

Bellows seal globe valve

1/2" -12"

Class 150LB 300 LB

Body A105, A182 F304 (L) , A182 F316 (L) for 1/2" -2"

Body A216 WCB, A351 CF8M, A351 CF3M for 2 1/2" -12"

Design acc. : BS 5352, MSS-SP-117, ASME B16.34

Face to face (End to end) : ASME B16.10

Flange end : ASME B16.5

BW end :ASME B16.25

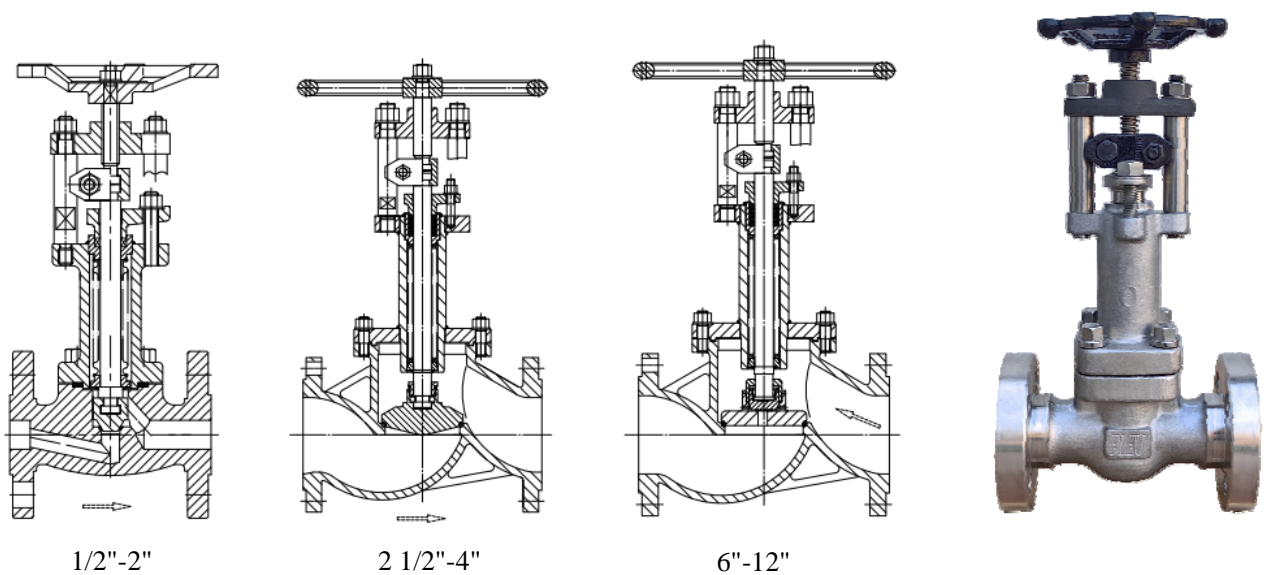
Test acc. : API 598

Witzenmann bellows

Cycles 10 000

Fig. 146 i

Protected Bellows



Design features

- Straight type,seat hardfaced ,conical plug
- Bellows protected in extended bonnet or by protecting plate against direct impingement from product flow
- Multiple walls and hydroformed Witzenmann bellows,and 10 000 cycles operations guaranteed
- two-piece stem protects the bellows against torque stress
- design eliminates stem bearings along with their maintenance needs
- Fire safe per EN ISO 10497 applicable
- Fugitive emissions test per EN ISO 15848 applicable

Applications

Fig.146 i is design guarantees reliable and excellent protections against leaks and fugitive emissions.The stem seal requires virtually no maintenance due to leak free weld connections of the bellows with bonnet and stem. The valve is designed for critical service applications involving lethal,toxic,corrsive,inflammable,volatile,radiating,or expensive fluids.

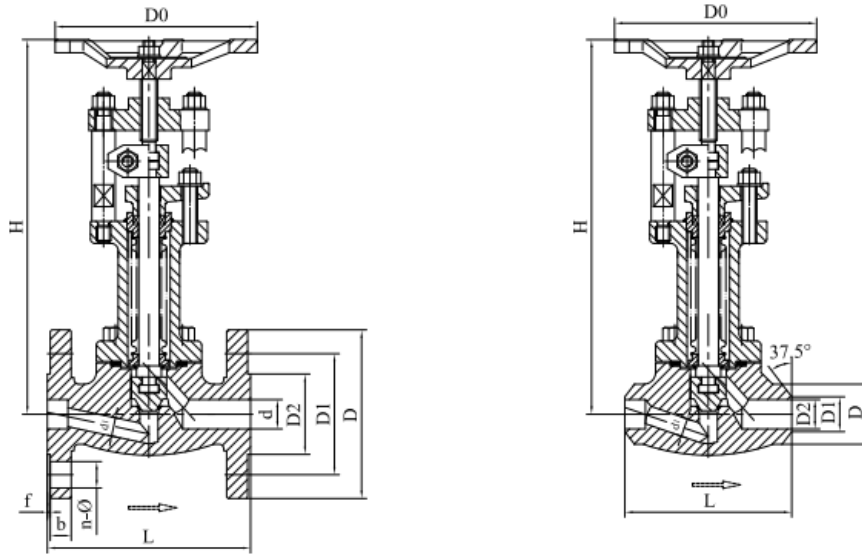
Bellows seal globe valve Class 150LB 300LB

Design acc. to BS 5352, MSS-SP-117, ASME B16.34

Flange ends acc. to ASME B16.5, BW ends acc. to ASME B16.25

Standard test acc. to API 598, ISO 5208

FTF (ETE) dimension acc. to ASME B16.10



Material List

| Component | C.S. | S.S. |
|-----------------------|------------------|------------------------|
| Body / Bonnet | A105 | A182 F316(L) |
| Body seal | ER410 | F316(L) / Stellite 21 |
| Disc | A276 420 | A276 F316(L) |
| Disk seal | ER420 | Stellite 21/Stellite 6 |
| Lower stem/Upper stem | A276 420 | A276 316(L) |
| Bellows | A276 316Ti | A276 316Ti |
| Bolts / Nuts | A193 B7 /A197 2H | A193 B8M / A194 8M |

Dimension List

| Fig. | Material | Class | Size | d | d1* | L | D FL/BW | D1 FL/BW | D2 FL/BW | f | b | D0 | n-Ø | H |
|------------------------|----------|-------|--------|----|-----|-----|------------|-------------|-------------|---|----|-----|------|-----|
| 141.146 i 231.146 i | A105 | 150lb | 1/2" | 15 | 12 | 108 | 90 / 32 | 60.3 / 22 | 34.9 / 17 | 2 | 12 | 148 | 4-16 | 306 |
| | | | 3/4" | 20 | 17 | 117 | 100 / 32 | 69.9 / 28 | 42.9 / 22 | 2 | 12 | 148 | 4-16 | 306 |
| | | | 1" | 25 | 22 | 127 | 110 / 38 | 79.4 / 34 | 50.8 / 28 | 2 | 12 | 148 | 4-16 | 310 |
| | F316 | | 1 1/4" | 32 | 28 | 140 | 115 / 60 | 88.9 / 43 | 63.5 / 37 | 2 | 13 | 196 | 4-16 | 420 |
| | | | 1 1/2" | 40 | 35 | 165 | 125 / 60 | 98.4 / 49 | 73.0 / 43 | 2 | 15 | 196 | 4-16 | 420 |
| | | | 2" | 50 | 44 | 203 | 150 / 70 | 120.7 / 61 | 92.1 / 54 | 2 | 16 | 196 | 4-19 | 432 |
| 142.146 i 232.146 i | A105 | 300lb | 1/2" | 15 | 12 | 152 | 95 / 32 | 66.7 / 22 | 34.9 / 17 | 2 | 15 | 148 | 4-16 | 306 |
| | | | 3/4" | 20 | 17 | 178 | 115 / 32 | 82.6 / 28 | 42.9 / 22 | 2 | 16 | 148 | 4-19 | 306 |
| | | | 1" | 25 | 22 | 203 | 125 / 38 | 88.9 / 34 | 50.8 / 28 | 2 | 18 | 148 | 4-19 | 310 |
| | F316 | | 1 1/4" | 32 | 28 | 216 | 135 / 60 | 98.4 / 43 | 63.5 / 37 | 2 | 19 | 196 | 4-19 | 420 |
| | | | 1 1/2" | 40 | 35 | 229 | 155 / 60 | 114.3 / 49 | 73.0 / 43 | 2 | 21 | 196 | 4-22 | 420 |
| | | | 2" | 50 | 44 | 267 | 165 / 70 | 127.0 / 61 | 92.1 / 54 | 2 | 23 | 196 | 8-19 | 432 |

* d1 acc.API602 Minimum Diameter or Equivalent Flow Passageway for Full-bore Valves

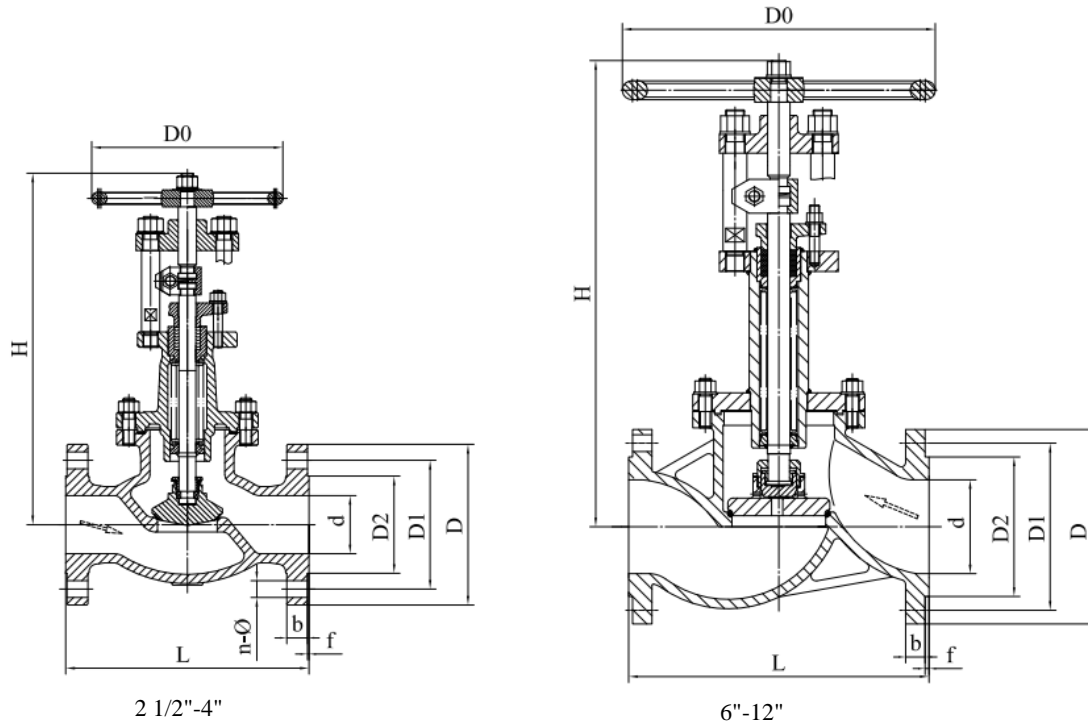
Bellows seal globe valve Class 150LB 300LB

Design acc. to BS 5352, MSS-SP-117, ASME B16.34

Flange ends acc. to ASME B16.5

Standard test acc. to API 598, ISO 5208

FTF dimension acc. to ASME B16.10



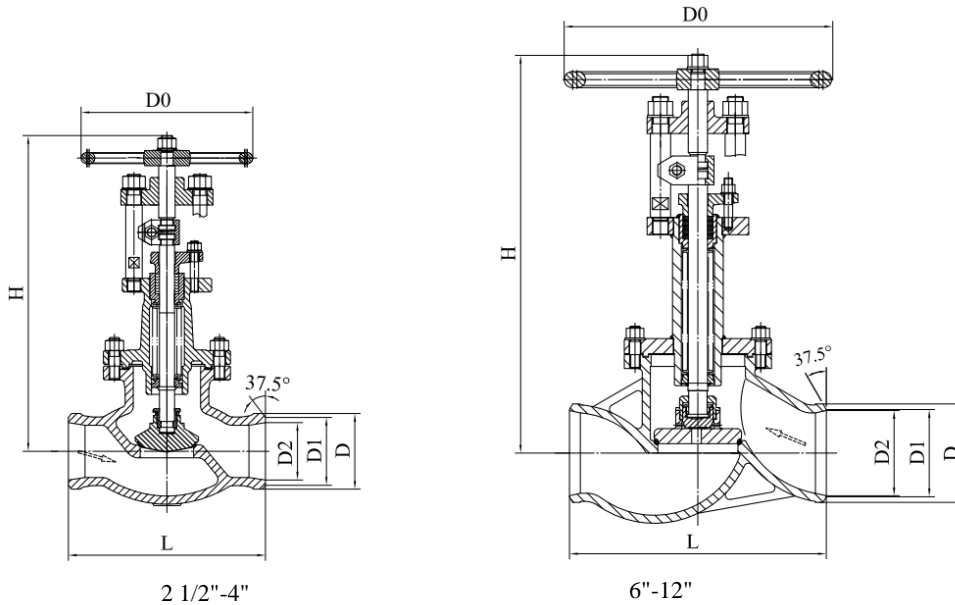
Material List

| Component | C.S. | S.S. |
|-----------------------|-------------------|------------------------|
| Body / Bonnet | A216 WCB | A351 CF8M |
| Body seal | ER410 | CF8M/Stellite 21 |
| Disc | A276 420 | A276 F316(L) |
| Disk seal | ER420 | Stellite 21/Stellite 6 |
| Lower stem/Upper stem | A276 420 | A276 316(L) |
| Bellows | A276 316Ti | A276 316Ti |
| Bolts / Nuts | A193 B7 / A197 2H | A193 B8M / A194 8M |

Dimension List

| Fig. | Material | Class | Size | d | L | D | D1 | D2 | f | b | D0 | N-Ø | H |
|-----------|----------|-------|--------|-----|-----|-----|-------|-------|---|----|-----|-------|------|
| 131.146 i | WCB | 150lb | 2 1/2" | 65 | 216 | 180 | 139.7 | 104.8 | 2 | 18 | 200 | 4-19 | 387 |
| | | | 3" | 80 | 241 | 190 | 152.4 | 127 | 2 | 19 | 250 | 4-19 | 411 |
| | | | 4" | 100 | 292 | 230 | 190.5 | 157.2 | 2 | 24 | 250 | 8-19 | 454 |
| | | | 6" | 150 | 406 | 280 | 241.3 | 215.9 | 2 | 26 | 355 | 8-22 | 541 |
| 151.146 i | CF8M | 150lb | 8" | 200 | 495 | 345 | 298.5 | 269.9 | 2 | 29 | 450 | 8-22 | 651 |
| | | | 10" | 250 | 622 | 405 | 362.0 | 323.8 | 2 | 31 | 450 | 12-26 | 800 |
| | | | 12" | 300 | 698 | 485 | 431.8 | 381 | 2 | 32 | 500 | 12-26 | 1230 |
| 132.146 i | WCB | 300lb | 2 1/2" | 65 | 292 | 190 | 149.2 | 104.8 | 2 | 26 | 200 | 8-22 | 387 |
| | | | 3" | 80 | 318 | 210 | 168.3 | 127 | 2 | 29 | 250 | 8-22 | 411 |
| | | | 4" | 100 | 356 | 255 | 200.0 | 157.2 | 2 | 32 | 250 | 8-22 | 454 |
| 152.146 i | CF8M | 300lb | 6" | 150 | 444 | 320 | 269.9 | 215.9 | 2 | 37 | 355 | 12-22 | 541 |
| | | | 8" | 200 | 559 | 380 | 330.2 | 269.9 | 2 | 42 | 450 | 12-26 | 651 |
| | | | 10" | 250 | 622 | 445 | 387.4 | 323.8 | 2 | 48 | 450 | 16-29 | 800 |
| | | | 12" | 300 | 711 | 520 | 450.8 | 381 | 2 | 51 | 500 | 16-32 | 1230 |

Bellows seal globe valve Class 150LB 300LB
 Design acc. to BS 5352, MSS-SP-117, ASME B16.34
 BW ends acc. to ASME B16.25
 Standard test acc. to API 598, ISO 5208
 ETE dimension acc. to ASME B16.10



Material List

| Component | C.S. | S.S. |
|-----------------------|------------------|------------------------|
| Body / Bonnet | A216 WCB | A351 CF8M |
| Body seal | ER410 | CF8M/Stellite 21 |
| Disc | A276 420 | A276 F316(L) |
| Disk seal | ER420 | Stellite 21/Stellite 6 |
| Lower stem/Upper stem | A276 420 | A276 316(L) |
| Bellows | A276 316Ti | A276 316Ti |
| Bolts / Nuts | A193 B7 /A197 2H | A193 B8M / A194 8M |

Dimension List

| Fig. | Material | Class | NPS | L | D | D1 | D2 | H | D0 |
|------------------------------|----------|-------|-------|-----|------|-----|-----|------|-----|
| 131.146 i-BW 151.146 i-BW | WCB | 150Lb | 2 1/2 | 216 | 92 | 72 | 67 | 495 | 220 |
| | | | 3 | 241 | 106 | 84 | 80 | 548 | 250 |
| | | | 4 | 292 | 122 | 107 | 104 | 626 | 320 |
| | CF8M | | 6 | 406 | 184 | 163 | 157 | 855 | 400 |
| | | | 8 | 495 | 238 | 211 | 206 | 1016 | 500 |
| | | | 10 | 622 | 296 | 262 | 260 | 1240 | 600 |
| 132.146 i-BW 152.146 i-BW | WCB | 300Lb | 12 | 698 | 345 | 310 | 306 | 1287 | 600 |
| | | | 2 1/2 | 292 | 92 | 72 | 67 | 495 | 220 |
| | | | 3 | 318 | 106 | 84 | 80 | 548 | 250 |
| | CF8M | | 4 | 356 | 122 | 107 | 104 | 626 | 320 |
| | | | 6 | 444 | 184 | 163 | 157 | 855 | 400 |
| | | | 8 | 559 | 238 | 211 | 206 | 1016 | 500 |
| 10 | 622 | 296 | 262 | 260 | 1240 | 600 | | | |
| 12 | 711 | 345 | 310 | 306 | 1287 | 600 | | | |