



83R-200 Series

Carbon Steel 3-Piece Full Port Socket Weld Ball Valve With Actuator Ready ISO Mounting Pad

2"

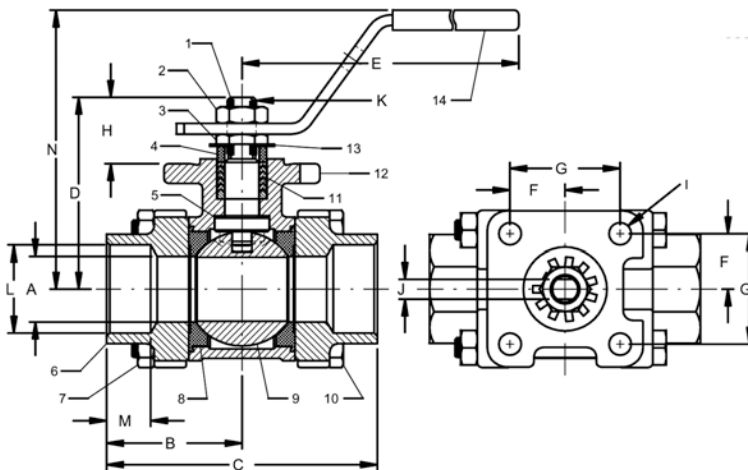
Socket Weld, 800 psig CWP, Cold Non-Shock. 150 psig Saturated Steam.
 Vacuum Service to 29 inches Hg.
 Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 1.
 MSS SP-110; Ball Valve Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
 Meets NACE MR-01-75

FEATURES

- Multi-piece packing set
- ISO 5211 mounting pad
- Blow-out-proof stem design
- In-line repairable
- Adjustable packing gland
- Investment cast components
- Reinforced seats and seals
- Full port configuration

STANDARD MATERIAL LIST

1. Stem	A108-CS	8. Seat (2)	RPTFE
2. Jam nut	Steel, zinc plate	9. Ball	A108-CS chrome plate
3. Low profile nut	316 SS	10. Body bolt (4)	Stl-gr. 8-zinc plt
4. Gland	A276-316	11. Stem packing	MPTFE
5. Stem bearing	RPTFE	12. Body	ASTM A216-WCB
6. End cap (2)	A216-WCB	13. Lock tab washer	304 SS
7. Hex nut (4)	Stl-gr. 8-zinc plt	14. Lever and grip	Stl-zinc plt-w/vinyl



For Pressure/Temperature Ratings,
 Refer to Page M-10, Graph No. 7

VARIATIONS AVAILABLE:

- 83R-240 Series (316 SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-02-	Static Grounded
-03-	1-1/4" Stem Extension
-04-	2-1/4" Stem Extension
-08-	90° Reversed Stem
-10-	SS Lever & Nut
-14-	Vented Ball
-18-	Plain Yellow Grip
-21-	UHMWPE Seats (Non-PTFE)
-24-	Graphite Stem Packing
-27-	Latch Lock Lever
-35-	VTFE Trim
-36-	SS Round Handle
-39-	SS Hi-Rise Locking Wheel Handle, SS Nut
-59-	SS External Trim - 3-pc. Valves
-60-	Grounded Ball & Stem
-AR-	Less Handle & Stop-Add Belleville Washers
-WB-	With Lever & Belleville Washers

CARBON STEEL 3-PIECE FULL PORT SOCKET WELD BALL VALVE WITH ISO MOUNTING PAD

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K (THRDS.) UNF	L	M	N
83R-208-01	2"	2.00	3.01	6.03	3.95	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	2.405	1.05	4.85



83R-200 Series

Carbon Steel 3-Piece Full Port Socket Weld Ball Valve With Actuator Ready ISO Mounting Pad 3"

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Vacuum Service to 29 inches Hg.

Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 1.

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

Meets NACE MR-01-75

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- ISO 5211 mounting pad
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- In-line repairable
- Adjustable packing gland
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STANDARD MATERIAL LIST

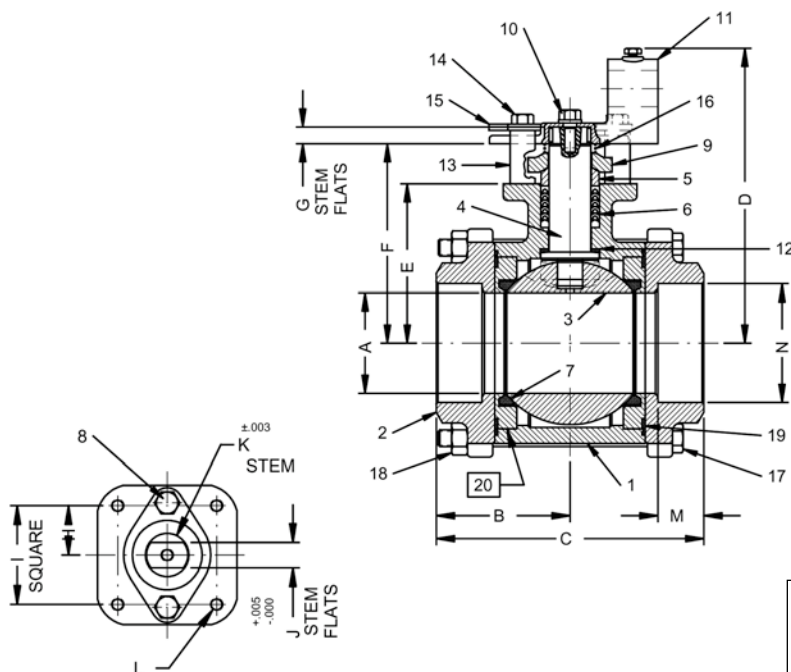
1. Body	ASTM A216-WCB	12. Stem Bearing	RPTFE
2. End Caps	ASTM A216-WCB	13. Stops (2)	SS
3. Ball	A108-CS, Chrome Plated	14. Stop Screws (2)	SS
4. Stem	A108-CS	15. Lock Plate	SS
5. Packing Gland	CS	16. Grounding Spring	SS
6. Stem Seal	MPTFE	17. Body Bolts (6)	SS
7. Seats (2)	RPTFE	18. Heavy Hex Nuts (6)	SS
8. Gland Screws (2)	SS	19. Body Seals (2)	RPTFE
9. Gland Plate	SS	20. Seat Holders (2)	CS
10. Adapter Screw	SS	21. Pipe Handle	(not shown)
11. Handle Adapter	SS		

VARIATIONS AVAILABLE:

- 83R-240 Series (316 SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-02-	Static Grounded
-14-	Vented Ball
-24-	Graphite Stem Packing
-35-	VTFE Trim
-49-	Assembled Dry
-57-	Cleaned For Gaseous Oxygen
-60-	Grounded Ball & Stem



For Pressure/Temperature Ratings,
Refer to Page M-10, Graph No. 7

CARBON STEEL 3-PIECE FULL PORT SOCKET WELD BALL VALVE WITH ISO MOUNTING PAD

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K	L (THRDS.) UNF	M	N
83R-200-01	3"	3.00	4.00	8.00	8.80	4.75	5.94	.50	1.420	2.840	.725	1.250	3/8-16	1.37	3.54

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)
 P₁ = 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

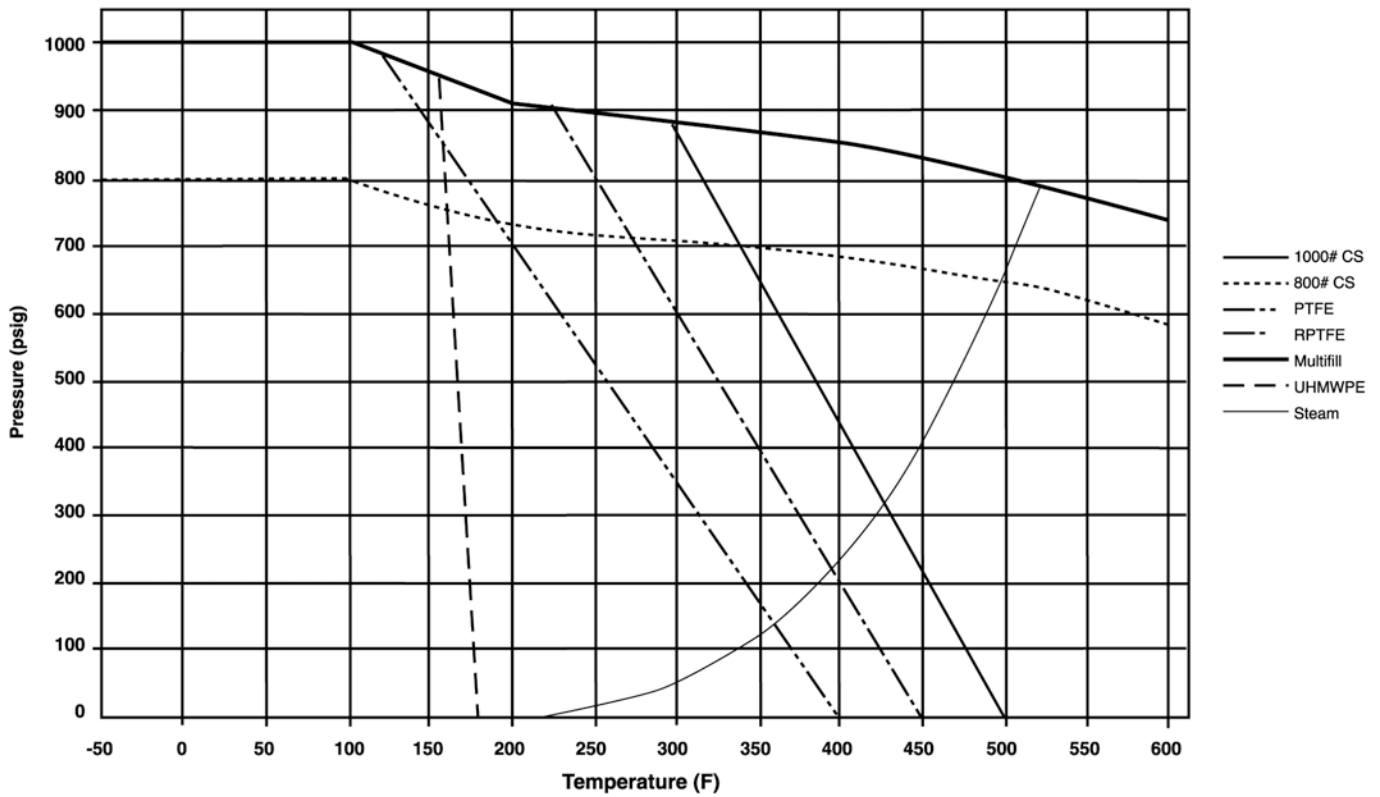
SIZE		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
OPEN	90°	8.1	14	26	51	68	120	170	376	510	996	1893

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

1000# CS P-T Rating (Graph 7)



1000# SS P-T Rating (Graph 8)

