70-100 Series
Bronze Ball Valve

Threaded, 600 psig WOG, Cold Non-Shock. 150 psig Saturated Steam. (See referenced P/T charts)
Vacuum Service to 29 inches Hg.
MSS SP-110; Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

FEATURES
• Two-piece body
• Reinforced seats
• Blow-out-proof stem design
• Adjustable packing gland

STANDARD MATERIAL LIST

1. Lever and grip
   Steel, zinc plated w/vinyl
2. Stem packing
   MPTFE
3. Stem bearing
   RPTFE
4. Ball
   B16, chrome plated
5. Seat (2)
   B16 (1/4” to 1”)
6. Retainer
   B16 (1/4” to 1”)
   BS84-C84400 (1-1/4” to 4”)
7. Gland nut
   B16
8. Stem
   B16
9. Lever nut
   Steel, zinc plated
10. Body seal
    PTFE
11. Body
    BS84-C84400

VARIATIONS AVAILABLE:
70-140 Series (316 SS Ball & Stem)
70-190 Series (Locked Retainer)

OPTIONS AVAILABLE:

(SUFFIX) OPTION SIZES
-02-  Stem Grounded 1/4” to 4”
-03-  1-1/4” CS Stem Extension 1/4” to 3”
-04-  2-1/4” CS Stem Extension 1/4” to 3”
-05-  Plain Ball 1/4” to 3”
-07-  Steel tee Handle 1/4” to 2”
-08-  90° Reversed Stem 1/4” to 3”
-10-  SS Lever & Nut 1/4” to 3”
-11-  Thermo-Seal™ Insulating Tee Handle 1/4” to 2”
-14-  Side Vented Ball (Uni-Directional) 1/4” to 4”
-15-  Wheel Handle, Steel 1/4” to 2”
-16-  Chain Lever - Vertical 3/4” to 2”
-17-  Rough Chrome Plated - Bronze Valves 1/4” to 3”
-21-  UHMPE Trim (Non-PTFE) 1/4” to 3”
-24-  Graphite Packing 1/4” to 3”
-37-  SS Latch-Lock Lever & Nut 1/4” to 3”
-39-  Cam-Lock and Grounded 1/4” to 2”
-32-  SS Tee Handle & Nut 1/4” to 2”
-35-  VITF Trim 1/4” to 3”
-36-  SS Hi-Rise Round Handle, SS Nut 1/4” to 2”
-39-  SS Hi-Rise Locking Wheel Handle, SS Nut 1/4” to 2”
-40-  Cyl-Loc and Grounded 1/4” to 2”
-41-  Automatic Drain (Bronze Valves Only) 1/4” to 2”

For Pressure/Temperature Ratings,
Refer to Page M-8, 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

\[ Q = Cv \sqrt{\frac{\Delta P}{SpGr}} \]

Where:
- \( Q \) = flow in US gpm
- \( \Delta P \) = pressure drop (psig)
- \( SpGr \) = specific gravity at flowing temperature
- \( Cv \) = valve constant

or \( \Delta P = \frac{(Q)^2}{(Cv)^2} \left( \frac{SpGr}{(Q)} \right) \)

Flow of Gas

\[ Q = 1360 \cdot Cv \sqrt{\frac{(\Delta P) (P_1)}{(SpGr) (T)}} \]

or \( \Delta P = 5.4 \times 10^{-7} \left( \frac{SpGr}{(Q)^2} \right) \left( \frac{T}{(Cv)^2} \right) \left( \frac{P_2}{P_1} \right) \)

Where:
- \( Q \) = flow in SCFH
- \( \Delta P \) = pressure drop (psig)
- \( SpGr \) = specific gravity (based on air = 1.0)
- \( P_1 \) = outlet pressure–psia
- \( T \) = (temp. °F + 460)
- \( Cv \) = valve constant

Cv FACTORS
SERIES:
70-100, 71-100, 71AR, 73A-100,
74-100, 76-100, 76AR, 80-100
81-100, 89-100

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Cv FACTORS
76F, 77, 77AR, 77C, 77D SERIES

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Cv FACTORS
82-100/200, 83R-100/200/700, 85R-100/200, 86R-100/200/700, 83-500/600, 86-500/600/900 SERIES

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Cv FACTORS
83A/83B, 86A/86B, 86C SERIES

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