS-6 | QS-8 |
| Pilot air port 21 | | QS-6 | QS-8 |
| Actuation type, piloted non-return function | | Pneumatic | |
| Manual exhaust function | | Non-detenting | |
| Type of mounting | | Screw-in | |
| Mounting position | | Any | |
| Switching time | Off | [ms] | 9 |
| | On | [ms] | 6 |
| Nominal tightening torque | [Nm] | | 6 ±20% |
| | [Nm] | | 10 ±20% |
| Rotatability | [°] | 360 (continuous rotation not permitted) | |

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

1) More information www.festo.com/x/topic/crc

Materials

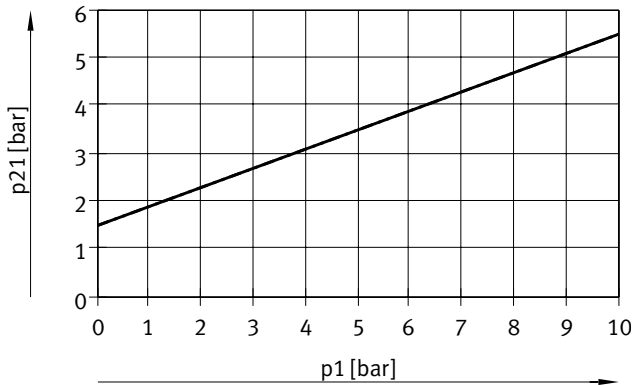
Sectional view



| Check valve, piloted | | |
|------------------------|----------------|-------------------------|
| [1] | Housing | PBT |
| [2] | Cover | PBT |
| [3] | Hollow bolt | Wrought aluminium alloy |
| [4] | Releasing ring | POM |
| - | Covering | ES-BE |
| - | Seals | NBR |
| Note on materials | | RoHS-compliant |
| LABS (PWIS) conformity | | VDMA24364-B1/B2-L |

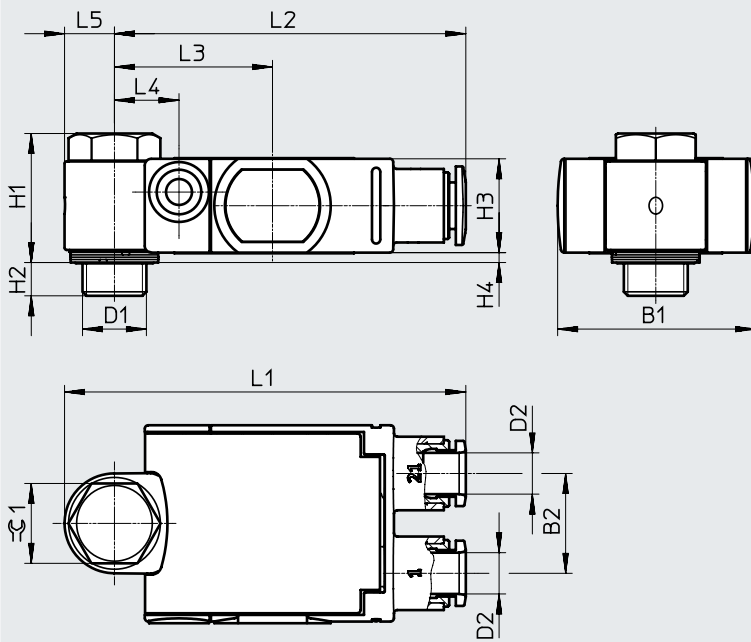
Datasheet

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



Dimensions

Download CAD data → www.festo.com



| Type | Connection D1 | Tubing O.D. D2 | B1 | B2 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | $\approx C1$ |
|----------------|------------------|-------------------|------|------|------|-----|------|-----|------|------|------|------|-----|--------------|
| VBNF...-G18-Q6 | G1/8 | QS-6 | 29.8 | 15 | 19.4 | 5 | 14.1 | 1.5 | 60.3 | 52.8 | 23.8 | 9.7 | 7.5 | 12 |
| VBNF...-G14-Q8 | G1/4 | QS-8 | 39.5 | 20.5 | 28.2 | 5.6 | 21 | 2 | 76.8 | 66.8 | 30 | 11.1 | 10 | 15 |

Ordering data

| Version | Pneumatic connection | | Pilot air port | Standard nominal flow rate q_{nN} at 6 bar → 5 bar | Standard flow rate q_n at 6 bar → 0 bar | Weight [g] | Part no. | Type |
|---------|----------------------|------|----------------|---|--|---------------|----------------|------------------------|
| | 2 | 1 | 21 | [l/min] | [l/min] | | | |
| | G1/8 | QS-6 | QS-6 | 260 | 500 | 27.3 | 8001460 | VBNF-LBA-G18-Q6 |
| | G1/4 | QS-8 | QS-8 | 620 | 1100 | 65.6 | 1927027 | VBNF-LBA-G14-Q8 |