



# 82-100/82A-140 Series

## Bronze 3-Piece Full Port Ball Valve

Threaded, 82-100 & 82-140: 600 psig, CWP, 150 psig. SWP. 82A-140: 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 Valve Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.  
 CRN: OC10908.5C

### FEATURES

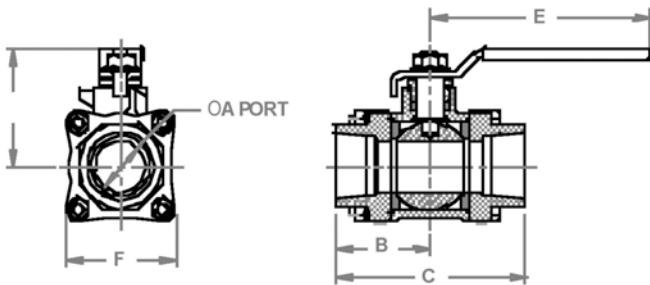
- Adjustable packing gland
- Blow-out-proof stem design
- Reinforced seats
- Inline repairable
- Full port ball configuration

### STANDARD MATERIAL LIST

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

### VARIATIONS AVAILABLE:

- 82-100 Series Standard
- 82-140 Series 316 SS Ball & Stem
- 82A-140 Series 3"&4" Only (No Options Available)



**For Pressure/Temperature Ratings,  
Refer to Page M-8, Graph No. 4**

#### BRONZE 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	Wt.
82-101-01	1/4"	.43	1.28	2.56	1.81	3.87	1.60	1.02
82-102-01	3/8"	.50	1.28	2.56	1.81	3.87	1.60	1.04
82-103-01	1/2"	.62	1.40	2.81	1.93	4.87	1.78	1.55
82-104-01	3/4"	.81	1.71	3.43	2.18	4.87	1.98	2.27
82-105-01	1"	1.00	1.93	3.87	2.62	5.50	2.22	3.28
82-106-01	1-1/4"	1.25	2.37	4.75	2.87	5.50	2.70	5.62
82-107-01	1-1/2"	1.50	2.62	5.25	3.37	8.00	3.03	8.07
82-108-01	2"	2.00	3.01	6.03	3.68	8.00	3.87	14.42
82-109-01	2-1/2"	2.50	3.62	7.25	5.14	9.75	5.05	26.61
82A-140-01	3"	3.00	4.18	8.37	8.10	19.13	5.82	43.00
82A-14A-01	4"	4.00	5.43	10.86	8.88	19.13	7.77	106.00

### OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Static Grounded	1/4" to 4"
-03-	1-1/4" Stem Extension	1/4" to 2"
-04-	2-1/4" Stem Extension	1/4" to 2"
-05-	Plain Ball	1/4" to 4"
-07-	Tee Handle	1/4" to 2"
-08-	90° Reversed Stem	1/4" to 4"
-10-	SS Lever & Nut	1/4" to 4"
-14-	Vented Ball (see page J-2)	1/4" to 4"
-15-	Round Handle	1/4" to 2"
-16-	Vertical Chain Lever	1/2" to 2"
-18-	Plain Yellow Grip	1/4" to 2"
-19-	Lock Plate	1/4" to 4"
-20-	Slot Vented Ball	1/4" to 4"
-21-	UHMWPE Seats	1/4" to 4"
-23-	Tank Flange	2" ONLY
-24-	Graphite Stem Packing	1/4" to 4"
-27-	Latch Lock Lever	1/2" to 2"
-30-	CamLock Handle	1/4" to 1-1/4"
-32-	SS Tee Handle & Nut	1/4" to 2"
-35-	PTFE Trim	1/4" to 4"
-39-	SS Hi-Rise Locking Wheel Handle, SS Nut	1/4" to 1-1/4"
-40-	Cyl-Loc & Grounded	1/4" to 1/2"
-45-	Less Lever & Nut	1/4" to 4"
-46-	Latch-Lock Lever - Lock in Closed Position Only	1/2" to 2"
-47-	SS Oval Latch-Lock Handle & Nut	1/4" to 3/4"
-48-	SS Oval Handle (No Latch) & Nut	1/4" to 2"
-49-	Assembled Dry	1/4" to 4"
-50-	2-1/4" CS Locking Stem Extension	1/4" to 2"
-56-	Multifill Seats & Graphite Packing	1/4" - 4"
-57-	Oxygen Cleaned	1/4" to 4"
-58-	Chain Lever - Horizontal	1/2" to 2"
-59-	SS External Trim - 3-pc. Valves	1/4" to 4"
-60-	Grounded Ball & Stem	1/4" to 4"
-63-	NPT x Solder/Socket Weld	3/8" to 4"
-92-	Balancing Stop	1/4" to 2-1/2"
-P01-	BSPP (Parallel) Thread Connection	1/4" to 4"
-T01-	BSPT (Tapered) Thread Connection	1/4" to 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

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

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

Where:

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

### Flow of Gas

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

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

Where:

Q = flow in SCFH  
 ΔP = pressure drop (psig)  
 SpGr = specific gravity (based on air = 1.0)  
 P<sub>1</sub> = 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

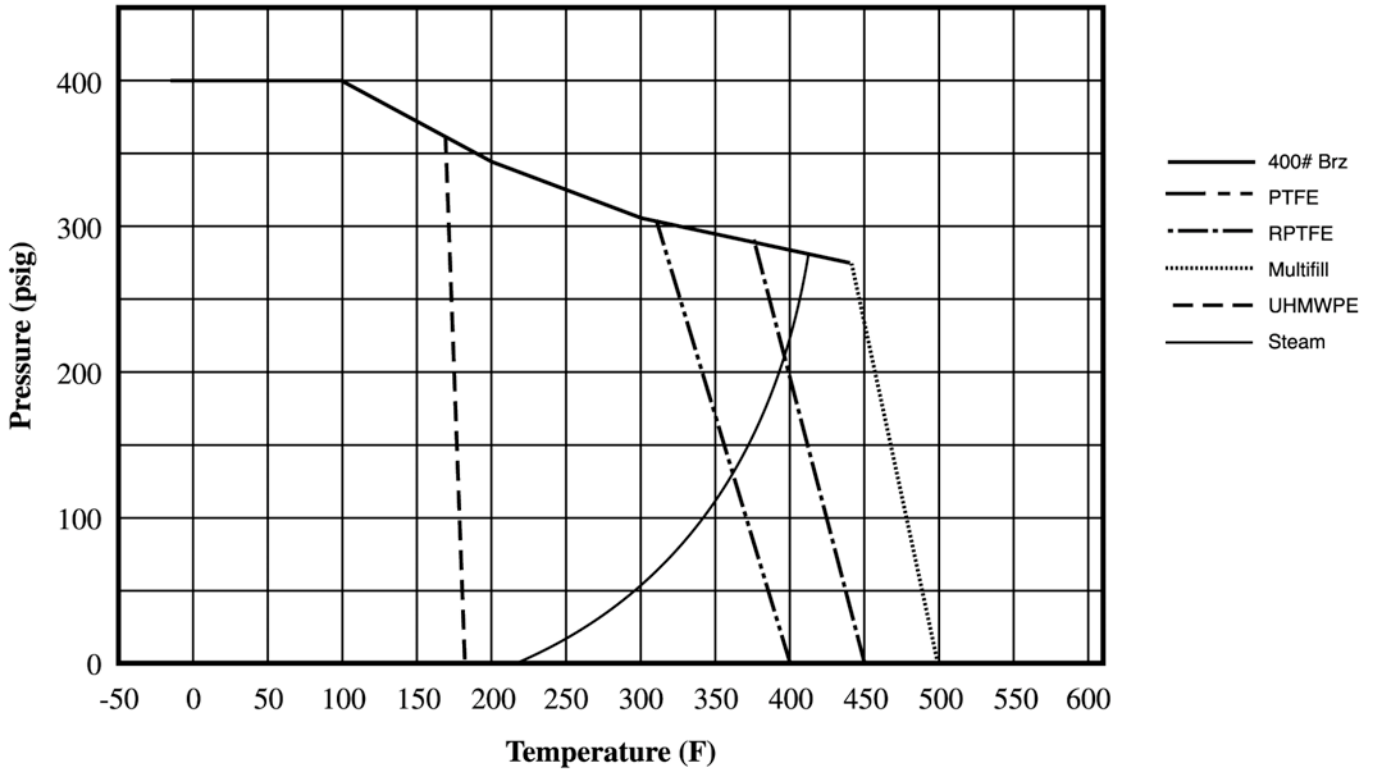
SIZE		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
OPEN	90°	8.1	14	26	51	68	120	170	376	510	996	1893

### 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)

