



# 73A-100 Series

## Carbon Steel Ball Valve

AAR Approved #E999032



Threaded, 1/4" to 1" 2000 psig WOG, 1-1/4" to 2" 1500 psig WOG Cold Non-Shock. 150 psig Saturated Steam.  
(See referenced P/T chart)

Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 3.

MSS SP-110; Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

## FEATURES

- RPTFE seats & packing
- Forged construction
- Raised handle stops
- Blow-out-proof stem design
- Adjustable packing gland
- Zinc phosphate corrosion protection
- (-24) Fire safe to API 607 4th ed. class 600 burn

## STANDARD MATERIAL LIST

1. Lever nut	Steel, zinc plated	6. Ball	A108-CS chrome plated
2. Gland nut	A108-CS	7. Seat (2)	RPTFE
3. Stem packing	MPTFE	8. Body	A105
4. Retainer	A216-WCB	9. Stem bearing	RPTFE
5. Body seal	RPTFE (1/2" to 2")	10. Stem	A108-CS
		11. Lever/grip	Steel, zinc plated, with vinyl

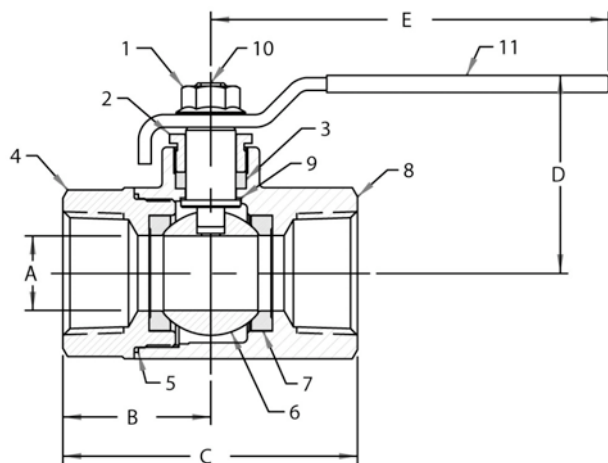
**VARIATIONS AVAILABLE:** 73A-140- Series (316 SS Ball & Stem NACE compliant)

## OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02-	Stem Grounded	1/4" to 2"
-03-	1-1/4" CS Stem Extension	1/4" to 2"
-04-	2-1/4" CS Stem Extension	1/4" to 2"
-07-	Steel Tee Handle	1/4" to 1-1/2"
-08-	90° Reversed Stem	1/4" to 2"
-10-	SS Lever & Nut	1/4" to 2"
-14-	Vented ball	1/4" to 2"
-15-	Wheel Handle, Steel	1/4" to 1-1/2"
-16-	Chain Lever - Vertical	1/4" to 2"
-21-	UHMWPE Trim (non TFE)	1/4" to 2"
-24-	Graphite Packing	1/4" to 2"
-27-	SS Latch-Lock Lever & Nut	1/4" to 2"
-30-	Cam-Lock & Grounded	1/4" to 2"
-32-	SS Tee Handle & Nut	1/4" to 2"
-35-	VTFE Trim	1/4" to 2"
-39-	SS Hi-Rise Locking Round Handle, SS Nut	1/4" to 2"
-40-	Cyl-Loc & Grounded	1/4" to 2"
-45-	Less Lever & Nut	1/4" to 2"
-47-	SS Oval Latch-Lock Handle & Nut	1/4" to 1"
-48-	SS Oval Handle (No Latch) & Nut	1/4" to 2"
-50-	2-1/4" CS Locking Stem Extension	1/4" to 2"
-52-	Two Tack Welds	1/4" to 2"
-56-	Multi-fill Seats	1/4" to 2"
-58-	Chain Lever - Horizontal	1/4" to 2"
-60-	Static Grounded Ball & Stem	1/4" to 2"
-64-	250# Steam Trim	1/4" to 2"
-67-	Cleaned for Industrial Gas - CS Valves	1/4" to 2"
-P01-	BSPP (Parallel) Thread Conn.	1/4" to 2"
-T01-	BSPT (Tapered) Thread Conn.	1/4" to 2"

AAR Approval No. E999032 (when -52 is specified)

**For Pressure/Temperature Ratings,**  
**Refer to Page M-12, Graph No. 13**  
**(1/4" to 1")**  
**Refer to Page M-11, Graph No. 11**  
**(1-1/4" to 2")**



CARBON STEEL BALL VALVE

NUMBER	SIZE	A	B	C	D	E
73A-101-01A	1/4"	.37	1.02	2.30	1.72	3.85
73A-102-01A	3/8"	.37	1.08	2.37	1.72	3.85
73A-103-01A	1/2"	.50	1.18	2.31	1.78	3.85
73A-104-01A	3/4"	.68	1.57	3.07	2.07	4.75
73A-105-01A	1"	.87	1.73	3.40	2.18	4.75
73A-106-01	1-1/4"	1.00	1.98	3.97	2.72	5.50
73A-107-01	1-1/2"	1.25	2.14	4.32	3.12	7.75
73A-108-01	2"	1.50	2.73	5.44	3.27	7.75

# 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  
 $\Delta P$  = 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  
 $\Delta P$  = 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

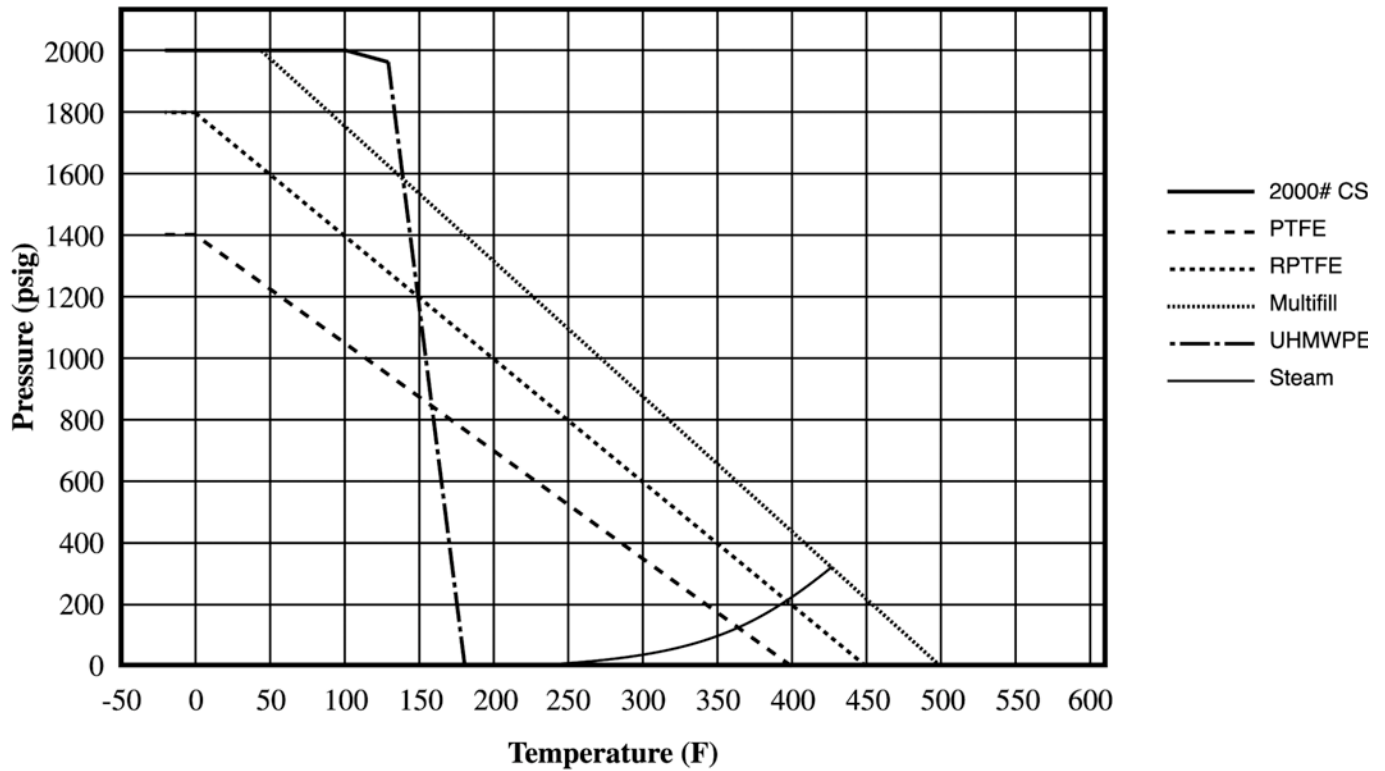
SIZE		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
OPEN	90°	8.1	14	26	51	68	120	170	376	510	996	1893

### Cv FACTORS

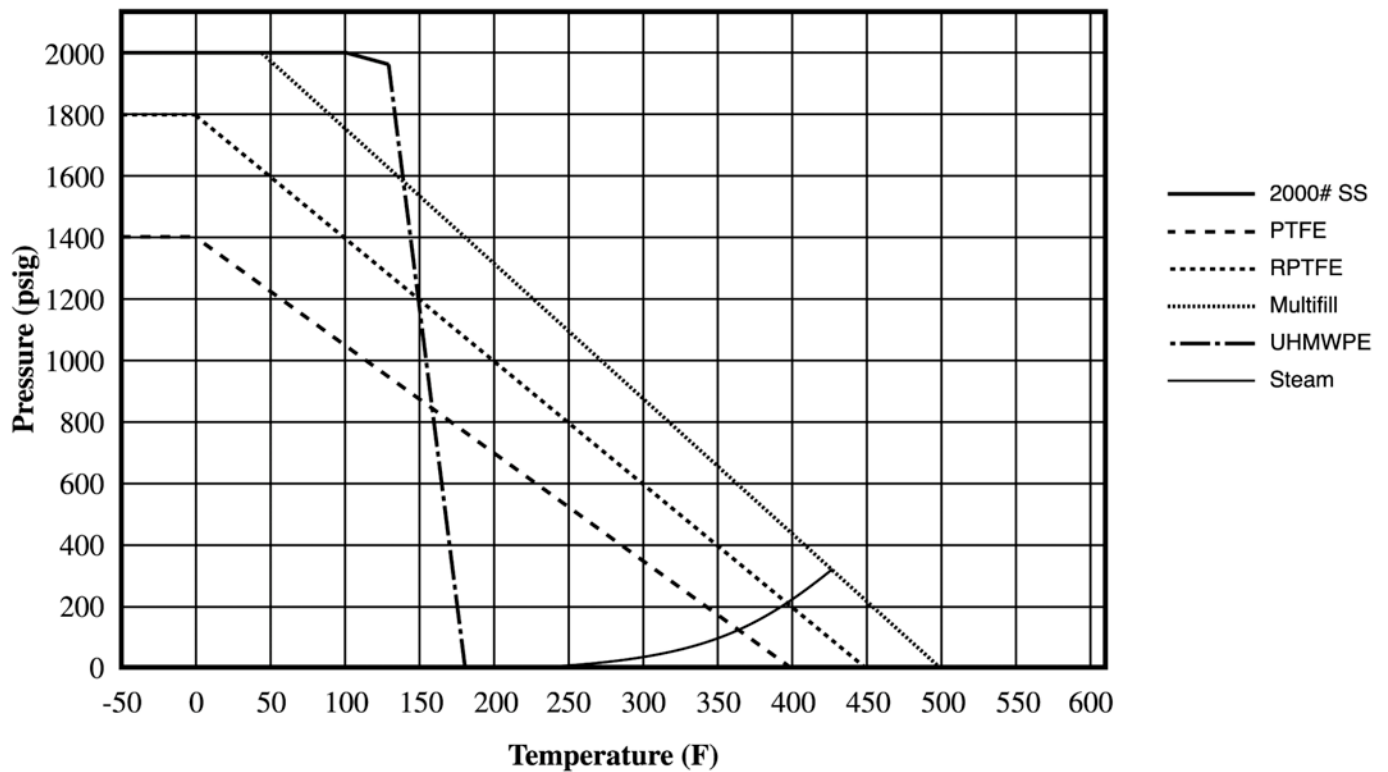
#### 83A/83B, 86A/86B, 86C SERIES

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

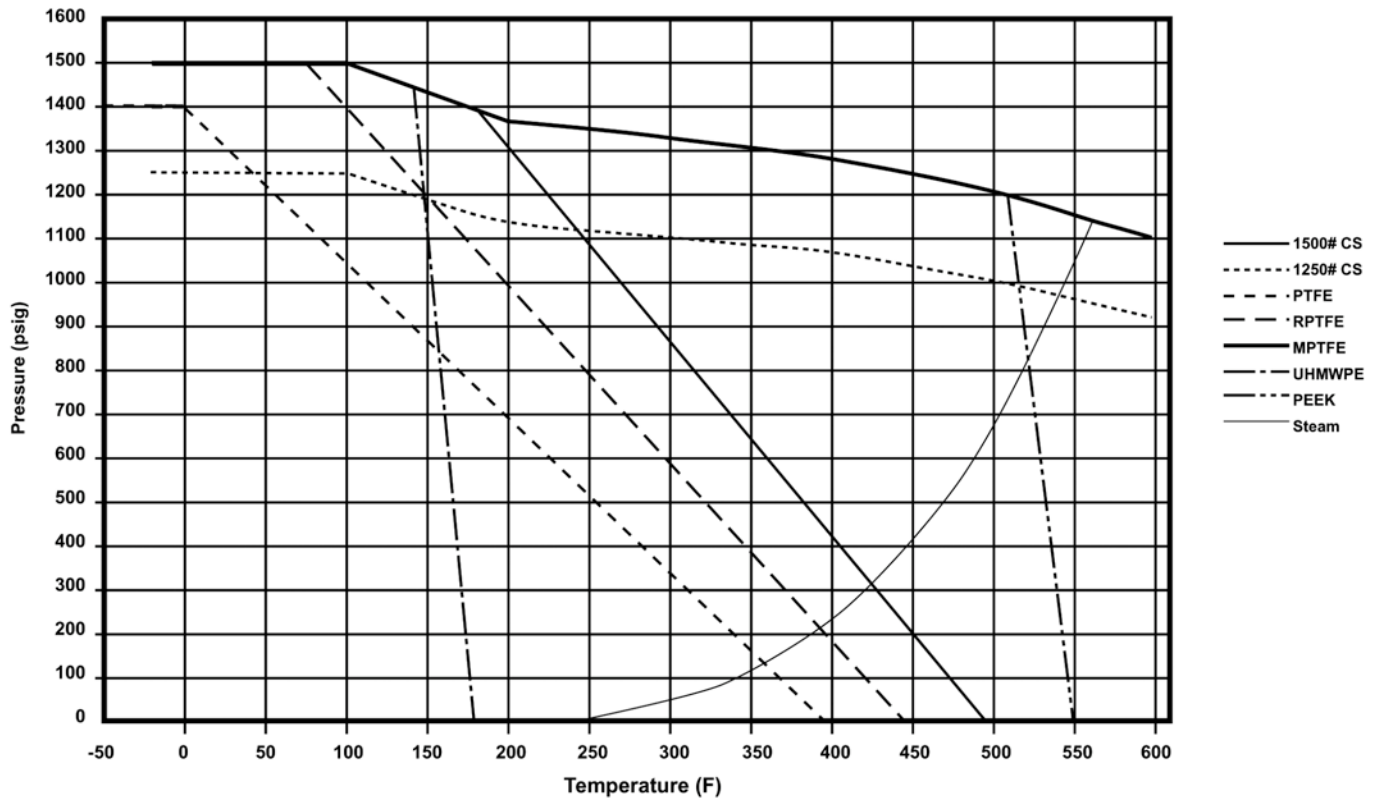
## 2000# CS P-T Rating (Graph 13)



## 2000# SS P-T Rating (Graph 14)



## 1500# CS P-T Rating (Graph 11)



## 1500# SS P-T Rating (Graph 12)

