82-200/82A-240 Series

Bronze 3-Piece Full Port Ball Valve

Solder End, 82-200 & 82-240: 600 psig. CWP, 150 psig. SWP. 82A-240: 400 psig. CWP, 150 psig. SWP
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C, Type: II, Composition: BZ, Style: 1.
MSS SP-110; Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
CRN: OC10908.5C

FEATURES

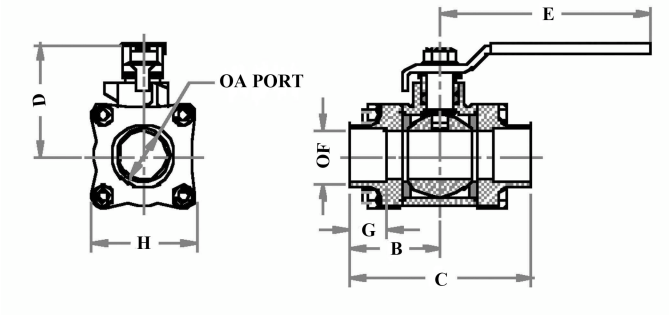
- Adjustable packing gland
- Blow-out-proof stem design
- Reinforced seats
- Inline repairable
- Full port ball configuration

STANDARD MATERIAL LIST

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"-2-1/2") ASTM 276-316 SS (3"-4")
5. Seat (2)	RPTFE
6. End cap (2)	B16 (1/4" to 3/8"), B584-C84400 (1/2"-4")
7. Gland nut	B16 (Brass)
8. Stem	ASTM B16 (Brass), chrome plated (1/4"-2-1/2") 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)

VARIATIONS AVAILABLE:

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



BRONZE 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	Wt.
82-202-01	3/8"	.44	1.28	2.56	1.81	3.87	.50	.38	1.60	1.04
82-203-01	1/2"	.56	1.40	2.81	1.93	4.87	.63	.50	1.78	1.55
82-204-01	3/4"	.83	1.71	3.43	2.18	4.87	.88	.75	1.98	2.27
82-205-01	1"	1.00	1.93	3.87	2.62	5.50	1.13	.90	2.22	3.28
82-206-01	1-1/4"	1.25	2.37	4.75	2.87	5.50	1.38	.97	2.70	5.62
82-207-01	1-1/2"	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	2-1/2"	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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	3/8" to 4"
-04-	2-1/4" Stem Extension	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"
-14-	Vented Ball (see page J-2)	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 4"
-20-	Slot Vented Ball	3/8" to 4"
-21-	UHMWPE Seats	3/8" to 4"
-23-	Tank Flange	2" ONLY
-24-	Graphite Stem Packing	3/8" to 4"
-27-	Latch Lock Lever	1/2" to 2"
-30-	CamLock Handle	3/8" to 1-1/4"
-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 1-1/4"
-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-	Assembled Dry	3/8" to 4"
-50-	2-1/4" CS Locking Stem Extension	3/8" to 2"
-56-	Multifill Seats & Graphite Packing	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 2-1/2"

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

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

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

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

Flow of Gas

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

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

Where:
Q = flow in SCFH
ΔP = pressure drop (psig)
SpGr = specific gravity (based on air = 1.0)
P_1 = outlet pressure–psia (psig + 14.7)
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

SIZE		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
OPEN	90°	8.4	7.2	15	30	43	48	84	108	503	370	670

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

SIZE		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
OPEN	90°	8.1	15	15	51	68	125	177	389	503

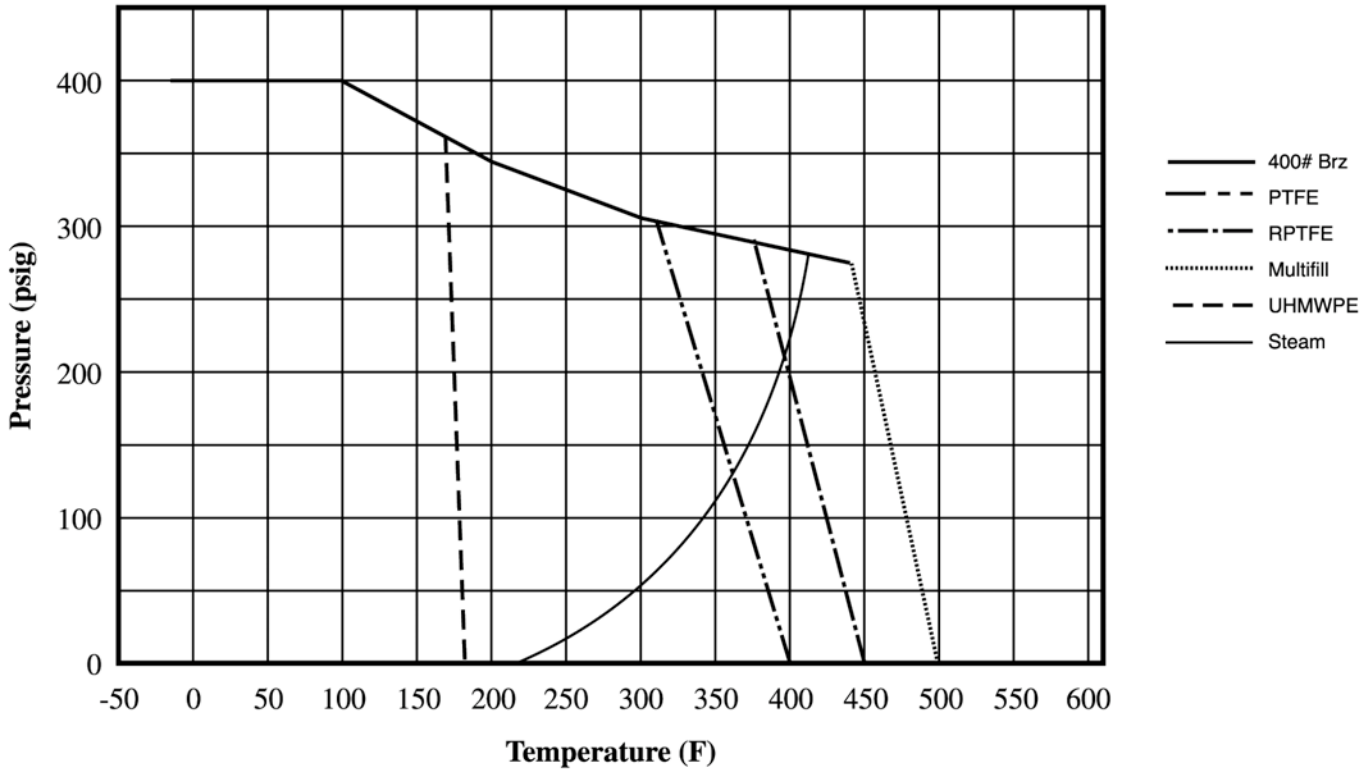
Cv FACTORS
82-100/200, 83R-100/200/700,85R-100/200,86R-100/200/700,83-500/600,86-500/600/900 SERIES

SIZE		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
OPEN	90°	8.1	14	26	51	68	120	170	376	510	996	1893

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

SIZE		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
OPEN	90°	8.1	14	26	51	68	120	170	376

400# Bronze P-T Rating (Graph 3)



600# Bronze P-T Rating (Graph 4)