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SECTION B CONTENTS

THREE PIECE BALL VALVES

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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

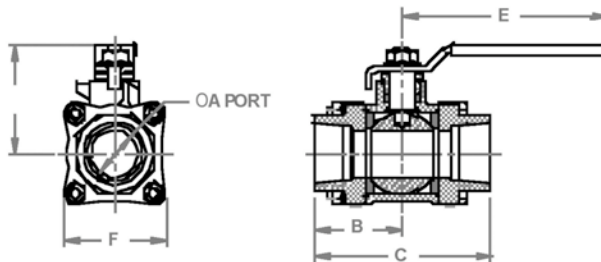
- Adjustable packing gland
- Blow-out-proof stem design
- Reinforced seats
- Inline repairable
- Full port ball configuration

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" -2-1/2") | 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"
-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 2"
-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 2-1/2"
-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-	BSP (Parallel) Thread Connection	1/4" to 4"
-T01-	BSP (Tapered) Thread Connection	1/4" to 4"



82LF-100/82ALF-140 Series

Bronze 3-Piece Full Port Lead Free* Ball Valve

Threaded, 82LF-100 & 82LF-140: 600 psig, CWP, 150 psig. SWP. 82ALF-140: 400 psig. CWP, 150 psig. SWP Vacuum Service to 29 inches Hg.

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

CRN: OC10908.5C

* LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471 and Federal Public Law 111-380.

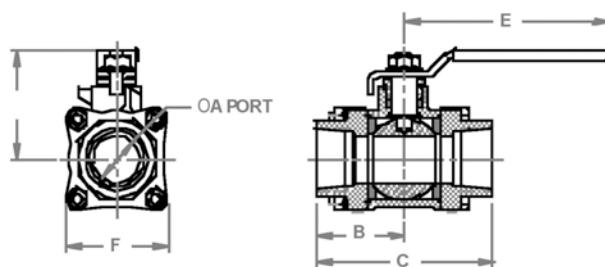
FEATURES



- Adjustable packing gland
- Blow-out-proof stem design
- Reinforced seats
- Easily identifiable blue tag
- Inline repairable
- Full port ball configuration
- Lead Free* brass & bronze materials
- Design manufactured and 100% tested in the USA

STANDARD MATERIAL LIST

- | | | | |
|-------------------|---|---------------|---|
| 1. Lever and grip | Steel, zinc plated w/vinyl | 8. Stem | C27450 Lead Free* brass, chrome plated (1/4" -2-1/2") |
| 2. Stem packing | MPTFE (Chevron style PTFE 82A 3"&4") | 9. Lever nut | ASTM 276-316 SS (3"-4") |
| 3. Stem bearing | RPTFE | 10. Body bolt | Steel, zinc plated |
| 4. Ball | C27450 Lead Free*, chrome plated (1/4"-2-1/2") ASTM A276-316 SS (3"-4") | 11. Hex nut | Steel, zinc plated |
| 5. Seat (2) | RPTFE | 12. Body | C89836 Lead Free* bronze |
| 6. End cap (2) | C27450 (1/4" to 3/8"), C89836 (1/2"-4") | | |
| 7. Gland nut | B16 (Brass) | | |



VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-07-	Tee Handle	1/4" to 2"
-10-	SS Lever & Nut	1/4" to 4"
-15-	Round Handle	1/4" to 2"
-27-	Latch Lock Lever	1/2" to 2"
-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"
-47-	SS Oval Latch-Lock Handle & Nut	1/4" to 3/4"
-48-	SS Oval Handle (No Latch) & Nut	1/4" to 2"
-50-	2-1/4" CS Locking Stem Extension	1/4" to 2"
-59-	SS External Trim - 3-pc. Valves	1/4" to 4"
-63-	NPT x Solder/Socket Weld	3/8" to 4"

LEAD FREE* BRONZE 3-PIECE FULL PORT BALL VALVE

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

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



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

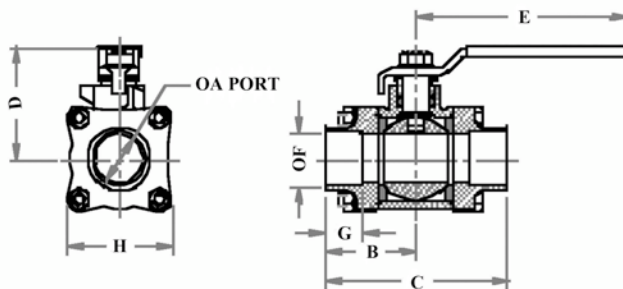
- Adjustable packing gland
- Blow-out-proof stem design
- Reinforced seats
- Inline repairable
- Full port ball configuration

STANDARD MATERIAL LIST

1. Lever and grip	Steel, zinc plated w/vinyl	8. Stem	ASTM B16 (Brass), chrome plated (1/4"-2-1/2")
2. Stem packing	MPTFE (Chevron style PTFE 82A 3"&4")	9. Lever nut	ASTM 276-316 SS (3"-4")
3. Stem bearing	RPTFE	10. Body bolt	Steel, zinc plated
4. Ball	ASTM B16 (Brass),chrome plated (1/4"-2-1/2") ASTM 276-316 SS (3"-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:

- 82-200 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**



82LF-200/82ALF-240 Series

Bronze 3-Piece Full Port Lead Free* Ball Valve

Solder End, 82LF-200 & 82LF-240: 600 psig. CWP, 150 psig. SWP. 82ALF-240: 400 psig. CWP, 150 psig. SWP
 Vacuum Service to 29 inches Hg.

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

CRN: OC10908.5C

* LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471 and Federal Public Law 111-380.

FEATURES



- Adjustable packing gland
- Blow-out-proof stem design
- Reinforced seats
- Easily identifiable blue tag
- Inline repairable
- Full port ball configuration
- Lead Free* brass & bronze materials
- Designed, manufactured and 100% tested in the USA

STANDARD MATERIAL LIST

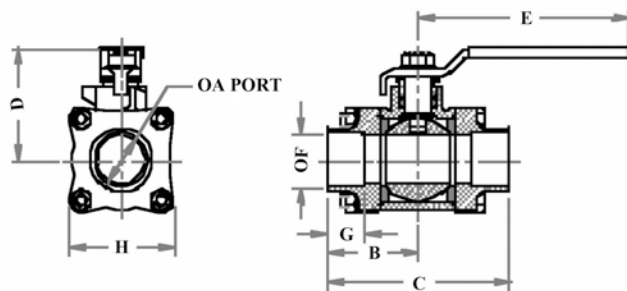
- | | | | |
|-------------------|---|---------------|--|
| 1. Lever and grip | Steel, zinc plated w/vinyl | 8. Stem | C27450 Lead Free* (Brass), chrome plated (1/4"-2-1/2") |
| 2. Stem packing | MPTFE (Chevron style PTFE 82A 3"&4") | 9. Lever nut | Steel, zinc plated |
| 3. Stem bearing | RPTFE | 10. Body bolt | Steel, zinc plated |
| 4. Ball | C27450 Lead Free* (Brass),chrome plated (1/4"-2-1/2") | 11. Hex nut | Steel, zinc plated |
| 5. Seat (2) | RPTFE | 12. Body | C89836 Lead Free* (Bronze) |
| 6. End cap (2) | C27450 (1/4" to 3/8"), C89836 (1/2"-4") | | |
| 7. Gland nut | B16 (Brass) | | |

VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	3/8" to 2"
-07-	Tee Handle	3/8" to 2"
-10-	SS Lever & Nut	3/8" to 4"
-15-	Round Handle	3/8" to 2"
-27-	Latch Lock Lever	1/2" to 2"
-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"
-47-	SS Oval Latch-Lock Handle & Nut	3/8" to 3/4"
-48-	SS Oval Handle (No Latch) & Nut	3/8" to 2"
-50-	2-1/4" CS Locking Stem Extension	3/8" to 2"
-57-	Oxygen Cleaned	3/8" to 4"
-59-	SS External Trim - 3-pc. Valves	3/8" to 4"



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

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



83A-140 Series

3-Piece Full Port Carbon Steel 1500 CWP NPT Ball Valve

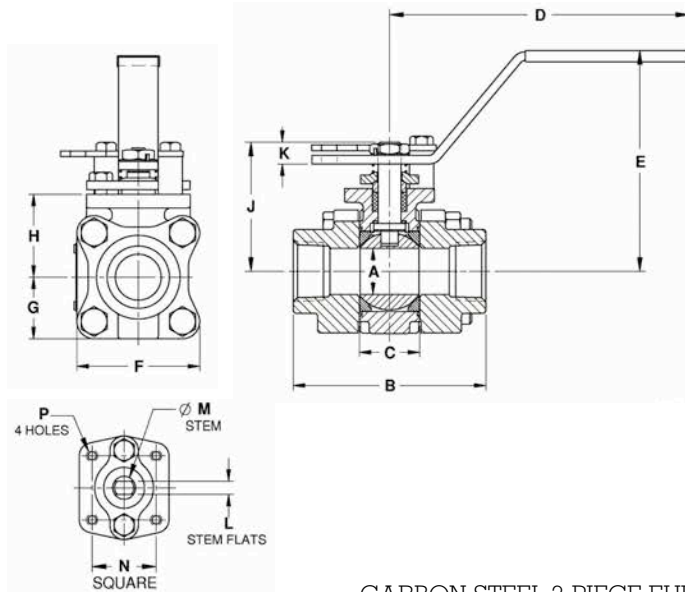
Standard Compliance - Valve design: MSS SP-110, End Connections: NPT per ASME B1.20.1, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-60-	Static Grounding	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-63-	NPT x Socketweld	1/4" to 2"
-67-	Cleaned for Industrial Gases	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/ Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-P01-	BSPP (Parallel) Thread Connection	1/4" to 2"
-T01-	BSPT (Tapered) Thread Connection	1/4" to 2"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 23**

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83A-141-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-142-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-143-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-144-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83A-145-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83A-146-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83A-147-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83A-148-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83A-240 Series

3-Piece Full Port Carbon Steel 1500 CWP Socket-Weld Ball Valve

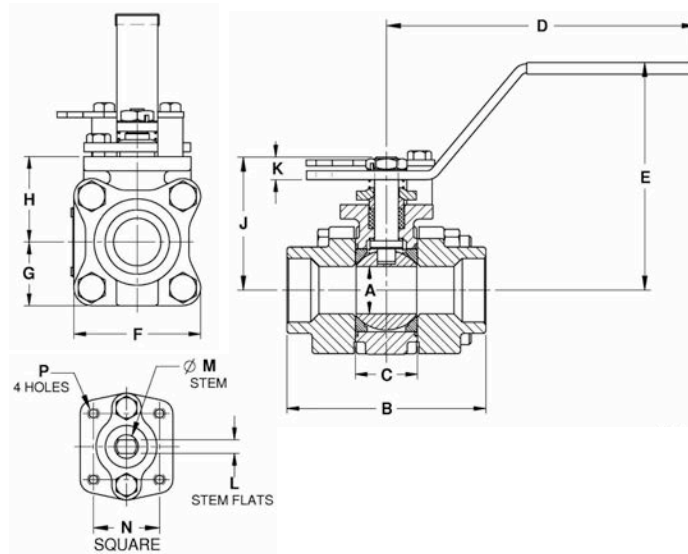
Standard Compliance - Valve design: MSS SP-110, End Connections: Socket-weld per ASME B16.11, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/4" to 2"
-14	Vented Ball (see page J-2)	1/4" to 2"
-15	Round Handle	1/4" to 2"
-49	Assembled Dry	1/4" to 2"
-60	Static Grounding	1/4" to 2"
-62	Center Section Only	1/4" to 2"
-67	Cleaned for Industrial Gases	1/4" to 2"
-69	Drilled & Tapped Purge & Drains	1/4" to 2"
-70	Extended Bonnet	1/4" to 2"
-76	Live Loaded (Lever Operated)	1/4" to 2"
-77	Live Loaded (Actuated)	1/4" to 2"
-90	Extended Bonnet w/Double Packing	1/4" to 2"
-SR	Spring Return Handle	1/4" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 23**

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83A-241-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-242-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-243-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-244-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83A-245-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83A-246-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83A-247-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83A-248-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83A-340 Series

3-Piece Full Port Carbon Steel 1500 CWP Schedule 5 Butt-Weld Ball Valve

Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25,
Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

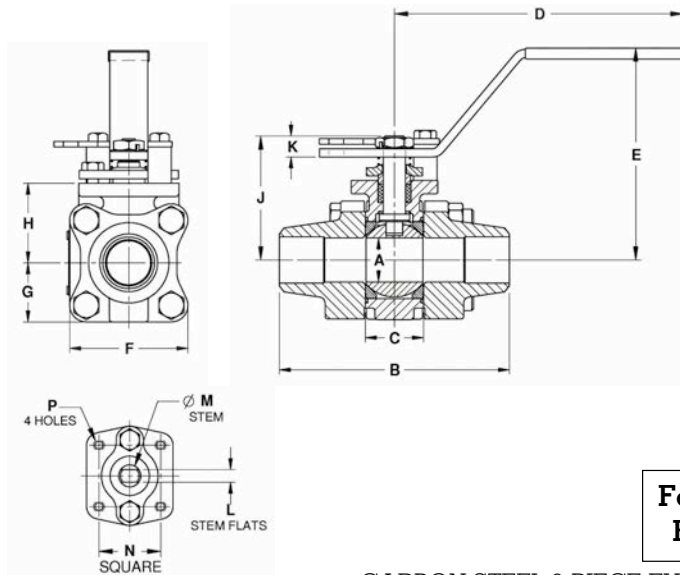
1. Body	ASTM A216-WCB	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 83A-440 - Schedule 10 Butt-weld
- 83A-540 - Schedule 40 Butt-weld
- 83A-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-60-	Static Grounding	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	NPT x Buttweld	1/2" to 2"
-67-	Cleaned for Industrial Gases	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"



**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 23**

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83A-343-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-344-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83A-345-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83A-346-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83A-347-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83A-348-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83A-440 Series

3-Piece Full Port Carbon Steel 1500 CWP Schedule 10 Butt-Weld Ball Valve

Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel

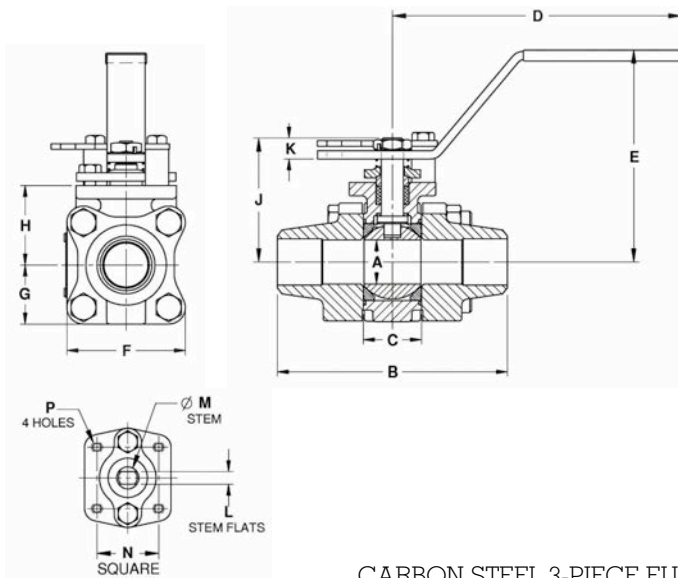
VARIATIONS AVAILABLE:

- 83A-340 - Schedule 5 Butt-weld
- 83A-540 - Schedule 40 Butt-weld
- 83A-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-60-	Static Grounding	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-67-	Cleaned for Industrial Gases	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 23**



CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83A-443-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-444-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83A-445-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83A-446-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83A-447-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83A-448-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83A-540 Series

3-Piece Full Port Carbon Steel 1500 CWP Schedule 40 Butt-Weld Ball Valve

Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel

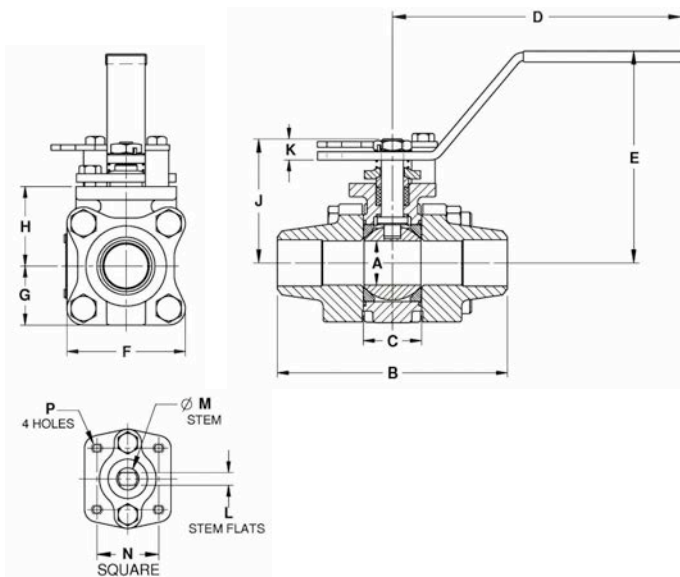
VARIATIONS AVAILABLE:

- 83A-340 - Schedule 5 Butt-weld
- 83A-440 - Schedule 10 Butt-weld
- 83A-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-60-	Static Grounding	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-67-	Cleaned for Industrial Gases	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 23**



CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83A-543-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-544-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83A-545-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83A-546-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83A-547-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83A-548-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83A-640 Series

3-Piece Full Port Carbon Steel 1500 CWP Schedule 80 Butt-Weld Ball Valve

Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel

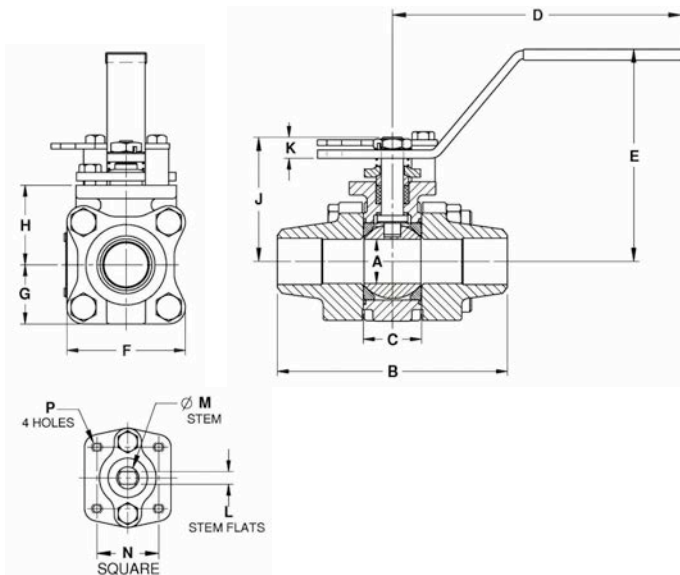
VARIATIONS AVAILABLE:

- 83A-340 - Schedule 5 Butt-weld
- 83A-440 - Schedule 10 Butt-weld
- 83A-540 - Schedule 40 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-60	Static Grounding	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Buttweld	1/2" to 2"
-67	Cleaned for Industrial Gases	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 23**



CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83A-643-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83A-644-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83A-645-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83A-646-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83A-647-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83A-648-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83B-140 Series

3-Piece Full Port Carbon Steel

Class 600 NPT Ball Valve



Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: NPT per ASME B1.20.1, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

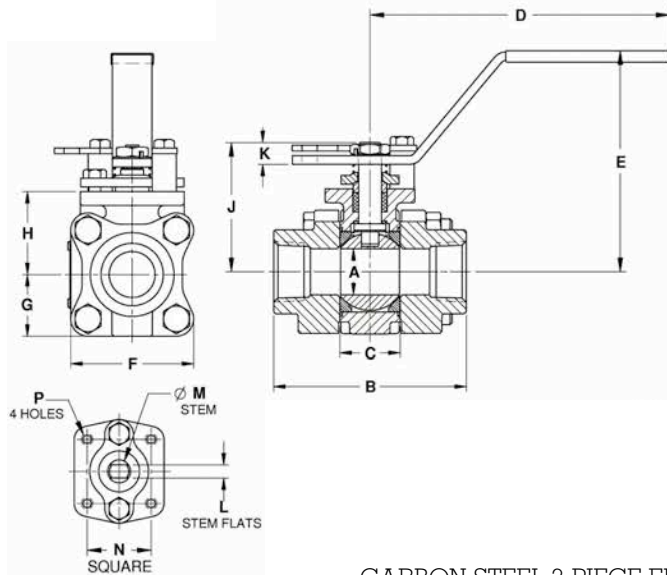
- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
2. End Caps	ASTM A216-WCB	12. Gland Bolts	ASTM A193-Gr.B8
3. Ball	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
4. Stem	ASTM A276-316SS	14. Packing Gland	ASTM A276-316SS
5. Seat	Multi-Seal	15. Gland Plate	300 Series Stainless Steel
6. Packing	PTFE	16. Lever Handle	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	17. Lock Plate	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	18. Stops	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	19. Int. Grnd. Spring	300 Series Stainless Steel
10. Body Nuts	ASTM A194-Gr.8	20. Ext. Grnd. Spring	300 Series Stainless Steel

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38-	PEEK Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-63-	NPT x Socketweld	1/4" to 2"
-67-	Cleaned for Industrial Gases	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-P01-	BSPP (Parallel) Thread Connection	1/4" to 2"
-T01-	BSPT (Tapered) Thread Connection	1/4" to 2"
-UL-	UL Listed	1/4" to 2"



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 25**

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83B-141-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-142-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-143-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-144-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83B-145-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83B-146-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83B-147-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83B-148-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83B-240 Series

3-Piece Full Port Carbon Steel Class 600 Socket-Weld Ball Valve



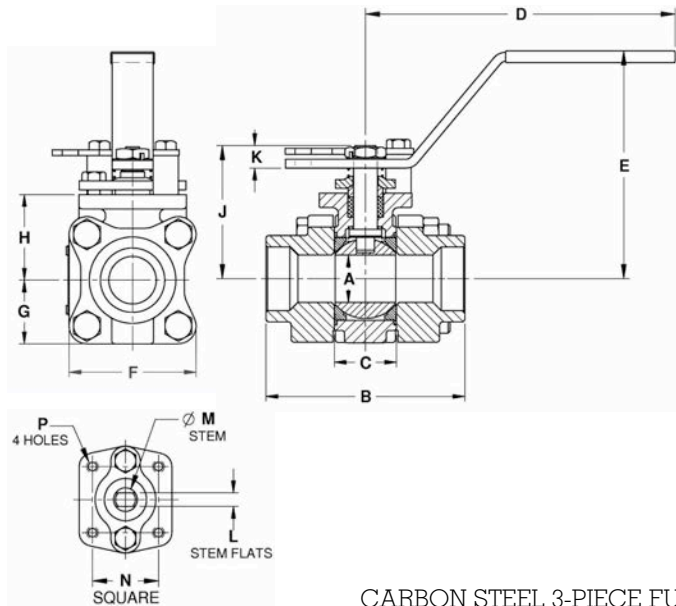
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Socket-weld per ASME B16.11, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in. of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38-	Peek Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-67-	Cleaned for Industrial Gases	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-UL-	UL Listed	1/4" to 2"

**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 25**

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83B-241-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-242-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-243-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-244-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83B-245-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83B-246-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83B-247-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83B-248-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83B-340 Series

3-Piece Full Port Carbon Steel

Class 600 Schedule 5 Butt-Weld Ball Valve



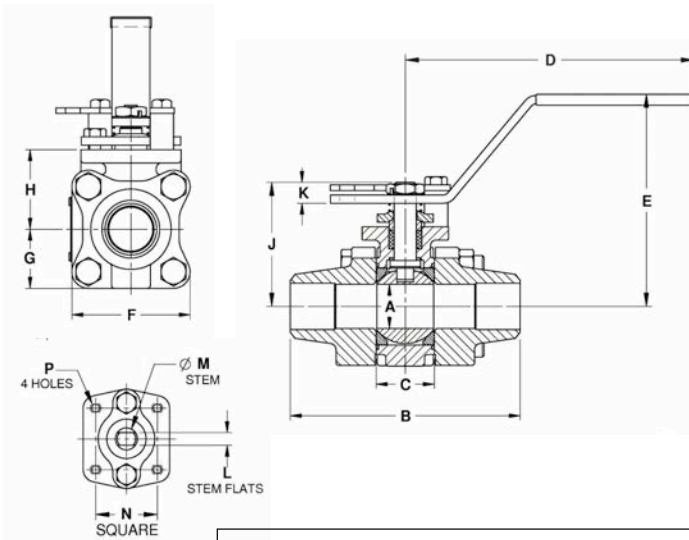
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 25**

VARIATIONS AVAILABLE:

- 83B-440 - Schedule 10 Butt-weld
- 83B-540 - Schedule 40 Butt-weld
- 83B-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Buttweld	1/2" to 2"
-67	Cleaned for Industrial Gases	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"
-UL	UL Listed	1/2" to 2"

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83B-343-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-344-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83B-345-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83B-346-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83B-347-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83B-348-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83B-440 Series

3-Piece Full Port Carbon Steel

Class 600 Schedule 10 Butt-Weld Ball Valve



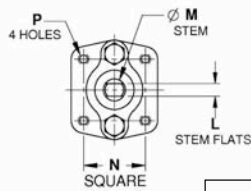
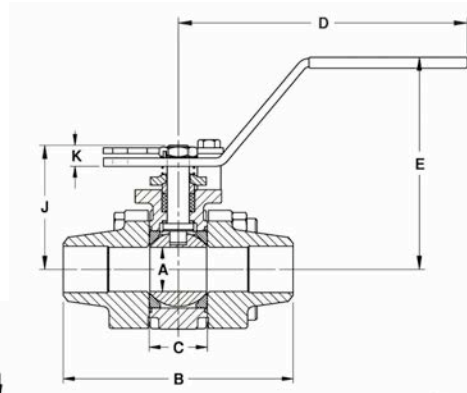
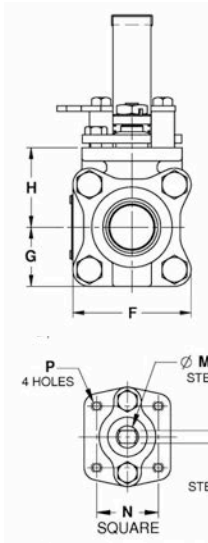
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 25**

VARIATIONS AVAILABLE:

- 83B-340 - Schedule 5 Butt-weld
- 83B-540 - Schedule 40 Butt-weld
- 83B-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seats	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-67	Cleaned for Industrial Gases	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83B-443-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-444-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83B-445-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83B-446-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83B-447-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83B-448-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83B-540 Series

3-Piece Full Port Carbon Steel

Class 600 Schedule 40 Butt-Weld Ball Valve



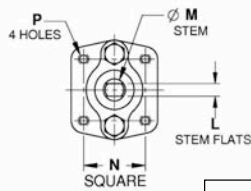
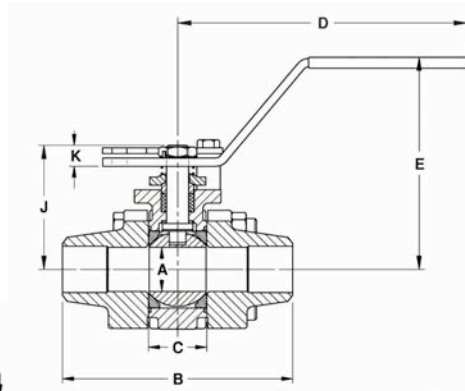
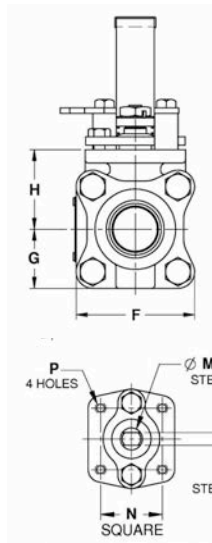
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



For Pressure/Temperature Ratings, Refer to Page M-18, Graph No. 25

VARIATIONS AVAILABLE:

- 83B-340 - Schedule 5 Butt-weld
- 83B-440 - Schedule 10 Butt-weld
- 83B-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Buttweld	1/2" to 2"
-67-	Cleaned for Industrial Gases	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83B-543-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-544-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83B-545-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83B-546-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83B-547-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83B-548-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83B-640 Series

3-Piece Full Port Carbon Steel

Class 600 Schedule 80 Butt-Weld Ball Valve



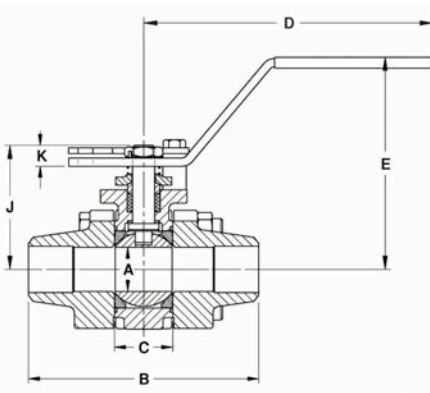
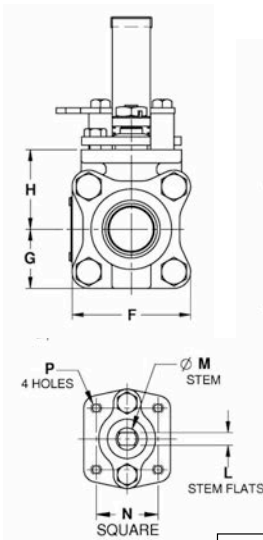
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A216-WCB	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A216-WCB	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 25**

VARIATIONS AVAILABLE:

- 83B-340 - Schedule 5 Butt-weld
- 83B-440 - Schedule 10 Butt-weld
- 83B-540 - Schedule 40 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-67-	Cleaned for Industrial Gases	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83B-643-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83B-644-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83B-645-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83B-646-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83B-647-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83B-648-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83L-140 Series



3-Piece Full Port Low Temperature Carbon Steel Class 600 NPT Ball Valve

Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: NPT per ASME B1.20.1, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

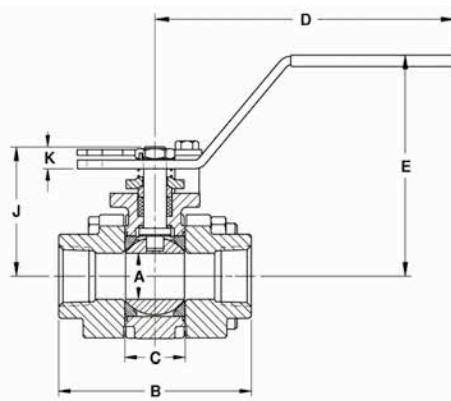
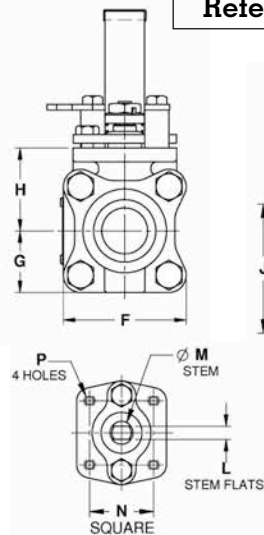
FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Rated to -50°F (-46°C)
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A352-LCC	11. Stop Bolts	18-8 Stainless Steel
2. End Caps	ASTM A352-LCC	12. Gland Bolts	ASTM A193-Gr.B8
3. Ball	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
4. Stem	ASTM A276-316SS	14. Packing Gland	ASTM A276-316SS
5. Seat	Multi-Seal	15. Gland Plate	300 Series Stainless Steel
6. Packing	PTFE	16. Lever Handle	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	17. Lock Plate	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	18. Stops	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	19. Int. Grnd. Spring	300 Series Stainless Steel
10. Body Nuts	ASTM A194-Gr.8	20. Ext. Grnd. Spring	300 Series Stainless Steel

For Pressure/Temperature Ratings, Refer to Page M-18, Graph No. 25



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38-	Peek Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-63-	NPT x Socketweld	1/4" to 2"
-67-	Cleaned for Industrial Gases	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-P01-	BSPP (Parallel) Thread Connection	1/4" to 2"
-T01-	BSPT (Tapered) Thread Connection	1/4" to 2"
-UL-	UL Listed	1/4" to 2"

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83L-141-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-142-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-143-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-144-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83L-145-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83L-146-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83L-147-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83L-148-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83L-240 Series



3-Piece Full Low Temperature Port Carbon Steel Class 600 Socket-Weld Ball Valve

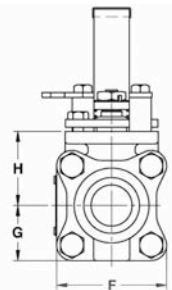
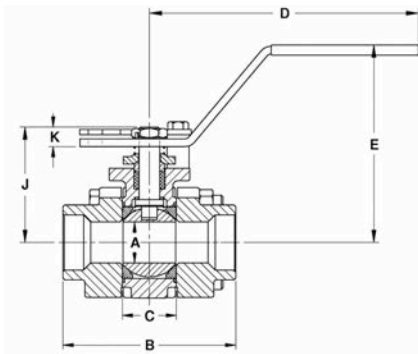
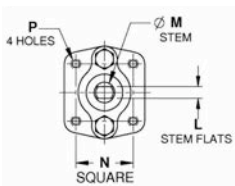
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Socket-weld per ASME B16.11, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Rated to -50°F (-46°C)
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A352-LCC	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A352-LCC	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



For Pressure/Temperature Ratings, Refer to Page M-18, Graph No. 25

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/4" to 2"
-14	Vented Ball (see page J-2)	1/4" to 2"
-15	Round Handle	1/4" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38	PEEK Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49	Assembled Dry	1/4" to 2"
-62	Center Section Only	1/4" to 2"
-67	Cleaned for Industrial Gases	1/4" to 2"
-69	Drilled & Tapped Purge & Drains	1/4" to 2"
-70	Extended Bonnet	1/4" to 2"
-76	Live Loaded (Lever Operated)	1/4" to 2"
-77	Live Loaded (Actuated)	1/4" to 2"
-90	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-UL-	UL Listed	1/4" to 2"

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83L-241-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-242-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-243-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-244-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83L-245-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83L-246-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83L-247-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83L-248-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83L-340 Series



3-Piece Full Port Low Temperature Carbon Steel Class 600 Schedule 5 Butt-Weld Ball Valve

Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Rated to -50°F (-46°C)
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

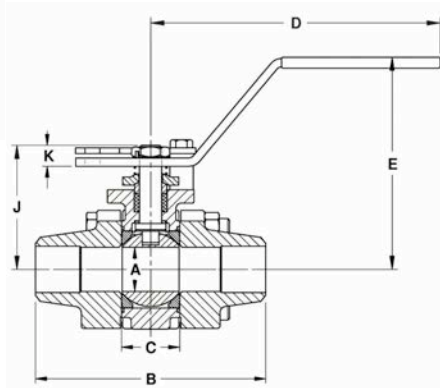
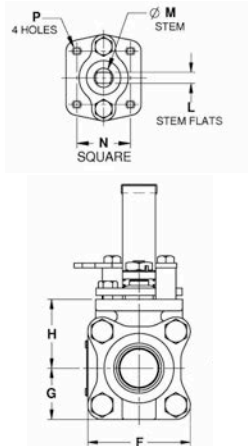
1. Body	ASTM A352-LCC	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A352-LCC	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 83L-440 - Schedule 10 Butt-weld
- 83L-540 - Schedule 40 Butt-weld
- 83L-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-67	Cleaned for Industrial Gases	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"
-UL	UL Listed	1/2" to 2"



For Pressure/Temperature Ratings, Refer to Page M-18, Graph No. 25

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83L-343-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-344-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83L-345-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83L-346-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83L-347-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83L-348-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83L-440 Series

3-Piece Full Port Low Temperature Carbon Steel Class 600 Schedule 10 Butt-Weld Ball Valve

Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

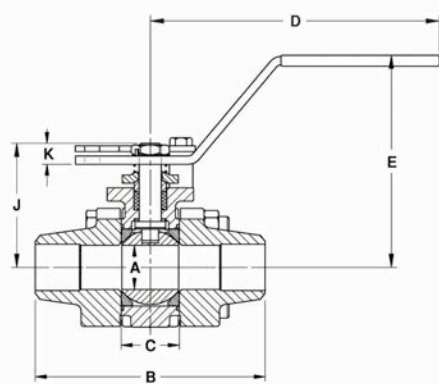
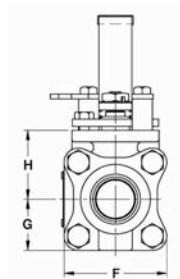
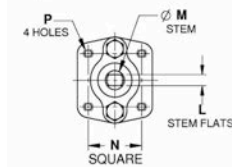
- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Rated to -50°F (-46°C)
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A352-LCC	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A352-LCC	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 83L-340 - Schedule 5 Butt-weld
- 83L-540 - Schedule 40 Butt-weld
- 83L-640 - Schedule 80 Butt-weld



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-67	Cleaned for Industrial Gases	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"
-UL	UL Listed	1/2" to 2"

**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 25**

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83L-443-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-444-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83L-445-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83L-446-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83L-447-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83L-448-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83L-540 Series

3-Piece Full Port Low Temperature Carbon Steel Class 600 Schedule 40 Butt-Weld Ball Valve

Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Rated to -50°F (46°C)
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

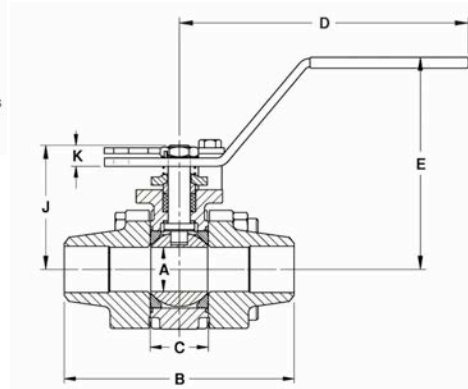
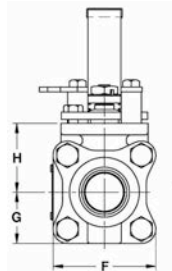
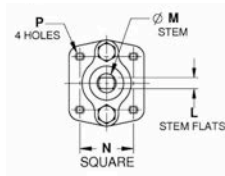
1. Body	ASTM A352-LCC	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A352-LCC	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 83L-340 - Schedule 5 Butt-weld
- 83L-440 - Schedule 10 Butt-weld
- 83L-640 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-67-	Cleaned for Industrial Gases	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"



For Pressure/Temperature Ratings, Refer to Page M-18, Graph No. 25

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83L-543-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-544-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83L-545-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83L-546-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83L-547-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83L-548-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83L-640 Series

3-Piece Full Port Low Temperature Carbon Steel Class 600 Schedule 80 Butt-Weld Ball Valve

Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Rated to -50°F (-46°C)
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

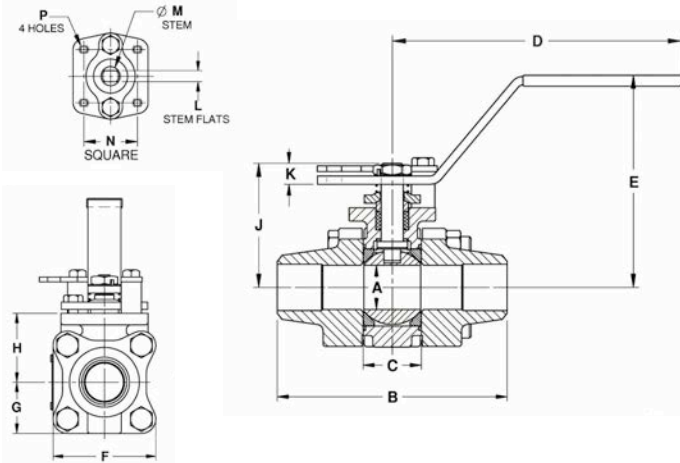
1. Body	ASTM A352-LCC	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A352-LCC	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 83L-340 - Schedule 5 Butt-weld
- 83L-440 - Schedule 10 Butt-weld
- 83L-540 - Schedule 40 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-67	Cleaned for Industrial Gases	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"
-UL	UL Listed	1/2" to 2"



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 25**

CARBON STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
83L-643-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
83L-644-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
83L-645-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
83L-646-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
83L-647-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
83L-648-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86A-100 Series

3-Piece Full Port Stainless Steel

1500 CWP NPT Ball Valve

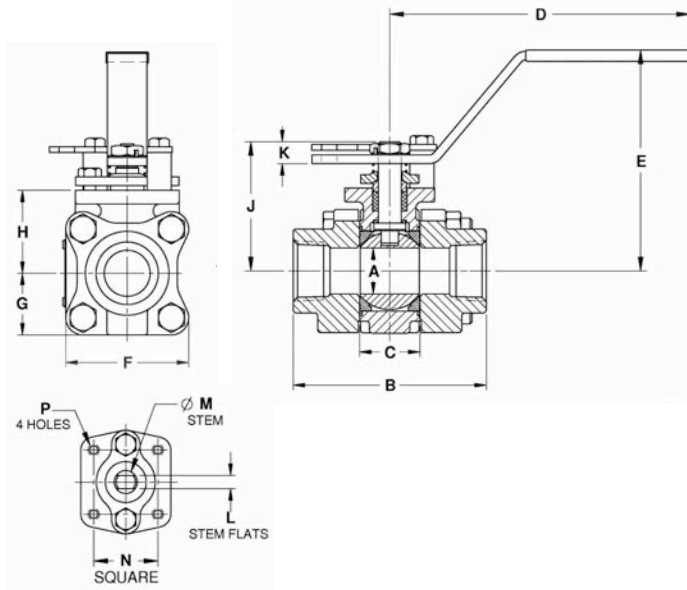
Standard Compliance - Valve design: MSS SP-110, End Connections: NPT per ASME B1.20.1, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-57-	Cleaned for Oxygen Service	1/4" to 2"
-60-	Static Grounding	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-63-	NPT x Socketweld	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-P01-	BSPP (Parallel) Thread Connection	1/4" to 2"
-T01-	BSPT (Tapered) Thread Connection	1/4" to 2"

For Pressure/Temperature Ratings, Refer to Page M-17, Graph No. 24

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	K	L	M	N	P	WT.
86A-101-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-102-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-103-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-104-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86A-105-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86A-106-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86A-107-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86A-108-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86A-200 Series

3-Piece Full Port Stainless Steel

1500 CWP Socket-Weld Ball Valve

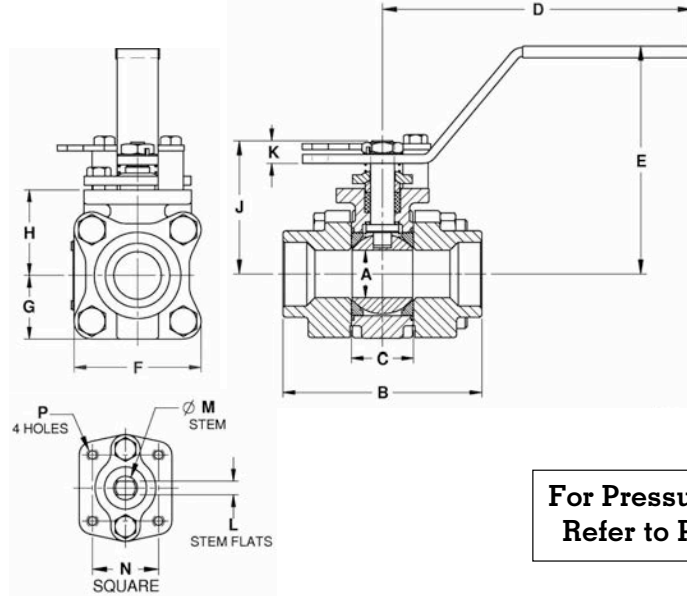
Standard Compliance - Valve design: MSS SP-110, End Connections: Socket-weld per ASME B16.11, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-57-	Cleaned for Oxygen Service	1/4" to 2"
-60-	Static Grounding	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 24**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86A-201-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-202-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-203-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-204-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86A-205-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86A-206-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86A-207-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86A-208-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86A-300 Series

3-Piece Full Port Stainless Steel

1500 CWP Schedule 5 Butt-Weld Ball Valve

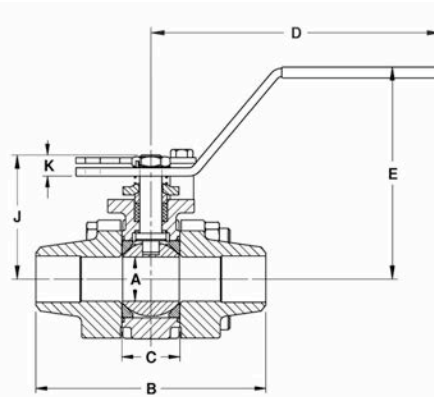
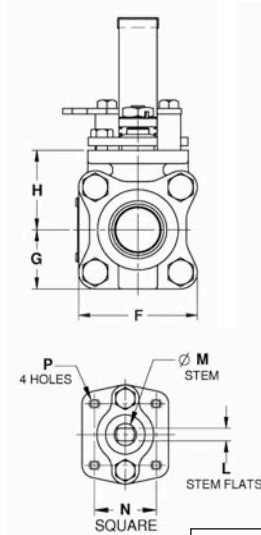
Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



VARIATIONS AVAILABLE:

- 86A-400 - Schedule 10 Butt-weld
- 86A-500 - Schedule 40 Butt-weld
- 86A-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-57	Cleaned for Oxygen Service	1/2" to 2"
-60	Static Grounding	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 24**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86A-303-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-304-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86A-305-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86A-306-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86A-307-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86A-308-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86A-400 Series

3-Piece Full Port Stainless Steel

1500 CWP Schedule 10 Butt-Weld Ball Valve

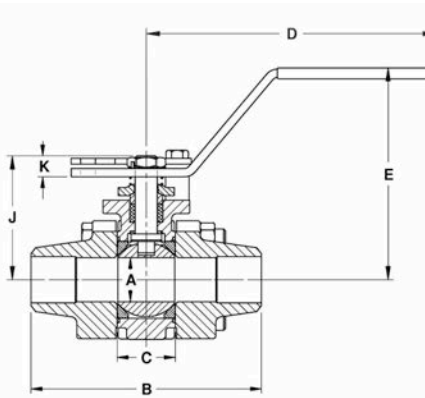
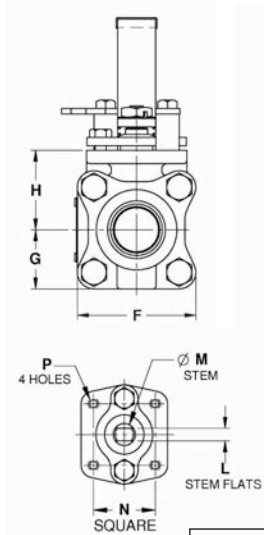
Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



VARIATIONS AVAILABLE:

- 86A-300 - Schedule 5 Butt-weld
- 86A-500 - Schedule 40 Butt-weld
- 86A-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-57	Cleaned for Oxygen Service	1/2" to 2"
-60	Static Grounding	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 24**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86A-403-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-404-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86A-405-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86A-406-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86A-407-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86A-408-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86A-500 Series

3-Piece Full Port Stainless Steel

1500 CWP Schedule 40 Butt-Weld Ball Valve



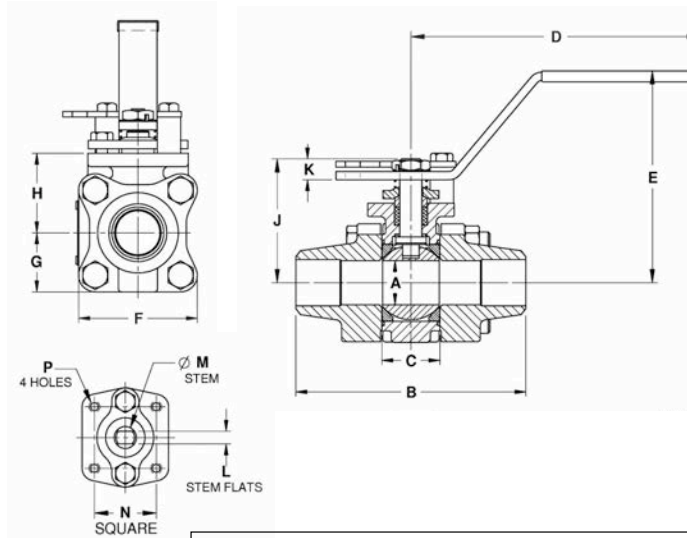
Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



VARIATIONS AVAILABLE:

- 86A-300 - Schedule 5 Butt-weld
- 86A-400 - Schedule 10 Butt-weld
- 86A-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-57-	Cleaned for Oxygen Service	1/2" to 2"
-60-	Static Grounding	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 24**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86A-503-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-504-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86A-505-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86A-506-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86A-507-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86A-508-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86A-600 Series

3-Piece Full Port Stainless Steel

1500 CWP Schedule 80 Butt-Weld Ball Valve

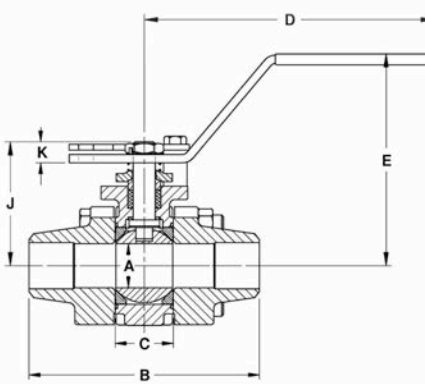
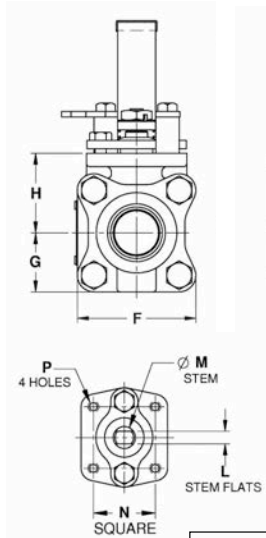
Standard Compliance - Valve design: MSS SP-110, End Connections: Butt-weld per ASME B16.25, Valve Marking: MSS SP-25, Production Testing: MSS SP-110, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- 150 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	18-8 Stainless Steel
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	18-8 Stainless Steel
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	RPTFE	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	18-8 Stainless Steel	18. Stops	300 Series Stainless Steel



VARIATIONS AVAILABLE:

- 86A-300 - Schedule 5 Butt-weld
- 86A-400 - Schedule 10 Butt-weld
- 86A-500 - Schedule 40 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-57	Cleaned for Oxygen Service	1/2" to 2"
-60	Static Grounding	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR	Spring Return Handle	1/2" to 1"

**For Pressure/Temperature Ratings,
Refer to Page M-17, Graph No. 24**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86A-603-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86A-604-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86A-605-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86A-606-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86A-607-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86A-608-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86B-100 Series

3-Piece Full Port Stainless Steel

Class 600 NPT Ball Valve



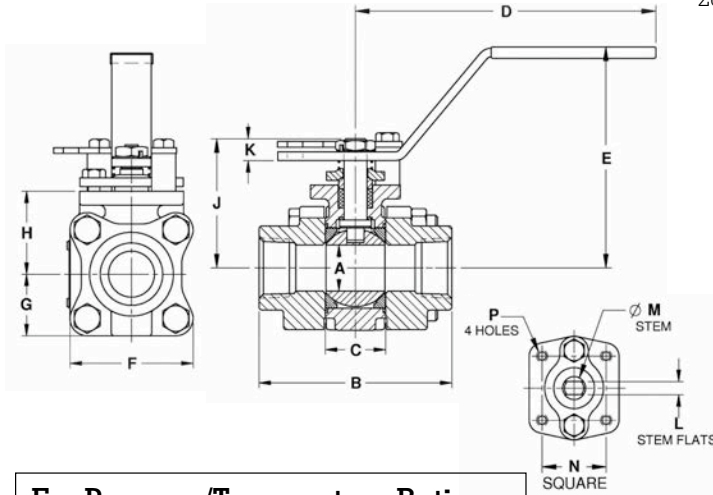
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: NPT per ASME B1.20.1, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

- | | | | |
|-----------------|-------------------|-----------------------|----------------------------|
| 1. Body | ASTM A351-CF8M | 10. Body Nuts | ASTM A194-Gr.8 |
| 2. End Caps | ASTM A351-CF3M | 11. Stop Bolts | 18-8 Stainless Steel |
| 3. Ball | ASTM A276-316SS | 12. Gland Bolts | ASTM A193-Gr.B8 |
| 4. Stem | ASTM A276-316SS | 13. Handle Nut/Screw | 300 Series Stainless Steel |
| 5. Seat | Multi-Seal | 14. Packing Gland | ASTM A276-316SS |
| 6. Packing | PTFE | 15. Gland Plate | 300 Series Stainless Steel |
| 7. Stem Bearing | PEEK/PTFE | 16. Lever Handle | 300 Series Stainless Steel |
| 8. Body Gasket | PTFE Spiral Wound | 17. Lock Plate | 300 Series Stainless Steel |
| 9. Body Bolts | ASTM A193-Gr.B8M3 | 18. Stops | 300 Series Stainless Steel |
| | | 19. Int. Grnd. Spring | 300 Series Stainless Steel |
| | | 20. Ext. Grnd. Spring | 300 Series Stainless Steel |



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 26**

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38-	Peek Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-57-	Cleaned for Oxygen Service	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-63-	NPT x Socketweld	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-P01-	BSPP (Parallel) Thread Connection	1/4" to 2"
-T01-	BSPT (Tapered) Thread Connection	1/4" to 2"
-UL-	UL Listed	1/4" to 2"

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86B-101-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-102-01	3/8	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-103-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-104-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86B-105-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86B-106-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86B-107-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86B-108-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86B-200 Series

3-Piece Full Port Stainless Steel Class 600 Socket-Weld Ball Valve



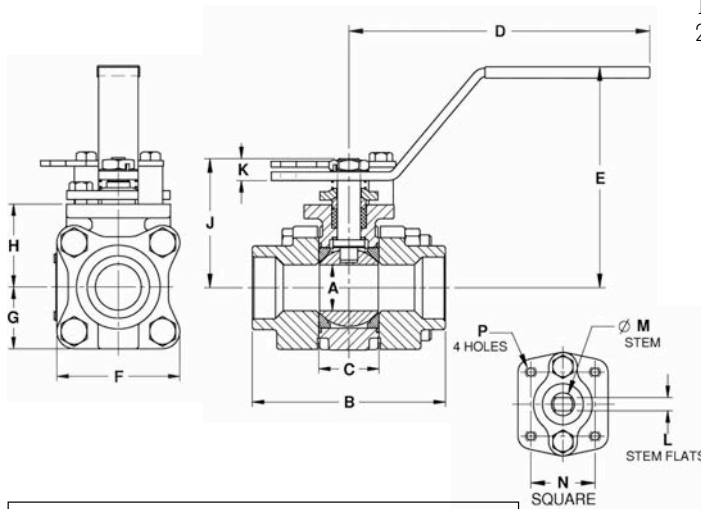
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Socket-weld per ASME B16.11, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



For Pressure/Temperature Ratings, Refer to Page M-18, Graph No. 26

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/4" to 2"
-14	Vented Ball (see page J-2)	1/4" to 2"
-15	Round Handle	1/4" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38	PEEK Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49	Assembled Dry	1/4" to 2"
-57	Cleaned for Oxygen Service	1/4" to 2"
-62	Center Section Only	1/4" to 2"
-69	Drilled & Tapped Purge & Drains	1/4" to 2"
-70	Extended Bonnet	1/4" to 2"
-76	Live Loaded (Lever Operated)	1/4" to 2"
-77	Live Loaded (Actuated)	1/4" to 2"
-90	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-UL-	UL Listed	1/4" to 2"

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86B-201-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-202-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-203-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-204-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86B-205-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86B-206-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86B-207-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86B-208-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86B-300 Series

3-Piece Full Port Stainless Steel

Class 600 Schedule 5 Butt-Weld Ball Valve



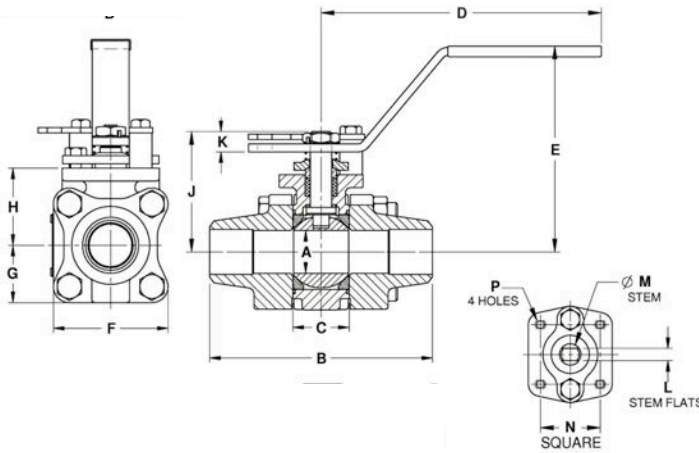
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 26**

VARIATIONS AVAILABLE:

- 86B-400 - Schedule 10 Butt-weld
- 86B-500 - Schedule 40 Butt-weld
- 86B-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-57	Cleaned for Oxygen Service	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86B-303-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-304-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86B-305-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86B-306-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86B-307-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86B-308-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86B-400 Series

3-Piece Full Port Stainless Steel

Class 600 Schedule 10 Butt-Weld Ball Valve



Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

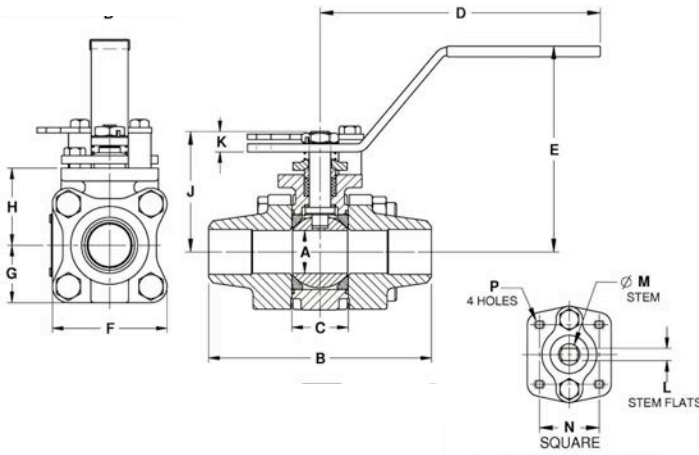
1. Body	ASTM A351-CF8M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 86B-300 - Schedule 5 Butt-weld
- 86B-500 - Schedule 40 Butt-weld
- 86B-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-57-	Cleaned for Oxygen Service	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 26**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86B-403-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-404-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86B-405-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86B-406-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86B-407-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86B-408-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86B-500 Series

3-Piece Full Port Stainless Steel

Class 600 Schedule 40 Butt-Weld Ball Valve



Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

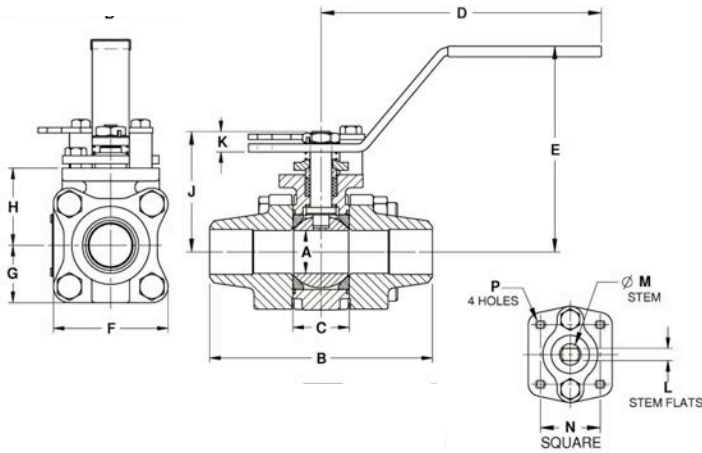
1. Body	ASTM A351-CF8M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 86B-300 - Schedule 5 Butt-weld
- 86B-400 - Schedule 10 Butt-weld
- 86B-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-57	Cleaned for Oxygen Service	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Butt-weld	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"



**For Pressure/Temperature Ratings,
Refer to Page M-18, Graph No. 26**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86B-503-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-504-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86B-505-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86B-506-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86B-507-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86B-508-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86B-600 Series

3-Piece Full Port Stainless Steel

Class 600 Schedule 80 Butt-Weld Ball Valve



Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

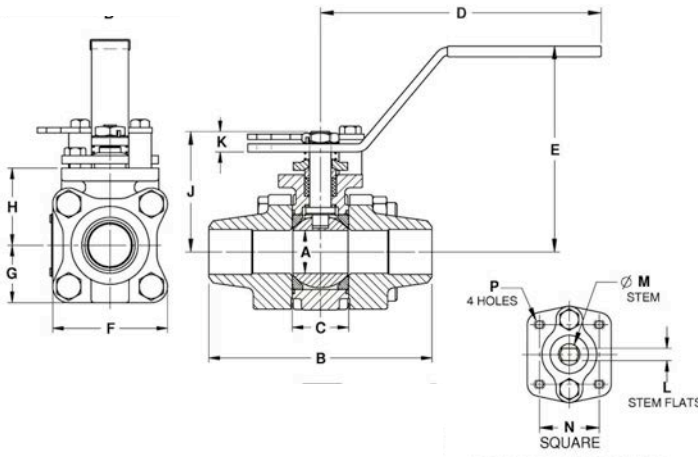
1. Body	ASTM A351-CF8M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CF3M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM A276-316SS	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM A276-316SS	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel

VARIATIONS AVAILABLE:

- 86B-300 - Schedule 5 Butt-weld
- 86B-400 - Schedule 10 Butt-weld
- 86B-500 - Schedule 40 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-57-	Cleaned for Oxygen Service	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"
-UL-	UL Listed	1/2" to 2"



For Pressure/Temperature Ratings, Refer to Page M-18, Graph No. 26

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86B-603-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86B-604-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86B-605-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86B-606-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86B-607-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86B-608-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86C-100 Series

3-Piece Full Port Alloy 20

Class 600 NPT Ball Valve



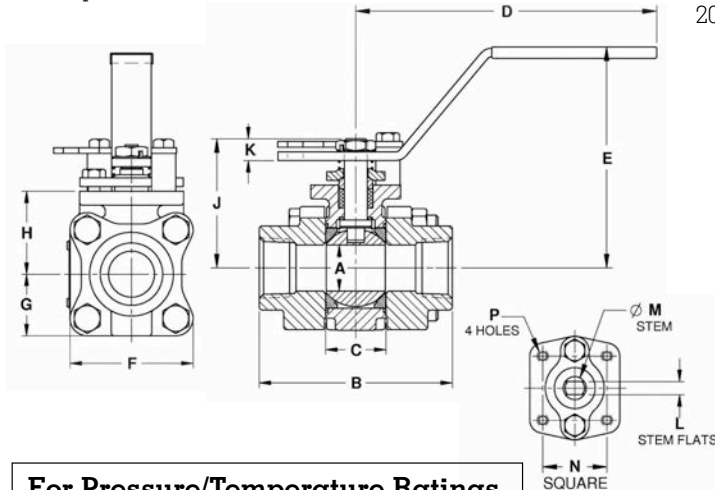
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: NPT per ASME B1.20.1, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

- | | | | |
|-----------------|--|-----------------------|----------------------------|
| 1. Body | ASTM A351-CN7M | 10. Body Nuts | ASTM A194-Gr.8 |
| 2. End Caps | ASTM A351-CN7M | 11. Stop Bolts | 18-8 Stainless Steel |
| 3. Ball | ASTM B473 (UNS N08020)
or ASTM-CN7M | 12. Gland Bolts | ASTM A193-Gr.B8 |
| 4. Stem | ASTM B473 (UNS N08020) | 13. Handle Nut/Screw | 300 Series Stainless Steel |
| 5. Seat | Multi-Seal | 14. Packing Gland | ASTM A276-316SS |
| 6. Packing | PTFE | 15. Gland Plate | 300 Series Stainless Steel |
| 7. Stem Bearing | PEEK/PTFE | 16. Lever Handle | 300 Series Stainless Steel |
| 8. Body Gasket | PTFE Spiral Wound | 17. Lock Plate | 300 Series Stainless Steel |
| 9. Body Bolts | ASTM A193-Gr.B8M3 | 18. Stops | 300 Series Stainless Steel |
| | | 19. Int. Grnd. Spring | 300 Series Stainless Steel |
| | | 20. Ext. Grnd. Spring | 300 Series Stainless Steel |



**For Pressure/Temperature Ratings,
Refer to Page M-19, Graph No. 27**

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/4" to 2"
-14-	Vented Ball (see page J-2)	1/4" to 2"
-15-	Round Handle	1/4" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38-	PEEK Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49-	Assembled Dry	1/4" to 2"
-57-	Cleaned for Oxygen Service	1/4" to 2"
-62-	Center Section Only	1/4" to 2"
-63-	NPT x Socketweld	1/4" to 2"
-69-	Drilled & Tapped Purge & Drains	1/4" to 2"
-70-	Extended Bonnet	1/4" to 2"
-76-	Live Loaded (Lever Operated)	1/4" to 2"
-77-	Live Loaded (Actuated)	1/4" to 2"
-90-	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"
-P01-	BSPP (Parallel) Thread Connection	1/4" to 2"
-T01-	BSPT (Tapered) Thread Connection	1/4" to 2"

ALLOY 20 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86C-101-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-102-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-103-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-104-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86C-105-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86C-106-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86C-107-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86C-108-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86C-200 Series

3-Piece Full Port Alloy 20

Class 600 Socket-Weld Ball Valve



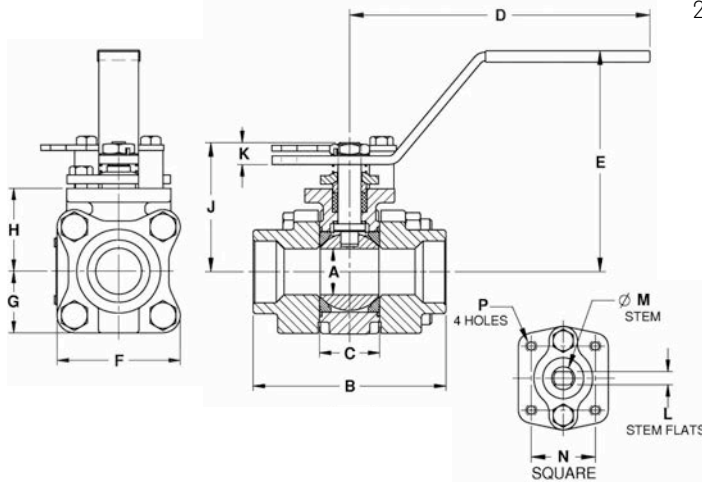
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Socket-weld per ASME B16.11, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in. of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CN7M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CN7M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM B473 (UNS N08020) or ASTM-CN7M	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM B473 (UNS N08020)	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/4" to 2"
-14	Vented Ball (see page J-2)	1/4" to 2"
-15	Round Handle	1/4" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/4" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/4" to 2"
-38	Peek Seats, Graphite Stem Packing & Gaskets	1/4" to 2"
-49	Assembled Dry	1/4" to 2"
-57	Cleaned for Oxygen Service	1/4" to 2"
-62	Center Section Only	1/4" to 2"
-69	Drilled & Tapped Purge & Drains	1/4" to 2"
-70	Extended Bonnet	1/4" to 2"
-76	Live Loaded (Lever Operated)	1/4" to 2"
-77	Live Loaded (Actuated)	1/4" to 2"
-90	Extended Bonnet w/Double Packing	1/4" to 2"
-SR-	Spring Return Handle	1/4" to 1"

For Pressure/Temperature Ratings, Refer to Page M-19, Graph No. 27

ALLOY 20 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86C-201-01	1/4"	.37	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-202-01	3/8"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-203-01	1/2"	.50	2.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-204-01	3/4"	0.75	3.68	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86C-205-01	1"	1.00	4.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86C-206-01	1-1/4"	1.50	4.50	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86C-207-01	1-1/2"	1.50	4.98	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86C-208-01	2"	2.00	5.86	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86C-300 Series

3-Piece Full Port Alloy 20

Class 600 Schedule 5 Butt-Weld Ball Valve



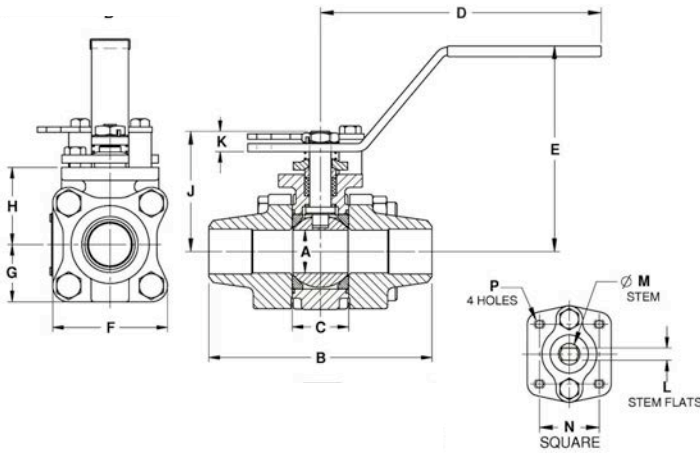
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CN7M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CN7M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM (UNS N08020) or ASTM-CN7M	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM B473 (UNS N08020)	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-19, Graph No. 27**

VARIATIONS AVAILABLE:

- 86C-400 - Schedule 10 Butt-weld
- 86C-500 - Schedule 40 Butt-weld
- 86C-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-57-	Cleaned for Oxygen Service	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Buttweld	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"

Alloy 20 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86C-303-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-304-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86C-305-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86C-306-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86C-307-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86C-308-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86C-400 Series

3-Piece Full Port Alloy 20

Class 600 Schedule 10 Butt-Weld Ball Valve



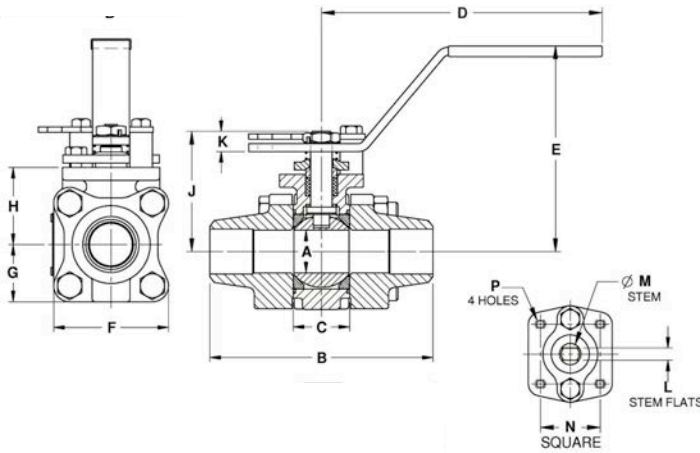
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CN7M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CN7M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM (UNS N08020) or ASTM-CN7M	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM B473 (UNS N08020)	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-19, Graph No. 27**

VARIATIONS AVAILABLE:

- 86C-300 - Schedule 5 Butt-weld
- 86C-500 - Schedule 40 Butt-weld
- 86C-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-57-	Cleaned for Oxygen Service	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"

Alloy 20 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86C-403-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-404-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86C-405-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86C-406-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86C-407-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86C-408-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86C-500 Series

3-Piece Full Port Alloy 20

Class 600 Schedule 40 Butt-Weld Ball Valve



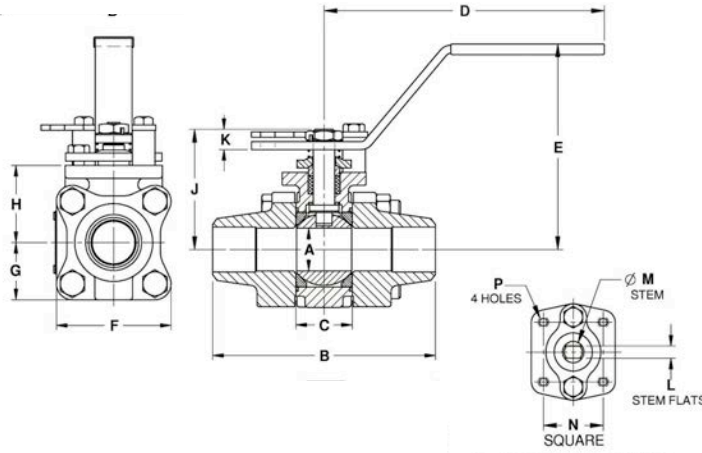
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CN7M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CN7M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM (UNS N08020) or ASTM-CN7M	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM B473 (UNS N08020)	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-19, Graph No. 27**

VARIATIONS AVAILABLE:

- 86C-300 - Schedule 5 Butt-weld
- 86C-400 - Schedule 10 Butt-weld
- 86C-600 - Schedule 80 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04	2-1/4" Stem Extension	1/2" to 2"
-14	Vented Ball (see page J-2)	1/2" to 2"
-15	Round Handle	1/2" to 2"
-21	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38	PEEK Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49	Assembled Dry	1/2" to 2"
-57	Cleaned for Oxygen Service	1/2" to 2"
-62	Center Section Only	1/2" to 2"
-66	FNPT x Buttweld	1/2" to 2"
-69	Drilled & Tapped Purge & Drains	1/2" to 2"
-70	Extended Bonnet	1/2" to 2"
-76	Live Loaded (Lever Operated)	1/2" to 2"
-77	Live Loaded (Actuated)	1/2" to 2"
-90	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"

ALLOY 20 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86C-503-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-504-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86C-505-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86C-506-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86C-507-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86C-508-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



86C-600 Series

3-Piece Full Port Alloy 20

Class 600 Schedule 80 Butt-Weld Ball Valve



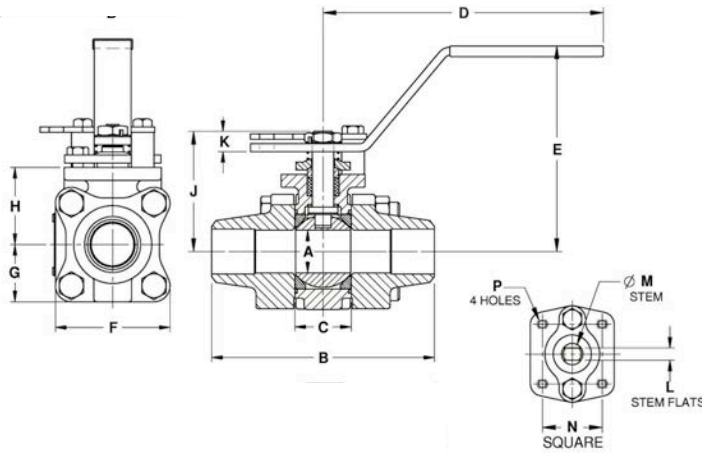
Standard Compliance - Valve design: ASME B16.34, Class 600, End Connections: Butt-weld per ASME B16.25, Valve Marking: ASME B16.34, Production Testing: ASME B16.34, NACE MR0175, 2000 edition.

FEATURES

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled spiral wound gaskets
- Anti-blowout one piece bottom entry stem
- Statically grounded ball, stem, & body
- Two-position locking
- Adjustable multi-piece PTFE "V" style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.
- CE mark, 1-1/4" and larger
- 250 psig saturated steam

STANDARD MATERIAL LIST

1. Body	ASTM A351-CN7M	10. Body Nuts	ASTM A194-Gr.8
2. End Caps	ASTM A351-CN7M	11. Stop Bolts	18-8 Stainless Steel
3. Ball	ASTM (UNS N08020) or ASTM-CN7M	12. Gland Bolts	ASTM A193-Gr.B8
4. Stem	ASTM B473 (UNS N08020)	13. Handle Nut/Screw	300 Series Stainless Steel
5. Seat	Multi-Seal	14. Packing Gland	ASTM A276-316SS
6. Packing	PTFE	15. Gland Plate	300 Series Stainless Steel
7. Stem Bearing	PEEK/PTFE	16. Lever Handle	300 Series Stainless Steel
8. Body Gasket	PTFE Spiral Wound	17. Lock Plate	300 Series Stainless Steel
9. Body Bolts	ASTM A193-Gr.B8M3	18. Stops	300 Series Stainless Steel
		19. Int. Grnd. Spring	300 Series Stainless Steel
		20. Ext. Grnd. Spring	300 Series Stainless Steel



**For Pressure/Temperature Ratings,
Refer to Page M-19, Graph No. 27**

VARIATIONS AVAILABLE:

- 86C-300 - Schedule 5 Butt-weld
- 86C-400 - Schedule 10 Butt-weld
- 86C-500 - Schedule 40 Butt-weld

OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-04-	2-1/4" Stem Extension	1/2" to 2"
-14-	Vented Ball (see page J-2)	1/2" to 2"
-15-	Round Handle	1/2" to 2"
-21-	UHMWPE Seats w/Graphite Seals	1/2" to 2"
-24-	Fire Safe - Graphite Packing & Gaskets (API 607, 5th ed., ISO 10497-5)	1/2" to 2"
-38-	Peek Seats, Graphite Stem Packing & Gaskets	1/2" to 2"
-49-	Assembled Dry	1/2" to 2"
-57-	Cleaned for Oxygen Service	1/2" to 2"
-62-	Center Section Only	1/2" to 2"
-66-	FNPT x Butt-weld	1/2" to 2"
-69-	Drilled & Tapped Purge & Drains	1/2" to 2"
-70-	Extended Bonnet	1/2" to 2"
-76-	Live Loaded (Lever Operated)	1/2" to 2"
-77-	Live Loaded (Actuated)	1/2" to 2"
-90-	Extended Bonnet w/Double Packing	1/2" to 2"
-SR-	Spring Return Handle	1/2" to 1"

Alloy 20 3-PIECE FULL PORT BALL VALVE

NUMBER	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT.
86C-603-01	1/2"	.50	3.80	0.89	5.12	3.02	2.02	1.01	1.39	1.97	0.23	0.245	0.375	1.00	10-24	2.3
86C-604-01	3/4"	0.75	4.66	1.10	5.53	3.40	2.40	1.20	1.65	2.35	0.24	0.312	0.500	1.392	1/4-20	4.0
86C-605-01	1"	1.00	5.19	1.31	6.53	4.80	2.67	1.34	1.80	2.80	0.48	0.287	0.500	1.392	1/4-20	5.7
86C-606-01	1-1/4"	1.50	5.48	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.2
86C-607-01	1-1/2"	1.50	5.96	1.97	6.65	4.70	3.84	1.92	2.49	3.89	0.72	0.412	0.625	1.949	5/16-18	14.4
86C-608-01	2"	2.00	6.84	2.56	8.40	5.47	4.92	2.46	3.17	4.74	0.80	0.477	0.750	1.949	5/16-18	27.6



83R-100 Series

Carbon Steel 3-Piece Full Port Ball Valve With Actuator Ready ISO Mounting Pad 1-1/2" & 2"

Full Port Threaded, 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.

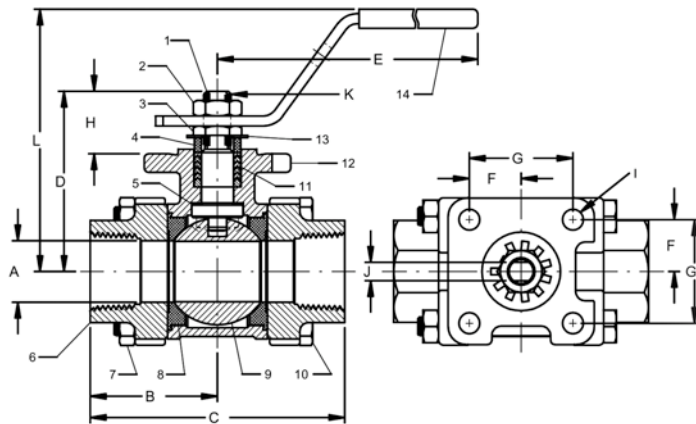
Meets NACE MR-01-75

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-140 Series (316 SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-02-	Static Grounded
-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
-56-	Multifill Seats & Graphite Packing
-59-	SS External Trim - 3-pc. Valves
-60-	Grounded Ball & Stem
-63-	NPT x Socket Weld
-66-	NPT x Butt weld
-P01-	BSPP (Parallel) Thread Connection
-T01-	BSPT (Tapered) Thread Connection
-AR-	Less Handle & Stop-Add Belleville Washers
-WB-	With Lever & Belleville Washers

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

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K (THRDS.) UNF	L
83R-10-01	1-1/2"	1.50	2.59	5.18	3.49	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	4.35
83R-108-01	2"	2.00	3.01	6.03	3.95	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	4.85



83R-100 Series

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

3"

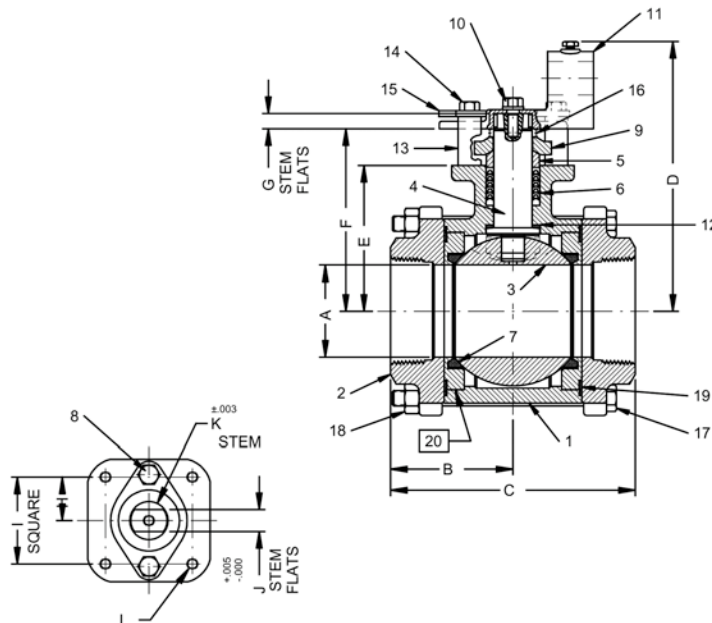
Full Port Threaded, 800 psig CWP, Cold Non-Shock. 150 psig Saturated Steam.
 Vacuum Service to 29 inches Hg.
 Federal Specification: WW-V-35C, Type: II, Composition: CS, Style: 1.
 MSS SP-110; Ball Valve Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
 Meets NACE MR-01-75

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. 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-140 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
-63-	NPT x Socket Weld
-70-	4" Extended Bonnet

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

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

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K	L (THRDS.) UNF
83R-100-01	3"	3.00	4.00	8.00	8.80	4.75	5.94	.50	1.420	2.840	.725	1.250	3.28



83R-200 Series

Carbon Steel 3-Piece Full Port Socket Weld Ball Valve With Actuator Ready ISO Mounting Pad 1-1/2" & 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

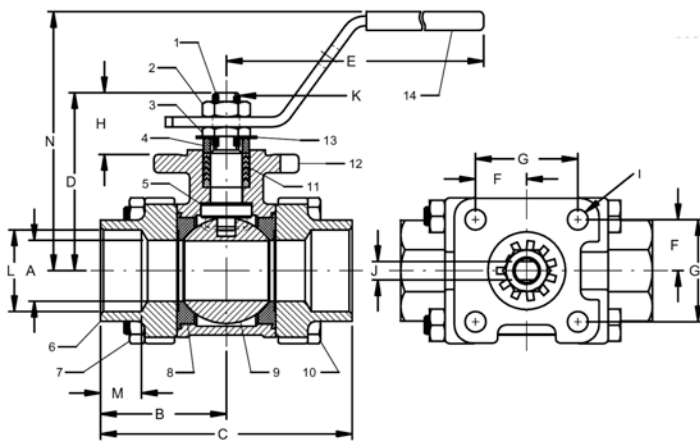
STANDARD MATERIAL LIST

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

VARIATIONS AVAILABLE:

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

OPTIONS AVAILABLE:



(SUFFIX)	OPTION
-02-	Static Grounded
-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

**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 (THRDS.) UNF	L	M	N
83R-207-01	1-1/2"	1.50	2.59	5.18	3.49	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	1.915	.87	4.38
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"

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

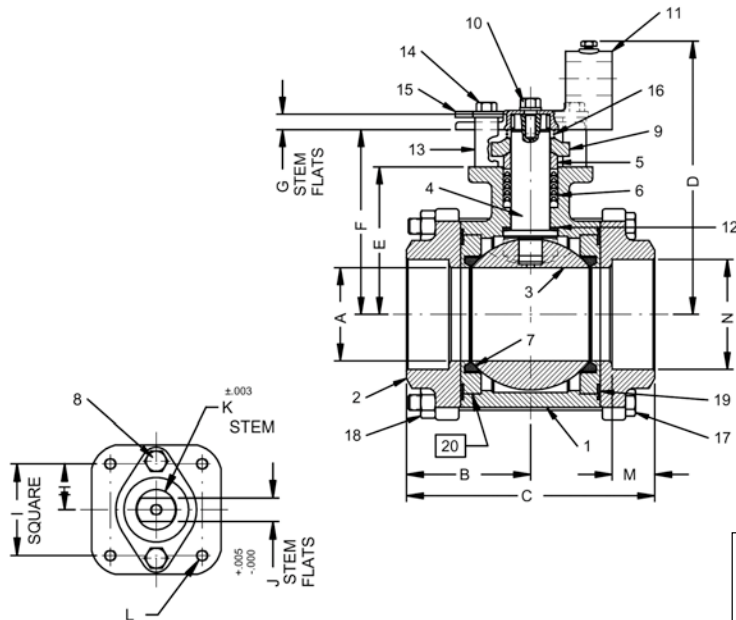
1. Body	ASTM A216-WCB	12. Stem Bearing	RPTFE
2. End Caps	ASTM A216-WCB	13. Stops (2)	SS
3. Ball	A108-CS, Chrome Plated	14. Stop Screws (2)	SS
4. Stem	A108-CS	15. Lock Plate	SS
5. Packing Gland	CS	16. Grounding Spring	SS
6. Stem Seal	MPTFE	17. Body Bolts (6)	SS
7. Seats (2)	RPTFE	18. Heavy Hex Nuts (6)	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
-70-	4" Extended Bonnet



**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



83R-700 Series

Carbon Steel 3-Piece Full Port Butt-Weld Ball Valve With Actuator Ready ISO Mounting Pad 1-1/2" & 2"

Schedule 40 Butt-Weld Ends, 800 psig WOG, 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-72; Ball Valves with Flanged or Butt-Weld Ends for General Service.

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

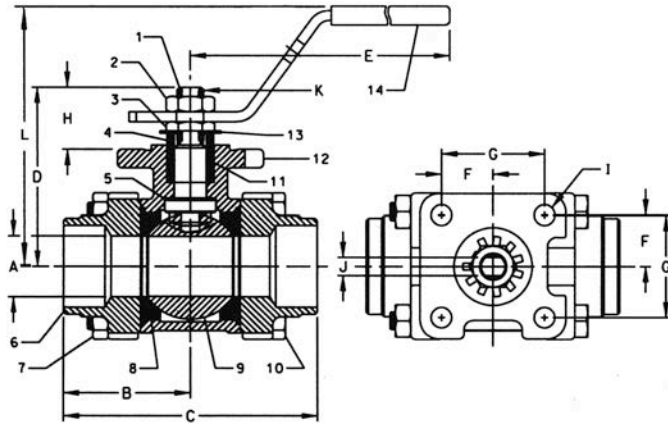
1. Stem	A108-CS	8. Seat (2)	RPTFE
2. Jam nut	Steel, zinc plate	9. Ball	A108-CS chrome plate
3. Low profile nut	316 SS	10. Body bolt (4)	Stl-gr. 8-zinc plt
4. Gland	A276-316	11. Stem packing	MPTFE
5. Stem bearing	RPTFE	12. Body	ASTM A216-WCB
6. End cap (2)	A216-WCB	13. Lock tab washer	304 SS
7. Hex nut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

VARIATIONS AVAILABLE:

- 83R-740 Series (316 SS Ball & Stem)

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-02-	Static Grounded
-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



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

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

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K (THRDS.) UNF	L
83R-707-01	1-1/2"	1.50	2.59	5.18	3.49	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	4.35
83R-708-01	2"	2.00	3.01	6.03	3.95	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	4.85



86R-100 Series

Stainless Steel 3-Piece Full Port Ball Valve With Actuator Ready ISO Mounting Pad 1-1/2" & 2"

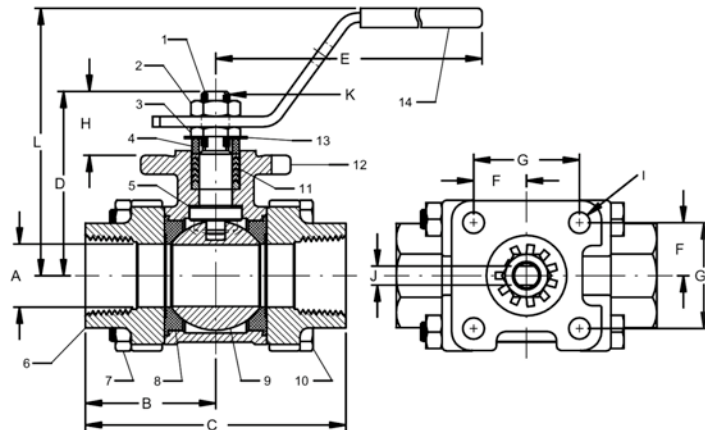
Full Port Threaded, 800 psig CWP, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 1.
MSS SP-110; Ball Valve Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
Meets NACE MR01-75

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	A276-316	8. Seat (2)	RPTFE
2. Jam nut	SS	9. Ball	316 SS
3. Low profile nut	316 SS	10. Body bolt (4)	18-8 SS
4. Gland	A276-316	11. Stem packing	MPTFE
5. Stem bearing	RPTFE	12. Body	ASTM A351-CF8M
6. End cap (2)	ASTM A351-CF3M	13. Lock tab washer	304 SS
7. Hex nut (4)	18-8 SS	14. Lever and grip	304 SS w/vinyl



OPTIONS AVAILABLE:

(SUFFIX)	OPTION	SIZES
-02	Static Grounded	
-04	2-1/4" Stem Extension	
-08	90° Reversed Stem	
-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	
-49	Assembled Dry	
-57	Oxygen Cleaned	
-60	Grounded Ball & Stem	
-63	Threaded x Socket Weld	
-P01-	BSPP (Parallel) Thread Connection	
-T01-	BSPT (Tapered) Thread Connection	
-AR-	Less Handle & Stop-Add Belleville Washers	
-WB-	With Lever & Belleville Washers	

**For Pressure/Temperature Ratings,
Refer to Page M-10, Graph No. 8**

STAINLESS STEEL 3-PIECE FULL PORT BALL VALVE WITH ISO MOUNTING PAD

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K (THRDS.) UNF	L
86R-107-01	1-1/2"	1.50	2.59	5.18	3.49	8.00	.98	1.95	1.16	.34	.370/.372	5/8-18	4.35
86R-108-01	2"	2.00	3.01	6.03	3.95	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	4.85



86R-100 Series

Stainless Steel 3-Piece Full Port Ball Valve With Actuator Ready ISO Mounting Pad 3"

Full Port Threaded, 800 psig CWP, Cold Non-Shock. 150 psig Saturated Steam.
 Vacuum Service to 29 inches Hg.
 Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 1.
 MSS SP-110; Ball Valve Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
 Meets NACE MR01-75

FEATURES

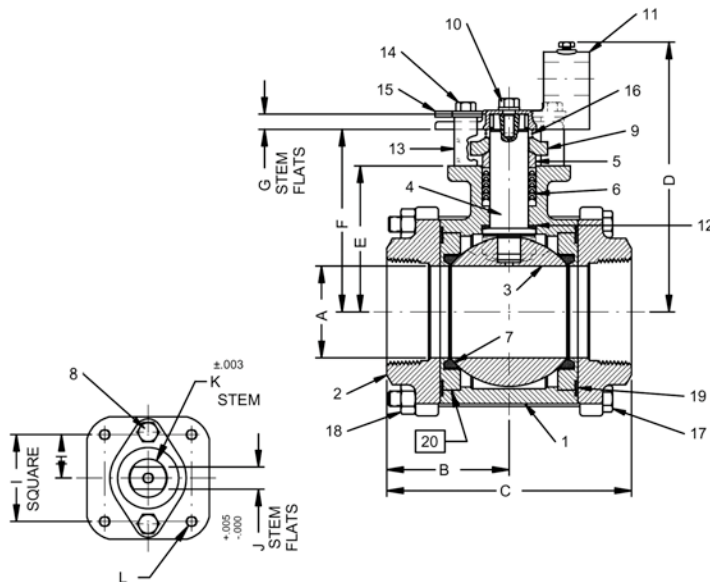
- Multi-piece packing set
- ISO 5211 mounting pad
- Blow-out-proof stem design
- In-line repairable
- Adjustable packing gland
- Investment cast components
- Reinforced seats and seals
- Full port configuration

STANDARD MATERIAL LIST

1. Body	ASTM A351-CF8M	12. Stem Bearing	RPTFE
2. End Caps (2)	ASTM A351-CF8M	13. Stops (2)	SS
3. Ball	316 SS	14. Stop Screws (2)	SS
4. Stem	A276-316	15. Lock Plate	SS
5. Packing Gland	316 SS	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)	SS
10. Adapter Screw	SS	21. Pipe Handle	(not shown)
11. Handle Adapter	SS		

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-02-	Static Grounded
-14-	Vented Ball
-24-	Graphite Stem Packing
-35-	VTFE Trim
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball & Stem
-63-	Threaded x Socket Weld
-70-	4" Extended Bonnet



**For Pressure/Temperature Ratings,
Refer to Page M-10, Graph No. 8**

STAINLESS STEEL 3-PIECE FULL PORT
BALL VALVE WITH ISO MOUNTING PAD

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K	L (THRDS.) UNF
86R-100-01	3"	3.00	4.00	8.00	8.80	4.75	5.94	.50	1.420	2.840	.725	1.250	3/8-16



86R-200 Series

Stainless Steel 3-Piece Full Port Socket Weld Valve Ball Valve With Actuator Ready ISO Mounting Pad 1-1/2" & 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: SS, Style: 1.
 MSS SP-110; Ball Valve Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
 Meets NACE MR01-75

FEATURES

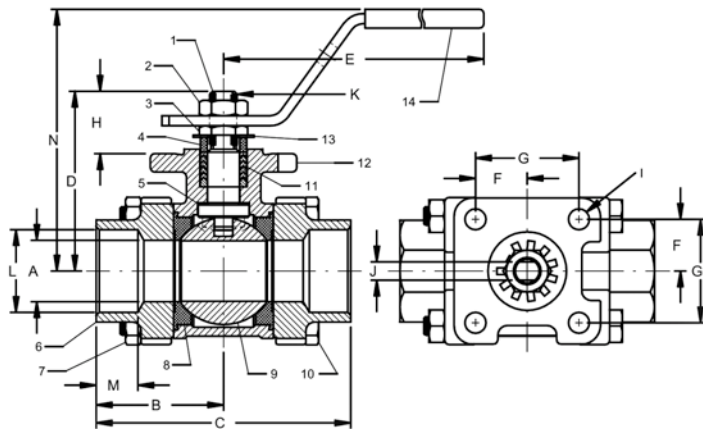
- Multi-piece packing set
- ISO 5211 mounting pad
- Blow-out-proof stem design
- In-line repairable
- Adjustable packing gland
- Investment cast components
- Reinforced seats and seals
- Full port configuration

STANDARD MATERIAL LIST

1. Stem	A276-316	8. Seat (2)	RPTFE
2. Jam nut	SS	9. Ball	316 SS
3. Low profile nut	316 SS	10. Body bolt (4)	18-8 SS
4. Gland	A276-316	11. Stem packing	MPTFE
5. Stem bearing	RPTFE	12. Body	ASTM A351-CF8M
6. End cap (2)	ASTM A351-CF3M	13. Lock tab washer	304 SS
7. Hex nut (4)	18-8 SS	14. Lever and grip	304 SS w/vinyl

OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-02-	Static Grounded
-04-	2-1/4" Stem Extension
-08-	90° Reversed Stem
-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
-49-	Assembled Dry
-56-	Multi-fill Seats
-57-	Oxygen Cleaned
-60-	Grounded Ball & Stem
-AR-	Less Handle & Stop-Add Belleville Washers
-WB-	With Lever & Belleville Washers



**For Pressure/Temperature Ratings,
Refer to Page M-10, Graph No. 8**

STAINLESS 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
86R-207-01	1-1/2"	1.50	2.59	5.18	3.49	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	1.915	.87	4.38
86R-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



86R-200 Series

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

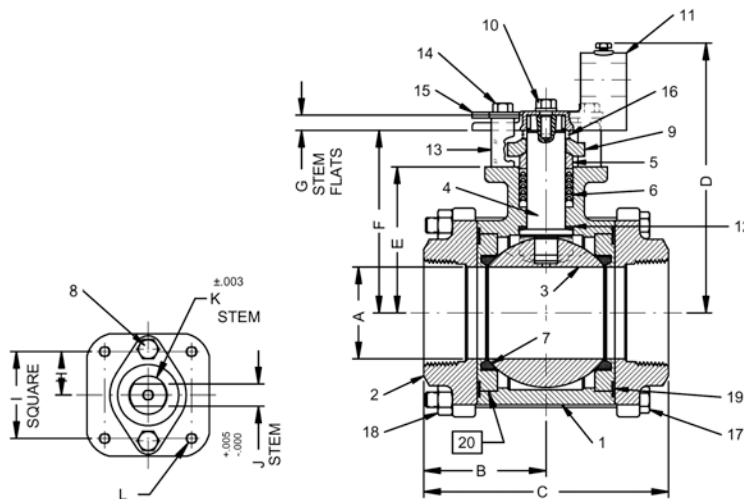
Socket Weld, 800 psig CWP, Cold Non-Shock. 150 psig Saturated Steam.
Vacuum Service to 29 inches Hg.
Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 1.
MSS SP-110; Ball Valve Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
Meets NACE MR01-75

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. Body	ASTM A351-CF8M	12. Stem Bearing	RPTFE
2. End Caps (2)	ASTM A351-CF8M	13. Stops (2)	SS
3. Ball	316 SS	14. Stop Screws (2)	SS
4. Stem	A276-316	15. Lock Plate	SS
5. Packing Gland	316 SS	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)	SS
10. Adapter Screw	SS	21. Pipe Handle	(not shown)
11. Handle Adapter	SS		



OPTIONS AVAILABLE:

(SUFFIX) OPTION

-02-	Static Grounded
-14-	Vented Ball
-24-	Graphite Stem Packing
-35-	VTFE Trim
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball & Stem
-70-	4" Extended Bonnet

**For Pressure/Temperature Ratings,
Refer to Page M-10, Graph No. 8**

STAINLESS 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
86R-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



86R-700 Series

Stainless Steel 3-Piece Full Port Butt-Weld Ball Valve With Actuator Ready ISO Mounting Pad 1-1/2" & 2"

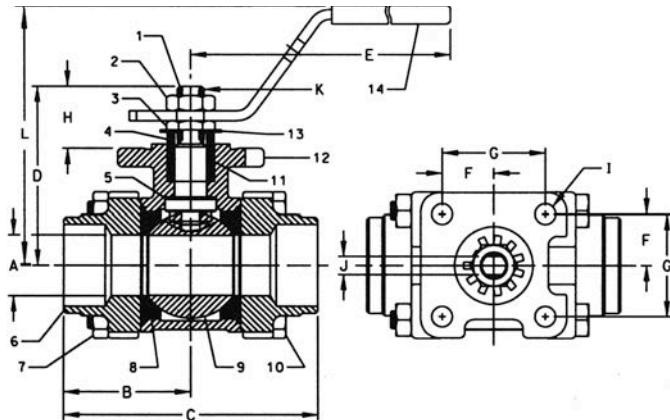
Schedule 10 Butt-Weld Ends, 800 psig WOG, Cold Non-Shock. 150 psig Saturated Steam.
 Vacuum Service to 29 inches Hg.
 Federal Specification: WW-V-35C, Type: II, Composition: SS, Style: 1.
 MSS SP-72; Ball Valves with Flanged or Butt-Weld Ends for General Service.
 Meets NACE MR01-75

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	A276-316	8. Seat (2)	RPTFE
2. Jam nut	SS	9. Ball	316 SS
3. Low profile nut	316 SS	10. Body bolt (4)	18-8 SS
4. Gland	A276-316	11. Stem packing	MPTFE
5. Stem bearing	RPTFE	12. Body	ASTM A351-CF8M
6. End cap (2)	ASTM A351-CF3M	13. Lock tab washer	304 SS
7. Hex nut (4)	18-8 SS	14. Lever and grip	304 SS w/vinyl



OPTIONS AVAILABLE:

(SUFFIX)	OPTION
-02-	Static Grounded
-04-	2-1/4" Stem Extension
-08-	90° Reversed Stem
-14-	Vented Ball
-18-	Plain Yellow Grip
-21-	UHMWPE Seats (Non-PTFE)
-24-	Graphite Stem Packing
-27-	Latch Lock Lever
-35-	VTPE Trim
-36-	SS Round Handle
-39-	SS Hi-Rise Locking Wheel Handle, SS Nut
-49-	Assembled Dry
-57-	Oxygen Cleaned
-60-	Grounded Ball & Stem
-AR-	Less Handle & Stop-Add Belleville Washers
-WB-	With Lever & Belleville Washers

**For Pressure/Temperature Ratings,
Refer to Page M-10, Graph No. 8**

STAINLESS STEEL 3-PIECE FULL PORT BUTT WELD BALL VALVE WITH ISO MOUNTING PAD

NUMBER	SIZE	A	B	C	D	E	F	G	H	I	J (FLATS)	K (THRDS.) UNF	L
86R-707-01	1-1/2"	1.50	2.59	5.18	3.49	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	4.38
86R-708-01	2"	2.00	3.01	6.03	3.95	8.06	.98	1.95	1.16	.34	.370/.372	5/8-18	4.85