

## Specifying Series 6800 Valve Figure Numbers

Example: 6" C-6830-71-2236-NV-NG ■ This number represents a 6" ANSI Class 300, Full Port, Two Piece Trunnion Ball Valve, Fire Tested with Emergency Grease Seals, with Raised Face, WCB Body Material, 316SS Trim, Nylon Seats, Viton® A Seals, for NACE MR0175 2002 Service and Gear Operated.

**C** - **6**   **8**   **30** - **7**   **1** - **22**   **36** - **N**   **V** - **N**   **G** -

| Material Code            | Port Config.     | Valve Type                          | Pressure Class   | Fire Tested   | End Connect.  | Body Material                            | Trim Material                      | Seat Material                                | Seal Material  | NACE Option                              | Operator  | Modifier Code |
|--------------------------|------------------|-------------------------------------|--|---|---|--|------------------------------------|--|--|--|---|---------------|
| <b>C</b><br>Carbon Steel | <b>6</b><br>Full | <b>8</b><br>Two Piece Trunnion Type | <b>10</b><br>150 Class<br><b>30</b><br>300 Class<br><b>60</b><br>600 Class | <b>3</b><br>Fire Tested w/No Emergency Grease Seals<br><b>7</b><br>Fire Tested w/Emergency Grease Seals | <b>1</b><br>RF<br><b>2</b><br>Non-Standard<br><b>3</b><br>RTJ | <b>22</b><br>WCB/WCC<br><b>28</b><br>LCC | Same as Body<br><b>36</b><br>316SS | <b>G</b><br>Filled PTFE<br><b>N</b><br>Nylon | <b>B</b><br>Buna-N<br><b>R</b><br>Low Temp*<br>Buna-N<br><b>V</b><br>Viton® A<br><b>W</b><br>Viton® B**<br><b>Y</b><br>Viton® GF | <b>N</b><br>NACE<br><b>S</b><br>Standard | <b>A</b><br>Actuator<br><b>B</b><br>Bare Stem<br><b>G</b><br>Gear Operator<br><b>L</b><br>Lever | <b>XXX</b>    |

\*For Low Temperature Service. \*\*For Explosive Decompression Service.  
Other body, trim, seat and seal materials are available upon request.

## Series 5700/6700/6800 ■ Flow Coefficients (C<sub>v</sub>) For PBV® Trunnion Ball Valves

C<sub>v</sub>, by definition, is the volume of water in gallons per minute at 60°F that will flow through a given element with a pressure drop of 1 psi.

| Size  | Flow Coefficients (C <sub>v</sub> ) Rating |         |         |         |          |          |
|-------|--|---------|---------|---------|----------|----------|
|       | Cl. 150                                    | Cl. 300 | Cl. 600 | Cl. 900 | Cl. 1500 | Cl. 2500 |
| 2x2   | 500  | 460     | 400     | 330     | 330      | 300      |
| 3x2   | 180  | 195     | 180     | 187     | 187      | 150      |
| 3x3   | 1350                                       | 1150    | 1050    | 935     | 830      | 740      |
| 4x3   | 545  | 535     | 550     | 510     | 510      | 410      |
| 4x4   | 2500                                       | 2200    | 1850    | 1760    | 1660     | 1460     |
| 6x4   | 790  | 765     | 745     | 740     | 740      | 590      |
| 6x6   | 5300                                       | 5290    | 4460    | 4405    | 4100     | 2600     |
| 8x6   | 1945                                       | 1945    | 2220    | 2035    | 1930     | 1400     |
| 8x8   | 10,500                                     | 9600    | 8730    | 8475    | 8010     | 5370     |
| 10x8  | 4050                                       | 4040    | 4065    | 4050    | 3860     | 3050     |
| 10x10 | 17,500                                     | 16,750  | 14,250  | 14,205  | 13,310   | 8630     |
| 12x10 | 6900                                       | 7100    | 7050    | 7025    | 6670     | 5350     |
| 12x12 | 26,300                                     | 25,500  | 22,550  | 21,430  | 17,070   | 12,500   |
| 14x12 | 13,100                                     | 13,200  | 13,350  | 13,300  | 12,630   | —        |
| 14x14 | 31,850                                     | 30,050  | 28,400  | 26,800  | 24,275   | —        |
| 16x14 | 14,600                                     | 14,580  | 14,300  | 14,200  | 13,490   | —        |
| 16x16 | 43,300                                     | 41,700  | 38,150  | 36,700  | 33,215   | —        |
| 18x16 | 19,750                                     | 19,800  | 20,350  | 19,750  | 18,760   | —        |
| 18x18 | 57,300                                     | 55,370  | 50,950  | 48,700  | 43,400   | —        |
| 20x18 | 27,750                                     | 28,050  | 28,300  | 27,300  | 20,470   | —        |
| 20x20 | 74,500                                     | 72,300  | 65,600  | 62,500  | 55,930   | —        |
| 24x20 | 27,100                                     | 27,130  | 27,250  | 26,900  | 25,500   | —        |
| 24x24 | 112,300                                    | 109,150 | 98,150  | 94,050  | 84,025   | —        |
| 26x24 | 85,270                                     | 82,470  | 77,630  | 67,880  | 53,190   | —        |

| Size  | Flow Coefficients (C <sub>v</sub> ) Rating |         |         |         |          |          |
|-------|--|---------|---------|---------|----------|----------|
|       | Cl. 150                                    | Cl. 300 | Cl. 600 | Cl. 900 | Cl. 1500 | Cl. 2500 |
| 26x26 | 116,800                                    | 111,900 | 103,750 | 93,240  | 71,670   | —        |
| 28x24 | 62,590                                     | 61,470  | 59,380  | 53,880  | 43,750   | —        |
| 28x28 | 136,850                                    | 131,600 | 122,650 | 112,200 | 84,220   | —        |
| 30x24 | 49,980                                     | 49,390  | 48,030  | 44,540  | 37,130   | —        |
| 30x30 | 161,700                                    | 155,650 | 143,200 | 131,500 | 98,390   | —        |
| 32x30 | 143,600                                    | 137,400 | 128,600 | 116,950 | 90,690   | —        |
| 32x32 | 182,650                                    | 173,300 | 160,450 | 151,250 | 113,800  | —        |
| 34x30 | 109,950                                    | 107,050 | 101,950 | 94,300  | 76,200   | —        |
| 34x34 | 207,800                                    | 197,800 | 181,550 | 172,950 | 129,550  | —        |
| 36x30 | 90,830                                     | 88,660  | 85,210  | 78,690  | 65,010   | —        |
| 36x32 | 127,750                                    | 123,350 | 116,650 | 112,150 | 88,850   | —        |
| 36x36 | 233,600                                    | 219,450 | 199,800 | 197,600 | 145,950  | —        |
| 40x36 | 160,850                                    | 160,850 | 157,250 | 148,650 | —        | —        |
| 40x40 | 282,300                                    | 282,300 | 271,550 | 248,400 | —        | —        |
| 42x40 | 265,250                                    | 265,250 | 253,450 | 232,050 | —        | —        |
| 42x42 | 312,350                                    | 312,350 | 297,100 | 275,550 | —        | —        |
| 44x40 | 218,100                                    | 218,100 | 209,800 | 196,700 | —        | —        |
| 44x44 | 351,600                                    | 351,600 | 331,000 | 306,400 | —        | —        |
| 46x46 | 379,700                                    | 379,700 | 358,450 | 352,400 | —        | —        |
| 48x42 | 201,050                                    | 201,050 | 196,400 | 187,150 | —        | —        |
| 48x44 | 275,950                                    | 275,950 | 266,850 | 248,200 | —        | —        |
| 48x48 | 412,500                                    | 412,500 | 393,150 | 373,200 | —        | —        |
| 56x56 | 605,150                                    | 605,150 | 587,750 | —       | —        | —        |

## PBV®- USA Repair Kits

Spare parts are available for quick delivery. Orders with valve serial numbers will ensure the correct parts are shipped. Contact your PBV®-USA salesperson for more information.

## Our Quality Commitment...

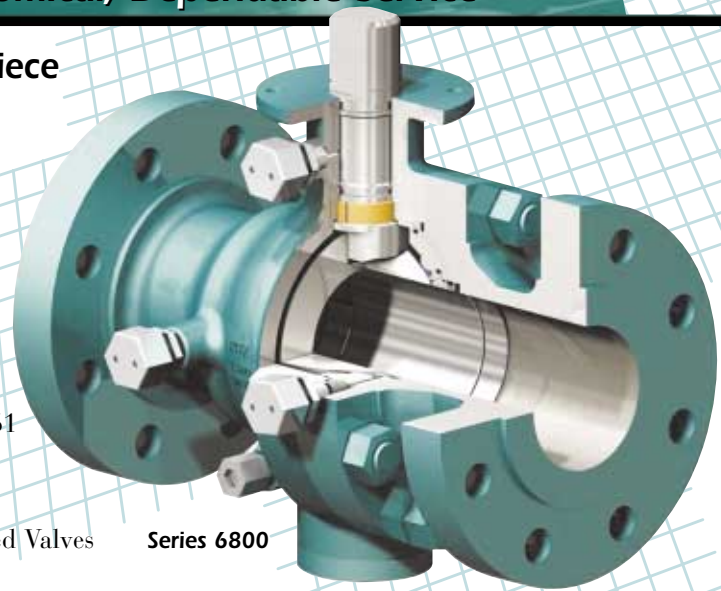
Zy-Tech Global Industries, Inc. is dedicated to continually improving their state-of-the-art engineering and manufacturing capabilities to improve the overall quality of their products and customer service. Zy-Tech's entire global network of flow control experts consist of highly trained technicians, engineers, and superior testing laboratories to ensure that all products supplied to our customers are 100% in accordance with industry standards as well as our own Quality Management System.

# The Professional Choice for Economical, Dependable Service

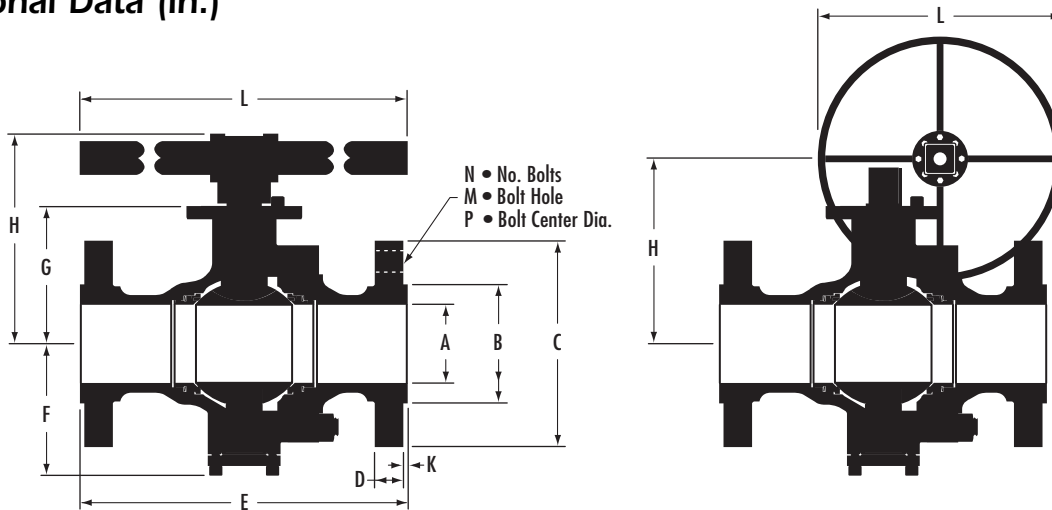
## The PBV® Series 6800 Flanged, Two-Piece Cast Trunnion Supported Ball Valves

### Standard Features

- WCB/WCC Cast Bodies and Adapters
- 316 Stainless Steel Standard on Internal Trim (Ball, Seat and Stems) 2" -150 thru 6" -600
- O-ring Stem Seal Design backed by Firesafe Seal
- Valves Built to API 6D
- Valves meet ASME B16.34, B16.10, B16.5 and BS 5351
- ISO 5211 Compatible Mounting Pads
- Fire tested to API 6FA
- Locking Devices Standard for Lever or Gear Operated Valves
- All Materials Meet NACE MR0175 2002



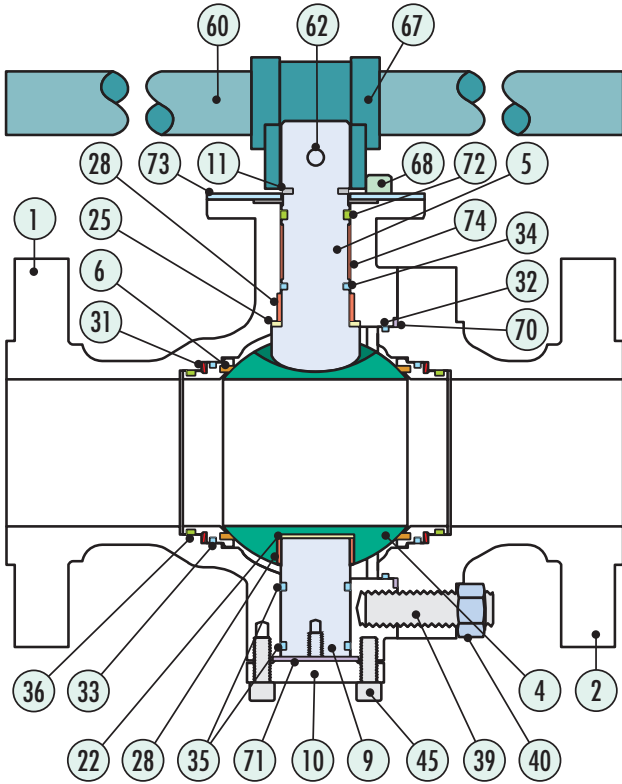
### Dimensional Data (in.)



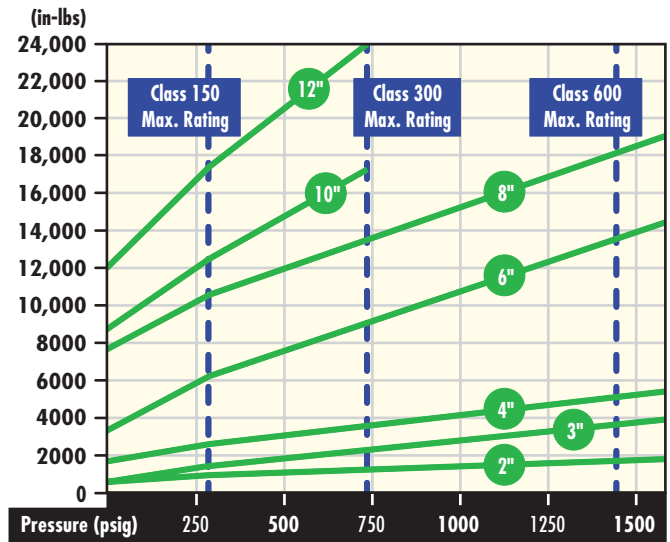
#### 6800, Full Port

| Valve Sz (in) | Class | A     | B     | C     | D    | E     | F     | G     | H     | K    | N  | M    | P     | L     |
|---------------|-------|-------|-------|-------|------|-------|-------|-------|-------|------|----|------|-------|-------|
| 2             | 150   | 2.06  | 3.62  | 6.00  | 0.62 | 7.00  | 4.30  | 3.94  | 6.53  | 0.06 | 4  | 0.75 | 4.75  | 16.62 |
|               | 300   | 2.06  | 3.62  | 6.50  | 0.88 | 8.50  | 4.30  | 3.94  | 6.53  | 0.06 | 8  | 0.75 | 5.00  | 16.62 |
|               | 600   | 2.06  | 3.62  | 6.50  | 1.25 | 11.50 | 4.30  | 4.13  | 7.43  | 0.25 | 8  | 0.75 | 5.00  | 19.70 |
| 3             | 150   | 3.13  | 5.00  | 7.50  | 0.75 | 8.00  | 5.80  | 4.88  | 8.80  | 0.06 | 4  | 0.75 | 6.00  | 30.00 |
|               | 300   | 3.13  | 5.00  | 8.25  | 1.12 | 11.12 | 5.80  | 4.88  | 8.19  | 0.06 | 8  | 0.88 | 6.62  | 30.00 |
|               | 600   | 3.13  | 5.00  | 8.25  | 1.50 | 14.00 | 5.80  | 5.38  | 9.28  | 0.25 | 8  | 0.88 | 6.62  | 30.00 |
| 4             | 150   | 4.06  | 6.19  | 9.00  | 0.94 | 9.00  | 6.86  | 6.10  | 10.01 | 0.06 | 8  | 0.75 | 7.50  | 30.00 |
|               | 300   | 4.06  | 6.19  | 10.00 | 1.25 | 12.00 | 6.86  | 7.06  | 10.97 | 0.06 | 8  | 0.88 | 7.88  | 30.00 |
|               | 600   | 4.06  | 6.19  | 10.75 | 1.75 | 17.00 | 6.86  | 7.06  | 10.97 | 0.25 | 8  | 1.00 | 8.50  | 30.00 |
| 6             | 150   | 6.00  | 8.50  | 11.00 | 1.00 | 15.50 | 8.27  | 8.75  | 10.91 | 0.06 | 8  | 0.88 | 9.50  | 18.11 |
|               | 300   | 6.00  | 8.50  | 12.50 | 1.44 | 15.87 | 8.27  | 8.75  | 10.91 | 0.06 | 12 | 0.88 | 10.62 | 18.11 |
|               | 600   | 6.00  | 8.50  | 14.00 | 2.13 | 22.00 | 8.27  | 8.75  | 10.91 | 0.25 | 12 | 1.12 | 11.50 | 18.11 |
| 8             | 150   | 8.00  | 10.62 | 13.50 | 1.12 | 18.00 | 10.62 | 10.94 | 13.06 | 0.06 | 8  | 0.88 | 11.75 | 24.02 |
|               | 300   | 8.00  | 10.62 | 15.00 | 1.62 | 19.75 | 10.62 | 10.94 | 13.06 | 0.06 | 12 | 1.00 | 13.00 | 24.02 |
|               | 600   | 8.00  | 10.62 | 16.50 | 2.44 | 26.00 | 10.62 | 10.94 | 13.06 | 0.25 | 12 | 1.25 | 13.75 | 24.02 |
| 10            | 150   | 10.00 | 12.75 | 16.00 | 1.19 | 21.00 | 12.17 | 12.50 | 14.63 | 0.06 | 12 | 1.00 | 14.25 | 24.02 |
|               | 300   | 10.00 | 12.75 | 17.50 | 1.88 | 22.38 | 12.17 | 12.50 | 14.63 | 0.06 | 16 | 1.12 | 15.25 | 24.02 |
| 12            | 150   | 12.00 | 15.00 | 19.00 | 1.25 | 24.00 | 13.74 | 14.13 | 16.25 | 0.06 | 12 | 1.00 | 17.00 | 24.02 |
|               | 300   | 12.00 | 15.00 | 20.50 | 2.00 | 25.50 | 13.74 | 14.13 | 16.25 | 0.06 | 16 | 1.25 | 17.75 | 24.02 |

# PBV® Two-Piece Trunnion Valve Engineering Data



## Stem Torque



## Max Break Torques (in.-lbs.)

| Pressure psig | Torque (in.-lbs.) By Size |      |      |        |        |    |    |
|---------------|---------------------------|------|------|--------|--------|----|----|
|               | 2                         | 3    | 4    | 6      | 8      | 10 | 12 |
| 0             | 540                       | 720  | 1560 | 3180   | 7560   | *  | *  |
| 285           | 900                       | 1440 | 2580 | 6120   | 10,560 | *  | *  |
| 740           | 1320                      | 2460 | 3600 | 9540   | 13,560 | *  | *  |
| 1480          | 1620                      | 3720 | 5220 | 13,800 | 18,180 | —  | —  |

\*Contact your PBV® salesperson.

## Parts & Materials Typical 4" Steel Valve

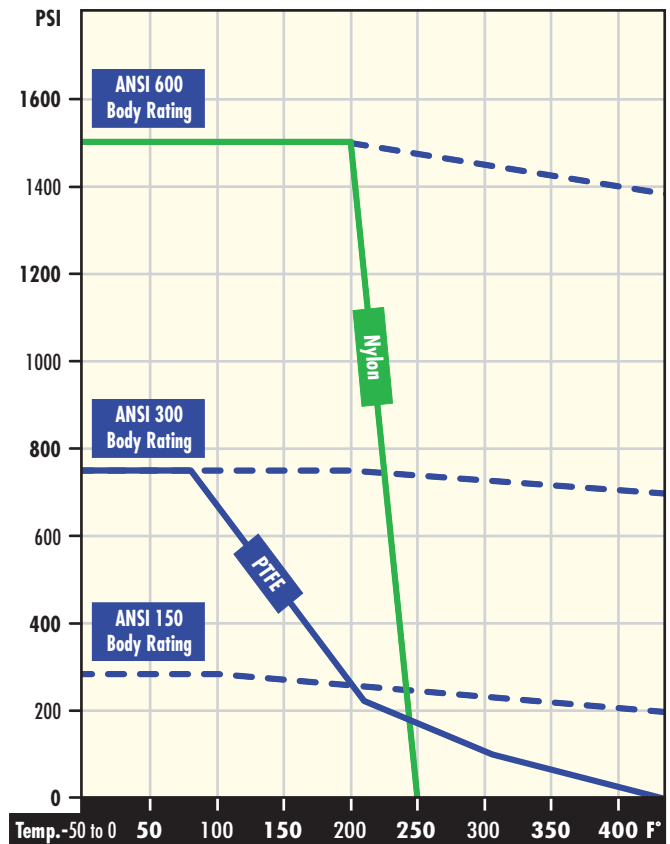
| Item No. | Qty.     | Description         | Material/Carbon Steel Std. |
|----------|----------|---------------------|----------------------------|
| 1        | 1        | Body                | A216-WCB/WCC               |
| 2        | 1        | Adapter Cap         | A216-WCB/WCC               |
| 4        | 1        | Ball                | A351-CF8M                  |
| 5**      | 1        | Stem                | A276-316                   |
| 6*       | 2        | Seat Assembly       | Nylon/316                  |
| 9        | 1        | Trunnion            | A276-316                   |
| 10       | 1        | Trunnion Plate      | A352-LCC                   |
| 11**     | 1        | Snap Ring           | Stainless Steel            |
| 22**     | 1        | Bearing             | TFMC                       |
| 25*      | 1        | Stem Thrust Bearing | TFMC                       |
| 28*      | 2        | Bearing Washer      | Steel/PTFE                 |
| 31**     | 2        | Spring              | Inconel X-750              |
| 32*      | 1        | O-ring, Body        | Viton® A                   |
| 33*      | 2        | O-ring, Seat        | Viton® A                   |
| 34*      | 1        | O-ring, Stem        | Viton® A                   |
| 35*      | 2        | O-ring, Trunnion    | Viton® A                   |
| 36*      | —        | Packing             | Graphite                   |
| 39       | See Dim. | Stud                | A193-B7M                   |
| 40       | See Dim. | Nut                 | A194-2HM                   |
| 45       | 4        | Cap Screw, Trunnion | A574                       |
| 60       | 1        | Handle              | Carbon Steel               |
| 62       | 1        | Handle Screw        | F912                       |
| 67       | 1        | Handle Adapter      | Ductile Iron               |
| 68       | 1        | Cap Screw, Stop     | A574                       |
| 70*      | 1        | Gasket, Body        | Graphite                   |
| 71*      | 1        | Gasket, Trunnion    | Graphite                   |
| 72*      | —        | Packing, Stem       | Graphite                   |
| 73**     | 1        | Stop Plate          | Carbon Steel               |
| 74**     | 1        | Stem Bearing        | PTFE                       |

\*Recommended spare parts after two years service.

\*\*Recommended spare parts after five years service.

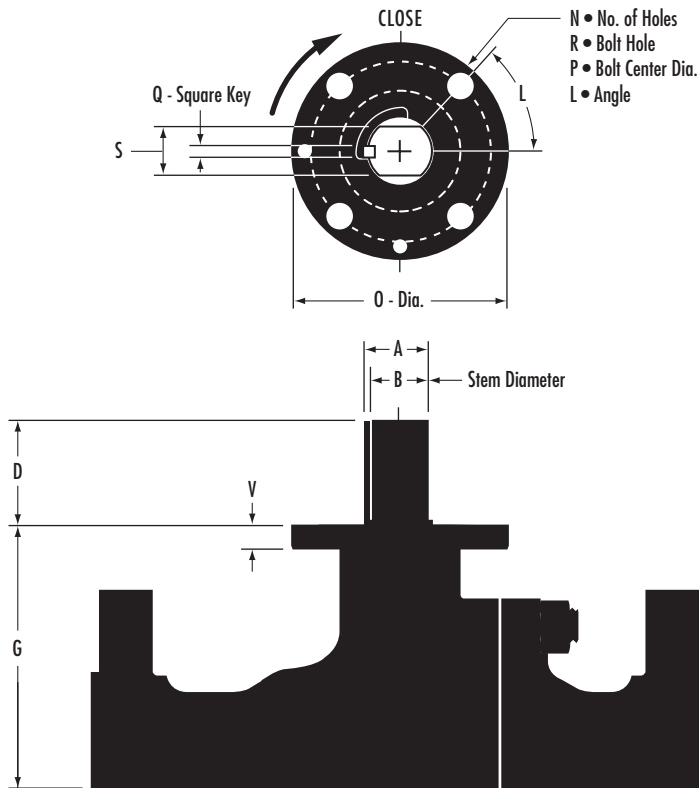
NOTE: We reserve the right to change materials and specifications.

## Pressure Temperature



Data contained below is based on ball bore size and not end flange bore size. All dimensions are given in inches.

Dimensions may be changed without notice. Contact PBV® with **valve serial numbers** for exact dimensions.



### Class 150 (in.)

| Size | 2     | 3     | 4     | 6     | 8     | 10    | 12    |
|------|-------|-------|-------|-------|-------|-------|-------|
| A    | —     | —     | —     | 1.987 | 2.630 | 2.630 | 2.630 |
| B    | 0.905 | 1.280 | 1.875 | 1.772 | 2.362 | 2.362 | 2.362 |
| D    | 1.29  | 1.81  | 2.16  | 2.57  | 3.38  | 3.38  | 3.29  |
| G    | 3.94  | 4.88  | 5.10  | 8.75  | 10.94 | 12.50 | 14.13 |
| L    | 45°   | 45°   | 45°   | 45°   | 45°   | 45°   | 45°   |
| N    | 4     | 4     | 4     | 4     | 4     | 4     | 4     |
| O    | 3.54  | 3.54  | 5.91  | 6.80  | 8.27  | 8.27  | 8.27  |
| P    | 2.75  | 2.75  | 4.92  | 5.51  | 6.50  | 6.50  | 6.50  |
| Q    | —     | —     | —     | 0.500 | 0.625 | 0.625 | 0.625 |
| R    | 0.39  | 0.39  | 0.57  | 0.81  | 0.81  | 0.81  | 0.81  |
| S    | 0.669 | 0.906 | 1.250 | 1.376 | —     | —     | —     |
| V    | 0.35  | 0.35  | 0.51  | 0.72  | 0.78  | 0.69  | 0.78  |

### Class 600 (in.)

| Size | 2     | 3     | 4     | 6     | 8     |
|------|-------|-------|-------|-------|-------|
| A    | —     | —     | —     | 1.987 | 2.630 |
| B    | 1.280 | 1.870 | 1.870 | 1.772 | 2.362 |
| D    | 1.84  | 2.13  | 2.13  | 2.87  | 3.37  |
| G    | 4.12  | 5.38  | 7.03  | 8.75  | 10.93 |
| L    | 45°   | 45°   | 45°   | 45°   | 45°   |
| N    | 4     | 4     | 4     | 4     | 4     |
| O    | 3.54  | 5.00  | 5.91  | 6.89  | 8.26  |
| P    | 2.75  | 4.02  | 4.92  | 5.51  | 6.50  |
| Q    | —     | —     | —     | 0.500 | 0.625 |
| R    | 0.39  | 0.45  | 0.57  | 0.81  | 0.81  |
| S    | 0.906 | 1.250 | 1.250 | 1.376 | —     |
| V    | 0.39  | 0.37  | 0.53  | 0.72  | 0.78  |

### Class 300 (in.)

| Size | 2     | 3     | 4     | 6     | 8     | 10    | 12    |
|------|-------|-------|-------|-------|-------|-------|-------|
| A    | —     | —     | —     | 1.507 | 2.032 | 2.032 | 2.032 |
| B    | 0.905 | 1.280 | 1.870 | 1.772 | 2.362 | 2.362 | 2.362 |
| D    | 1.29  | 1.81  | 2.13  | 2.87  | 3.38  | 3.38  | 3.29  |
| G    | 3.94  | 4.88  | 7.06  | 8.75  | 10.94 | 12.50 | 14.13 |
| L    | 45°   | 45°   | 45°   | 45°   | 45°   | 45°   | 45°   |
| N    | 4     | 4     | 4     | 4     | 4     | 4     | 4     |
| O    | 3.54  | 3.54  | 5.91  | 6.69  | 8.27  | 8.27  | 8.27  |
| P    | 2.75  | 2.75  | 4.92  | 5.51  | 6.50  | 6.50  | 6.50  |
| Q    | —     | —     | —     | 0.500 | 0.625 | 0.625 | 0.625 |
| R    | 0.39  | 0.39  | 0.57  | 0.81  | 0.81  | 0.81  | 0.81  |
| S    | 0.669 | 0.906 | 1.250 | 1.376 | —     | —     | —     |
| V    | 0.35  | 0.35  | 0.53  | 0.72  | 0.78  | 0.69  | 0.78  |