

# 75-100 SERIES

## Bronze Pad Locking Ball Valve

Female NPT Thread, 600 CWP (psig), Cold Non-Shock.  
150 psig Saturated Steam.  
Vacuum Service to 29 inches Hg.  
MSS SP-110 compliant.



### FEATURES

- Reinforced seats
- Blow-out-proof stem design
- May be padlocked in open or closed position with no change of hardware
- Adjustable packing gland

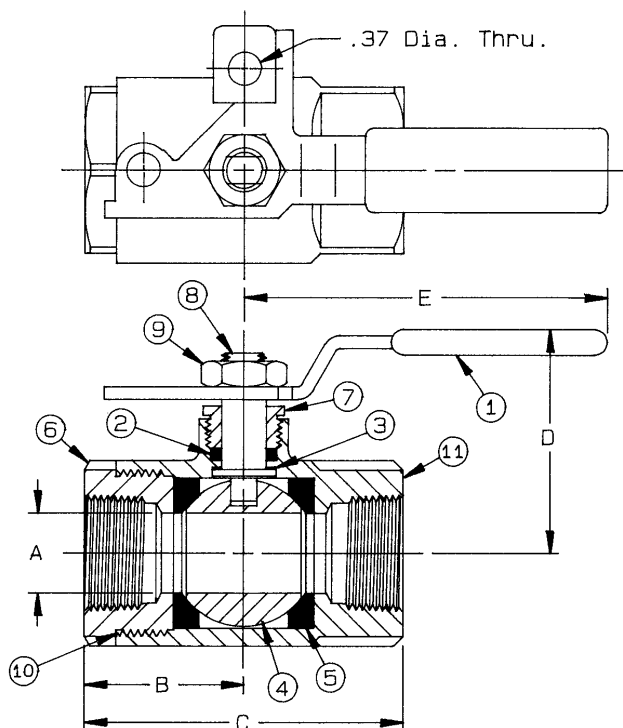
### VARIATIONS AVAILABLE:

- 75-140 Series (316 SS Ball & Stem)  
75-190 Series (Pinned Retainer)

### OPTIONS AVAILABLE: (More information in Section J)

- Minimum quantities apply
- To specify an option, replace the "01" standard suffix with the suffix of the option.
- To specify multiple options, replace the "01" suffix with the desired suffixes in the numerical order shown below. NOTE: Not all suffixes can be combined together.

| (SUFFIX) | OPTION                                                | SIZES      |
|----------|-------------------------------------------------------|------------|
| -01      | Standard Configuration                                | All        |
| -P -01-  | BSPP (Parallel) Thread Connection                     | 1/4" to 2" |
| -T -01-  | BSPT (Tapered) Thread Connection                      | 1/4" to 2" |
| -02-     | Stem Grounded                                         | 1/4" to 2" |
| -05-     | Plain Ball                                            | 1/4" to 2" |
| -08-     | 90° Reversed Stem                                     | 1/4" to 2" |
| -10-     | SS Lever & Nut                                        | 1/4" to 2" |
| -14-     | Side Vented Ball (Uni-Directional)                    | 1/4" to 2" |
| -17-     | Rough Chrome Plated - Bronze Valves                   | 1/4" to 2" |
| -18-     | Plain Yellow Grip                                     | 1/4" to 2" |
| -20-     | Slot Vented Ball                                      | 1/4" to 2" |
| -21-     | UHMWPE Trim (Non-PTFE)                                | 1/4" to 2" |
| -24-     | Graphite Packing                                      | 1/4" to 2" |
| -35-     | PTFE Trim                                             | 1/4" to 2" |
| -41-     | Automatic Drain (+50°F to 200°F limit. 125 psig max.) | 1/4" to 2" |
| -49-     | No Lubrication. Assembled Dry.                        | 1/4" to 2" |
| -57-     | Oxygen Cleaned                                        | 1/4" to 2" |
| -60-     | Grounded Ball & Stem                                  | 1/4" to 2" |



| PRODUCT NUMBER | SIZE  | A    | B    | C    | D    | E    | WT.  |
|----------------|-------|------|------|------|------|------|------|
| 75-101-01      | 1/4"  | 0.43 | 1.10 | 2.22 | 1.74 | 2.87 | 0.80 |
| 75-102-01      | 3/8"  | 0.50 | 1.10 | 2.22 | 1.74 | 2.87 | 0.77 |
| 75-103-01      | 1/2"  | 0.50 | 1.10 | 2.22 | 1.74 | 2.87 | 0.70 |
| 75-104-01      | 3/4"  | 0.87 | 1.68 | 3.35 | 2.20 | 3.81 | 2.03 |
| 75-105-01      | 1"    | 0.87 | 1.68 | 3.35 | 2.20 | 3.81 | 1.83 |
| 75-106-01      | 1.25" | 1.00 | 1.98 | 3.97 | 2.56 | 5.50 | 3.48 |
| 75-107-01      | 1.5"  | 1.25 | 2.14 | 4.31 | 2.74 | 5.50 | 4.23 |
| 75-108-01      | 2"    | 1.50 | 2.35 | 4.67 | 2.93 | 5.50 | 5.69 |

FOR PRESSURE/TEMPERATURE RATINGS, REFER TO PAGE M-10, GRAPH NO. 4

### STANDARD MATERIAL LIST

|    | PART           | MATERIAL                                            |
|----|----------------|-----------------------------------------------------|
| 1  | Lever and grip | Steel, zinc plated w/vinyl                          |
| 2  | Stem packing   | MPTFE                                               |
| 3  | Stem bearing   | RPTFE                                               |
| 4  | Ball           | B16 Brass, chrome plated                            |
| 5  | Seat (2)       | RPTFE                                               |
| 6  | Retainer       | B16 Brass (1/4" to 1")<br>B584-C84400 (1.25" to 2") |
| 7  | Gland nut      | B16 Brass                                           |
| 8  | Stem           | B16 Brass                                           |
| 9  | Lever nut      | Steel, zinc plated                                  |
| 10 | Body seal      | PTFE (1.25" & 2")                                   |
| 11 | Body           | B584-C84400                                         |

# FLOW DATA

## For Apollo® Ball Valves

The listed Cv "factors" are derived from actual flow testing, in the Apollo® Ball Valve Division, Conbraco Industries, Inc., Pageland, South Carolina. These tests were completed using standard "off the shelf" valves with no special preparation and utilizing standard schedule 40 pipe. It should be understood that these factors are for the valve only and also include the connection configuration. The flow testing is done utilizing water as a fluid media and is a direct statement of the gallons of water flowed per minute with a 1 psig pressure differential across the valve/connection unit. Line pressure is not a factor. Because the Cv is a factor, the formula can be used to estimate flow of most media for valve sizing.

### FLOW OF LIQUID

$$Q = C_v \sqrt{\frac{\Delta P}{\text{SpGr}}}$$

$$\text{or } \Delta P = \frac{(Q)^2 (\text{SpGr})}{(C_v)^2}$$

#### Where:

Q = flow in US gpm  
 ΔP = pressure drop (psig)  
 SpGr = specific gravity at flowing temperature  
 Cv = valve constant

### FLOW OF GAS

$$Q = 1360 C_v \sqrt{\frac{(\Delta P) (P_2)}{(\text{SpGr}) (T)}}$$

$$\text{or } \Delta P = \frac{5.4 \times 10^{-7} (\text{SpGr}) (T) (Q)^2}{(C_v)^2 (P_2)}$$

#### Where:

Q = flow in SCFH  
 ΔP = pressure drop (psig)  
 SpGr = specific gravity (based on air = 1.0)  
 P<sub>2</sub> = outlet pressure-psia (psig + 14.7)  
 T = (temp. °F + 460)  
 Cv = valve constant

**CAUTION:** The gas equation shown, is valid at very low pressure drop ratios. The gas equation is **NOT** valid when the ratio of pressure drop (ΔP) to inlet pressure (P1) exceeds 0.02.

**NOTE:** Only use the gas equation shown if (P1-P2)/P1 is less than 0.02.

### Cv FACTORS FOR APOLLO VALVES

| VALVE              | SIZE (IN.) |     |     |     |    |      |     |     |     |     |     |    |    |    |    |
|--------------------|------------|-----|-----|-----|----|------|-----|-----|-----|-----|-----|----|----|----|----|
|                    | 1/4        | 3/8 | 1/2 | 3/4 | 1  | 1.25 | 1.5 | 2   | 2.5 | 3   | 4   | 6  | 8  | 10 | 12 |
| 70B-140 Series     | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | 670 | -- | -- | -- | -- |
| 70-100/200 Series  | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | 670 | -- | -- | -- | -- |
| 70-300/400 Series  | --         | --  | 15  | 30  | 43 | 48   | 84  | 108 | --  | --  | --  | -- | -- | -- | -- |
| 70-600 Series      | 2.3        | 4.5 | 5.4 | 12  | 14 | 21   | 34  | 47  | --  | --  | --  | -- | -- | -- | -- |
| 70-800 Series      | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | --  | --  | --  | --  | -- | -- | -- | -- |
| 71-AR Series       | --         | --  | --  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | --  | -- | -- | -- | -- |
| 71-100/200 Series  | --         | --  | --  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | --  | -- | -- | -- | -- |
| 72-100/900 Series  | --         | --  | 26  | 48  | 65 | 125  | 170 | 216 | --  | --  | --  | -- | -- | -- | -- |
| 73A-100 Series     | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | --  | --  | --  | -- | -- | -- | -- |
| 73-300/400 Series  | --         | --  | 26  | 48  | 65 | 125  | 170 | 216 | --  | --  | --  | -- | -- | -- | -- |
| 74-100 Series      | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | 670 | -- | -- | -- | -- |
| 75-100 Series      | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | 670 | -- | -- | -- | -- |
| 76-AR Series       | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | 670 | -- | -- | -- | -- |
| 76F-100 Series     | 8.1        | 15  | 15  | 51  | 68 | 125  | 177 | 389 | --  | --  | --  | -- | -- | -- | -- |
| 76FJ-100 Series    | 8.1        | 15  | 15  | 51  | 68 | 125  | 177 | 389 | --  | --  | --  | -- | -- | -- | -- |
| 76FK-100 Series    | 8.1        | 15  | 15  | 51  | 68 | 125  | 177 | 389 | --  | --  | --  | -- | -- | -- | -- |
| 76-100 Series      | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | --  | -- | -- | -- | -- |
| 76-300/400 Series  | --         | --  | 26  | 48  | 65 | 125  | 170 | 216 | --  | --  | --  | -- | -- | -- | -- |
| 76-600 Series      | 2.3        | 4.5 | 5.4 | 12  | 14 | 21   | 34  | 47  | --  | --  | --  | -- | -- | -- | -- |
| 76J-100 Series     | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | --  | -- | -- | -- | -- |
| 76J-AR Series      | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | 670 | -- | -- | -- | -- |
| 76K-100 Series     | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | --  | -- | -- | -- | -- |
| 76K-AR Series      | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370 | 670 | -- | -- | -- | -- |
| 7K-100 Series      | --         | --  | 15  | 51  | 68 | 125  | 177 | 389 | 503 | --  | --  | -- | -- | -- | -- |
| 77-AR Series       | 8.1        | 15  | 15  | 51  | 68 | 125  | 177 | 389 | --  | --  | --  | -- | -- | -- | -- |
| 77C-100/200 Series | 4.5        | 7.2 | 16  | 36  | 68 | 125  | 177 | 389 | 503 | --  | --  | -- | -- | -- | -- |
| 77D-140 Series     | 4.5        | 7.2 | 16  | 36  | 68 | 125  | 177 | 389 | --  | --  | --  | -- | -- | -- | -- |

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# FLOW DATA

## For Apollo® Ball Valves

### Cv FACTORS FOR APOLLO VALVES (continued from M-3)

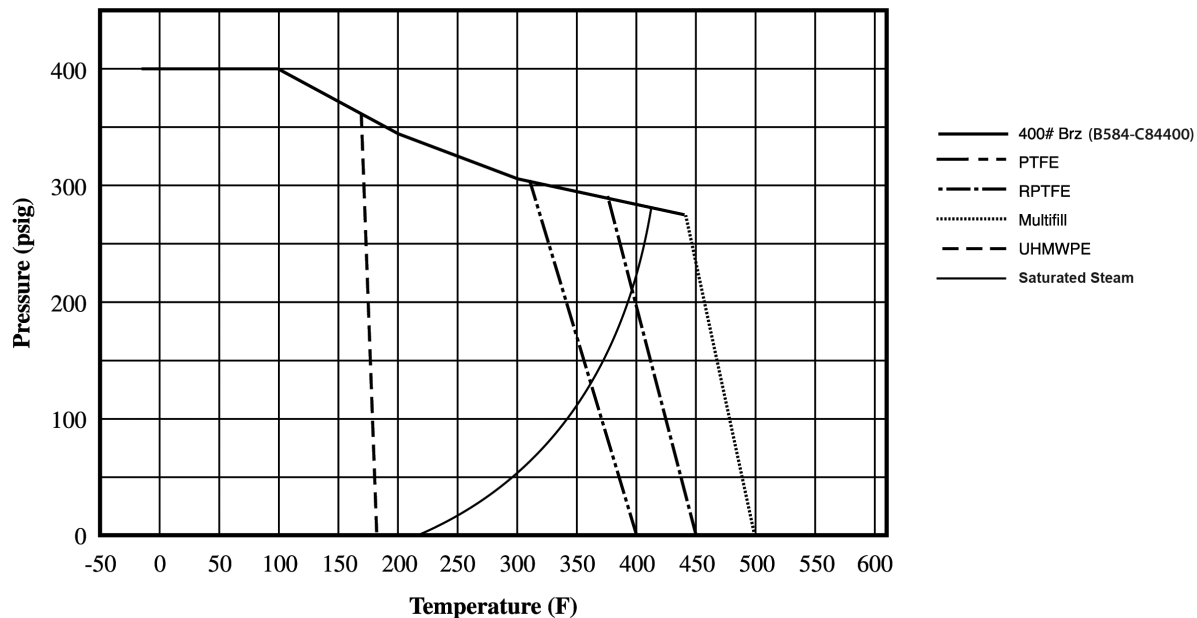
| VALVE              | SIZE (IN.) |     |     |     |    |      |     |     |     |      |      |      |      |       |       |
|--------------------|------------|-----|-----|-----|----|------|-----|-----|-----|------|------|------|------|-------|-------|
|                    | 1/4        | 3/8 | 1/2 | 3/4 | 1  | 1.25 | 1.5 | 2   | 2.5 | 3    | 4    | 6    | 8    | 10    | 12    |
| 77D-640 Series     | --         | --  | --  | 11  | 24 | 35   | --  | --  | --  | --   | --   | --   | --   | --    | --    |
| 77G-UL Series      | 4.5        | 7.2 | 16  | 36  | 68 | 125  | 177 | 389 | 503 | --   | --   | --   | --   | --    | --    |
| 77W Series         | --         | --  | 16  | 36  | 68 | 125  | 177 | 389 | --  | --   | --   | --   | --   | --    | --    |
| 77-100/200 Series  | 8.1        | 15  | 15  | 51  | 68 | 125  | 177 | 389 | 503 | --   | --   | --   | --   | --    | --    |
| 79 Series          | 8.5        | 8.5 | 9.8 | 32  | 44 | 66   | 148 | 218 | 440 | 390  | --   | --   | --   | --    | --    |
| 80 Series          | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370  | --   | --   | --   | --    | --    |
| 82-100/200 Series  | 8.1        | 14  | 26  | 51  | 68 | 120  | 170 | 376 | 510 | 996  | 1893 | --   | --   | --    | --    |
| 83A/83B Series     | 8.1        | 14  | 26  | 51  | 68 | 120  | 170 | 376 | --  | --   | --   | --   | --   | --    | --    |
| 83R-100/200 Series | --         | --  | --  | --  | -- | --   | 170 | 376 | --  | 996  | 1893 | --   | --   | --    | --    |
| 86A/86B Series     | 8.1        | 14  | 26  | 51  | 68 | 120  | 170 | 376 | --  | --   | --   | --   | --   | --    | --    |
| 86R-100/200 Series | --         | --  | --  | --  | -- | --   | 170 | 376 | --  | 996  | 1893 | --   | --   | --    | --    |
| 87A-100 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 87A-200 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 87A-700 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 87A-900 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 87A-F00 Series     | --         | --  | --  | --  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | --   | --    | --    |
| 87B-100 Series     | --         | --  | --  | --  | -- | --   | --  | --  | --  | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 87J-100 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 87J-200 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 87J-700 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 87J-900 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 87K-100 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 87K-200 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 87K-700 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 87K-900 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 88A-100 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 88A-200 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 88A-700 Series     | --         | --  | --  | --  | -- | --   | 86  | 104 | 234 | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 88A-900 Series     | --         | --  | 15  | 19  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | 9250 | 15170 | 22390 |
| 88A-F00 Series     | --         | --  | --  | --  | 75 | --   | 195 | 410 | 545 | 1021 | 2016 | 4837 | --   | --    | --    |
| 88B-100 Series     | --         | --  | --  | --  | -- | --   | --  | --  | --  | 375  | 673  | 1099 | 1902 | 3890  | --    |
| 89-100 Series      | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370  | --   | --   | --   | --    | --    |
| 9A-100 Series      | 8.3        | 6.7 | 5.7 | 10  | 16 | 25   | 40  | 62  | --  | --   | --   | --   | --   | --    | --    |
| 90-100 Series      | 8.3        | 6.7 | 5.7 | 10  | 16 | 25   | 40  | 62  | --  | --   | --   | --   | --   | --    | --    |
| 92-100 Series      | 8.3        | 6.7 | 5.7 | 10  | 16 | 25   | 40  | 62  | --  | --   | --   | --   | --   | --    | --    |
| 93-100 Series      | 8.3        | 6.7 | 5.7 | 10  | 16 | 25   | 40  | 62  | --  | --   | --   | --   | --   | --    | --    |
| 94A-100/200 Series | 6          | 7   | 19  | 34  | 50 | 104  | 268 | 309 | 629 | 1018 | 1622 | --   | --   | --    | --    |
| 96-100 Series      | 8.3        | 6.7 | 5.7 | 10  | 16 | 25   | 40  | 62  | --  | --   | --   | --   | --   | --    | --    |
| 399-100 Series     | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370  | --   | --   | --   | --    | --    |
| 489-100 Series     | 8.4        | 7.2 | 15  | 30  | 43 | 48   | 84  | 108 | 190 | 370  | --   | --   | --   | --    | --    |

# PRESSURE TEMPERATURE RATINGS

400 CWP

Bronze ASTM B584-C84400

(GRAPH 3)



600 CWP

Bronze ASTM B584-C84400

(GRAPH 4)

