# BOA®-RVK

**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
- High temperature hot-water heating systems
- Heat transfer installations (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 Δp = 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

## 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 558/49
- 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

TÜV CERT PED 97/23/EC

CE

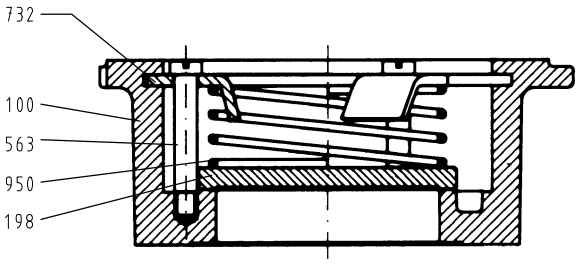
KSB

## Working pressures

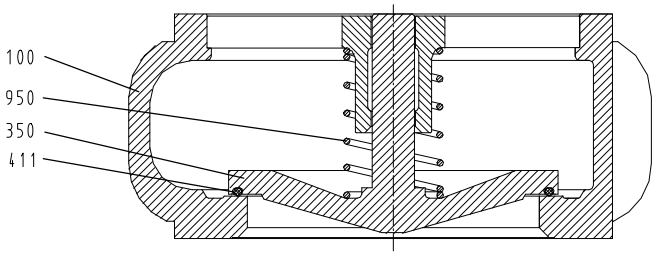
| Nominal pressure | Nominal bore | Body pressure test with water | | Seat tightness test with water | Working pressures in bar at temperatures in °C [3] [4] | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PN | DN | P10, P11 bar [1] | | P12 bar [2] | 50 | 80 | 100 | 120 | 250 |
| 6 | 15-200 | 9 | | 6 | 6 | 4 | 2 | – | – |
| 6/10/16 | 15-200 | 24 | | 16 | 16 | 16 | 16 | 16 | 13 |

[1]) DIN EN 12266-1 (P10, P11)
[2]) DIN EN 12266-1 (P12, leakage rate B)
[3]) For intermediate temperatures use linear interpolation.
[4]) Static loading

DN 15-100




DN 125-200




## Materials

| Part-no. | Name of parts | PN | DN | Material | |
|---|---|---|---|---|---|
| 100 | Body | | 15-100 | CuZn39Pb3 | 2.0401 |
| | | | 125-200 | EN-GJL-250 | 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 | JL 1040 |
| | | 6/10/16 | 125-200 | EN-GJL-250 | 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 ($p_o$)

depending on direction of flow

| DN | $p_o$ 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

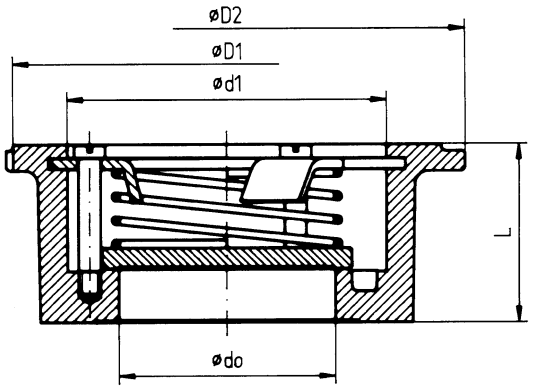
Observe direction of flow and direction arrow.
For opening, a minimum pressure is required. If this pressure is not attained, the installed closing spring can be removed. Without closing spring install only in vertical pipe with flow upward.

## Connection dimensions - Standards:

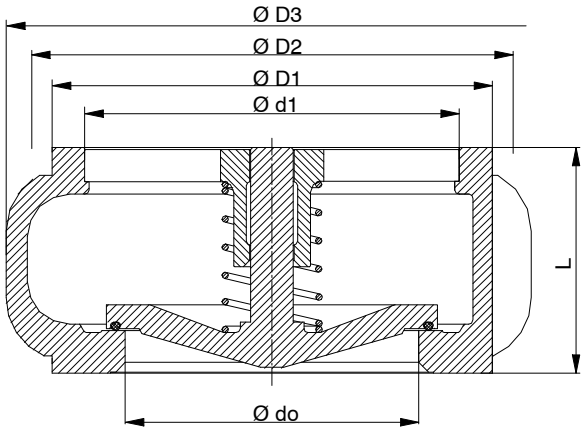
Face-to-face dimension: EN558/49
Flanges: DIN 2501 PN 6-16
ANSI B 16.1 25/125
BS 4504 PN 6-16
Raised faces: DIN EN 1092-2, type B

## Dimensions

DN 15-100




DN 125-200




| **Dimensions** (mm) | | | | | | | | **Weight** |
|---|---|---|---|---|---|---|---|---|
| PN | DN | **L** | ∅**$D_1$** | ∅**$D_2$** | ∅**$D_3$** | ∅**do** | ∅**d1** | 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 |

ø$D_1$ = centring dia. for PN 6

ø$D_2$ = centring dia. for PN 16

## Flow diagram

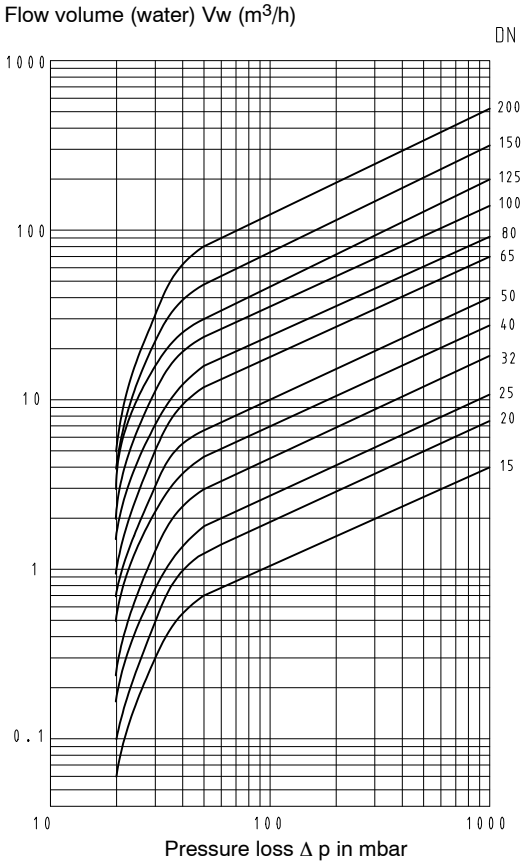
The readings shown in the chart apply to water at 20 °C. They were measured on valves installed in horizontal pipes. Valves installed in vertical pipes show minor deviations when partially open. To calculate pressure with other fluids, the equivalent water flow must first be determined acc. to the following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

$$\dot{V}_w = \sqrt{\frac{\varrho}{1000}} \cdot \dot{V}$$

$\dot{V}_w$ = equivalent water volume flow $m^3/h$

$\varrho$ = density of the fluid (operating conditions) $kg/m^3$

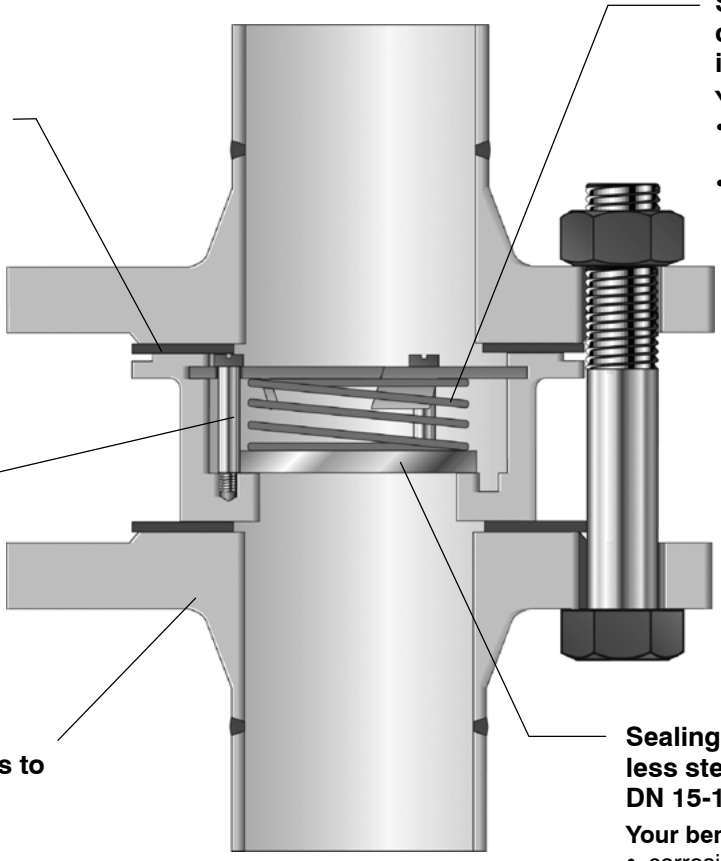
$\dot{V}$ = volumetric flow rate of the fluid (operating condition) $m^3/h$



# Product Features - to our Customers' Benefit

**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

**Installation in any position**
(with installed spring)
**Your benefit**
- Easy plant engineering



**Stainless steel spring, can easily be removed if necessary**
**Your benefit**
- Corrosion-resistant, reliable operation
- easily adaptable to operating conditions

**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 EN 1092-2, DIN EN 1092-1 PN 6-16 ANSI B 16.1 25/125 BS 4504 PN 16**
**Your benefit**
- easy stockkeeping

**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

Subject to technical modification without prior notice

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