



Pressure Drop Chart

The chart is valid for water at 20 °C; for other fluids, the equivalent water volume flowrate must be calculated and used in the chart.

The values indicated in the chart are applicable to valves with 7 mbar springs with horizontal flow. With vertical flow deviations occur only within the range of partial opening.

The dashed lines in the chart are valid for valves with 2 mbar springs with horizontal flow.

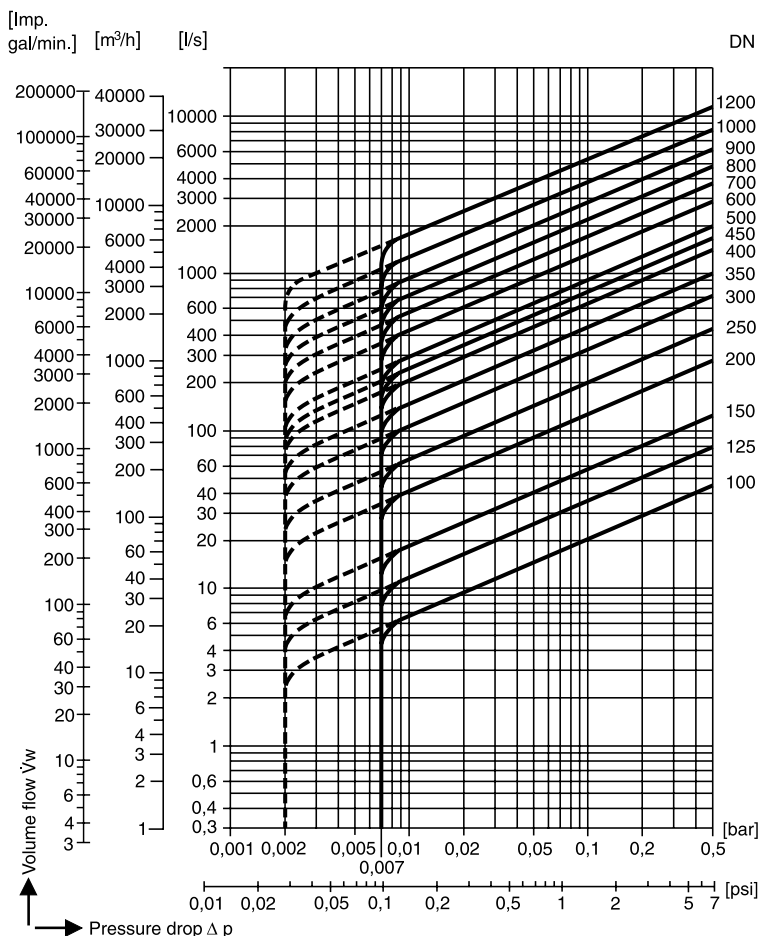
The chart and the flow characteristics apply to values up to PN 40. For valves with higher pressure ratings (PN) the loss coefficients (zeta values) and the pressure drops are increased by approx. 20%. The k_{vs} values are correspondingly reduced.

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

\dot{V}_W = Equivalent water volume flow in [l/s] or [m³/h]

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

\dot{V} = Volume flow of fluid (operating condition) in [l/s] or [m³/h]



Opening Pressures

Differential pressures at zero volume flow.

| DN | Opening pressures [mbar] | | | |
|-----|--------------------------|------------------------------|---------|---------|
| | without spring | with upward flow with spring | | |
| | | 7 WA 7 WAI | 2 WA | 5 VO |
| 100 | 7 | 14 | 9 | 19 |
| 125 | 10 | 17 | 12 | 25 |
| 150 | 11 (15) | 18 (22) | 13 (17) | 27 (35) |
| 200 | 12 (18) | 19 (25) | 14 (20) | 29 (41) |
| 250 | 14 (18) | 21 (25) | 16 (20) | 33 (41) |
| 300 | 15 (25) | 22 (32) | 17 (27) | 35 (55) |
| 350 | 17 (25) | 24 (32) | 19 (27) | 39 (55) |
| 400 | 19 (25) | 26 (32) | 21 (27) | 43 (55) |
| 450 | 22 | 29 | 24 | 49 |
| 500 | 23 (28) | 30 (35) | 25 (30) | 51 (61) |

Values indicated in brackets apply for BB 17/18/19.

Springs and Associated Opening Pressures

| | | | |
|--------------|---|-------------|--|
| 7 WA | Spring for 7 mbar opening pressure with horizontal installation | 2 WA | Spring for 2 mbar opening pressure with horizontal installation. |
| 7 WAI | As above, but for temperatures > 300 °C. | 5 VO | Spring for 5 mbar opening pressure with vertical installation and downward flow. |

For upward flow see opposite table.

¹⁾ If PN > 40 and DN > 500 mm ask for corresponding data sheets.

DISCOCHECK Dual-Plate Check Valves BB

DIN design DN 100 – 1200 mm, PN 6 – 160¹⁾



Dimensions and Weights

| DN | PN | Dimensions [mm] | | | Weight ²⁾ [kg] |
|--------|-----|-----------------|-----|----|---------------------------|
| | | D | L | A | |
| 100 mm | 10 | 164 | 64 | 19 | 7 |
| | 16 | 164 | | | 7 |
| | 25 | 171 | | | 7,5 |
| | 40 | 171 | | | 7,5 |
| 125 mm | 10 | 194 | 70 | 28 | 12 |
| | 16 | 194 | | | 12 |
| | 25 | 196 | | | 12 |
| | 40 | 196 | | | 12 |
| 150 mm | 6 | 209 | 76 | 40 | 12 |
| | 10 | 220 | | | 13,5 |
| | 16 | 220 | | | 13,5 |
| | 25 | 226 | | | 14 |
| 200 mm | 6 | 264 | 89 | 64 | 18,5 |
| | 10 | 275 | | | 20 |
| | 16 | 275 | | | 20 |
| | 25 | 286 | | | 22 |
| 250 mm | 6 | 319 | 114 | 87 | 33 |
| | 10 | 330 | | | 35 |
| | 16 | 330 | | | 35 |
| | 25 | 343 | | | 38 |
| 40 | 355 | 41 | | | |

| DN | PN | Dimensions [mm] | | | Weight ²⁾ [kg] |
|--------|----|-----------------|-----|-----|---------------------------|
| | | D | L | A | |
| 300 mm | 6 | 375 | 114 | 110 | 44 |
| | 10 | 380 | | | 45 |
| | 16 | 386 | | | 47 |
| | 25 | 403 | | | 51 |
| | 40 | 420 | | | 55 |
| 350 mm | 6 | 425 | 127 | 120 | 62,5 |
| | 10 | 440 | | | 67 |
| | 16 | 446 | | | 69 |
| | 25 | 460 | | | 73 |
| | 40 | 477 | | | 79 |
| 400 mm | 6 | 475 | 140 | 142 | 80,5 |
| | 10 | 491 | | | 86 |
| | 16 | 498 | | | 88 |
| | 25 | 517 | | | 95 |
| | 40 | 549 | | | 107 |
| 450 mm | 6 | 530 | 152 | 163 | 125 |
| | 10 | 541 | | | 130 |
| | 16 | 558 | | | 138 |
| | 40 | 574 | | | 143 |
| | 6 | 580 | | | 144 |
| 500 mm | 6 | 580 | 152 | 181 | 144 |
| | 10 | 596 | | | 152 |
| | 16 | 620 | | | 164 |
| | 25 | 627 | | | 168 |
| | 40 | 631 | | | 170 |

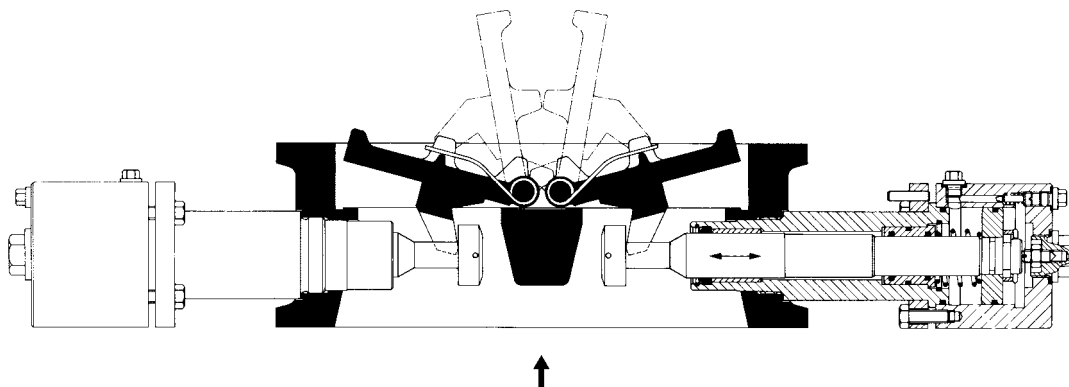
Type Code

| | |
|------|--|
| BB | Valve type |
| 2 | Series 1 – DN 100+125 mm and from DN 450 mm as well as from PN 63 2 – DN 150–400 mm up to PN 40 |
| 4 | Pressure rating 1 – PN 6 (only grey cast iron) 2 – PN 10 4 – PN 16 5 – PN 25 6 – PN 40 |
| C | Body material G – Grey cast iron C – Steel A – Austenitic steel |
| 150 | Nominal size DN 100 – 1200 mm |
| FPM | Seat HD – metal-to-metal EPDM FPM PTFE |
| 7 WA | Springs/Opening pressures 7 WA – Spring for 7 mbar with horizontal installation 7 WAI – Inconel spring for 7 mbar with horizontal installation 2 WA – Spring for 2 mbar with horizontal installation 5 VO – Spring for 5 mbar with downward flow |

Typical example: **BB 24 C 150 FPM 7 WA**
 Explanatory note: Dual-plate check valve BB 24, PN 16, made of cast steel type GS-C 25, DN 150 mm with FPM gasket and spring (7 mbar) for horizontal installation.

- 1) If PN > 40 and DN > 500 mm ask for corresponding data sheets.
 2) Weights rated for cast steel grade GP 240 GH (GS-C 25).

BB with patented adjustable dampers, DN 200 – 800 mm.
 Max. temperature rating 110 °C because of NBR gasket used.



DISCOCHECK Dual-Plate Check Valves BB

DIN design DN 100 – 1200 mm, PN 6 – 160¹⁾



Stock Codes

| Materials Body/ Dual plates | Type | Nom. press. PN | Nominal size | | Stock code | |
|--|---|-------------------|--------------|---------|------------|-----------|
| | | | DN | inch | | |
| Grey cast iron / S.G. (ductile) iron with soft seat EPDM | BB 21 G | 6 | 150 | 6" | 1402301 | |
| | BB 21 G | 6 | 200 | 8" | 1402501 | |
| | BB 21 G | 6 | 250 | 10" | 1402601 | |
| | BB 21 G | 6 | 300 | 12" | 1402701 | |
| | BB 21 G | 6 | 350 | 14" | 1402801 | |
| | BB 21 G | 6 | 400 | 16" | 1402901 | |
| | BB 11 G | 6 | 450 | 18" | 1403001 | |
| | BB 11 G | 6 | 500 | 20" | 1403101 | |
| | BB 11 G | 6 | 600–1200 | 24"–48" | on request | |
| | BB 22 G | 10 | 150 | 6" | 1402302 | |
| | BB 22 G | 10 | 200 | 8" | 1402502 | |
| | BB 22 G | 10 | 250 | 10" | 1402602 | |
| | BB 22 G | 10 | 300 | 12" | 1402702 | |
| | BB 22 G | 10 | 350 | 14" | 1402802 | |
| | BB 22 G | 10 | 400 | 16" | 1402902 | |
| | BB 12 G | 10 | 450 | 18" | 1403002 | |
| | BB 12 G | 10 | 500 | 20" | 1403102 | |
| | BB 12 G | 10 | 600–1200 | 24"–48" | on request | |
| | BB 24 G | 16 | 150 | 6" | 1402304 | |
| | BB 24 G | 16 | 200 | 8" | 1402504 | |
| | BB 24 G | 16 | 250 | 10" | 1402604 | |
| | BB 24 G | 16 | 300 | 12" | 1402704 | |
| | BB 24 G | 16 | 350 | 14" | 1402804 | |
| | BB 24 G | 16 | 400 | 16" | 1402904 | |
| | BB 14 G | 16 | 450 | 18" | 1403004 | |
| | BB 14 G | 16 | 500 | 20" | 1403104 | |
| | BB 14 G | 16 | 600–1200 | 24"–48" | on request | |
| | Grey cast iron / aluminium bronze Body lining: hard rubber | BB 21 GS | 6 | 150 | 6" | 140230184 |
| | | BB 21 GS | 6 | 200 | 8" | 140250184 |
| | | BB 21 GS | 6 | 250 | 10" | 140260184 |
| | | BB 21 GS | 6 | 300 | 12" | 140270184 |
| | | BB 21 GS | 6 | 350 | 14" | 140280184 |
| BB 21 GS | | 6 | 400 | 16" | 140290184 | |
| BB 11 GS | | 6 | 450 | 18" | 140300184 | |
| BB 11 GS | | 6 | 500 | 20" | 140310184 | |
| BB 11 GS | | 6 | 600–1200 | 24"–48" | on request | |
| BB 22 GS | | 10 | 150 | 6" | 140230284 | |
| BB 22 GS | | 10 | 200 | 8" | 140250284 | |
| BB 22 GS | | 10 | 250 | 10" | 140260284 | |
| BB 22 GS | | 10 | 300 | 12" | 140270284 | |
| BB 22 GS | | 10 | 350 | 14" | 140280284 | |
| BB 22 GS | | 10 | 400 | 16" | 140290284 | |
| BB 12 GS | | 10 | 450 | 18" | 140300284 | |
| BB 12 GS | | 10 | 500 | 20" | 140310284 | |
| BB 12 GS | | 10 | 600–1200 | 24"–48" | on request | |
| BB 24 GS | | 16 | 150 | 6" | 140230484 | |
| BB 24 GS | | 16 | 200 | 8" | 140250484 | |
| BB 24 GS | | 16 | 250 | 10" | 140260484 | |
| BB 24 GS | | 16 | 300 | 12" | 140270484 | |
| BB 24 GS | | 16 | 350 | 14" | 140280484 | |
| BB 24 GS | | 16 | 400 | 16" | 140290484 | |

| Materials Body/ Dual plates | Type | Nom. press. PN | Nominal size | | Stock code |
|-----------------------------------|----------|-------------------|--------------|------------|------------|
| | | | DN | inch | |
| Carbon steel, metal-to-metal seat | BB 14 GS | 16 | 450 | 18" | 140300484 |
| | BB 14 GS | 16 | 500 | 20" | 140310484 |
| | BB 14 GS | 16 | 600–1200 | 24"–48" | on request |
| | BB 22 C | 10 | 150 | 6" | 1432302 |
| | BB 22 C | 10 | 200 | 8" | 1432502 |
| | BB 22 C | 10 | 250 | 10" | 1432602 |
| | BB 22 C | 10 | 300 | 12" | 1432702 |
| | BB 22 C | 10 | 350 | 14" | 1432802 |
| | BB 22 C | 10 | 400 | 16" | 1432902 |
| | BB 12 C | 10 | 100 | 4" | 1432102 |
| | BB 12 C | 10 | 125 | 5" | 1431202 |
| | BB 12 C | 10 | 450 | 18" | 1433002 |
| | BB 12 C | 10 | 500 | 20" | 1433102 |
| | BB 12 C | 10 | 600–1200 | 24"–48" | on request |
| | BB 24 C | 16 | 150 | 6" | 1432304 |
| | BB 24 C | 16 | 200 | 8" | 1432504 |
| | BB 24 C | 16 | 250 | 10" | 1432604 |
| | BB 24 C | 16 | 300 | 12" | 1432704 |
| | BB 24 C | 16 | 350 | 14" | 1432804 |
| | BB 24 C | 16 | 400 | 16" | 1432904 |
| | BB 14 C | 16 | 100 | 4" | 1432104 |
| | BB 14 C | 16 | 125 | 5" | 1431204 |
| | BB 14 C | 16 | 450 | 18" | 1433004 |
| | BB 14 C | 16 | 500 | 20" | 1433104 |
| | BB 14 C | 16 | 600–1200 | 24"–48" | on request |
| | BB 25 C | 25 | 150 | 6" | 1432305 |
| | BB 25 C | 25 | 200 | 8" | 1432505 |
| | BB 25 C | 25 | 250 | 10" | 1432605 |
| | BB 25 C | 25 | 300 | 12" | 1432705 |
| | BB 25 C | 25 | 350 | 14" | 1432805 |
| | BB 25 C | 25 | 400 | 16" | 1432905 |
| | BB 15 C | 25 | 100 | 4" | 1432105 |
| | BB 15 C | 25 | 125 | 5" | 1431205 |
| | BB 15 C | 25 | 450 | 18" | 1433005 |
| | BB 15 C | 25 | 500 | 20" | 1433105 |
| | BB 15 C | 25 | 600–1200 | 24"–48" | on request |
| | BB 26 C | 40 | 150 | 6" | 1432306 |
| | BB 26 C | 40 | 200 | 8" | 1432506 |
| | BB 26 C | 40 | 250 | 10" | 1432606 |
| | BB 26 C | 40 | 300 | 12" | 1432706 |
| | BB 26 C | 40 | 350 | 14" | 1432806 |
| | BB 26 C | 40 | 400 | 16" | 1432906 |
| BB 16 C | 40 | 100 | 4" | 1432106 | |
| BB 16 C | 40 | 125 | 5" | 1432206 | |
| BB 16 C | 40 | 450 | 18" | 1433006 | |
| BB 16 C | 40 | 500 | 20" | 1433106 | |
| BB 16 C | 40 | 600–1200 | 24"–48" | on request | |

¹⁾ If PN > 40 and DN > 500 mm ask for corresponding data sheets.

DISCOCHECK Dual-Plate Check Valves BB

DIN design DN 100 – 1200 mm, PN 6 – 160¹⁾



Stock Codes

| Materials Body/ Dual plates | Type | Nom. press. PN | Nominal size | | Stock Code |
|--|---------|----------------------|--------------|---------|---------------|
| | | | DN | inch | |
| Austenitic stainless steel, metal-to-metal | BB 22 A | 10 | 150 | 6" | 1492302 |
| | BB 22 A | 10 | 200 | 8" | 1492502 |
| | BB 22 A | 10 | 250 | 10" | 1492602 |
| | BB 22 A | 10 | 300 | 12" | 1492702 |
| | BB 22 A | 10 | 350 | 14" | 1492802 |
| | BB 22 A | 10 | 400 | 16" | 1492902 |
| | BB 12 A | 10 | 100 | 4" | 1492102 |
| | BB 12 A | 10 | 125 | 5" | 1491202 |
| | BB 12 A | 10 | 450 | 18" | 1493002 |
| | BB 12 A | 10 | 500 | 20" | 1493102 |
| | BB 12 A | 10 | 600–1200 | 24"–48" | on request |
| | BB 24 A | 16 | 150 | 6" | 1492304 |
| | BB 24 A | 16 | 200 | 8" | 1492504 |
| | BB 24 A | 16 | 250 | 10" | 1492604 |
| | BB 24 A | 16 | 300 | 12" | 1492704 |
| | BB 24 A | 16 | 350 | 14" | 1492804 |
| | BB 24 A | 16 | 400 | 16" | 1492904 |
| | BB 14 A | 16 | 100 | 4" | 1492104 |
| | BB 14 A | 16 | 125 | 5" | 1491204 |
| | BB 14 A | 16 | 450 | 18" | 1493004 |
| | BB 14 A | 16 | 500 | 20" | 1493104 |
| | BB 14 A | 16 | 600–1200 | 24"–48" | on request |
| | BB 25 A | 25 | 150 | 6" | 1492305 |
| | BB 25 A | 25 | 200 | 8" | 1492505 |
| | BB 25 A | 25 | 250 | 10" | 1492605 |
| | BB 25 A | 25 | 300 | 12" | 1492705 |
| | BB 25 A | 25 | 350 | 14" | 1492805 |
| | BB 25 A | 25 | 400 | 16" | 1492905 |
| | BB 15 A | 25 | 100 | 4" | 1492105 |
| | BB 15 A | 25 | 125 | 5" | 1491205 |
| | BB 15 A | 25 | 450 | 18" | 1493005 |
| | BB 15 A | 25 | 500 | 20" | 1493105 |
| | BB 15 A | 25 | 600–1200 | 24"–48" | on request |
| | BB 26 A | 40 | 150 | 6" | 1492306 |
| | BB 26 A | 40 | 200 | 8" | 1492506 |
| | BB 26 A | 40 | 250 | 10" | 1492606 |
| | BB 26 A | 40 | 300 | 12" | 1492706 |
| | BB 26 A | 40 | 350 | 14" | 1492806 |
| | BB 26 A | 40 | 400 | 16" | 1492906 |
| | BB 16 A | 40 | 100 | 4" | 1492106 |
| | BB 16 A | 40 | 125 | 5" | 1492206 |
| | BB 16 A | 40 | 450 | 18" | 1493006 |
| | BB 16 A | 40 | 500 | 20" | 1493106 |
| | BB 16 A | 40 | 600–1200 | 24"–48" | on request |

Special Designs

Special Springs

7 WAI of Inconel X 750

This spring is not suitable for DISCOCHECK dual-plate check valves made of grey cast iron.

Other special springs available on request.

Soft seats

of EPDM for water and steam up to 150 °C

of FPM for oils, gases and air up to 200 °C

of PTFE

Other

DISCOCHECK dual-plate check valves suitable for ANSI flanges, made of ASTM material and for pressure ratings up to PN 160 and with adjustable dampers available on request.

¹⁾ If PN > 40 and DN > 500 mm ask for corresponding data sheets.