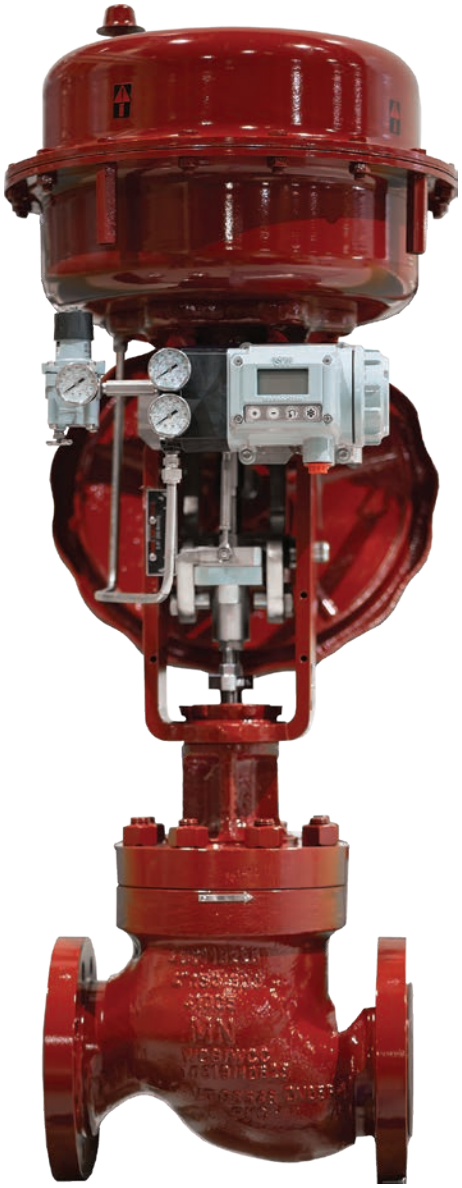
Technical Specifications

Rev. P - 11/2025

# Masoneilan™ 21000 Series

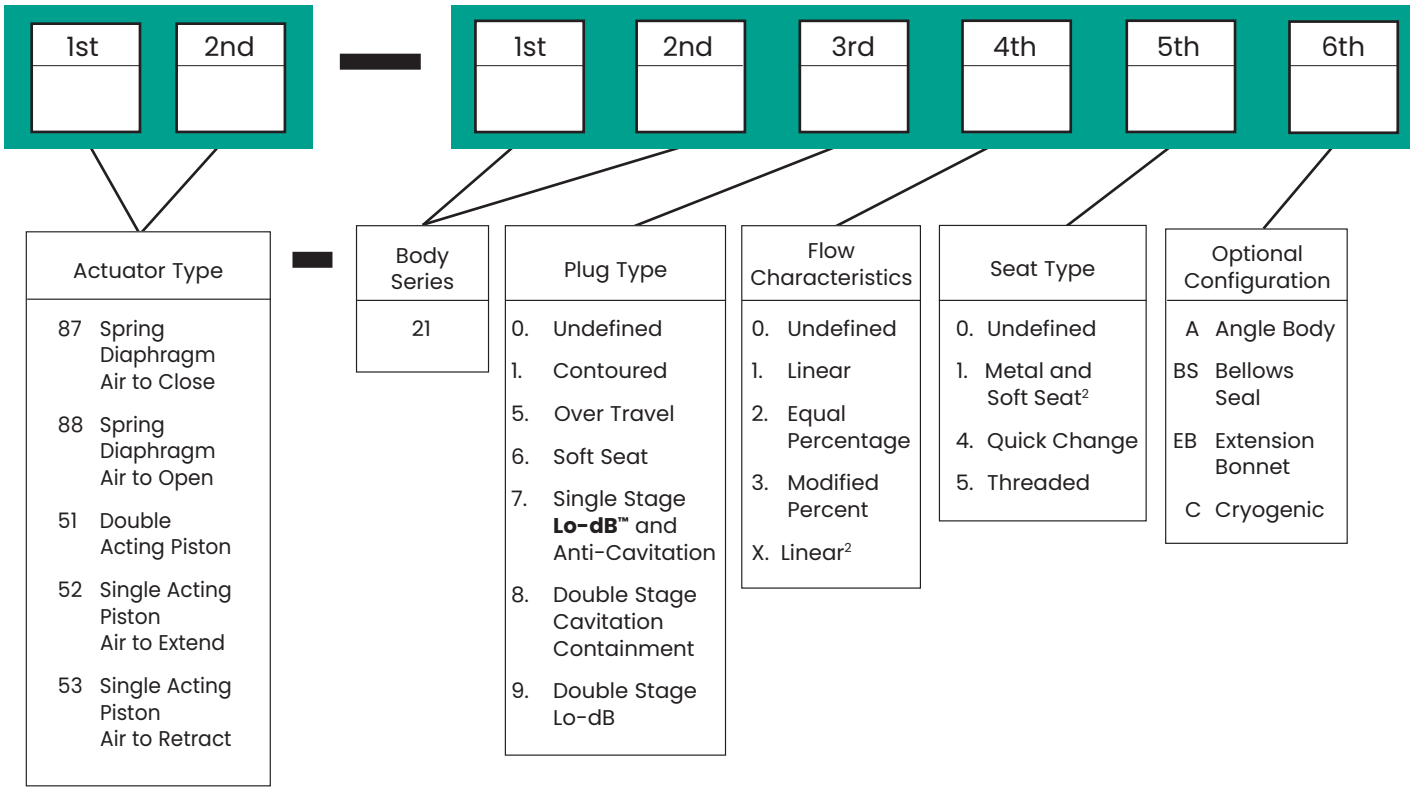
## Top Guided Globe Valves with Lo-dB, Anti-Cavitation, Bellows and API 6A High Pressure Capabilities



Baker Hughes Data Classification : Public

Baker Hughes™

# Numbering System




Notes:

1. Configuration for 21000 API 6A. See more details on page 27.
   For high temperature application, consult Engineering.

2. Over Travel Plug only.

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# Temperature Range and Seat Leakage

## Contoured Trim

| Valve Size | | Body [1] Rating | Seat Type | Packing Material | Temperature Range [2] | | | | Cryogenic Extension | | Seat Leakage IEC 60534-4 and ANSI and FCI 70.2 Class | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Standard Bonnet | | Extension Bonnet | | | | | |
| Inch | mm | | | | min. | max. | min. | max. | min. | max. | | |
| 0.75 to 8 | 20 to 200 | ASME Class 150 to 2500 and equivalent PN | Metal | PTFE, LE or LE FireSafe Packing | -20°F (-29°C) | +450°F (+232°C) | -50°F (-46°C) | +800°F (+427°C) | | | IV | V |
| | | | | Graphite Packing | -20°F (-29°C) | +800°F (+427°C) | -50°F (-46°C) | +800°F (+427°C) | | | | |
| | | | | V-ring | | | | | -320°F (-196°C) | +212°F (+100°C) | | |
| | | | Soft Seat [4] | Any | -20°F (-29°C) | +450°F (+232°C) | -50°F (-46°C) | +450°F (+232°C) | | | VI | |

## Lo-dB and Anti-Cavitation Trim (1 or 2 Stage Design)[3]

| Valve Size | | Body [1] Rating | Seat Type | Packing Material | Temperature Range [2] | | | | Cryogenic Extension | | Seat Leakage IEC 60534-4 and ANSI and FCI 70.2 Class | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Standard Bonnet | | Extension Bonnet | | | | | |
| Inch | mm | | | | min. | max. | min. | max. | min. | max. | | |
| 0.75 to 8 | 20 to 200 | ASME Class 150 to 2500 and equivalent PN | Metal | PTFE, LE or LE FireSafe Packing | -20°F (-29°C) | +450°F (+232°C) | -50°F (-46°C) | +800°F (+427°C) | | | IV | V |
| | | | | Graphite Packing | -20°F (-29°C) | +800°F (+427°C) | -50°F (-46°C) | +800°F (+427°C) | | | | |
| | | | | V-ring | | | | | -320°F (-196°C) | +212°F (+100°C) | | |

1. ASME Class 900-1500 available only in 0.75 to 4 inch (20 to 100 mm) sizes.
   ASME Class 2500 available only in 0.75 to 2 inch (20 to 50 mm) sizes.
2. See Materials of Construction Tables for other temperature limitations.
3. 2-Stage design only available with Quick Change seat rings.
4. Soft seat is limited to a maximum of 1000 psi (70 bar) shut-off and a maximum of 450°F (232°C).

Masoneilan 21000 Series products meet design and materials requirements of PED Directive 2014/68/EU.


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# Ratings and Connections1

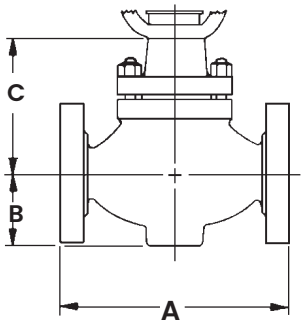
| Valve Size | | ASME Class 150 (PN 20) | | | | | ASME Class 300 (PN 50) | | | | | ASME Class 600 (PN 100) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inch | mm | RF | SW | THD | RTJ | BW | RF | SW | THD | RTJ | BW | RF | SW | THD | RTJ | BW |
| 0.75 | 20 | X | X | X | | | X | X | X | X | | X | X | X | X | |
| 1 | 25 | X | X | X | | | X | X | X | X | | X | X | X | X | |
| 1.5 | 40 | X | X | X | | | X | X | X | X | | X | X | X | X | |
| 2 | 50 | X | X | X | | X | X | X | X | X | X | X | X | X | X | X |
| 3 | 80 | X | | | | X | X | | | X | X | X | | | X | X |
| 4 | 100 | X | | | | X | X | | | X | X | X | | | X | X |
| 6 | 150 | X | | | | X | X | | | X | X | X | | | X | X |
| 8 | 200 | X | | | | X | X | | | X | X | X | | | X | X |

| Valve Size | | ASME Class 900 (PN 150) [4] | | | | | ASME Class 1500 (PN 250) [4] | | | | | ASME Class 2500 (PN 420) [3] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inch | mm | RF | SW | THD | RTJ | BW | RF | SW | THD | RTJ | BW | RF | SW | THD | RTJ | BW |
| 0.75 | 20 | X | X | | X | | X | X | | X | | X | X | | X | |
| 1 | 25 | X | X | | X | | X | X | | X | | X | X | | X | |
| 1.5 | 40 | X | X | | X | | X | X | | X | | X | X | | X | |
| 2 | 50 | X | X | | X | X | X | X | | X | X | X | X | | X | X |
| 3 | 80 | X | | | X | X | X | | | X | X | | | | | |
| 4 | 100 | X | | | X | X | X | | | X | X | | | | | |

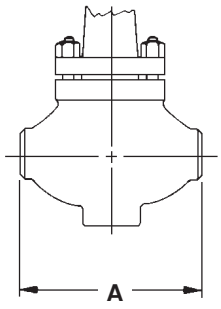
1. Standard flange finish of AARH = 125 to 250 µin (Ra = 3.2 to 6.3 µm). Other flange facings and surface finishes available.
2. Sizes, ratings and end connections available in both globe and angle body styles.
3. Butt weld end connections for ASME Class 2500 available only in 2 inch (50 mm).
4. Butt weld end connections for ASME Class 900 to 1500 available only in 2 inch (50 mm), 3 inch (80 mm) and 4 inch (100 mm)

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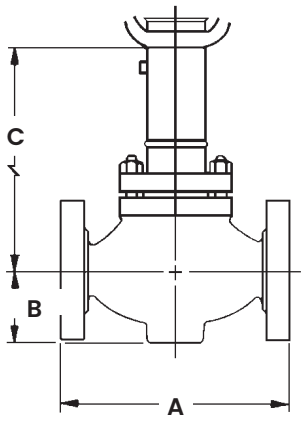
# Dimensions (inches)



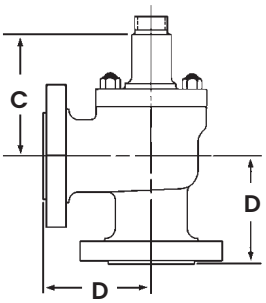

Flanged




Butt, Socket Weld or Threaded Ends




Extension or Bellows Bonnet




Angle

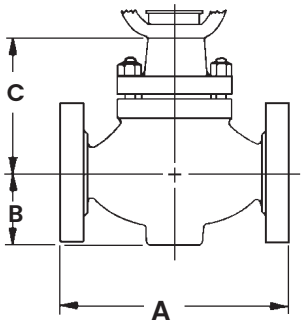
## 21000 Series Dimensions (inches)

| Valve Size (inches) | A | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ASME Class 150-600 (PN 20-100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150 (PN 20) | ASME Class 300 (PN 50) | | ASME Class 600 (PN 100) | | ASME Class 900 (PN 150) | | ASME Class 1500 (PN 250) | | ASME Class 2500 (PN 420) | |
| | BW, SW, THD | BW, SW, THD | BW, SW, THD | RF | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ |
| **0.75** | 8.25 | 8.50 | 12.50 | 7.25 | 7.63 | 8.11 | 8.11 | 8.11 | 10.75 | 10.75 | 10.75 | 10.75 | 12.12 | 12.12 |
| **1** | 8.25 | 8.50 | 12.50 | 7.25 | 7.75 | 8.25 | 8.25 | 8.25 | 11.50 | 11.50 | 11.50 | 11.50 | 12.50 | 12.50 |
| **1.5** | 9.88 | 9.25 | 13 | 8.75 | 9.25 | 9.76 | 9.88 | 9.88 | 13.12 | 13.12 | 13.12 | 13.12 | 14.12 | 14.25 |
| **2** | 11.25 | 11.50 | 14.75 | 10 | 10.50 | 11.12 | 11.25 | 11.38 | 14.75 | 14.88 | 14.75 | 14.88 | 16.25 | 16.37 |
| **3** | 13.24 | 12.50 | | 11.75 | 12.50 | 13.12 | 13.25 | 13.38 | 15.24 | 15.31 | 15.99 | 16.06 | | |
| **4** | 15.50 | 14.49 | | 13.88 | 14.50 | 15.12 | 15.50 | 15.62 | 18.27 | 18.34 | 19.02 | 19.09 | | |
| **6** | 20 | | | 17.75 | 18.62 | 19.25 | 20 | 20.12 | | | | | | |
| **8** | 24 | | | 21.38 | 22.36 | 22.83 | 24 | 24.09 | | | | | | |

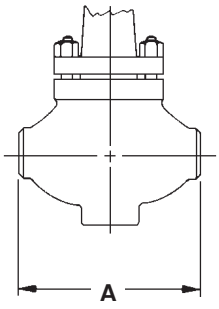
| Valve Size (inches) | B | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ANSI Class 150-300 (PN 20-50) | ANSI Class 600 (PN 100) | ANSI Class 150-600 (PN 20-100) | ANSI Class 900-1500 (PN 150-250) | | ANSI Class 2500 (PN 420) | | ANSI Class 150 (PN 20) | ANSI Class 300 (PN 50) | ANSI Class 600 (PN 100) | ANSI Class 900 (PN 150) | ANSI Class 1500 (PN 250) | ANSI Class 2500 (PN 420) |
| | BW | BW | SW & THD | BW | SW | BW | SW | RF | RF & RTJ | RF & RTJ | RF & RTJ | RF & RTJ | RF & RTJ |
| **0.75** | | | 1.83 | | 2.15 | | 2.42 | 2 | 2.29 | 2.29 | 2.59 | 2.59 | 2.79 |
| **1** | | | 1.83 | | 2.15 | | 2.42 | 2.19 | 2.49 | 2.49 | 2.98 | 2.98 | 3.18 |
| **1.5** | | | 2.50 | | 2.81 | | 3.17 | 2.50 | 3.08 | 3.08 | 3.57 | 3.57 | 4.06 |
| **2** | 3 | 3 | 3 | 3.53 | 3.53 | 3.87 | 3.87 | 3 | 3.28 | 3.30 | 4.26 | 4.26 | 4.66 |
| **3** | 3.69 | 3.69 | | 4.36 | | | | 3.77 | 4.16 | 4.16 | 4.72 | 5.22 | |
| **4** | 5 | 5.50 | | 5.75 | | | | 4.98 | 5.05 | 5.50 | 5.75 | 6.10 | |
| **6** | 6.26 | 7.37 | | | | | | 6.26 | 6.36 | 7.37 | | | |
| **8** | 7.68 | 7.68 | | | | | | 7.68 | 7.68 | 8.27 | | | |

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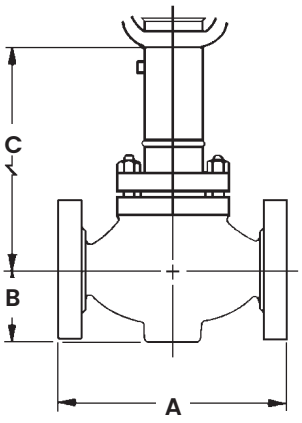
# Dimensions (inches)



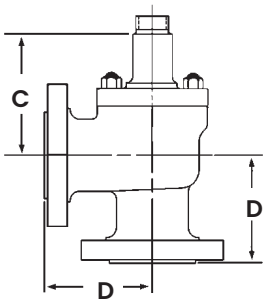

Flanged




Butt, Socket Weld or Threaded Ends




Extension or Bellows Bonnet




Angle

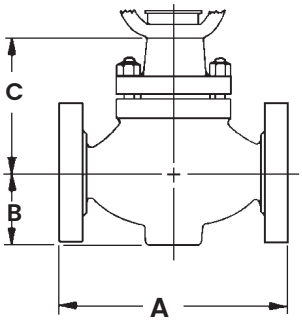
## 21000 Series Dimensions (inches)

| Valve Size (inches) | C | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard Bonnet | | | | Extension Bonnet | | | | Cryogenic Extension Bonnet | | | Bellows Bonnet |
| | ASME Class 150-300 (PN 20-50) | ASME Class 600 (PN 100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150-300 (PN 20-50) | ASME Class 600 (PN 100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150-600 (PN 20-100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150-300 (PN 20-50) |
| **0.75** | 5.65 | 5.65 | 7.69 | 7.69 | 9.78 | 9.78 | 10.76 | 10.76 | 23.70 | 23.80 | 23.80 | 13.15 |
| **1** | 5.65 | 5.65 | 7.69 | 7.69 | 9.78 | 9.78 | 10.76 | 10.76 | 23.70 | 23.80 | 23.80 | 13.15 |
| **1.5** | 5.51 | 5.51 | 9 | 9 | 10 | 10 | 11.70 | 11.70 | 23.70 | 23.70 | 23.70 | 13.15 |
| **2** | 5.51 | 5.51 | 9 | 9 | 10 | 10 | 11.70 | 11.70 | 23.70 | 23.70 | 23.70 | 13.15 |
| **3** | 8 | 8 | 11.35 | | 12.50 | 12.50 | 13.70 | | 27.64 | 27.78 | | 24.76 |
| **4** | 8.05 | 9.43 | 14.94 | | 12.56 | 12.56 | 17.44 | | 27.64 | 27.83 | | 24.85 |
| **6** | 11.20 | 11.13 | | | 17.06 | 16.63 | | | 31.84 | | | 43.85 |
| **8** | 16.66 | 16.66 | | | 22.78 | 22.78 | | | 34.71 | | | |

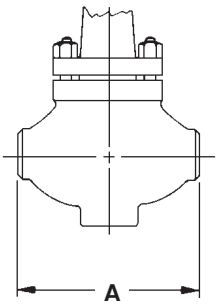
| Valve Size (inches) | D | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ASME Class 150-600 (PN 20-100) | ASME Class 900-1500 (PN 150-200) | ASME Class 2500 (PN 420) | ASME Class 150 (PN 20) | ASME Class 300 (PN 50) | | ASME Class 600 (PN 100) | | ASME Class 900 (PN 150) | | ASME Class 1500 (PN 250) | | ASME Class 2500 (PN 420) | |
| | BW, SW, THD | BW, SW, THD | BW, SW, THD | RF | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ |
| **0.75** | 4.13 | 4.25 | 6.25 | 3.63 | 3.87 | 4.13 | 4.13 | 4.13 | 5.38 | 5.38 | 5.38 | 5.38 | 6.06 | 6.06 |
| **1** | 4.13 | 4.25 | 6.25 | 3.63 | 3.87 | 4.13 | 4.13 | 4.13 | 5.75 | 5.75 | 5.75 | 5.75 | 6.25 | 6.25 |
| **1.5** | 4.94 | 4.63 | 6.50 | 4.37 | 4.63 | 4.88 | 4.95 | 4.94 | 6.56 | 6.56 | 6.56 | 6.56 | 7.06 | 7.12 |
| **2** | 5.63 | 5.57 | 7.38 | 5 | 5.25 | 5.56 | 5.63 | 5.69 | 7.37 | 7.44 | 7.37 | 7.44 | 8.13 | 8.19 |
| **3** | 6.63 | | | 5.87 | 6.25 | 6.56 | 6.63 | 6.69 | | | | | | |
| **4** | 7.75 | | | 6.94 | 7.25 | 7.56 | 7.75 | 7.81 | | | | | | |
| **6** | 10.00 | | | 8.87 | 9.31 | 9.63 | 10 | 10.06 | | | | | | |
| **8** | | | | | | | | | | | | | | |


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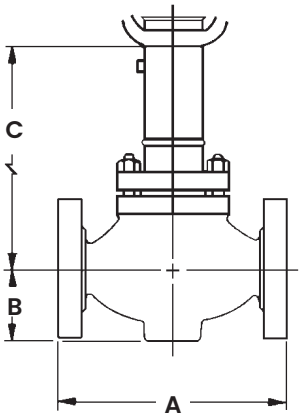
# Dimensions (mm)



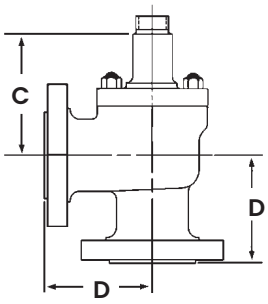

Flanged




Butt, Socket Weld or Threaded Ends




Extension or Bellows Bonnet




Angle

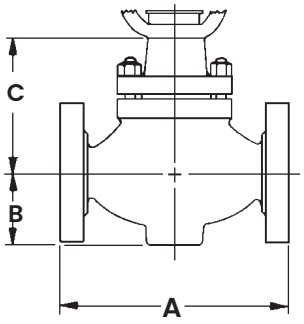
## 21000 Series Dimensions (mm)

| Valve Size (mm) | A | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ASME Class 150-600 (PN 20-100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150 (PN 20) | ASME Class 300 (PN 50) | | ASME Class 600 (PN 100) | | ASME Class 900 (PN 150) | | ASME Class 1500 (PN 250) | | ASME Class 2500 (PN 420) | |
| | BW, SW, THD | BW, SW, THD | BW, SW, THD | RF | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ |
| **20** | 210 | 216 | 318 | 184 | 194 | 206 | 206 | 206 | 273 | 273 | 273 | 273 | 308 | 308 |
| **25** | 210 | 216 | 318 | 184 | 197 | 210 | 210 | 210 | 292 | 292 | 292 | 292 | 318 | 318 |
| **40** | 251 | 235 | 330 | 222 | 235 | 248 | 251 | 251 | 333 | 333 | 333 | 333 | 359 | 362 |
| **50** | 286 | 292 | 375 | 254 | 267 | 283 | 286 | 289 | 375 | 378 | 375 | 378 | 413 | 416 |
| **80** | 336 | 318 | | 299 | 318 | 333 | 337 | 340 | 387 | 389 | 406 | 408 | | |
| **100** | 394 | 368 | | 353 | 368 | 384 | 394 | 397 | 464 | 466 | 483 | 485 | | |
| **150** | 508 | | | 451 | 473 | 489 | 508 | 511 | | | | | | |
| **200** | 610 | | | 543 | 568 | 580 | 610 | 612 | | | | | | |

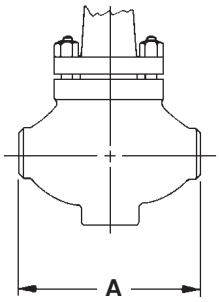
| Valve Size (mm) | B | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ANSI Class 150-300 (PN 20-50) | ANSI Class 600 (PN 100) | ANSI Class 150-600 (PN 20-100) | ANSI Class 900-1500 (PN 150-250) | | ANSI Class 2500 (PN 420) | | ANSI Class 150 (PN 20) | ANSI Class 300 (PN 50) | ANSI Class 600 (PN 100) | ANSI Class 900 (PN 150) | ANSI Class 1500 (PN 250) | ANSI Class 2500 (PN 420) |
| | BW | BW | SW & THD | BW | SW | BW | SW | RF | RF & RTJ | RF & RTJ | RF & RTJ | RF & RTJ | RF & RTJ |
| **20** | | | 47 | | 55 | | 62 | 51 | 58 | 58 | 66 | 66 | 71 |
| **25** | | | 47 | | 55 | | 62 | 56 | 63 | 63 | 76 | 76 | 81 |
| **40** | | | 64 | | 72 | | 81 | 64 | 78 | 78 | 91 | 91 | 103 |
| **50** | 76 | 76 | 76 | 90 | 90 | 96 | 98 | 76 | 83 | 84 | 108 | 108 | 118 |
| **80** | 95 | 95 | | 111 | | | | 96 | 106 | 106 | 120 | 133 | |
| **100** | 127 | 140 | | 146 | | | | 127 | 128 | 140 | 146 | 155 | |
| **150** | 159 | 187 | | | | | | 159 | 162 | 187 | | | |
| **200** | 195 | 195 | | | | | | 195 | 195 | 210 | | | |

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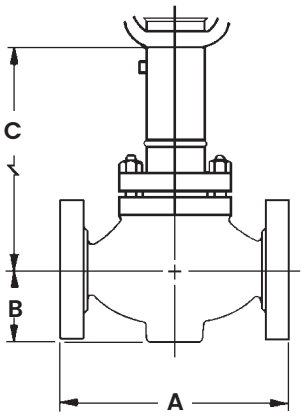
# Dimensions (mm)



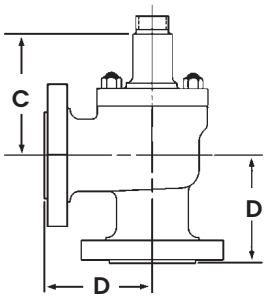

Flanged




Butt, Socket Weld or Threaded Ends




Extension or Bellows Bonnet




Angle

## 21000 Series Dimensions (mm)

| Valve Size (mm) | C | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard Bonnet | | | | Extension Bonnet | | | | Cryogenic Extension Bonnet | | | Bellows Bonnet |
| | ASME Class 150-300 (PN 20-50) | ASME Class 600 (PN 100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150-300 (PN 20-50) | ASME Class 600 (PN 100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150-600 (PN 20-100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150-300 (PN 20-50) |
| 20 | 144 | 144 | 195 | 195 | 249 | 249 | 273 | 273 | 602 | 604 | 604 | 334 |
| 25 | 144 | 144 | 195 | 195 | 249 | 249 | 273 | 273 | 602 | 604 | 604 | 334 |
| 40 | 140 | 140 | 228 | 228 | 254 | 254 | 297 | 297 | 602 | 602 | 602 | 334 |
| 50 | 140 | 140 | 228 | 228 | 254 | 254 | 297 | 297 | 602 | 602 | 602 | 334 |
| 80 | 203 | 203 | 288 | | 317 | 317 | 348 | | 702 | 706 | | 629 |
| 100 | 205 | 240 | 380 | | 319 | 319 | 443 | | 702 | 707 | | 631 |
| 150 | 284 | 283 | | | 424 | 422 | | | 808 | | | 1114 |
| 200 | 423 | 423 | | | 579 | | | | 882 | | | |

| Valve Size (mm) | D | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ASME Class 150-600 (PN 20-100) | ASME Class 900-1500 (PN 150-250) | ASME Class 2500 (PN 420) | ASME Class 150 (PN 20) | ASME Class 300 (PN 50) | | ASME Class 600 (PN 100) | | ASME Class 900 (PN 150) | | ASME Class 1500 (PN 250) | | ASME Class 2500 (PN 420) | |
| | BW, SW, THD | BW, SW, THD | BW, SW, THD | RF | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ | RF | RTJ |
| 20 | 105 | 108 | 159 | 92 | 98 | 105 | 105 | 105 | 137 | 137 | 137 | 137 | 154 | 154 |
| 25 | 105 | 108 | 159 | 92 | 98 | 105 | 105 | 105 | 146 | 146 | 146 | 146 | 159 | 159 |
| 40 | 126 | 118 | 165 | 111 | 118 | 124 | 126 | 126 | 167 | 167 | 167 | 167 | 179 | 181 |
| 50 | 143 | 142 | 188 | 127 | 133 | 141 | 143 | 145 | 187 | 189 | 187 | 189 | 206 | 208 |
| 80 | 168 | | | 149 | 159 | 167 | 168 | 170 | | | | | | |
| 100 | 197 | | | 176 | 184 | 192 | 197 | 198 | | | | | | |
| 150 | 254 | | | 225 | 237 | 244 | 254 | 256 | | | | | | |
| 200 | | | | | | | | | | | | | | |


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# Weights

## Body S/A with Standard Bonnet (lbs)

| Valve Size (inches) | ASME Class 150 – 300 (PN 20 – 50) | | ASME Class 600 (PN 100) | | ASME Class 900 – 1500 (PN 150 – 250) | | ASME Class 2500 (PN 420) | |
|---|---|---|---|---|---|---|---|---|
| | FLG | BW, SW & THD | FLG | BW, SW & THD | FLG | BW, SW & THD | FLG | BW, SW & THD |
| 0.75 | 24 | 18 | 26 | 18 | 75 | 53 | 99 | 66 |
| 1 | 24 | 18 | 26 | 18 | 75 | 53 | 99 | 66 |
| 1.5 | 42 | 35 | 44 | 35 | 99 | 77 | 150 | 93 |
| 2 | 49 | 44 | 51 | 44 | 143 | 101 | 201 | 128 |
| 3 | 101 | 73 | 119 | 99 | 254 | 170 | | |
| 4 | 159 | 134 | 218 | 185 | 483 | 346 | | |
| 6 | 302 | 238 | 430 | 276 | | | | |
| 8 | 796 | 741 | 827 | 741 | | | | |

## Body S/A with Standard Bonnet (kg)

| Valve Size (mm) | ASME Class 150 – 300 (PN 20 – 50) | | ASME Class 600 (PN 100) | | ASME Class 900 – 1500 (PN 150 – 250) | | ASME Class 2500 (PN 420) | |
|---|---|---|---|---|---|---|---|---|
| | FLG | BW, SW & THD | FLG | BW, SW & THD | FLG | BW, SW & THD | FLG | BW, SW & THD |
| 20 | 11 | 8 | 12 | 8 | 34 | 24 | 45 | 30 |
| 25 | 11 | 8 | 12 | 8 | 34 | 24 | 45 | 30 |
| 40 | 19 | 16 | 20 | 16 | 45 | 35 | 68 | 42 |
| 50 | 22 | 20 | 23 | 20 | 65 | 46 | 91 | 58 |
| 80 | 46 | 33 | 54 | 45 | 115 | 77 | | |
| 100 | 72 | 61 | 99 | 84 | 219 | 157 | | |
| 150 | 137 | 108 | 195 | 125 | | | | |
| 200 | 361 | 336 | 375 | 336 | | | | |

## Bellows Seal Assembly Additional Weights

| Valve Size | | Estimated Additional Weight | |
|---|---|---|---|
| inch | mm | lbs | kg |
| 0.75 to 2 | 20 to 50 | 6 | 3 |
| 3 to 4 | 80 to 100 | 17 | 8 |
| 6 | 150 | 73 | 33 |

Note: 21000 Bellow Seal Series are limited to Class rating 150-300

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