

82-200/82A-240 SERIES

Bronze 3-Piece Full Port Ball Valve

Solder End
 Vacuum Service to 29 inches Hg.
 MSS SP-110 compliant.
 CRN: OC10908.5C

82-200 & 82-240: 600 CWP (psig), 150 SWP (psig)
 82A-240: 400 CWP (psig), 150 SWP (psig)

* Recommend utilizing SS ball & stem in 150 SWP applications.

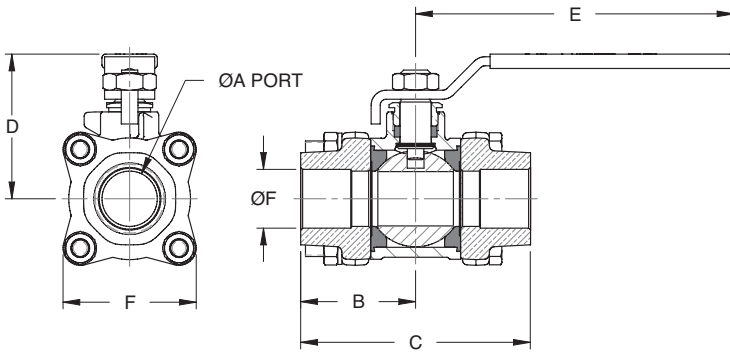


FEATURES

- Adjustable packing gland
- Blow-out-proof stem design
- Reinforced seats
- Inline repairable
- Full port ball configuration, all sizes

VARIATIONS AVAILABLE:

82-200 Series Standard
 82-240 Series 316 SS Ball & Stem
 82A-240 Series 3" & 4" Only (No Options Available)



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 |
| -02- | Static Grounded | 3/8" to 4" |
| -04- | 2.25" Stem Extension (Carbon Steel, Zinc Plated) | 3/8" to 2" |
| -05- | Plain Ball | 3/8" to 4" |
| -07- | Tee Handle | 3/8" to 2" |
| -08- | 90° Reversed Stem | 3/8" to 4" |
| -10- | SS Lever & Nut | 3/8" to 4" |
| -11- | Therma-Seal™ Insulating Tee Handle | 1/4" to 2" |
| -14- | Vented Ball | 3/8" to 4" |
| -15- | Round Handle | 3/8" to 2" |
| -16- | Vertical Chain Lever | 1/2" to 2" |
| -18- | Plain Yellow Grip | 3/8" to 2" |
| -19- | Lock plate | 3/8" to 2" |
| -20- | Slot Vented Ball | 3/8" to 4" |
| -21- | UHMWPE Seats | 3/8" to 4" |
| -23- | Tank Flange | 2" ONLY |
| -24- | Graphite Packing | 3/8" to 4" |
| -27- | Latch Lock Lever | 1/2" to 2" |
| -30- | CamLock Handle | 3/8" to 1.25" |
| -32- | SS Tee Handle & Nut | 3/8" to 2" |
| -35- | PTFE Trim | 3/8" to 4" |
| -39- | SS Hi-Rise Locking Wheel Handle, SS Nut | 3/8" to 1.25" |
| -40- | Cyl-Loc & Grounded | 3/8" to 1/2" |
| -45- | Less Lever & Nut | 3/8" to 4" |
| -46- | Latch-Lock Lever - Lock in Closed Position Only | 1/2" to 2" |
| -47- | SS Oval Latch-Lock Handle & Nut | 3/8" to 3/4" |
| -48- | SS Oval Handle (No Latch) & Nut | 3/8" to 2" |
| -49- | No Lubrication. Assembled Dry. | 3/8" to 4" |
| -50- | 2.25" CS Locking Stem Extension | 3/8" to 2" |
| -56- | Multifill Seats | 3/8" - 4" |
| -57- | Oxygen Cleaned | 3/8" to 4" |
| -58- | Chain Lever - Horizontal | 3/8" to 2" |
| -59- | SS External Trim - 3-pc. Valves | 3/8" to 4" |
| -60- | Grounded Ball & Stem | 3/8" to 4" |
| -92- | Balancing Stop | 3/8" to 2" |

STANDARD MATERIAL LIST

| PART | MATERIAL | |
|------|----------------|--|
| 1 | Lever and grip | Steel, zinc plated w/vinyl |
| 2 | Stem packing | MPTFE (Chevron style PTFE 82A 3"&4") |
| 3 | Stem bearing | RPTFE |
| 4 | Ball | ASTM B16 Brass,chrome plated (1/4"-2.5") ASTM 276-316 SS (3"-4") |
| 5 | Seat (2) | RPTFE |
| 6 | End cap (2) | B16 Brass (1/4" to 3/8"), B584-C84400 (1/2"-4") |
| 7 | Gland nut | B16 Brass |
| 8 | Stem | ASTM B16 Brass, ASTM 276-316 SS (3"-4") |
| 9 | Lever nut | Steel, zinc plated |
| 10 | Body bolt | Steel, zinc plated |
| 11 | Hex nut | Steel, zinc plated |
| 12 | Body | ASTM B584-C84400 (Bronze) |

| PRODUCT NUMBER | SIZE | A | B | C | D | E | F | G | H | WT. |
|----------------|-------|------|------|-------|------|-------|------|------|------|--------|
| 82-202-01 | 3/8" | 0.44 | 1.28 | 2.56 | 1.81 | 3.87 | 0.50 | 0.38 | 1.60 | 1.04 |
| 82-203-01 | 1/2" | 0.56 | 1.40 | 2.81 | 1.93 | 4.87 | 0.63 | 0.50 | 1.78 | 1.55 |
| 82-204-01 | 3/4" | 0.83 | 1.71 | 3.43 | 2.18 | 4.87 | 0.88 | 0.75 | 1.98 | 2.27 |
| 82-205-01 | 1" | 1.00 | 1.93 | 3.87 | 2.62 | 5.50 | 1.13 | 0.90 | 2.22 | 3.28 |
| 82-206-01 | 1.25" | 1.25 | 2.37 | 4.75 | 2.87 | 5.50 | 1.38 | 0.97 | 2.70 | 5.62 |
| 82-207-01 | 1.5" | 1.50 | 2.62 | 5.25 | 3.37 | 8.00 | 1.63 | 1.09 | 3.03 | 8.07 |
| 82-208-01 | 2" | 2.00 | 3.01 | 6.03 | 3.68 | 8.00 | 2.13 | 1.34 | 3.87 | 14.42 |
| 82-209-01 | 2.5" | 2.50 | 3.62 | 7.25 | 5.14 | 9.75 | 2.63 | 1.47 | 5.05 | 26.61 |
| 82A-240-01 | 3" | 3.00 | 4.18 | 8.37 | 8.10 | 19.13 | 3.13 | 1.66 | 5.82 | 43.00 |
| 82A-24A-01 | 4" | 4.00 | 5.43 | 10.86 | 8.88 | 19.13 | 4.13 | 2.16 | 7.77 | 106.00 |

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



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

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

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

Where:

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

FLOW OF GAS

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

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

Where:

Q = flow in SCFH
 ΔP = pressure drop (psig)
 SpGr = specific gravity (based on air = 1.0)
 P₂ = 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)

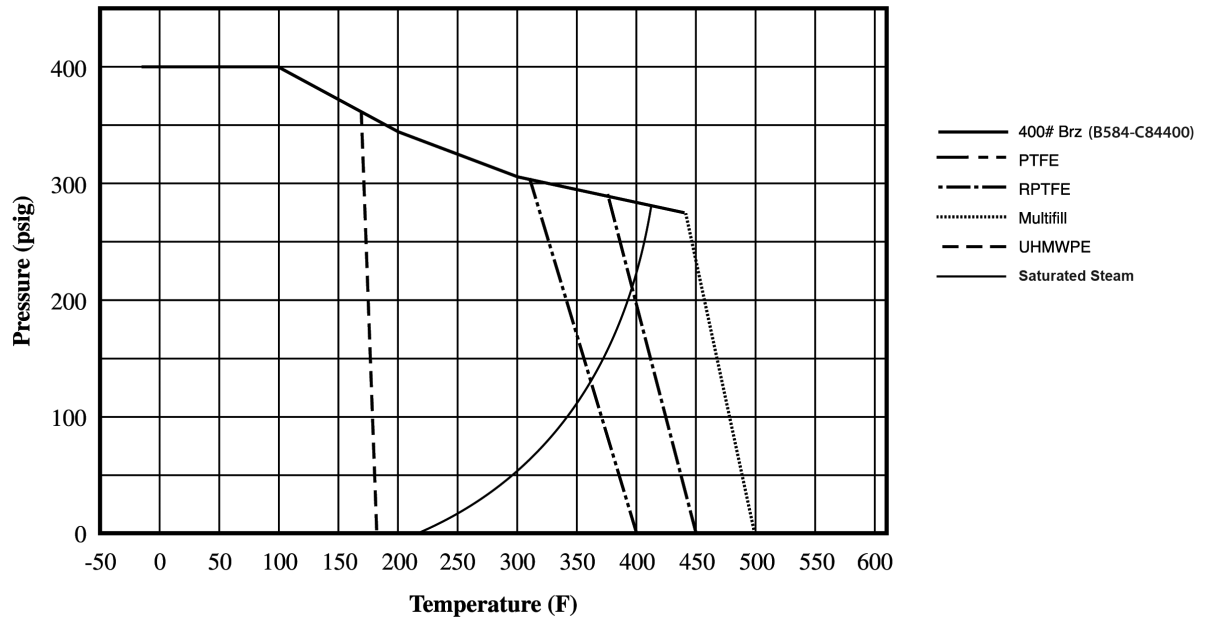
| VALVE | SIZE (IN.) | | | | | | | | | | | | | | |
|--------------------|------------|-----|-----|-----|----|------|-----|-----|-----|------|------|------|------|-------|-------|
| | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1.25 | 1.5 | 2 | 2.5 | 3 | 4 | 6 | 8 | 10 | 12 |
| 77D-640 Series | -- | -- | -- | 11 | 24 | 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)

