



Gate Valves Type Bolted Bonnet

Class 1500 DN 50-400 (2" – 16")

Carbon, Alloy and Stainless Steel



Fig. VC1500BB

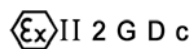
Design:

API 600 & ISO 10434

ASME B16.34 and BS 1414



600-0016

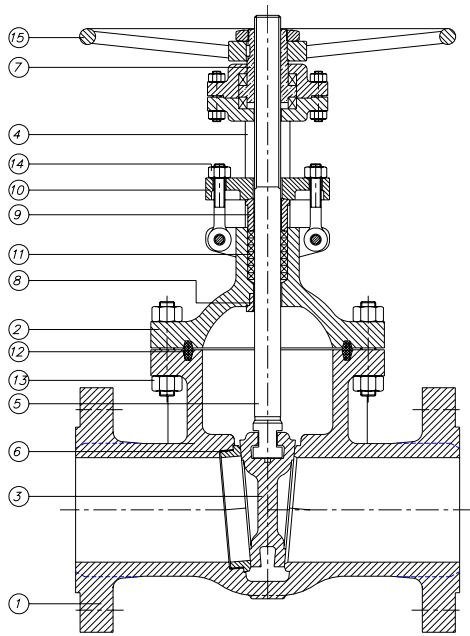




Gate Valves Class 1500

Type Bolted Bonnet

Parts and materials



Trim Material

| API 600 Trim No. | Stem / Backseat | Seating Surface Body / Wedge |
|------------------|-----------------|------------------------------|
| 1 | 13% Cr | 13% Cr |
| 2 | SS 304 | SS 304 |
| 3 | SS310 | SS310 |
| 4 | 13% Cr | 13% Cr (Hard) |
| 5 or 5A | 13% Cr | HF |
| 6 | 13% Cr | 13% Cr / Cu Ni |
| 7 | 13% Cr | 13% Cr / 13% Cr (Hard) |
| 8 or 8A | 13% Cr | HF / 13% Cr |
| 9 | Monel | Monel |
| 10 | SS 316 | SS 316 |
| 11 or 11A | Monel | HF / Monel |
| 12 or 12A | SS 316 | HF / SS 316 |
| 13 | Alloy 20 | Alloy 20 |
| 14 or 14A | Alloy 20 | HF / Alloy 20 |

HF: Hard Facing using CoCr welding alloy (Stellite)

| Item | Description | Material | | | |
|------|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| | | Carbon Steel | Carbon Steel (Low Temp.) | Alloy Steel | Stainless Steel |
| 1 | Body | A 216 Gr.WCB | A 352 Gr.LCB | A 217 Gr.C5 | A 351 Gr.CF8M |
| 2 | Bonnet | A 216 Gr.WCB | A 352 Gr.LCB | A 217 Gr.C5 | A 351 Gr.CF8M |
| 3 | Wedge | A 216 Gr.WCB + ER410 | A 352 Gr.LCB + ER308 | A 217 Gr.C5 + ER410 | A 351 Gr.CF8M |
| 4 | Yoke | A 216 Gr.WCB | A 352 Gr.LCB | A 217 Gr.C5 | A 351 Gr.CF8M |
| 5 | Stem | A 182 Gr.F6a | A 182 Gr.F304 | A 182 Gr.F6a | A 182 Gr.F316 |
| 6 | Seat Ring | A 105 + Stellite | A 182 Gr.F304 | A 182 Gr.F6a + Stellite | ----- |
| 7 | Stem Nut | B 148 / A 439 Gr.D2 | B 148 / A 439 Gr.D2 | B 148 / A 439 Gr.D2 | B 148 / A 439 Gr.D2 |
| 8 | Backseat | A 182 Gr.F6a | A 182 Gr.F304 | A 182 Gr.F6a | ----- |
| 9 | Gland | A 105 | A 105 | A 182 Gr.F6a | A 182 Gr.F316 |
| 10 | Gland Flange | A 105 | A 105 | A 105 | A 182 Gr.F304 |
| 11 | Stem Packing | Graphited | Graphited | Graphited | Graphited |
| 12 | Gasket | Soft Iron | SS 304 | SS 304 | SS 316 |
| 13 | Bonnet Bolt & Nut | A 193 Gr.B7 / A 194 Gr.2H | A320 Gr. L7 / A194 Gr. 7 | A 193 Gr.B7 / A 194 Gr.2H | A 193 Gr.B7 / A 194 Gr.2H |
| 14 | Eye Bolt & Nut | A 193 Gr.B7 / A 194 Gr.2H | A 193 Gr.B7 / A 194 Gr.2H | A 193 Gr.B7 / A 194 Gr.2H | A 193 Gr.B7 / A 194 Gr.2H |
| 15 | Handwheel | Carbon Steel | Carbon Steel | Carbon Steel | Carbon Steel |

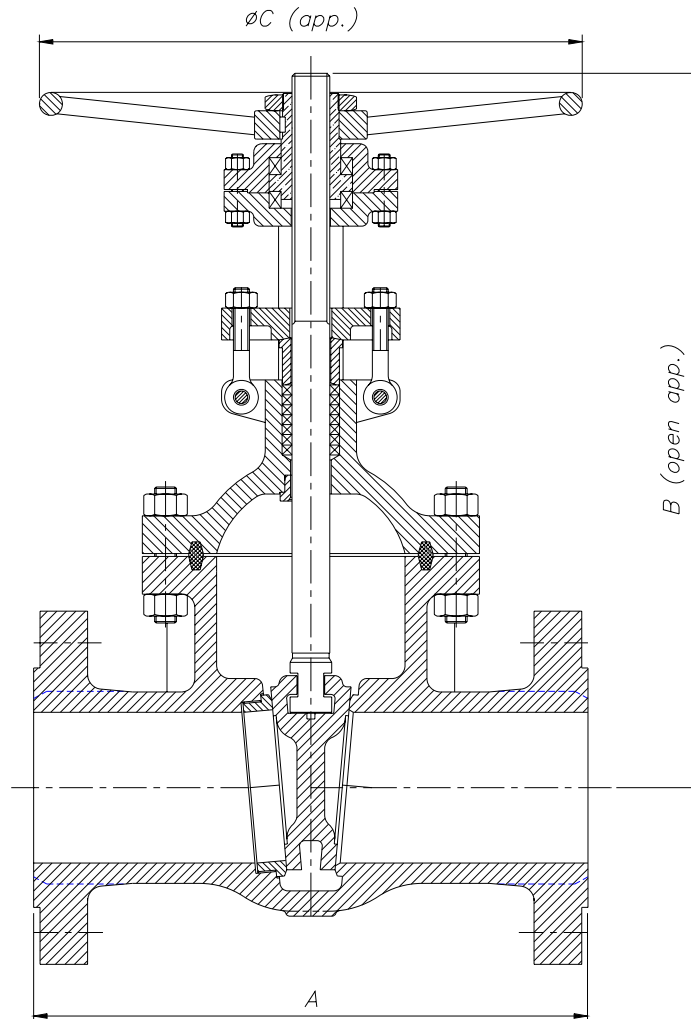
Item 6 and 8 only in Carbon Steel and Alloy Steel construction



Gate Valves Class 1500

Type Bolted Bonnet

Dimensions



| DN | A (RF/BW) | B | ØC | WEIGHT |
|-----------|-----------|------|------|--------|
| 50 (2") | 368 | 500 | 250 | 80 |
| 65 (2½") | 419 | 570 | 310 | 120 |
| 80 (3") | 470 | 633 | 350 | 150 |
| 100 (4") | 546 | 725 | 400 | 225 |
| 125 (5") | 673 | 900 | 500 | 440 |
| 150 (6") | 705 | 1045 | 600 | 625 |
| 200 (8") | 832 | 1310 | 680 | 1115 |
| 250 (10") | 991 | 1410 | 910 | 1430 |
| 300 (12") | 1130 | 1550 | 965 | 1955 |
| 350 (14") | 1257 | 2100 | 1015 | 2690 |
| 400 (16") | 1384 | 2475 | 1065 | 3830 |

(*) Dimensions in mm and weight in kg.



Gate Valves Class 1500

Type Bolted Bonnet

General Characteristics, Cv, P&T Rating

| GENERAL CHARACTERISTICS | | Fig. VC1500BB | | |
|-------------------------------|---------------------------------|-----------------|-----------|-----------|
| DESIGN STANDARDS | | | | |
| Valves design | API 600 & ISO 10434 | ASME B16.34 | BS 1414 | |
| End to End Dimensions | ASME B16.10 & ISO 5752 | | | |
| Flanged Dimensions | ASME B16.5 & ISO 7005-1 Part. 1 | ASME B16.47 | BS 3293 | MSS SP-44 |
| Buttweld Dimensions | ASME B16.25 | | | |
| Visual Inspection | MSS SP- 55 | | | |
| Marking | MSS SP-25 & ISO 5209 | | | |
| TESTS AND CERTIFICATES | | | | |
| Pressure testing | API 598 & ISO 5208 | BS 6755 Part. 1 | MSS SP-61 | |
| Other | ATEX, CE | | | |

Cv Values in U.S. Gallons/min.

| DN | Cv | DN | Cv |
|----------|------|-----------|-------|
| 50 (2") | 230 | 200 (8") | 3800 |
| 65 (2½") | 380 | 250 (10") | 6050 |
| 80 (3") | 520 | 300 (12") | 9100 |
| 100 (4") | 930 | 350 (14") | 11500 |
| 125 (5") | 1600 | 400 (16") | 15100 |
| 150 (6") | 2250 | | |

Pressure-Temperature (STANDARD CLASS According to ASME B16.34)

| Temp °C | MATERIAL | | | |
|------------|-----------------|-----------------|----------------|-----------------------|
| | A216 WCB Bar | A352 LCB Bar | A217 C5 Bar | A351 CF8M (**) Bar |
| -29 to 38 | 255,3 | 239,1 | 258,4 | 248,0 |
| 95 | 232,5 | 226,0 | 256,7 | 213,2 |
| 150 | 226,0 | 219,8 | 246,7 | 192,6 |
| 205 | 218,4 | 212,6 | 243,2 | 177,1 |
| 260 | 206,4 | 200,5 | 229,1 | 164,7 |
| 315 | 188,4 | 183,6 | 208,4 | 155,4 |
| 345 | 185,0 | 180,2 | 202,6 | 153,0 |
| 375 | 183,6 | | 195,7 | 149,5 |
| 400 | 173,6 | | 181,9 | 147,1 |
| 425 | 141,9 | | 175,0 | 145,4 |
| 450 | 92,3 | | 166,4 | 144,0 |
| 485 | 59,3 | | 127,5 | 143,0 |
| 510 | 35,5 | | 94,4 | 133,0 |
| 540 | 17,9 | | 68,6 | 120,6 |
| 565 | | | 49,6 * | 118,5 * |
| 595 | | | 34,1 * | 105,1 * |
| 620 | | | 21,4 * | 81,6 * |
| 650 | | | 11,7 * | 63,7 * |
| 675 | | | | 50,6 * |
| 705 | | | | 40,3 * |
| 735 | | | | 33,1 * |
| 760 | | | | 26,2 * |
| 790 | | | | 20,0 * |
| 815 | | | | 14,1 * |

* FOR WELD END VALVES ONLY. FLANGED END RATINGS TERMINATE AT 540°C

** A351 CF8M at temperatures over 538°C (1000°F) to be used only if Carbon contents is 0,04% or higher.