

Piloted check valve VBNF

FESTO



Characteristics

At a glance

The check valve VBNF-LBA is a valve with piloted non-return function and manual exhaust function.

- Minimal height
- High flow rate
- Can be rotated horizontally through 360° when mounted
- Actuation direction can be changed by converting the housing

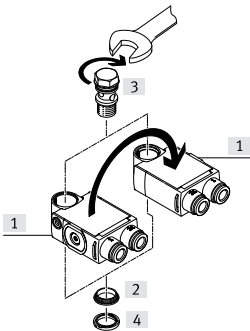
Diagrams [Link](#) [vbnf](#)



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

Design

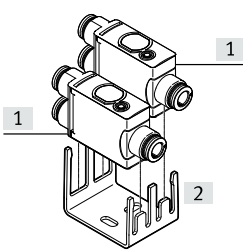
[L] L-shape



Universal actuation direction possible by converting the housing [1]:

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

[C] Inline



Two housings [1] are compact to mount with retainer VAME [2].

Non-return function

[B] Piloted non-return function

The piloted non-return function can be used for a brief intermediate stop. If there is a control signal, the exhaust air can escape. If there is no control signal, the valve blocks the exhaust air of the drive and the drive stops briefly.

Additional function 2

[A] Exhaust function, manual

A pneumatic drive can be manually exhausted by actuating the integrated manual exhaust function.

Special material properties [Link](#) [f1a](#)

[F1A] Recommended for production plants for manufacturing lithium-ion batteries, F1A

Suitable for battery production with reduced Cu/Zn/Ni values (F1a).

Type code

001	Series	
VBNF	Check valve	
002	Design	
C	Inline	
L	L-shape	
003	Non-return function	
B	Piloted non-return function	
004	Additional function 2	
A	Exhaust function, manual	

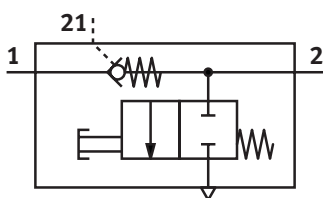
005	Pneumatic connection 1	
G14	G1/4	
G18	G1/8	
Q4	Push-in connector 4 mm	
Q6	Push-in connector 6 mm	
006	Pneumatic connection 2	
Q4	Push-in connector 4 mm	
Q6	Push-in connector 6 mm	
Q8	Push-in connector 8 mm	
007	Special material properties	
F1A	Suitable for battery production with reduced Cu/Zn/Ni content	

Datasheet

General technical data

General technical data					
Design	Inline		L-shape		
Pneumatic connection, port 1	QS-4	QS-6	QS-4	QS-6	QS-8
Pneumatic connection, port 2	QS-4	QS-6	G1/8		G1/4
Pilot air port 21	QS-4	QS-6	QS-4	QS-6	QS-8
Valve function	Non-return function		Piloted non-return function		
Type of actuation	Manual		–		
Type act., cont. n.-r. func.	Pneumatic				
Manual exhaust function	Non-detenting				
Type of mounting	–		Screw-in		
Mounting position	optional				
Switching time off	9 ms				11 ms
Switching time on	6 ms				8 ms
Nominal torque	–		3 ... 6 Nm	6 Nm	10 Nm
Tolerance for nominal tightening torque	–		± 20%		
Rotatability	–		360°/no continuous swivelling permissible		

Function



Operating and environmental conditions

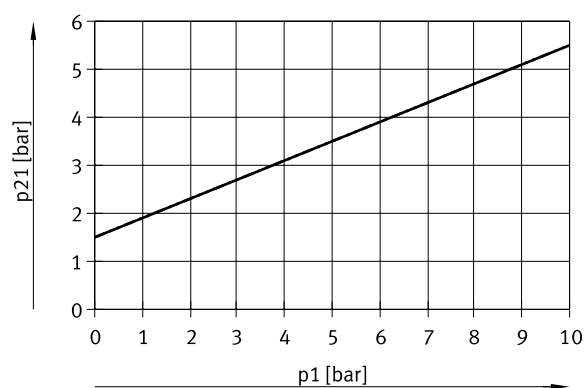
Design	Inline		L-shape		
Pneumatic connection, port 1	QS-4	QS-6	QS-4	QS-6	QS-8
Pneumatic connection, port 2	QS-4	QS-6	G1/8		G1/4
Operating pressure	≤10 bar		0.2 ... 10 bar		
Operating pressure complete temperature range	0.2 ... 10 bar				
Pilot pressure	2 ... 10 bar				
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]				
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:4]				
Note on operating and pilot medium	Lubricated operation possible		Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature	-10 ... 60°C				
Media temperature	-10 ... 60°C				
Storage temperature	-20 ... 70°C		-		
Standard flow rate 1->2 (6-0)	210 l/min	500 l/min			1,100 l/min
Standard nominal flow rate 1->2 (6-5)	130 l/min	260 l/min			620 l/min
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress				

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

Materials

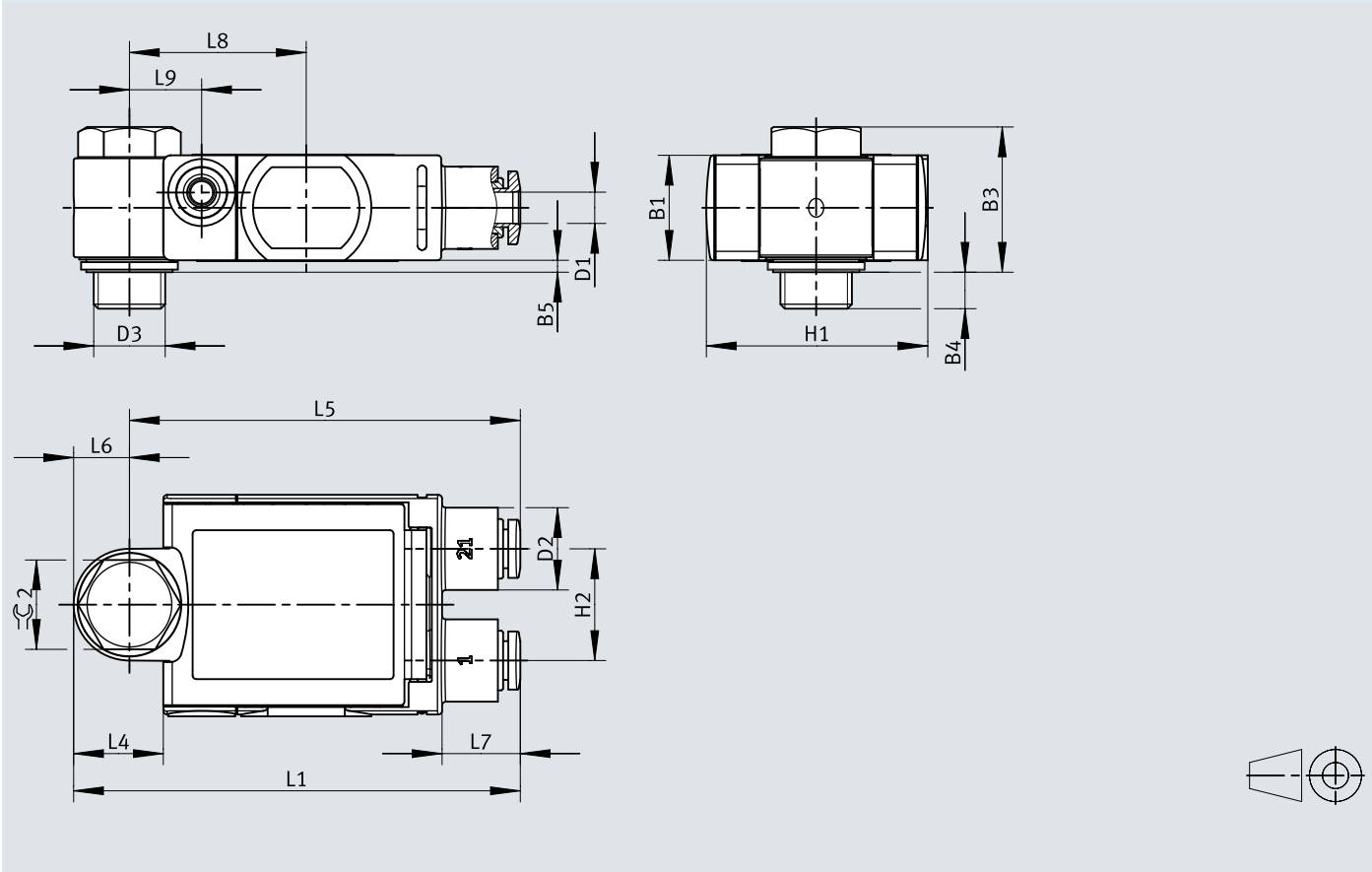
Material covering	ES-BE
Material cover	PBT
Material seals	NBR
Material hollow bolt	Wrought aluminium alloy
Material release ring	POM
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Datasheet

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

Dimensions

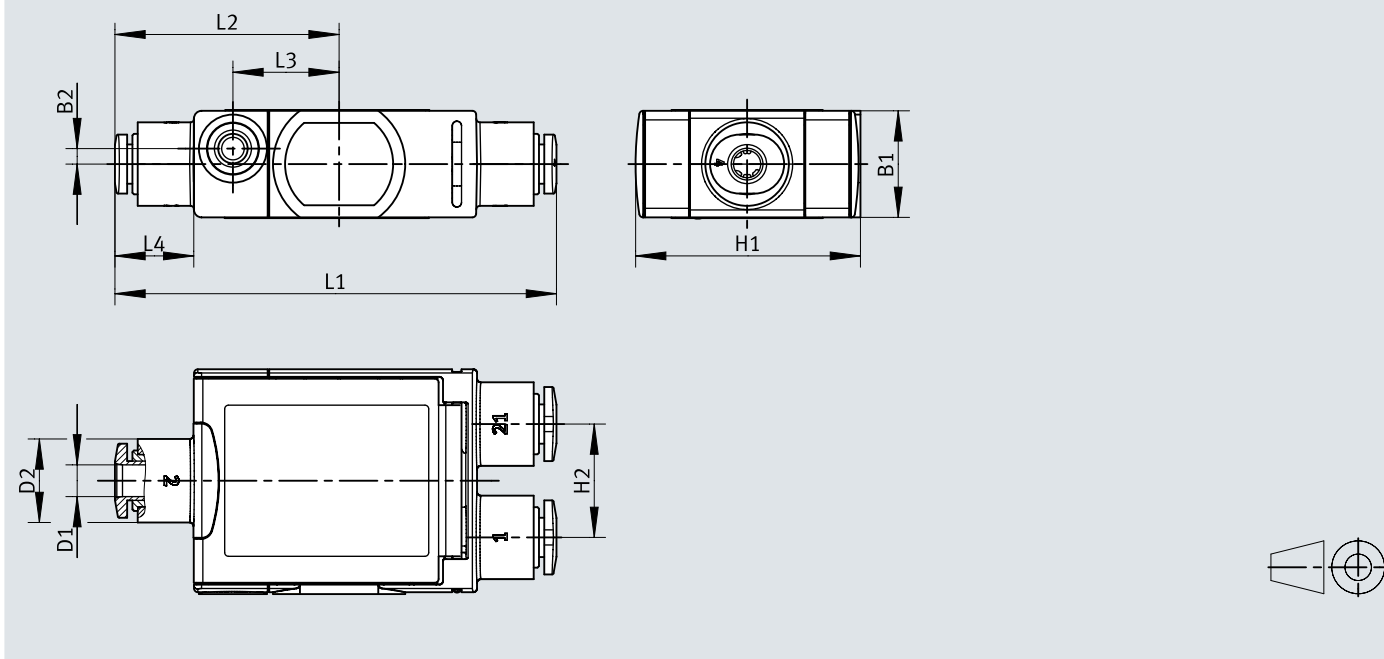
Dimensions – VBNF (L-shape) Download CAD data www.festo.com



Typ	B1	B2	B4	B5	D1 ø	D2 ø	D3	H1	H2	L1	L4	L5	L6	L7	L8	L9	≈ 2
VBNF-LBA-G18-Q4-F1A	14,1	19,5	4,9	1,6	4,2	11	G1/8	29,8	15	60	12	52,4	7,5	11	23,8	9,7	12
VBNF-LBA-G18-Q6-F1A	14,1	19,4	5	1,5	6,2	11	G1/8	29,8	15	60,1	12,1	52,5	7,5	10,5	23,8	9,7	12
VBNF-LBA-G14-Q8-F1A	21	28,2	5,6	2	8,2	15,5	G1/4	39,5	20,5	74,3	15,4	64,3	10	11,3	30	11,1	15

Dimensions

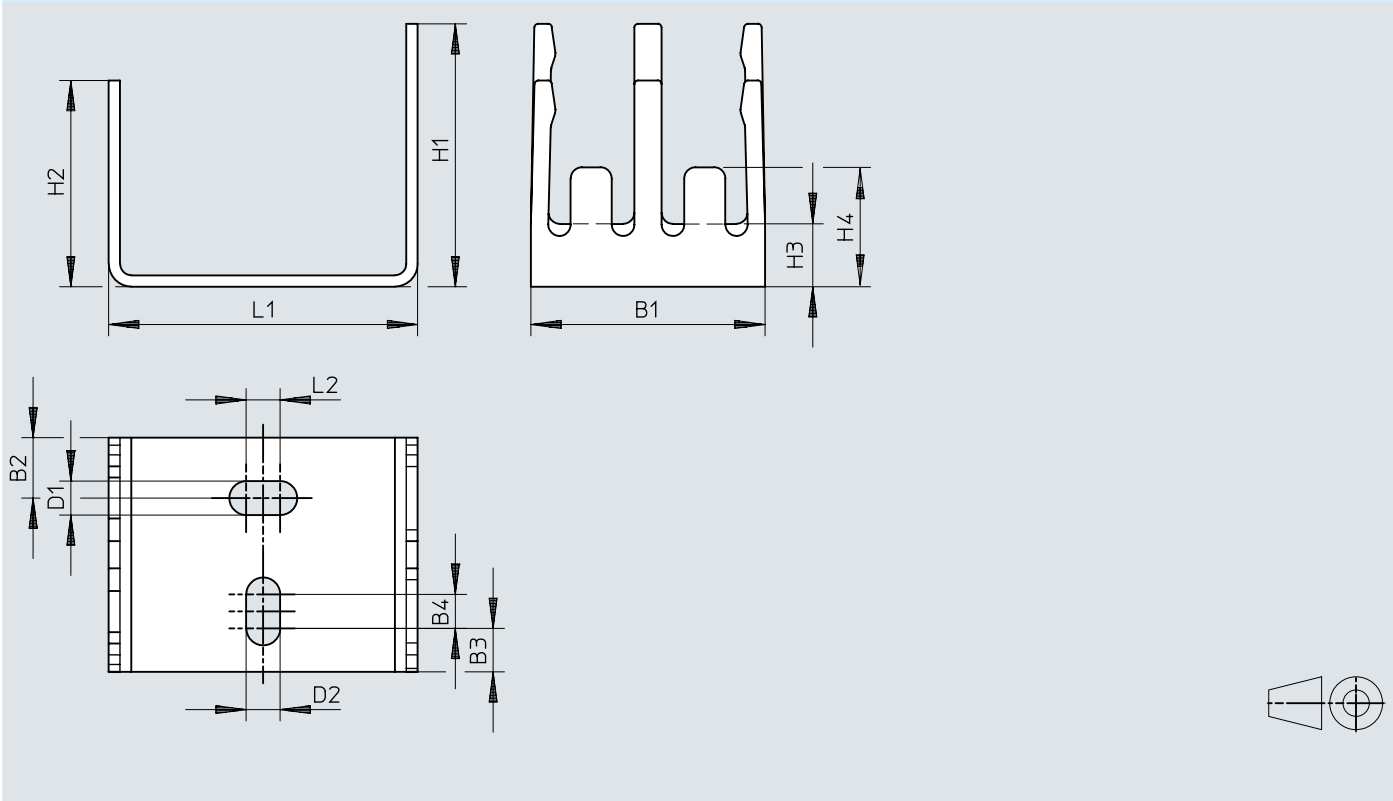
Dimensions – VBNF (inline)

Download CAD data www.festo.com

Typ	B1	B2	D1 Ø	D2 Ø	H1	H2	L1	L2	L3	L4
VBNF-CBA-Q4-Q4-F1A	14,1	2	4	11	29,8	15	59,4	31,3	~14	12,1
VBNF-CBA-Q6-Q6-F1A	14,1	2	6	11	29,8	15	60,2	31,5	~14	12,3

Dimensions

Dimensions – Retainer VAME (for VBNF inline) [Download CAD data](#) www.festo.com



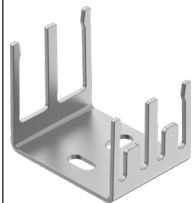
Typ	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	L1	L2
VAME-F13-Q-2	31	8	5,8	4,5	4,5	4,5	35	27,3	8,3	15,8	41	4,5

Ordering data

Ordering data (L-shape)					
	Pneumatic connection, port 1	Pneumatic connection, port 2	Product weight	Part no.	Type
	QS-4	G1/8	27.9 g	8193272	VBNF-LBA-G18-Q4-F1A
	QS-6		27.3 g	8001460	VBNF-LBA-G18-Q6-F1A
	QS-8	G1/4	65.6 g	1927027	VBNF-LBA-G14-Q8-F1A

Ordering data (inline)					
	Pneumatic connection, port 1	Pneumatic connection, port 2	Product weight	Part no.	Type
	QS-4	QS-4	23.8 g	8193271	VBNF-CBA-Q4-Q4-F1A
	QS-6	QS-6	23.3 g	8193270	VBNF-CBA-Q6-Q6-F1A

Accessories

Retainer VAME (for Inline)					
	Material retaining bracket	LABS (PWIS) conformity	Product weight	Part no.	Type
	Stainless steel	VDMA24364-B1/B2-L	23.55 g	8193273	VAME-F13-Q-2