

GESTRA Steam Systems

Product Range A2

Non-Return Valve
RK 44
 For flanges PN 6 / 10 / 16

RK 44



Description

Wafer-type non-return (check) valve for sandwiching between flanges. Valve with spring for installation in any position. Without spring only for vertical lines with upward flow. Self-centering valve body. Application for liquids, gases and vapours (observe classification according to PED).

Pressure/Temperature Rating for valves with metal-to-metal seat

| Nominal sizes DN | [mm] [in] | 15 – 100 ½ – 4 | | | 125 – 200 5 – 8 | | |
|-----------------------|------------------|---------------------------------|------------|------------|------------------------------|------------|------------|
| Nominal pressure | PN | 16 ¹⁾ | | | | | |
| Max. service pressure | [barg] [psig] | 16 230 | 14 200 | 13 185 | 16 230 | 14 200 | 13 185 |
| Related temperature | [°C] [°F] | 120 248 | 200 392 | 250 482 | 120 248 | 200 392 | 250 482 |
| Minimum temperature | | –200 °C (–328 °F) ¹⁾ | | | –10 °C (14 °F) ¹⁾ | | |

¹⁾ Minimum temperature at nominal pressure rating.

Soft seats

EPDM (ethylene propylene): –40 to +150 °C (–58 to +302 °F) for water, condensate and steam.

FPM (fluoro rubber): –25 to +200 °C (–13 to +392 °F) for oils, gases and air.

But also note valve pressure/temperature rating in the above table.

Tightness with soft seats of EPDM and FPM in accordance with DIN 3230, part 3, leakage rates BN 1, BO 1.

Permissible leakage rates with metal-to-metal seat in accordance with DIN 3230, part 3, leakage rates BN 2, BO 3.

Chemical resistance see GESTRA data base “Chemical Resistance”.

Connections of wafer-type valves ²⁾

| DIN | Standard valves for fitting between flanges to | |
|---------------------------|--|--|
| | BS | ASME |
| DIN EN 1092 PN 6/10/16 | BS 10 tables D, E, F | B 16.1 class 125 FF B 16.5 class 150 RF ³⁾ |

²⁾ DN 15–100 mm (½–4”) with universal centering ring.

³⁾ ASME class 150 RF only suitable for DN 125–200 mm (5–8”).

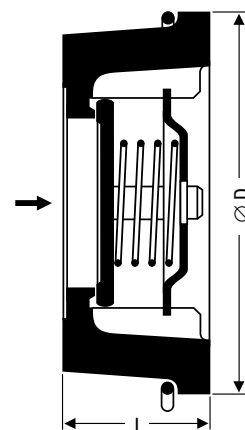
Dimensions

| DN | [mm] [in] | 15 ½ | 20 ¾ | 25 1 | 32 1¼ | 40 1½ | 50 2 | 65 2½ | 80 3 | 100 4 | 125 5 | 150 6 | 200 8 |
|------------|-----------------|---------|---------|---------|----------|----------|---------|----------|---------|----------|----------|----------|----------|
| Dimensions | L ⁴⁾ | 16 | 19 | 22 | 28 | 31.5 | 40 | 46 | 50 | 60 | 90 | 106 | 140 |
| | D | 42 | 49 | 58 | 74 | 84 | 97 | 117 | 132 | 152 | 184 | 209 | 264 |
| Weight | [kg] | 0.1 | 0.2 | 0.25 | 0.5 | 0.7 | 1.1 | 1.4 | 2 | 3.2 | 7.7 | 11 | 22 |

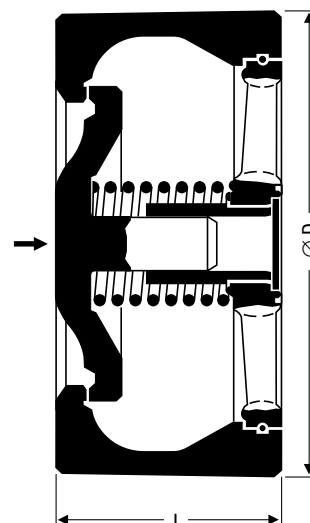
⁴⁾ Overall length according to DIN EN 558-1, table 11, series 49 (△ DIN 3202, part 3, series K4).

Materials

| DN 15 – 100 (½ – 4") | DIN reference | | ASTM equivalent |
|------------------------------|-------------------|------------|-----------------|
| Body, seat and guide ribs | CuSn 10 – Cu | CC480K-GS | B 584 C90 500 |
| Valve disc, spring retainer | X6CrNiMoTi17-12-2 | 1.4571 | A 182 F 316 |
| Spring | | | A 313 Type 316 |
| Centring ring | X10CrNi18-8 | 1.4310 | A 313 Type 302 |
| DN 125 – 200 (5 – 8") | | | |
| Body | EN-GJL-250 | EN-JL 1040 | A 126 Class A |
| Seat, valve cone and spindle | CuSn10 – Cu | CC480K-GS | B 584 C90 500 |
| Guide support | | | |
| Spindle guide | | | |
| Spring | X6CrNiMoTi17-12-2 | 1.4571 | A 313 Type 316 |



DN 15–100
(½ – 4")



DN 125–200
(5 – 8")

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Opening pressures

Differential pressures at zero volume flow.

| DN | | Opening pressures [mbar] | | | |
|-----|----|--------------------------|--------------|------|----|
| mm | in | Direction of flow | | | |
| | | without springs | with springs | | |
| 15 | ½ | 2.5 | 25 | 22.5 | 20 |
| 20 | ¾ | 2.5 | 25 | 22.5 | 20 |
| 25 | 1 | 2.5 | 25 | 22.5 | 20 |
| 32 | 1¼ | 3.5 | 27 | 23.5 | 20 |
| 40 | 1½ | 4.0 | 28 | 24.0 | 20 |
| 50 | 2 | 4.5 | 29 | 24.5 | 20 |
| 65 | 2½ | 5.0 | 30 | 25.0 | 20 |
| 80 | 3 | 5.5 | 31 | 25.5 | 20 |
| 100 | 4 | 6.5 | 33 | 26.5 | 20 |
| 125 | 5 | 12.5 | 35 | 22.5 | 10 |
| 150 | 6 | 14.0 | 38 | 24.0 | 10 |
| 200 | 8 | 13.5 | 37 | 23.5 | 10 |

1 mbar = 0.0145 psi = 10 mm w.g. = 0.4 in w.g.

On request at extra charge, special springs for opening pressures:

- between 5 and 1000 mbar for DN 15–50 mm (½–2"),
- between 5 and 700 mbar for DN 65 and 80 mm (2½–3"),
- between 5 and 500 mbar for DN 100–200 mm (4–8").

Enquiry Specification

GESTRA DISCO non-return valve RK 44, PN 6/10/16.
 Wafer design with extremely short overall length to DIN EN 558-1, table 11, series 49.
 Suitable for fitting between flanges to DIN, BS or ASME.
 Indications on pressure, nominal size (DN), body material. Metal-to-metal seat or soft seat (EPDM or FPM).

Order Specifications

Type RK 44, DN...
 Metal-to-metal or soft seat (EPDM or FPM).
 Fluid, flowrate, pressure and temperature.
 Type of pipe flanges.

Note

The valves should not be used on compressors or where pulsating flow exists.
 For these applications please consult us.



These products comply with the requirements of the EC Pressure Equipment Directive (PED) 97/23/eec. DN 65–200 with CE marking. DN 15–50 are excluded from the scope of this Directive and **not entitled** to bear the CE marking.

Supply in accordance with our general terms of business.

Pressure Drop Chart

The curves given in the chart are valid for water at 20 °C. To read the pressure drop for other fluids the equivalent water volume flowrate must be calculated and used in the graph.

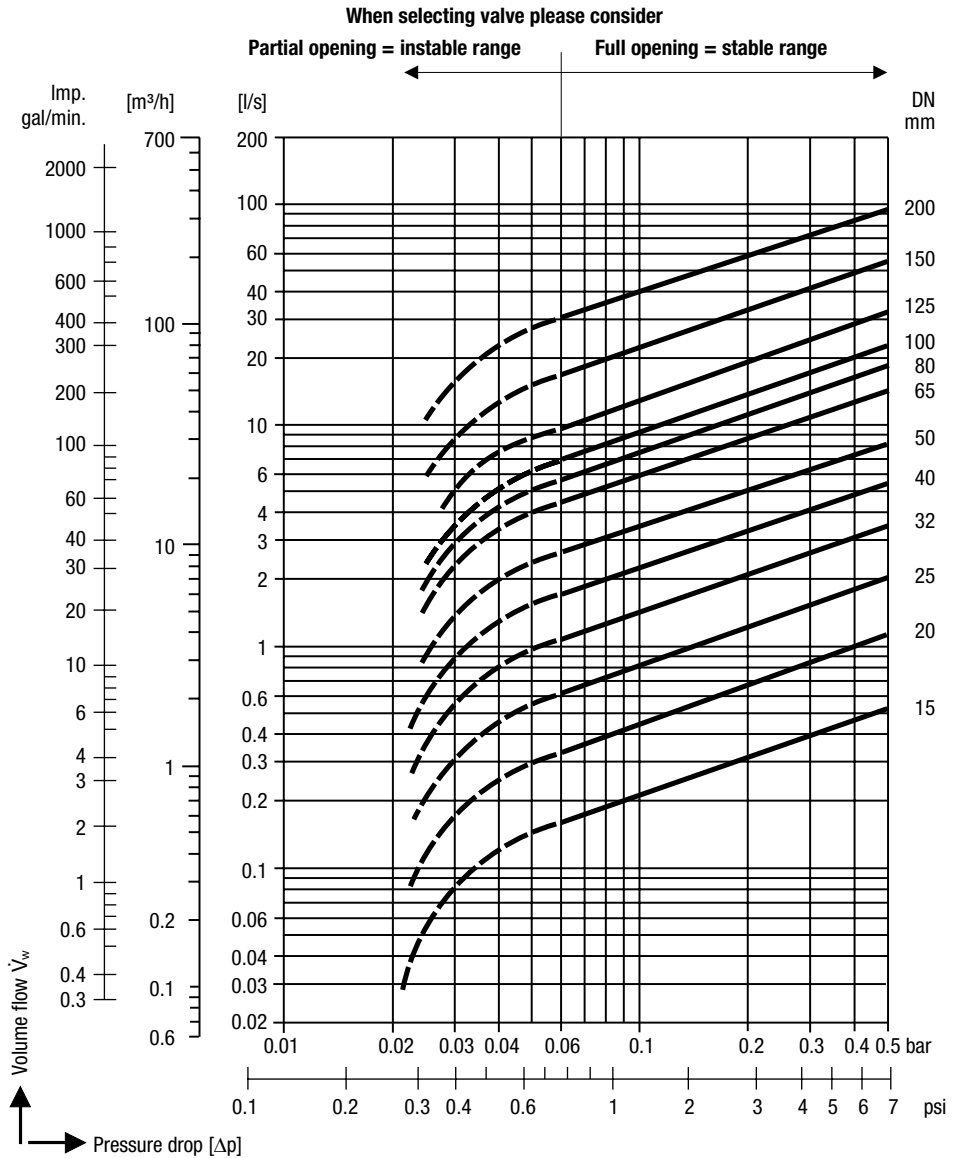
The values indicated in the chart are applicable to spring-loaded valves with horizontal flow. With vertical flow insignificant deviations occur only within the range of partial opening.

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

\dot{V}_w = Equivalent water volume flow in [l/s] etc.

ρ = Density of fluid (operating condition) in [kg/m³] etc.

\dot{V} = Volume of fluid (operating condition) in [l/s] etc.



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