

## Maintenance-free wafer-type non-return valves



**PN 6, DN 15-200**  
**seat type: metal body / plastic plate**  
**PN 6/10/16, DN 15-200**  
**seat type: metal-to-metal**

### Application

- Industrial plants and heating systems
- Liquids, gases and steams
- Medium temperature warm-water heating systems DIN 4751
- High temperature hot-water heating systems DIN 4752
- Heat transfer installations DIN 4754 (only PN 6/10/16)
- Contact KSB for limitations imposed by the applicable technical codes.
- Not suitable for media liable to attack the materials used

### Operating data

- Temperature range: design PN 6, -30 \*) up to 100 °C  
design PN 6/10/16, -30 \*) up to 250 °C  
\*) DN 125-200 (cast iron) -10 °C
- Pressure range: up to  $\Delta p = 6$  or 16 bar
- For further details, see table of working pressures

### Materials

- DN 15-100  
Body made of brass CuZn39Pb3
- DN 125-200  
Body made of grey cast iron EN-GJL-250  
(previously: GG-25)

### Design

- Non-return valve with wafer-type body
- Sealed by spring-loaded plate or cone, guided by guiding pins
- Free from asbestos, PCB and CFC
- Short face-to-face dimension EN 558-1/49  
(previously DIN 3202/3 K4)
- Exterior finish:
  - Body made of brass, DN 15-100 not painted
  - Body made of grey cast iron, DN 125-200 similar to blue RAL 5002

The valves meet the safety requirements of the Pressure Equipment Directive 97/23/EC (PED) of annex I for fluids of the group 2.

### Remarks

- For the equipment of pressure vessels to TRD 108/110 we recommend flanged non-return valves BOA®-R according to type series booklet 7117.1

### On all enquiries/orders please specify

Wafer-type non-return valves

1. BOA®-RVK according to type series booklet 7119.1
2. PN 6 or PN 6/10/16
3. DN 15-200



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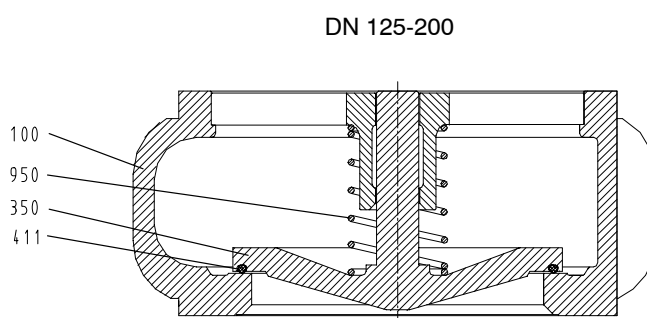
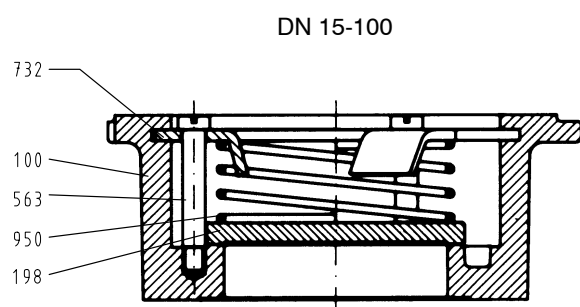
## Working pressures

Nominal pressure PN	Nominal bore DN	Body pressure test with water bar <sup>1)</sup>	Seat tightness bar <sup>2)</sup>	Working pressures in bar at temperatures in °C <sup>3)</sup>				
				50	80	100	120	250
6	15-200	9	6	6	4	2	-	-
6/10/16	15-200	24	16	16	16	16	16	13

<sup>1)</sup> DIN 3230-BQ (ISO 5208)

<sup>2)</sup> DIN 3230 part 3, BN 2 (leak rate 2)

<sup>3)</sup> For intermediate temperatures use linear interpolation.



## Materials

Part-no.	Name of parts	PN	DN	Material
100	Body		15-100	CuZn39Pb3 2.0401
			125-200	EN-GJL-250 (previously: GG-25) JL 1040
198	Plate	6	15-100	Plastic PPO-GFK
		6/10/16	15-100	Stainless steel 1.4301
350	Cone	6	125-200	EN-GJL-250 (previously: GG-25) JL 1040
		6/10/16	125-200	EN-GJL-250 (previously: GG-25) JL 1040
411	Gasket	6	125-200	EPDM
563	Guide pin		15-200	A2
732	Holder		15-100	Stainless steel 1.4301
950	Spring		15-200	Stainless steel 1.4571

## Opening pressures (p<sub>o</sub>)

depending on direction of flow

DN	p <sub>o</sub> in mbar			
	↔	↓	↑	↑ without spring
15	20	16	24	4
20	20	16	24	4
25	20	16	24	4
32	20	16	24	4
40	20	15.5	24.5	4.5
50	20	15	25	5
65	20	14.5	25.5	5.5
80	20	13.5	26.5	6.5
100	20	13.5	26.5	6.5
125	20		34	14
150	20		33	13
200	20		32	12

## Installation instructions

Observe direction of flow and direction arrow.

For opening, a minimum pressure is required. If this pressure is not attained, the installed closing spring can be removed. Without closing spring install only in vertical pipe with flow upward.

## Connection dimensions - Standards:

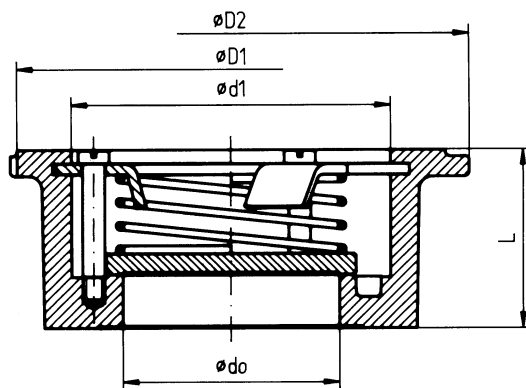
Face-to-face dimension: EN558-1/49  
(previously DIN 3202/K4)

Flanges: DIN 2501 PN 6-16  
ANSI B 16.1 25/125  
BS 4504 PN 6-16

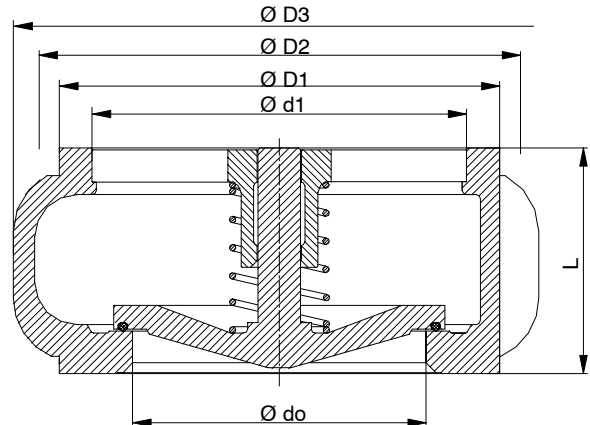
Raised faces: DIN 2526 type C

## Dimensions

DN 15-100



DN 125-200



### Dimensions (mm)

PN	DN	L	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	Ødo	Ød1	Weight
								approx. kg
6/10/16	15	17	43	51	-	15	28	0.15
	20	20	53	61	-	20	33	0.25
	25	23	64	71	-	25	41.5	0.3
	32	28	76	82	-	32	51.5	0.5
	40	31.5	86	92	-	40	58.5	0.65
	50	40	96	108	-	48.5	71.5	0.9
	65	46	116	127	-	63	90	1.2
	80	51	132	142	-	77	110	2.0
	100	61	152	162	-	96	126	2.8
	125	90	184	192	210	118	161	10.0
	150	106	209	218	250	138	186	13.0
	200	140	263	273	273	194	240	22.0

 ØD<sub>1</sub> = centring dia. for PN 6

 ØD<sub>2</sub> = centring dia. for PN 16

## Flow diagram

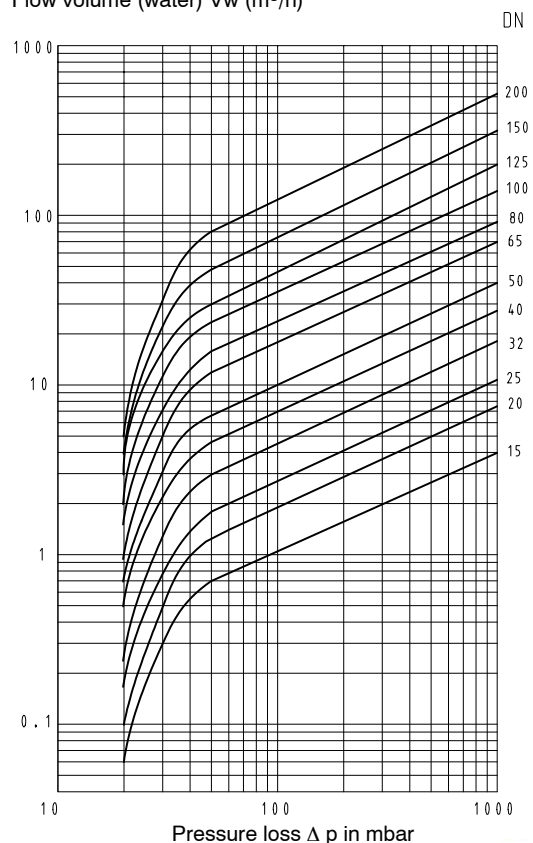
The readings shown in the chart apply to water at 20 °C. They were measured on valves installed in horizontal pipes. Valves installed in vertical pipes show minor deviations when partially open. To calculate pressure with other fluids, the equivalent water flow must first be determined acc. to the following formula:

$$V_w = \sqrt{\frac{\rho}{1000}} \cdot V$$

$V_w$  = equivalent water volume flow m<sup>3</sup>/h

$\rho$  = density of the fluid  
(operating conditions) kg/m<sup>3</sup>

$V$  = volumetric flow rate of the fluid  
(operating condition) m<sup>3</sup>/h

 Flow volume (water)  $V_w$  (m<sup>3</sup>/h)

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## Product Features - to our Customers' Benefit

### Installation in any position

(with installed spring)

#### Your benefit

- Easy plant engineering

### Centring aid part of the body

#### Your benefit

- Easy, quick assembly
- Cannot be lost

### Three guide pins for precise guidance of sealing plate

#### Your benefit

- Reliable operation
- No blocking of plate

### Standard design can be installed between flanges to

DIN 2501 PN 6-16

ANSI B 16.1 25/125

BS 4504 PN 16

#### Your benefit

- easy stockkeeping

### Compact design

#### short face-to-face length

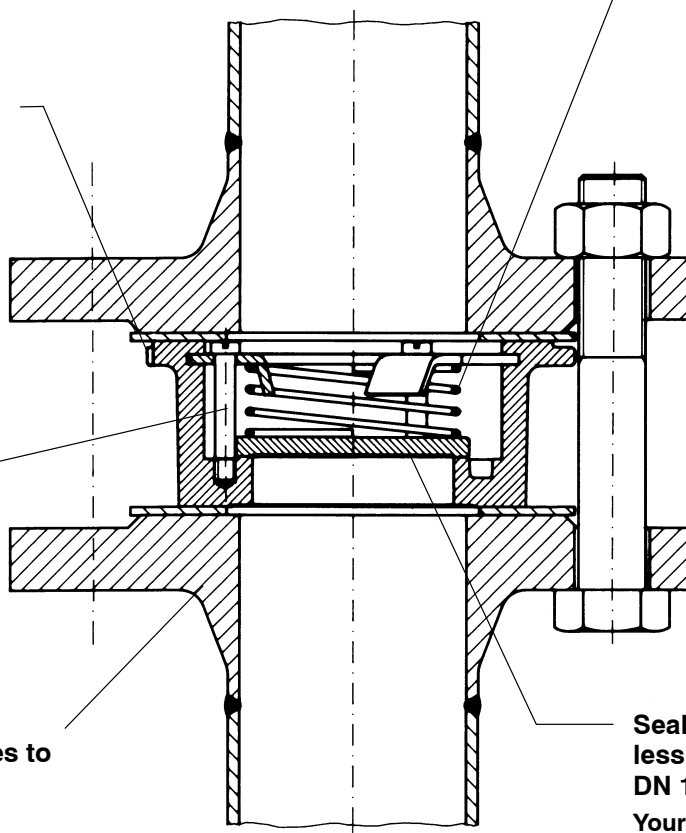
#### Your benefit

- Low weight
- Space-saving storage
- Easy to install
- **BOA®-RVK** helps to reduce construction volume and weight of the system
- Favourably-priced valve

### Stainless steel spring, can easily be removed if necessary

#### Your benefit

- Corrosion-resistant, reliable operation
- easily adaptable to operating conditions



### Sealing plate made of stainless steel on variant PN 6-16, DN 15-100

#### Your benefit

- corrosion-proof, reliable sealing

### Sealing plate/cone made of plastic on design PN 6, DN 15-200

#### Your benefit

- reliable sealing, reduced closing noise

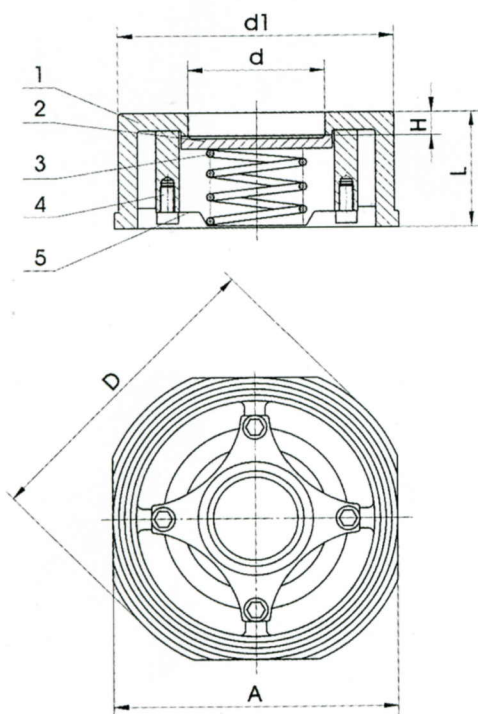
### Low pressure drop

#### Your benefit

- reduced operating costs

## VT-CW CHECK VALVE

- Investment Castings for Body and Bonnet
- Pressure rating: PN40
- Material: CF8M,CF8,CF3M



ITEM	PART	MATERIAL	QTY.
1	Body	CF8M(1.4408)	1
2	Disc	CF8M(1.4408)	1
3	Sping	SS301	1
4	Screw	SS304	4
5	Cap	CF8M(1.4408)	1



### VT-CW CHECK VALVE Specifications

SIZE	d	d1	A	D	L	H	WEIGHT(Kgs)
1/2 "	15	43	45	53	16.5	4.4	0.11
3/4 "	20	53	55	63	19.5	4.8	0.19
1 "	25	63	65	73	22	5.4	0.30
1-1/4 "	20	75	78	84	28	6.0	0.40
1-1/2 "	38	86	88	94	32	6.6	0.60
2 "	47	96	98	107	40	7.1	0.88
2-1/2 "	62.5	115	118	126	46	7.8	1.26
3 "	77	130	134	144	50	8.4	1.86
4 "	96	151	154	164	60	9.0	3.30



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