

Non-return valves VBNF

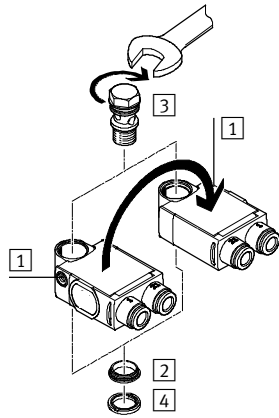


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Key features and product range overview

Features

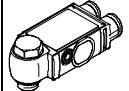



- Minimal height
- High flow rate
- Can be rotated horizontally through 360° in assembled state
- Actuation direction **1** can be changed by repositioning the housing



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 | qnN [l/min] | → Page/Internet |
| Non-return valves | Flat design | | | | | | |
| | Piloted non-return function |  | VBNF | QS-6, QS-8 | G ¹ / ₈ , G ¹ / 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 ... 1,715 | h-qs |
| | | | | M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄ | M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄ | 115 ... 5,900 | h |
| | Non-return function |  | HA | M5, R ¹ / ₈ , R ¹ / ₄ , R ³ / ₈ , R ¹ / ₂ | QS-4, QS-6, QS-8, QS-10, QS-12 | 138 ... 2,230 | ha |
| | | | HB | QS-4, QS-6, QS-8, QS-10, QS-12 | M5, R ¹ / ₈ , R ¹ / ₄ , R ³ / ₈ , R ¹ / ₂ | 142 ... 2,206 | hb |
| | Piloted non-return function |  | HGL | QS-4, QS-6, QS-8, QS-10, QS-12 | M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ | 130 ... 1,400 | hgl |
| | | | | M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ | M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ | 130 ... 1,600 | hgl |

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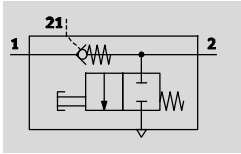
Type codes




| | | | | | | | | | |
|-------------------------------|--|------|---|---|----|---|-----|---|----|
| | | VBNF | - | L | BA | - | G18 | - | Q6 |
| Type | | | | | | | | | |
| VBNF | Non-return valve, flat design | | | | | | | | |
| Design | | | | | | | | | |
| L | L-shaped outlet | | | | | | | | |
| Additional function | | | | | | | | | |
| BA | Piloted non-return function, manual exhaust function | | | | | | | | |
| Pneumatic connection 2 | | | | | | | | | |
| G18 | Thread G $\frac{1}{8}$ | | | | | | | | |
| G14 | Thread G $\frac{1}{4}$ | | | | | | | | |
| Pneumatic connection 1 | | | | | | | | | |
| Q6 | Push-in connector QS-6 | | | | | | | | |
| Q8 | Push-in connector QS-8 | | | | | | | | |

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Technical data

Piloted non-return function



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



The non-return 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 temporary intermediate stop. If a pilot signal is applied, the exhaust air can escape. 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.

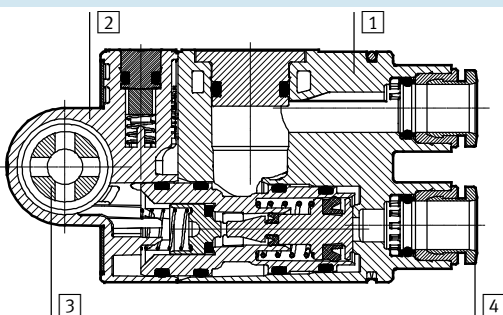
| General technical data | | |
|--|-----------------------------|---|
| Valve function | Piloted non-return function | |
| Pneumatic connection 2 | G $\frac{1}{8}$ | G $\frac{1}{4}$ |
| Pneumatic connection 1 | QS-6 | QS-8 |
| Pilot air connection 21 | QS-6 | QS-8 |
| Type of actuation, piloted non-return function | Pneumatic | |
| Manual exhaust function | Non-detenting | |
| Type of mounting | Screw-in | |
| Mounting position | Any | |
| Switching time | Off [ms] | 9 |
| | On [ms] | 6 |
| Nominal tightening torque | [Nm] | 3 ±20% |
| | | 11 ±20% |
| 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 ¹⁾ | | 2 |

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

Materials

Sectional view

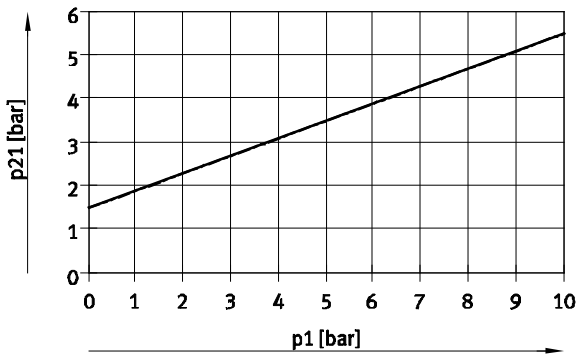


| Non-return valve | | |
|-------------------|----------------|-------------------------|
| 1 | Housing | PBT |
| 2 | End cap | PBT |
| 3 | Hollow bolt | Wrought aluminium alloy |
| 4 | Releasing ring | POM |
| - | Cover | ES-BE |
| - | Seals | NBR |
| Note on materials | | RoHS-compliant |

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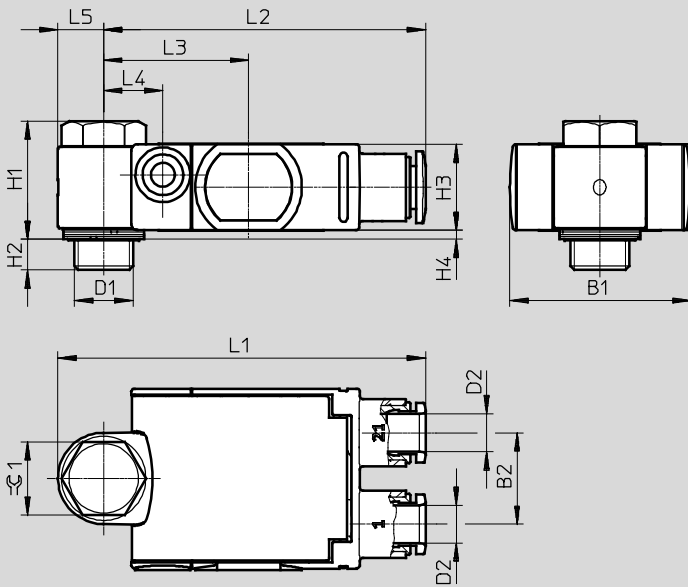
Technical data

Minimum pilot pressure p21 as a function of operating pressure p1



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 | ⌀1 |
|-----------------|---------------|----------------|------|------|------|-----|------|-----|------|------|------|------|-----|----|
| 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

| Design | Pneumatic connection | | Pilot air connection | Standard nominal flow rate qnN at 6 bar → 5 bar | Standard flow rate qN at 6 bar → 0 bar | Weight | Part No. | Type |
|--------|----------------------|------|----------------------|---|--|--------|----------------|------------------------|
| | 2 | 1 | 21 | [l/min] | [l/min] | [g] | | |
| | G1/8 | QS-6 | QS-6 | 260 | 500 | 27.3 | 8001460 | VBNF-LBA-G18-Q6 |
| | G1/4 | QS-8 | QS-8 | 620 | 1,100 | 65.5 | 1927027 | VBNF-LBA-G14-Q8 |