



Product Guide



M. A. Stewart & Sons Ltd.
VALVES AND FITTINGS



HM Series Steel Ball Valves

Product order code information	1.1
HM-3ART(-P) 3LRT(-P): reduced port, 3 piece, NPT, API 607	1.2
HM-3AFT(-P) 3LFT(-P): full port, 3 piece, NPT, API 607	1.3
HM-3AFSW(-P) 3LFSW(-P): full port, 3 piece, socket weld, API 607	1.4
HM-3SFT(-P): full port, 3 piece, Forged Stainless Steel, API 607	1.5
HM-6ART-P 6LRT-P: full port, 3 piece, NPT, API 607	1.6
HM-6AFT-P 6LFT-P: reduced port, 3 piece, NPT, API 607	1.7
HM-6SFT-P: full port, 3 piece, Forged Stainless Steel, API 607	1.8

G Series Stainless Steel Ball Valves

G1: reduced port, 1 piece, NPT	2.1
G2E: full port, 2 piece, NPT, 1000 WOG, CSA3.16	2.2
G2: full port, 2 piece, NPT, 2000 WOG	2.3
G2-A: full port, 2 piece, NPT, 2000 WOG, Alloy 20 - ASTM A351 CN7M	2.4
G2-ED: full port, 2 piece, NPT, Direct Mount	2.5
G2-DM: full port, 2 piece, NPT, Deadman Handle	2.6
G2-250: full port, 2 piece, NPT, 250 WSP	2.7
G3-ED: full port, 3 piece, NPT, Direct Mount	2.8
G3/G3-7: full port, 3 piece, NPT	2.9
G3-SW: full port, 3 piece, socket weld	2.10
G3-HDFS: full port, 3 piece, NPT, API 607	2.11
G3-HD-6-FS: full port, 3 piece, NPT, 6000 WOG	2.12
G4: reduced, 3 way, L port, NPT	2.13

F Series Flanged Ball Valves

Product order code information	3.1
F150-CS-R-SS-FS-N: WCB, 1 piece, reduced port, SS Trim, API 607	3.2
F150-CS-F-SS-FS-N: WCB, 2 piece, full port, SS Trim, API 607	3.3
F300-CS-R-SS-FS-N: WCB, 1 piece, reduced port, SS Trim, API 607	3.4
F300-CS-F-SS-FS-N: WCB, 2 piece, full port, SS Trim, API 607	3.5
F600-CS-R-SS-FS-N: WCB, 2 piece, reduced port, SS Trim, API 607	3.6
F600-CS-F-SS-FS-N: WCB, 2 piece, full port, SS Trim, API 607	3.7
F150-SS-R-FS-N: CF8M, 1 piece, reduced port, API 607	3.8
F150-SS-F-FS-N: CF8M, 2 piece, full port, API 607	3.9
F300-SS-R-FS-N: CF8M, 1 piece, reduced port, API 607	3.10
F300-SS-F-FS-N: CF8M, 2 piece, full port, API 607	3.11
F600-SS-R-FS-N: CF8M, 2 piece, regular port, API 607	3.12
F600-SS-F-FS-N: CF8M, 2 piece, full port, API 607	3.13

C Series Carbon Steel Ball Valves

CSSDR1: reduced port, 1 piece, NPT	4.1
C2: full port, 2 piece, NPT	4.2
CSCR2: large port, 2 piece, NPT	4.3
CSCR2-DM: large port, 2 piece, NPT, Deadman Handle	4.4
CSCR2-250: large port, 2 piece, NPT, 250 WSP	4.5
CSSF2: full port, 2 piece, NPT	4.6
CSSF3-N: full port, 3 piece, NPT	4.7
CSSF3-N-SW: full port, 3 piece, SW & BW	4.8
CSSF3-HDFS-N: full port, 3 piece, NPT, API 607	4.9
LSSF3-HDFS-N: full port, 3 piece, NPT, API 607	4.10

B Series Brass/Bronze Ball Valves

B-1-F: full port, 2 piece, NPT, CSA, UL	5.1
B-1-F-LF-SS: Lead Free Forged Brass, full port, 2 piece, NPT, CSA, UL	5.2
B-1-F-LF-CC: Lead Free Brass, full port, 2 piece, drain cap	5.3
B-2-F: full port, 2 piece, solder end	5.4
B-2-F-LS-SS: Lead Free Forged Brass, full port, 2 piece, solder end	5.5
B-2-F-LF-CC: Lead Free Brass, full port, 2 piece, solder end, drain cap	5.6
B-3: full port, 2 piece, NPT, CSA, UL, FM	5.7
B-3D: full port, 2 piece, NPT, drain	5.8
B-3-LF: full port, 2 piece, NPT, CSA, UL, FM, LF - .25% low lead certified	5.9
B-4: full port, 2 piece, solder end	5.10
B-4D: full port, 2 piece, solder end, drain	5.11
B-4-LF: full port, 2 piece, solder end, LF - .25% low lead certified	5.12
B-5C: full port, compression ends	5.13
B-5C-LF: full port, compression ends, LF - .25% low lead certified	5.14
B-1 PEX-LF: full port, 2 piece, PEX end, LF - .25% low lead certified	5.15
B-2 PEX: PEX by solder end	5.16
B3-L: 3-way reduced L-port, 2 piece	5.17
BZ-3: full port, 2 piece bronze, NPT end	5.18
BZ-3SS-250: full port, 2 piece bronze, 250 SS Trim, NPT	5.19
BZ-4: full port, 2 piece bronze, solder end	5.20
BZ-4SS: full port, 2 piece bronze, SS Trim, solder end	5.21
B-GL: lever operated, quick opening gate valve	5.22
700: forged brass, spring loaded check valve	5.23

A Series CSA Gas Ball Valves

315: NPT x NPT, 1 piece	6.1
326: flare x flare, 1 piece	6.2
327: NPT x flare, 2 piece	6.3

Additional products & services

Kitz, Powell Valves, Beric, Red-White/Toyo, Bonney Forge	A.1
Moygro, FCC, American Valve, Demco, Mueller Steam,	
W-K-M, Max-Air/MAS, Promation, Automation, Fittings	



Product Catalogues

M.A. Stewart & Sons has a wide selection of products available. Ask us about other valves, fittings and automation, or check online at: www.mastewart.com

Technical data, dimensions, materials & specifications are subject to change without notice. Please refer to our web site for current product specs.



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Limited Three Year Manufacturer's Warranty

Limited Warranty. M.A. Stewart & Sons Ltd. ("**MAS**") is pleased to advise its customers ("**Customers**") of MAS brand products ("**Product**" or "**Products**") that the manufacturer ("**Manufacturer**") warrants its Products against defects in material and workmanship ("**Defects**") for a period of three years from the date of delivery by MAS to its Customers ("**Warranty Period**").

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HM Series 3 Piece Threaded High Pressure Fire-Safe Ball Valves

ORDERING CODES

1.1

HM-□-□-□-□-□

Series	Body Rating	Shell Material	Valve Bore	End Connection	Seat Material	Trim Material	Firesafe	Seat & Seal Material
HM	3 - Class 1500 6 - Class 2500	A A105N L LF2 S A182-F316	R Reduced bore F Full bore	T Threaded SW Socketweld	P Peek See Note 1	See Note 2	See Note 3	See Note 4

The order code system lets you specify your pressure class, material and reduced or full port.

Note 1: No Designation, Seats and Thrust Washer are Delrin

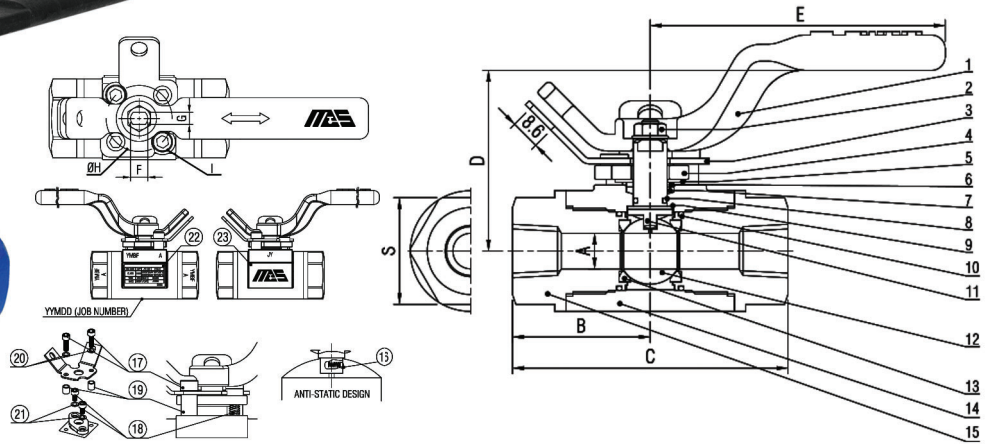
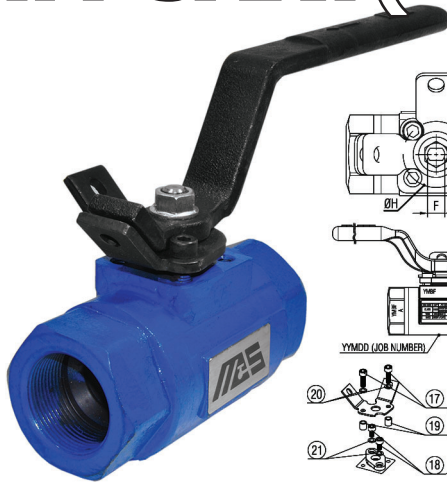
Note 2: All valves are standard with 316 SS trim and meet NACE MR-01-75-2002 & MR-01-03

Note 3: All valves conform with applicable requirements of the valve fire test per API 607.

Note 4: Refer to individual drawings for seat / seal and pressure / temperature ratings.

HM-3ART(-P) | 3LRT(-P)

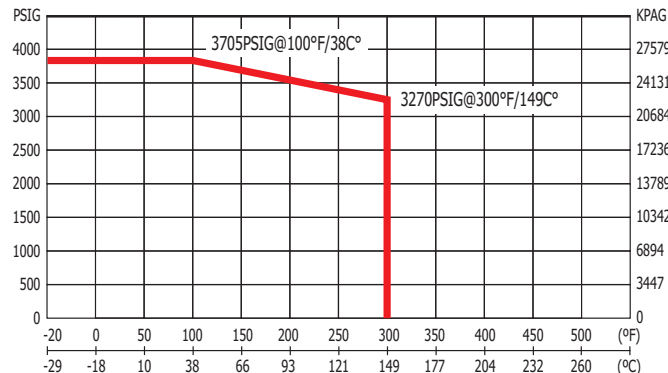
1.2



- Reduced Port
- Three Piece Threaded Body
- LF2 & A105N Forged Steel Construction
- NPT Threads to ANSI B1.20.1
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device
- Adjustable Gland
- Floating Ball
- ASME B16.34 design
- Class 1500 3/4 - 3
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- Fire-Safe Certified to API-607
- Optional Full Seal Welded Cap
- Delrin Seats / Thrust Washer (Peek Seats / Thrust Washer optional)

NAME / MATERIAL			
NO.	PART NAME	ART	LRT
1	Handle	Carbon Steel	
2	Handle Nut	A36 C.S. Plated	
3	Lock Plate	A276 TYPE 304	
4	Gland Flange	A216 GR. WCB	
5	Belleville Washer	S.S. 301	
6	Gland	A276 TYPE 304	
7	Packing	Graphite	
8	Stem O-ring	HNBR 90D (1 1/2-3)	
9	Thrust Washer	DELTRIN (PEEK)	
10	Body O-ring	HNBR 90D	
11	Stem	A276 TYPE 316 (3/4 - 1 1/2)	
		A564 TYPE 630 (17-4PH) (2 - 3)	
12	Ball	A351 GR. CF8M A182 GR. F316	
13	Seat	DELTRIN (PEEK)	
14	Body	A105N	A350 GR. LF2
15	Cap	A105N	A350 GR. LF2
16	Spring & Pin	A276 TYPE 304	
17	Stopper	A36 C.S. Plated	
18	Gland Bolt	A36 C.S. Plated	
19	Spacer	A36 C.S. Plated	
20	Washer	A276 TYPE 304	
21	Anti-Loosing Washer	A276 TYPE 304	
22	Brand Plate	A276 TYPE 304	
23	Identification Plate	A276 TYPE 304	

PRESSURE TEMPERATURE RATING



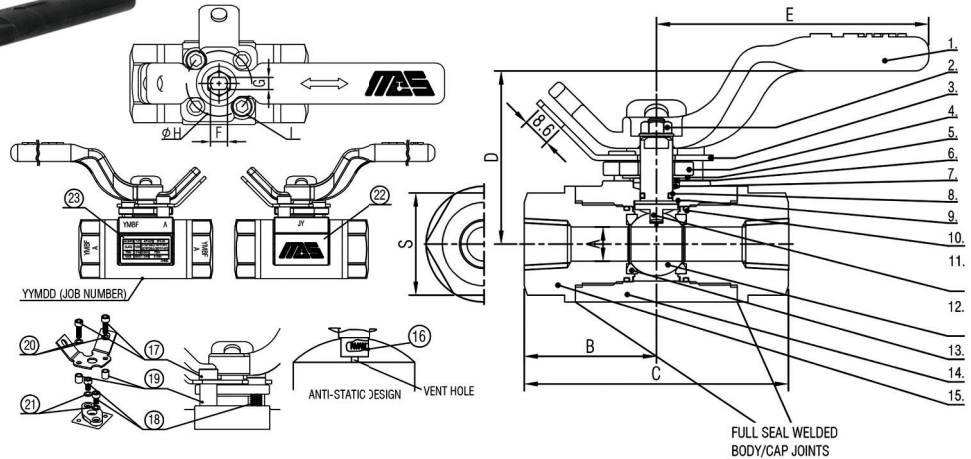
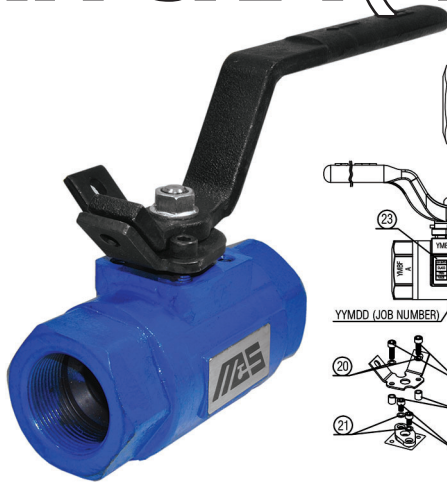
For A105N low temp limit is -20°F (-29°C) For LF2 low temp limit is -40°F (-40°C)

DIMENSIONS												
SIZE		mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm	mm	CV
20	3/4	A	B	C	D	E	F	G	H	S	I	15
		12.7	55.5	111.0	64.3	122.0	12.0	8.0	36	38	M6	
		0.50	2.19	4.37	2.531	4.80	0.47	0.32	1.417	1.496		2.00
												4.40
25	1	19.00	54.0	115.0	105.8	172.0	13.0	8.0	36	50	M6	35
		0.75	2.13	4.527	4.165	6.77	0.51	0.32	1.417	1.968		2.90
												6.38
32	1 1/4	22.2	76.0	152.0	105.8	172.0	13.0	8.0	36	62	M6	35
		0.87	2.99	5.98	4.165	6.77	0.51	0.32	1.417	2.441		4.80
												10.56
40	1 1/2	32.0	79.5	159.0	134.5	279.0	19.0	12.0	50	66	M8	100
		1.26	3.13	6.26	5.295	10.98	0.75	0.47	1.968	2.598		17.08
												10.26
50	2	38.1	79.5	159.0	134.5	279.0	19.0	12.0	50	82	M8	175
		1.50	3.13	6.26	5.295	10.98	0.75	0.47	1.968	3.228		22.62
												15.66
80	3	50.0	89.0	208.0	151.5	302.0	20.0	14.0	70	112	M8	480
		1.96	3.50	8.19	5.964	11.89	0.79	0.55	2.756	4.409		34.52

HM Series Forged Steel Full Port Class 1500 Ball Valves

HM-3AFT(-P) | 3LFT(-P)

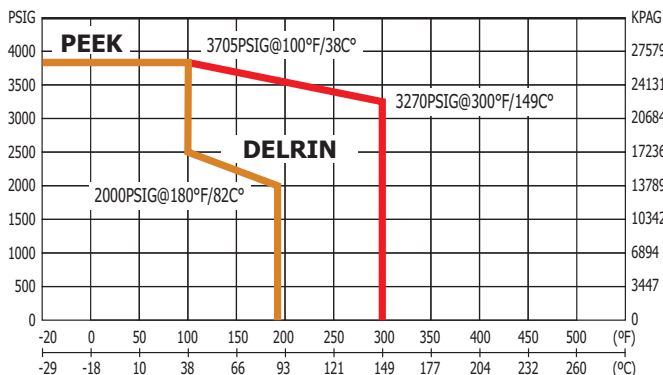
1.3



- Full Port
- Three Piece Threaded Body
- LF2 & A105N Forged Steel Construction
- ASME B16.34 design
- NPT Threads to ANSI B1.20.1
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device
- Adjustable Gland
- Floating Ball
- Full Seal Welded Body/Cap Joints
- Fire-Safe Certified to API-607
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- Class 1500 1/2 - 2
- Delrin Seats / Thrust Washer (Peek Seats / Thrust Washer optional)

NAME / MATERIAL			
NO.	PART NAME	AFT	LFT
1	Handle	Carbon Steel	
2	Handle Nut	A36 C.S. Plated	
3	Lock Plate	A276 TYPE 304	
4	Gland Flange	A216 GR. WCB	
5	Belleville Washer	S.S. 301	
6	Gland	A276 TYPE 304	
7	Packing	Graphite	
8	Stem O-ring	HNBR 90D (1 1/2-2)	
9	Thrust Washer	DELIN (PEEK)	
10	Body O-ring	HNBR 90D	
11	Stem	A276 TYPE 316 (1/2 - 1 1/2)	
		A564 TYPE 630 (17-4PH) (2)	
12	Ball	A351 GR. CF8M A182 GR. F316	
13	Seat	DELIN (PEEK)	
14	Body	A105N	A350 GR. LF2
15	Cap	A105N	A350 GR. LF2
16	Spring & Pin	A276 TYPE 304	
17	Stopper	A36 C.S. Plated	
18	Gland Bolt	A36 C.S. Plated	
19	Spacer	A36 C.S. Plated	
20	Washer	A276 TYPE 304	
21	Anti-Loosing Washer	A276 TYPE 304	
22	Brand Plate	A276 TYPE 304	
23	Identification Plate	A276 TYPE 304	

PRESSURE TEMPERATURE RATING

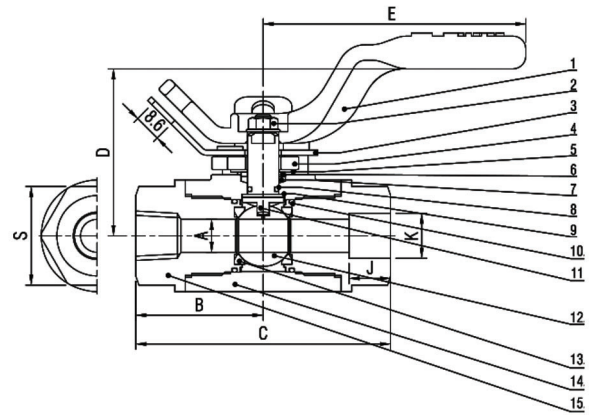
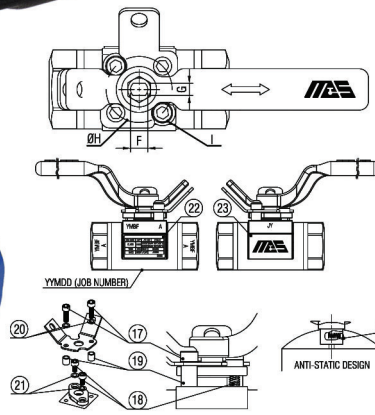


For A105N low temp limit is -20°F (-29°C) For LF2 low temp limit is -40°F (-40°C)

DIMENSIONS												
SIZE	A	B	C	D	E	F	G	H	S	I	CV	WEIGHT KGS/LBS
8 1/4	11.0	48.0	96.0	64.3	122.0	12.0	8.0	36.0	38.0	M6	12	1.15
	0.43	1.89	3.78	2.531	4.80	0.47	0.31	1.417	1.50			2.53
10 3/8	12.7	48.0	96.0	64.3	122.0	12.0	8.0	36.0	38.0	M6	15	1.15
	0.50	1.89	3.78	2.531	4.80	0.47	0.31	1.417	1.50			2.53
15 1/2	12.7	48.0	96.0	64.3	122.0	12.0	8.0	36.0	38.0	M6	15	1.15
	0.50	1.89	3.78	2.531	4.80	0.47	0.31	1.417	1.50			2.53
20 3/4	19.0	53.0	106.0	105.8	172.0	13.0	8.0	36.0	50.0	M6	40	2.05
	0.75	2.09	4.17	4.165	6.77	0.51	0.31	1.417	1.97			4.51
25 1	24.0	66.5	133.0	108.8	172.0	13.0	8.0	36.0	54.50	M6	65	2.92
	0.94	2.62	5.24	4.283	6.77	0.51	0.31	1.417	2.15			6.43
40 1 1/2	38.1	67.5	139.0	134.5	279.0	19.0	12.0	50.0	82.0	M8	250	7.86
	1.50	2.66	5.50	5.295	10.98	0.75	0.47	1.968	3.23			17.32
50 2	50.0	76.5	153.0	150.0	302.0	20.0	12.0	70.0	105.0	M8	480	11.40
	1.96	3.01	6.02	5.906	11.89	0.79	0.47	2.756	4.13			25.13

HM Series Forged Steel Full Port Socket Weld Class 1500 Ball Valves

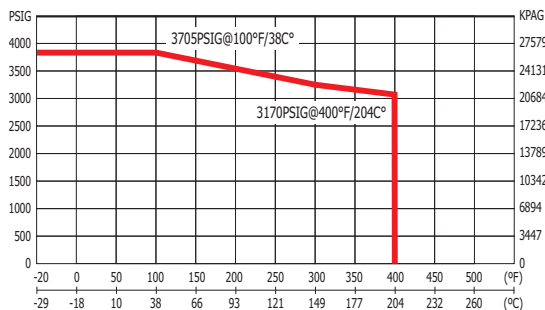
HM-3AFSW(-P) | 3LFSW(-P) 1.4



- Full Port
- Three Piece Threaded Body
- LF2 & A105N Forged Steel Construction
- Socket Weld Ends to ASME B1.20.1
- NPT Threads to ANSI B1.20.1
- **HM-3AFSW-P | 3LFSW-P MODELS**
(SW-Socket Weld Ends)
- **HM-3AFTSW-P | 3LFTSW-P MODELS**
(TSW-Screwed End X Socket Weld Ends)
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device
- Adjustable Gland
- Floating Ball
- ASME B16.34 design
- Class 1500 1/2 - 2
- Complies to NACE MR-0103
Complies with manufacturer requirements of NACE MR0175/ISO15156
- Fire-Safe Certified to API-607
- Optional Full Seal Welded Cap
- Delrin Seats / Thrust Washer
(Peek Seats / Thrust Washer optional)

NAME / MATERIAL				
NO.	PART NAME	AFSW-P AFTSW-P		LFSW-P LFTSW-P
1	Handle	Carbon Steel		
2	Handle Nut	A36 C.S. Plated		
3	Lock Plate	A276 TYPE 304		
4	Gland Flange	A216 GR. WCB		
5	Belleville Washer	S.S. 301		
6	Gland	A276 TYPE 304		
7	Packing	Graphite		
8	Stem O-ring	VITON GLT (1 1/2-2)		
9	Thrust Washer	DELRIN (PEEK)		
10	Body O-ring	VITON GLT		
11	Stem	A276 TYPE 316 (1/2 - 1 1/2)		
		A564 TYPE 630 (17-4PH) (2)		
12	Ball	A351 GR. CF8M A182 GR. F316		
13	Seat	DELRIN (PEEK)		
14	Body	A105N	A350 GR. LF2	
15	Cap	A105N	A350 GR. LF2	
16	Spring & Pin	A276 TYPE 304		
17	Stopper	A36 C.S. Plated		
18	Gland Bolt	A36 C.S. Plated		
19	Spacer	A36 C.S. Plated		
20	Washer	A276 TYPE 304		
21	Anti-Loosing Washer	A276 TYPE 304		
22	Brand Plate	A276 TYPE 304		
23	Identification Plate	A276 TYPE 304		

PRESSURE TEMPERATURE RATING

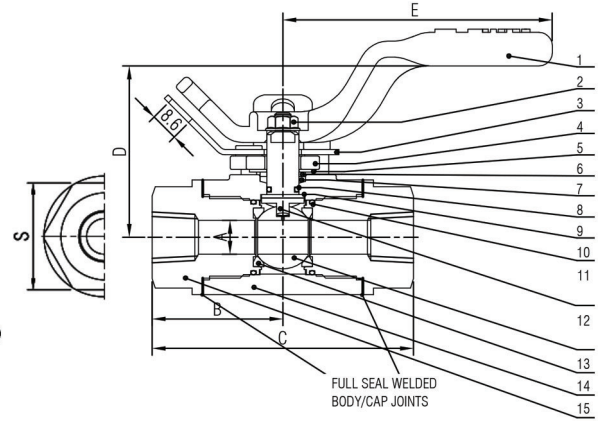
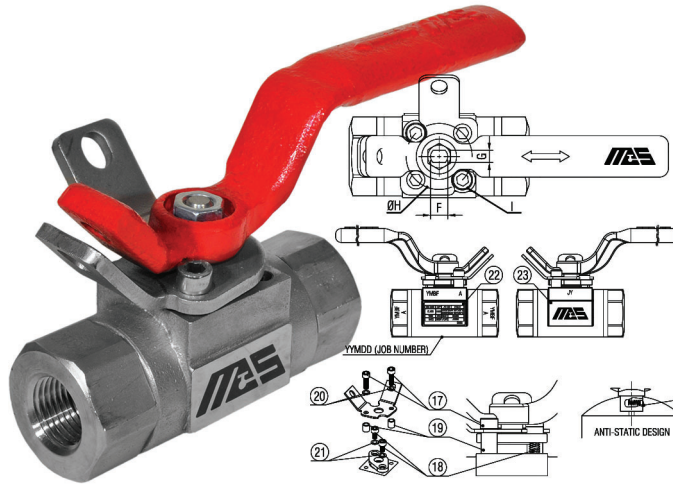


DIMENSIONS															
SIZE		A	B	C	D	E	F	G	H	J	K	S	I	CV	WEIGHT KGS/LBS
15	1/2	12.7	48.0	96.0	64.3	122.0	12.0	8.0	36.0	21.7	17.0	38.0	M6	15	1.15
		0.50	1.89	3.78	2.531	4.80	0.47	0.31	1.417	0.854	0.669	1.50			2.53
20	3/4	19.0	53.0	106.0	105.8	172.0	13.0	8.0	36.0	27.0	17.0	50.0	M6	40	2.05
		0.75	2.09	4.17	4.165	6.77	0.51	0.31	1.417	1.063	0.669	1.97			4.51
25	1	24.0	66.5	133.0	108.8	172.0	13.0	8.0	36.0	33.8	19.0	54.50	M6	65	2.92
		0.94	2.62	5.24	4.283	6.77	0.51	0.31	1.417	1.331	0.748	2.15			6.43
40	1 1/2	38.1	67.5	135.0	134.5	279.0	19.0	12.0	50.0	48.6	23.0	82.0	M8	250	7.86
		1.50	2.66	5.31	5.295	10.98	0.75	0.47	1.968	1.913	0.906	3.23			17.32
50	2	50.0	76.5	153.0	150.0	302.0	20.0	12.0	70.0	61.6	24.0	105.0	M8	480	11.40
		1.96	3.01	6.02	5.964	11.89	0.79	0.47	2.756	2.406	0.945	4.13			25.13

For A105N low temp limit is -20°F (-29°C) For LF2 low temp limit is -40°F (-40°C)

HM Series Forged Stainless Steel Full Port Class 1500 Ball Valves

HM-3SFT-P

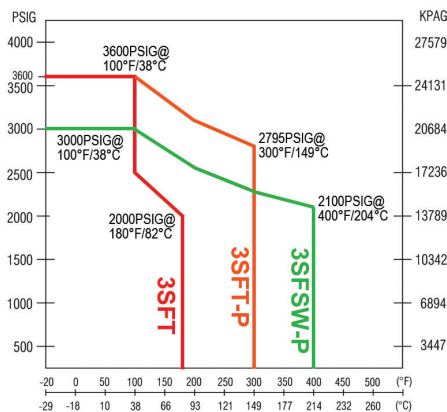


- Full Port
- Three Piece Threaded Body
- Forged Stainless Steel Construction
- ASME B16.34 design
- NPT Threads to ANSI B1.20.1
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device
- Adjustable Gland
- Floating Ball
- Full Seal Welded Body/Cap Joints
- Fire-Safe Certified to API-607
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- Class 1500 1/4 - 2

3SFSW-P and 3SFTSW-P
are available from 1/2" to 2"

NAME / MATERIAL		
NO.	PART NAME	3SFT
1	Handle	Carbon Steel
2	Handle Nut	A36 C.S. Plated
3	Lock Plate	A276 TYPE 304
4	Gland Flange	A351 GR. CF8
5	Belleville Washer	S.S. 301
6	Gland	A276 TYPE 304
7	Packing	Graphite
8	Stem O-ring	HNBR 90D (1 1/2-2)
9	Thrust Washer	PEEK
10	Body O-ring	HNBR 90D
11	Stem	A276 TYPE 316 (1/2 - 1 1/2) A564 TYPE 630 (17-4PH) (2)
12	Ball	A351 GR. CF8M A182 GR. F316
13	Seat	PEEK
14	Body	A182 GR.316
15	Cap	A182 GR.316
16	Spring & Pin	A276 TYPE 304
17	Stopper	A276 TYPE 304
18	Gland Bolt	A276 TYPE 304
19	Spacer	A276 TYPE 304
20	Washer	A276 TYPE 304
21	Anti-Loosing Washer	A276 TYPE 304
22	Brand Plate	A276 TYPE 304
23	Identification Plate	A276 TYPE 304

PRESSURE TEMPERATURE RATING



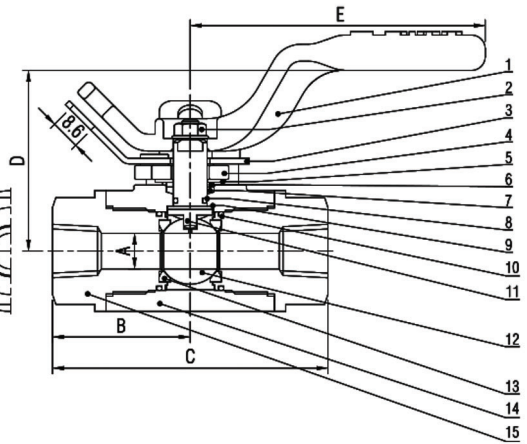
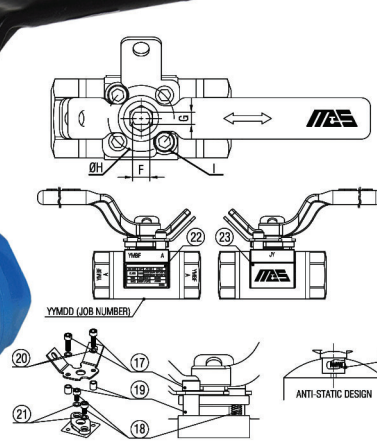
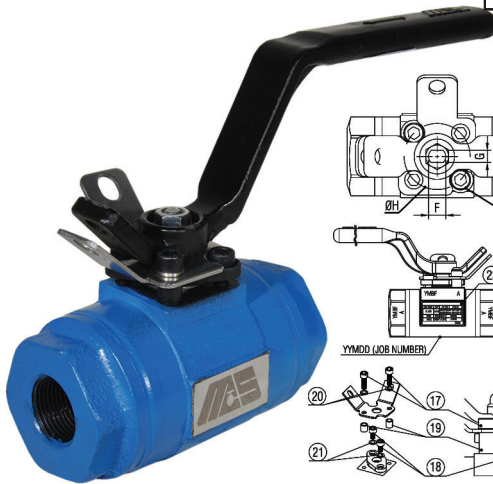
Good for Low Temperature service to -40 C (-40 F)

DIMENSIONS												
SIZE	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	I	CV	WEIGHT KGS/LBS
8 1/4	11.0	48.0	96.0	64.3	122.0	12.0	8.0	36.0	38.0	M6	12	1.15
	0.43	1.89	3.78	2.531	4.80	0.47	0.31	1.417	1.50			2.53
10 3/8	12.7	48.0	96.0	64.3	122.0	12.0	8.0	36.0	38.0	M6	15	1.15
	0.50	1.89	3.78	2.531	4.80	0.47	0.31	1.417	1.50			2.53
15 1/2	12.7	48.0	96.0	64.3	122.0	12.0	8.0	36.0	38.0	M6	15	1.15
	0.50	1.89	3.78	2.531	4.80	0.47	0.31	1.417	1.50			2.53
20 3/4	19.0	53.0	106.0	105.8	172.0	13.0	8.0	36.0	50.0	M6	40	2.05
	0.75	2.09	4.17	4.165	6.77	0.51	0.31	1.417	1.97			4.51
25 1	24.0	66.5	133.0	108.8	172.0	13.0	8.0	26.0	54.50	M6	65	2.92
	0.94	2.62	5.24	4.283	6.77	0.51	0.31	1.417	2.15			6.43
40 1 1/2	38.1	67.5	139.0	134.5	297.0	19.0	12.0	50.0	82.0	M8	250	7.86
	1.50	2.66	5.50	5.295	10.98	0.75	0.47	1.968	3.23			17.32
50 2	50	76.5	153.0	150.0	302.0	20.0	12.0	70.0	105.0	M8	480	11.40
	1.96	3.01	6.02	5.906	11.89	0.79	0.47	2.756	4.13			25.13

HM Series Forged Steel Reduced Port Class 2500 Ball Valves Peek Seats

HM-6ART-P | 6LRT-P

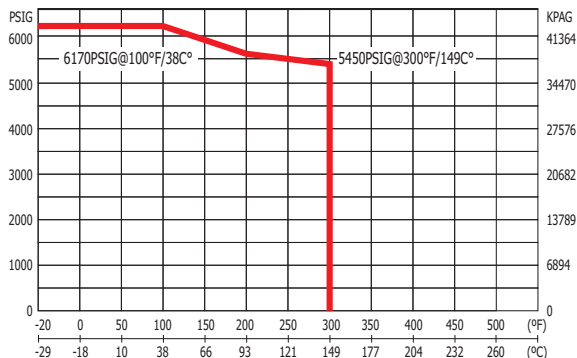
1.6



- Reduced Port
- Three Piece Threaded Body
- Forged Steel Construction
- NPT Threads to ANSI B1.20.1
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device
- Adjustable Gland
- Floating Ball
- ASME B16.34 design
- Class 2500 3/4 - 3
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- Fire-Safe Certified to API-607
- Optional Full Seal Welded Cap
- Peek Seats

NAME / MATERIAL			
NO.	PART NAME	ART	LRT
1	Handle	Carbon Steel	
2	Handle Nut	A36 C.S. Plated	
3	Lock Plate	A276 TYPE 304	
4	Gland Flange	A216 GR. WCB	
5	Belleville Washer	S.S. 301	
6	Gland	A276 TYPE 304	
7	Packing	Graphite	
8	Stem O-ring	HNBR 90D (1 1/2-3)	
9	Thrust Washer	PEEK	
10	Body O-ring	HNBR 90D	
11	Stem	A276 TYPE 316 (3/4 - 1 1/2)	
		A564 TYPE 630 (17-4PH) (2 - 3)	
12	Ball	A351 GR. CF8M A182 GR. F316	
13	Seat	PEEK	
14	Body	A105N	A350 GR. LF2
15	Cap	A105N	A350 GR. LF2
16	Spring & Pin	A276 TYPE 304	
17	Stopper	A36 C.S. Plated	
18	Gland Bolt	A36 C.S. Plated	
19	Spacer	A36 C.S. Plated	
20	Washer	A276 TYPE 304	
21	Anti-Loosing Washer	A276 TYPE 304	
22	Brand Plate	A276 TYPE 304	
23	Identification Plate	A276 TYPE 304	

PRESSURE TEMPERATURE RATING



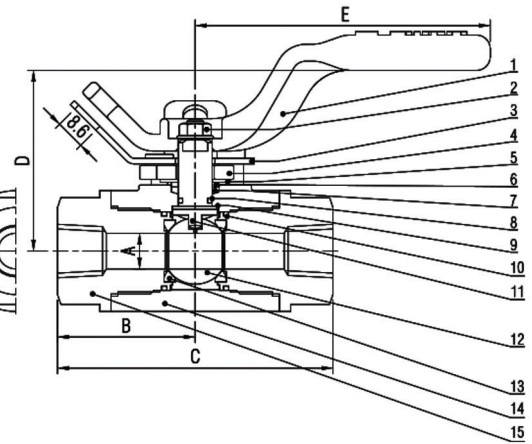
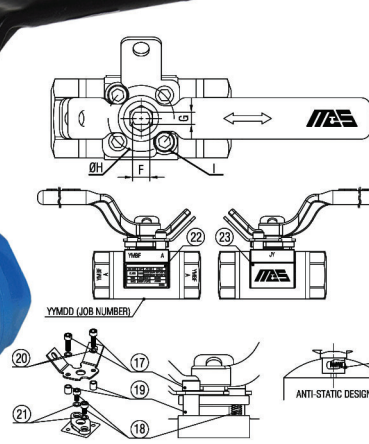
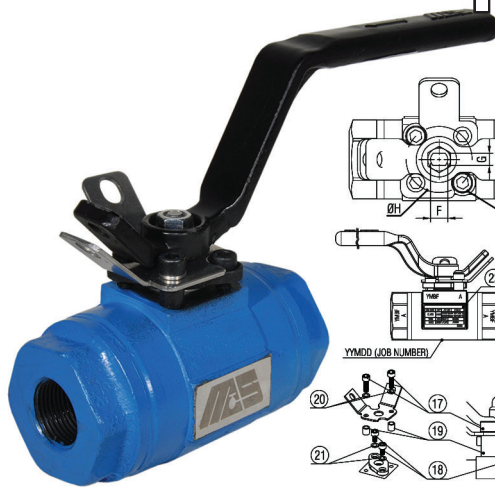
For A105N low temp limit is -20°F (-29°C) For LF2 low temp limit is -40°F (-40°C)

DIMENSIONS												
SIZE		mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm	CV	WEIGHT KGS/LBS
20	3/4	12.7	55.5	111.0	64.3	122.0	12.0	8.0	36	46	M6	15
		0.50	2.19	4.37	2.531	4.80	0.47	0.32	1.417	1.69		2.42
25	1	19.00	54.0	115.0	105.8	172.0	13.0	8.0	36	55	M6	35
		0.75	2.13	4.527	4.165	6.77	0.51	0.32	1.417	2.165		7.78
32	1 1/4	22.2	76.0	152.0	105.8	172.0	13.0	8.0	36	65	M6	35
		0.87	2.99	5.98	4.165	6.77	0.51	0.32	1.417	2.56		11.61
40	1 1/2	32.0	79.5	159.0	134.5	279.0	19.0	12.0	50	72	M8	100
		1.26	3.13	6.26	5.295	10.98	0.75	0.47	1.968	2.83		19.44
50	2	38.1	79.5	159.0	134.5	279.0	19.0	12.0	50	92	M8	175
		1.50	3.13	6.26	5.295	10.98	0.75	0.47	1.968	3.62		12.08
80	3	50.0	89.0	178.0	151.5	302.0	20.0	14.0	70	125	M8	480
		1.96	3.50	7.01	5.964	11.89	0.79	0.55	2.756	4.92		17.65

HM Series Forged Steel Full Port Class 2500 Ball Valves Peek Seats

HM-6AFT-P | 6LFT-P

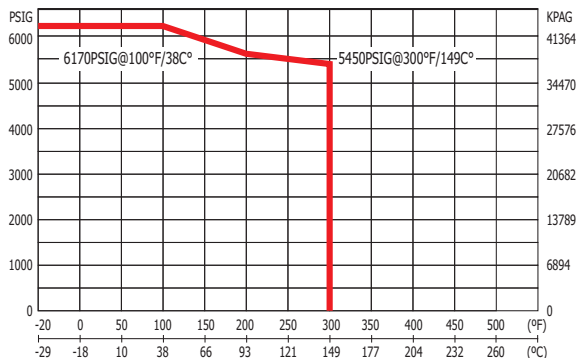
1.7



- Full Port
- Three Piece Threaded Body
- Forged Steel Construction
- NPT Threads to ANSI B1.20.1
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device
- Adjustable Gland
- Floating Ball
- ASME B16.34 design
- Class 2500 1/2 - 2
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- Fire-Safe Certified to API-607
- Optional Full Seal Welded Cap
- Peek Seats

NAME / MATERIAL			
NO.	PART NAME	AFT	LFT
1	Handle	Carbon Steel	
2	Handle Nut	A36 C.S. Plated	
3	Lock Plate	A276 TYPE 304	
4	Gland Flange	A216 GR. WCB	
5	Belleville Washer	S.S. 301	
6	Gland	A276 TYPE 304	
7	Packing	Graphite	
8	Stem O-ring	HNBR 90D (1 1/2-2)	
9	Thrust Washer	PEEK	
10	Body O-ring	HNBR 90D	
11	Stem	A276 TYPE 316 (1/2 - 1 1/2)	
		A564 TYPE 630 (17-4PH) (2)	
12	Ball	A351 GR. CF8M A182 GR. F316	
13	Seat	PEEK	
14	Body	A105N	A350 GR. LF2
15	Cap	A105N	A350 GR. LF2
16	Spring & Pin	A276 TYPE 304	
17	Stopper	A36 C.S. Plated	
18	Gland Bolt	A36 C.S. Plated	
19	Spacer	A36 C.S. Plated	
20	Washer	A276 TYPE 304	
21	Anti-Loosing Washer	A276 TYPE 304	
22	Brand Plate	A276 TYPE 304	
23	Identification Plate	A276 TYPE 304	

PRESSURE TEMPERATURE RATING

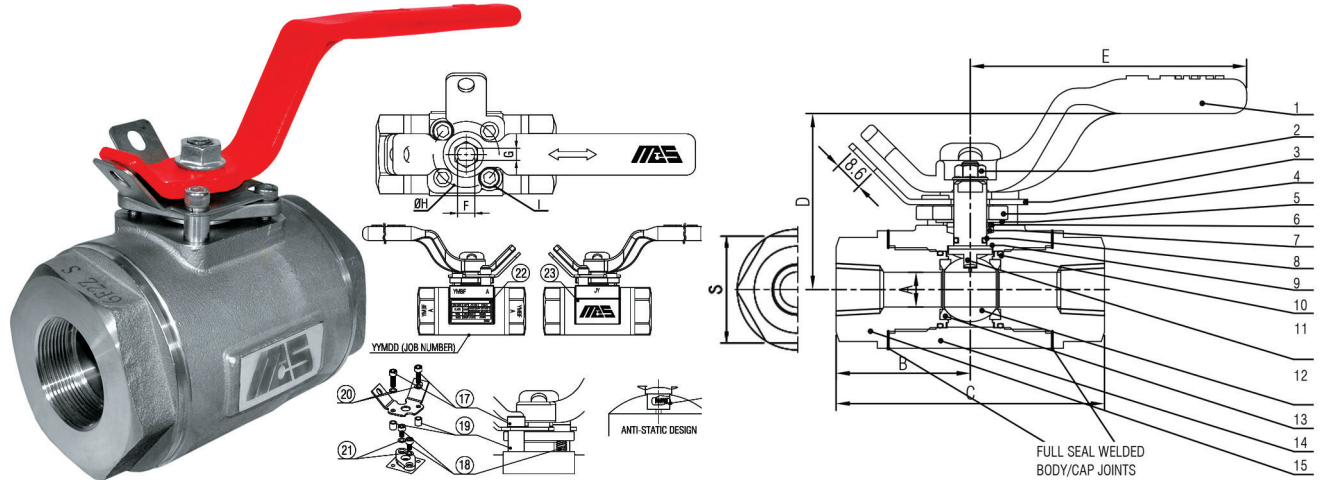


For A105N low temp limit is -20°F (-29°C) For LF2 low temp limit is -40°F (-40°C)

DIMENSIONS												
SIZE		mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm	CV	WEIGHT KGS/LBS
15	1/2	12.7	49.0	98.0	64.5	122.0	12.0	8.0	36.0	38.0	M6	15
		0.50	1.93	3.78	2.54	4.80	0.47	0.31	1.417	1.50		3.15
20	3/4	19.0	57.5	115.0	105.0	172.0	13.0	8.0	36.0	50.0	M6	40
		0.75	2.26	4.17	4.13	6.77	0.51	0.31	1.417	1.97		2.72
25	1	24.0	66.5	133.0	109.0	172.0	13.0	8.0	36.0	54.50	M6	65
		0.94	2.62	5.24	4.29	6.77	0.51	0.31	1.417	2.15		7.71
40	1 1/2	38.1	88.5	177.0	134.5	279.0	19.0	12.0	50.0	82.0	M8	250
		1.50	3.48	6.97	5.30	10.98	0.75	0.47	1.968	3.23		20.52
50	2	50.0	88.5	177.0	153.0	302.0	20.0	12.0	70.0	105.0	M8	480
		1.96	3.48	6.97	6.02	11.89	0.79	0.47	2.756	4.13		31.08

HM Series Forged Stainless Steel Full Port Class 2500 Ball Valves Peek Seats

HM-6SFT-P

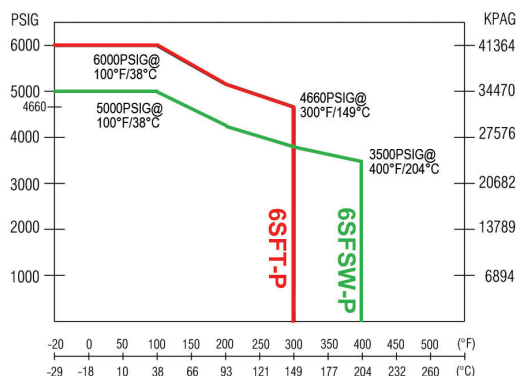


- Full Port
- Three Piece Threaded Body
- Forged Steel Construction
- ASME B16.34 design
- NPT Threads to ANSI B1.20.1
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device
- Adjustable Gland
- Floating Ball
- Full Seal Welded Body/Cap Joints
- Fire-Safe Certified to API-607
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- Class 2500 1/2 - 2
- Peek Seats

6SFSW-P and 6SFTSW-P
are available from 1/2" to 2"

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle	CARBON STEEL
2	Handle Nut	A36 C.S. PLATED
3	Lock Plate	A276 TYPE 304
4	Gland Flange	A 351 GR. CF8
5	Belleville Washer	S.S. 301
6	Gland	A276 TYPE 304
7	Packing	GRAPHITE
8	Stem O-Ring	HNBR 90D (1 1/2 - 2)
9	Thrust Washer	PEEK
10	Body O-Ring	HNBR 90D
11	Stem	A276 TYPE 316 (1/2-1 1/2) A564 TYPE 630 (17-4PH) (2)
12	Ball	A351 GR. CF8M A182 GR. F316
13	Seat	PEEK
14	Body	A182 GR. F316
15	Cap	A182 GR. F316
16	Spring & Pin	A276 TYPE 304
17	Stopper	A276 TYPE 304
18	Gland Bolt	A276 TYPE 304
19	Spacer	A276 TYPE 304
20	Washer	A276 TYPE 304
21	Anti-Loosing Washer	A276 TYPE 304
22	ID Plate	A276 TYPE 304
23	ID Plate	A276 TYPE 304

PRESSURE TEMPERATURE RATING



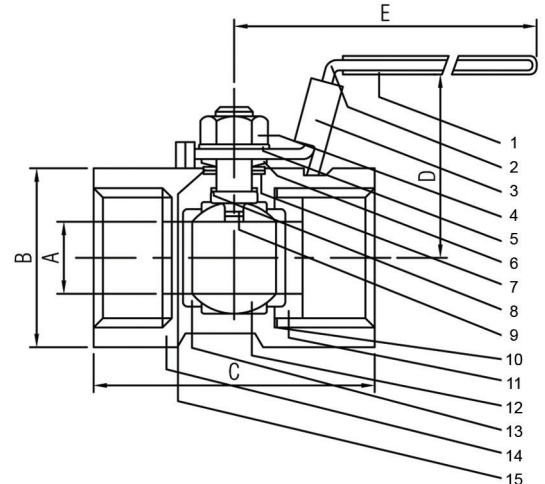
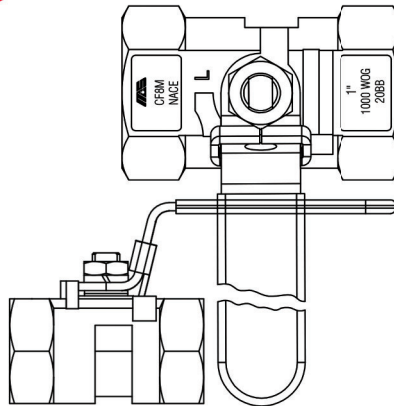
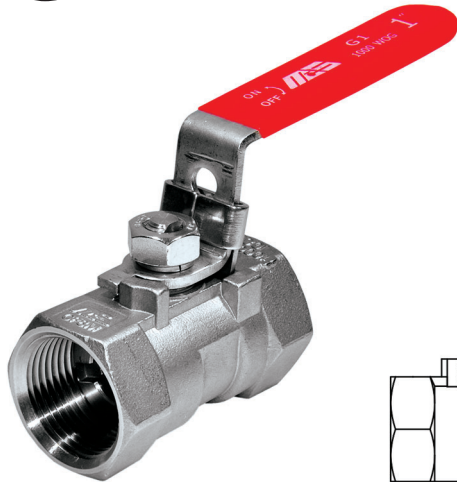
DIMENSIONS												
SIZE	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	I	CV	WEIGHT KGS/LBS
15 1/2	12.7	49.0	98.0	64.5	122.0	12.0	8.0	36.0	38.0	M6	15	1.40
	0.50	1.93	3.78	2.54	4.80	0.47	0.31	1.417	1.50			3.15
20 3/4	19.0	57.5	115.0	105.0	172.0	13.0	8.0	36.0	50.0	M6	40	2.72
	0.75	2.26	4.17	4.13	6.77	0.51	0.31	1.417	1.97			5.99
25 1	24.0	66.5	133.0	109.0	172.0	13.0	8.0	36.0	54.50	M6	65	3.32
	0.94	2.62	5.24	4.29	6.77	0.51	0.31	1.417	2.15			7.71
40 1 1/2	38.1	88.5	177.0	134.5	279.0	19.0	12.0	50.0	82.0	M8	250	9.89
	1.50	3.48	6.97	5.30	10.98	0.75	0.47	1.968	3.23			20.52
50 2	50.0	88.5	177.0	153.0	302.0	20.0	12.0	70.0	105.0	M8	480	14.30
	1.96	3.48	6.97	6.02	11.89	0.79	0.47	2.756	4.13			31.08

Good for Low Temperature service to -40 C (-40 F)

G Series Investment Cast Stainless Steel One Piece Reduced Port 1000 WOG Ball Valves

G1

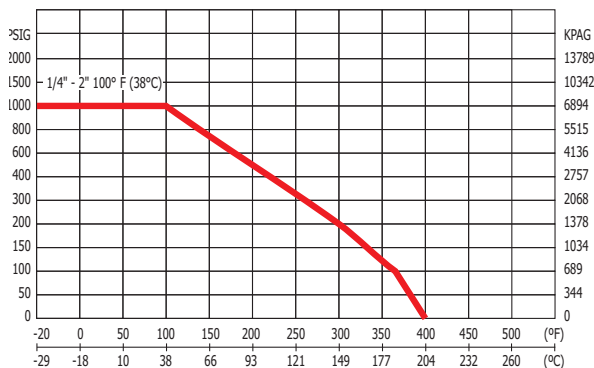
2.1



- Reduced port
- NPT ends to ANSI B1.20.1
- One piece body
- Blowout-proof stem
- Locking lever handle
(Ring lock with 1/4" to 3/8",
Latch lock with 1/2" to 2")
- Complies with NACE MR-0103 and supplier
requirements of NACE MR-0175 / ISO 15156
- 1000 PSI, WOG 1/4" to 2"
- Available with Oval handle

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 Type 304
3	Locking Device	A276 Type 304
4	Handle Nut	A276 Type 304
5	Stem Washer	A276 Type 304
6	Belleville Washer	S.S. 301
7	Packing	PTFE
8	Thrust Washer	R-PTFE 15% GLASS-FILLED
9	Stem	A276 TYPE 316
10	Gasket	PTFE
11	Seat Retainer	A351 GRADE CF8M
12	Ball	A351 GRADE CF8M
13	Seat	R-PTFE 15% GLASS-FILLED
14	Body	A351 GRADE CF8M
15	Spring Washer	A276 Type 304

PRESSURE TEMPERATURE RATING

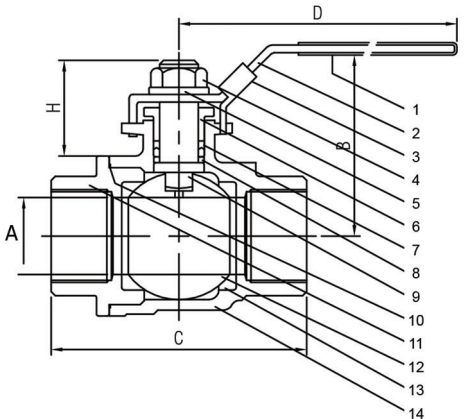
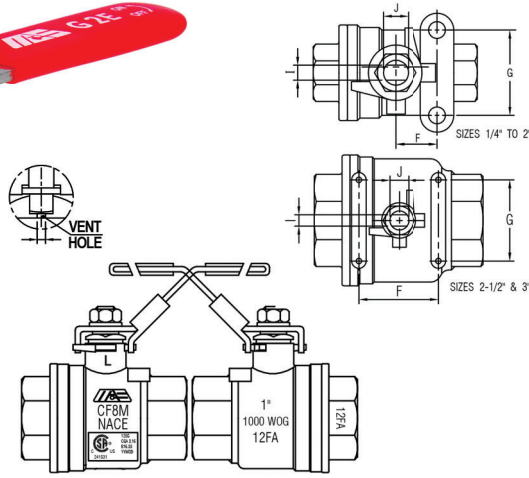
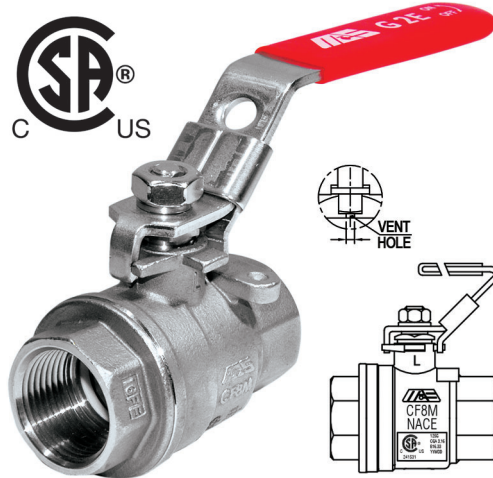


DIMENSIONS							
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	CV
8	1/4	4.60	17.0	40.5	34.0	77.0	1.5
		0.181	0.669	1.594	1.336	3.031	
10	3/8	6.80	21.5	48.0	35.5	85.0	3.5
		0.268	0.846	1.890	1.398	3.346	
15	1/2	9.20	26.0	57.0	43.0	98.0	5.7
		0.362	1.024	2.244	1.693	3.858	
20	3/4	12.5	32.0	59.0	48.5	98.0	10
		0.492	1.260	2.323	1.99	3.858	
25	1	16.0	38.0	70.54	60.0	107.0	16
		0.630	1.496	2.777	2.362	4.212	
32	1 1/4	20.0	49.0	77.5	61.5	107.0	25
		0.787	1.929	3.051	2.421	4.212	
40	1 1/2	24.5	52.5	82.5	70.5	135.0	40
		0.965	2.067	3.248	2.776	5.315	
50	2	32.0	66.0	99.3	83.0	143.0	62
		1.260	2.598	3.909	3.268	5.630	

G Series Investment Cast Stainless Steel Two Piece Full Port CSA Certified 1000 WOG Ball Valves

G2E

2.2



- Full port
- NPT ends to ANSI B1.20.1
- Two piece body
- Floating ball
- Blowout-proof stem
- Adjustable packing nut
- Locking lever handle
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- 1000 PSI, WOG 1/4" to 3"
- P-T 100 PSI @ 450°F

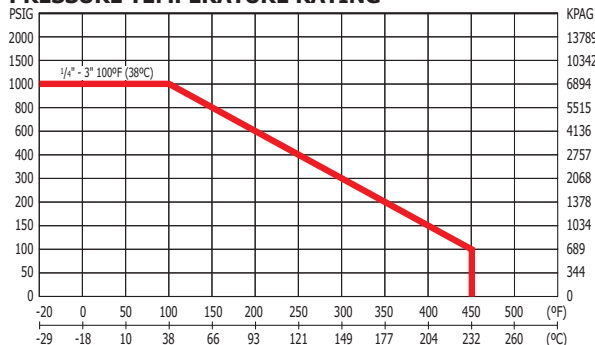
NATURAL AND PROPANE GAS SERVICE:

CSA 3.16 125 PSI TO -40°C (1/4" - 2")
-30°C (2-1/2" & 3")

ASME B16.33 175 PSI (1/2" - 2")
ASME B16.38 125 PSI (2-1/2" - 3")

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Packing	R-PTFE 15% GLASS-FILLED
8	Thrust Washer	R-PTFE 15% GLASS-FILLED
9	Stem	A276 TYPE 316
10	Gasket	R-PTFE 15% GLASS-FILLED
11	Cap	A351 GRADE CF8M
12	Ball	A351 GRADE CF8M
13	Seat	R-PTFE 15% GLASS-FILLED
14	Body	A351 GRADE CF8M

PRESSURE TEMPERATURE RATING

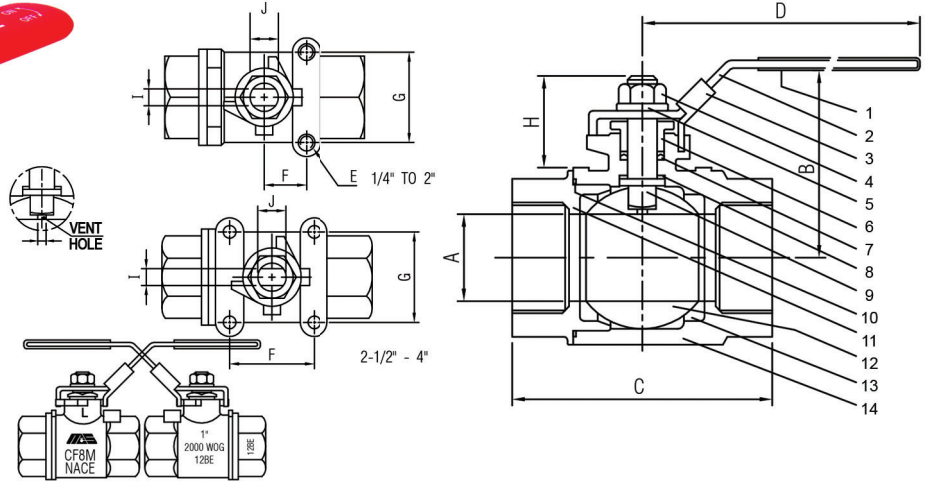
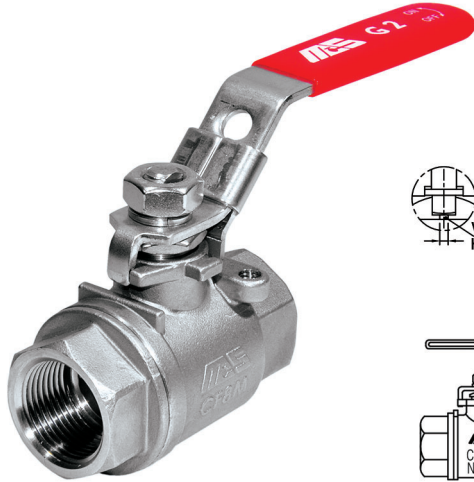


DIMENSIONS											
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	CV
8	1/4	9.6	50.1	49.8	96.0	12.7	25.4	21.8	5.50	8.0	7
		0.378	1.972	1.961	3.780	0.500	1.000	0.858	0.217	0.315	
10	3/8	9.6	50.1	49.8	96.0	12.7	25.4	21.8	5.50	8.0	7
		0.378	1.972	1.961	3.780	0.500	1.000	0.858	0.217	0.315	
15	1/2	12.5	50.1	55.0	96.0	12.7	25.4	21.35	5.50	8.0	15
		0.492	1.972	2.165	3.780	0.500	1.000	0.841	0.217	0.315	
20	3/4	20.0	64.8	66.0	119.5	14.85	29.7	26.0	6.0	8.1	45
		0.787	2.264	2.598	4.705	0.585	1.169	1.024	0.236	0.319	
25	1	24.7	61.0	77.2	119.5	14.85	29.7	26.0	6.0	8.1	65
		0.972	2.402	3.039	4.705	0.585	1.169	1.024	0.236	0.319	
32	1 1/4	32.0	71.0	90.0	138.2	17.68	35.40	31.0	8.1	10.2	125
		1.260	2.795	3.543	5.441	0.696	1.394	1.220	0.319	0.402	
40	1 1/2	38.1	76.0	101	138.2	17.68	35.35	31.0	8.1	10.2	175
		1.500	2.992	3.976	5.441	0.696	1.392	1.220	0.319	0.402	
50	2	50.0	91.5	117	159.2	23.62	49.5	39.0	10.0	14.0	380
		1.968	3.602	4.606	6.268	0.930	1.949	1.535	0.394	0.551	
65	2 1/2	63.5	118.7	147	244.0	72.1	72.1	42.9	12.05	19.2	500
		2.500	4.673	5.797	9.606	2.839	2.839	1.689	0.474	0.756	
80	3	76.0	128.7	168	244.0	72.1	72.1	43.9	12.05	19.2	900
		2.992	5.067	6.614	9.606	2.839	2.839	1.728	0.474	0.756	

G Series Investment Cast Stainless Steel Two Piece Full Port 2000 WOG Ball Valves

G2

2.3



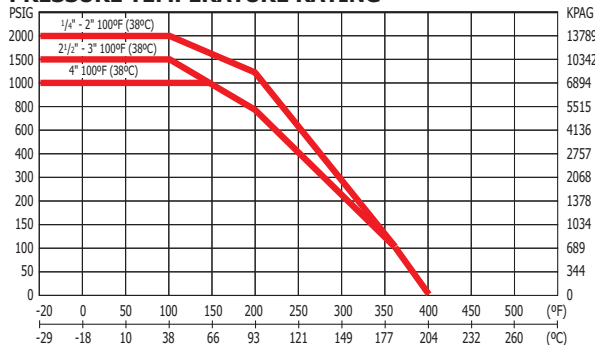
- Full port
- NPT threads to ANSI B1.20.1
- Two piece body
- Floating ball
- Blowout proof stem
- Adjustable packing nut
- Locking lever handle
- Actuator mounting pad
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- 2000 PSI, WOG 1/4" to 2"
- 1500 PSI, WOG 2-1/2" to 3"
- 1000 PSI, WOG 4"

- Available with Oval handle for size range: 1/4"-2"
- 1/4" & 3/8" have non-tapped reserve holes cast in
- 1/2" to 2" mounting pads are tapped
- 2 1/2" to 4" mounting pads are dimpled at the drilling locations

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Packing	PTFE
8	Thrust Washer	R-PTFE 15% GLASS-FILLED
9	Stem	A276 TYPE 316
10	Gasket	PTFE
11	Cap	A351 GRADE CF8M
12	Ball	A351 GRADE CF8M
13	Seat	R-PTFE 15% GLASS-FILLED
14	Body	A351 GRADE CF8M

NOTE 1 Untapped
NOTE 2 Dimpled at drilling locations

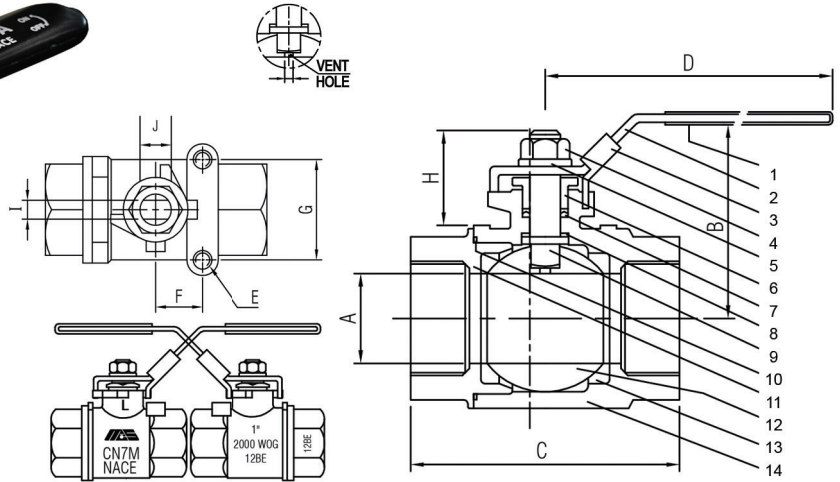
PRESSURE TEMPERATURE RATING



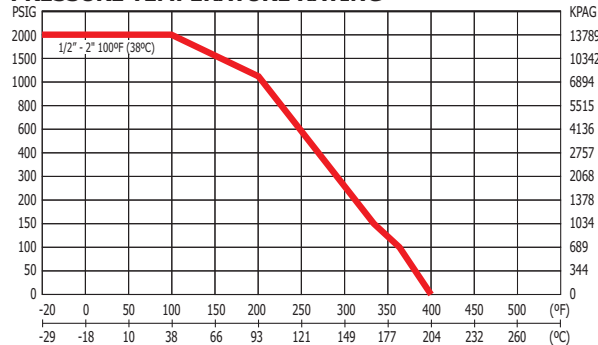
DIMENSIONS													
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	CV	WEIGHT KGS/ LBS	
8 1/4	9.6	50.28	55.80	96	NOTE (1)	12.7	25.4	20.78	5.52	8.00	7	0.230	
	0.378	1.980	2.197	3.780		0.5	1.00	0.818	0.217	0.315		0.506	
10 3/8	9.6	50.28	55.80	96	NOTE (1)	12.7	25.4	20.78	5.52	8.00	7	0.225	
	0.378	1.980	2.197	3.780		0.5	1.00	0.818	0.217	0.315		0.495	
15 1/2	12.5	52.6	60.5	96	M5	12.7	25.4	23.1	5.55	8.00	15	0.280	
	0.492	2.071	2.382	3.780		0.5	1.00	0.909	0.219	0.315		0.616	
20 3/4	20	59.25	72.5	119	M6	15.80	29.40	28.75	6.50	10	45	0.520	
	0.787	2.333	2.854	4.685		0.622	1.157	1.132	0.256	0.394		1.144	
25 1	24.7	62.35	85.5	119	M6	15.80	29.40	27.85	6.50	10	65	0.765	
	0.972	2.455	3.366	4.685		0.622	1.157	1.096	0.256	0.394		1.683	
32 1 1/4	32	79.90	93	149	M8	17.68	35.35	36.20	8.07	12.00	125	1.292	
	1.260	3.146	3.661	5.866		0.696	1.392	1.425	0.317	0.480		2.842	
40 1 1/2	38.1	84.8	110.5	149	M8	25	49.50	37.30	8.07	12.00	175	1.864	
	1.5	3.339	4.350	5.866		0.984	1.949	1.469	0.317	0.480		4.101	
50 2	50	94.6	128	174	M8	23.6	50	36.1	10.00	14.00	380	3.170	
	1.969	3.724	5.039	6.850		0.929	1.969	1.421	0.394	0.551		6.974	
65 2 1/2	63.50	122.05	153.8	244	NOTE (2)	72.10	72.10	45.35	12.00	16.00	500	5.796	
	2.500	4.805	6.055	9.606		2.839	2.839	1.785	0.472	0.630		12.751	
80 3	76	131.55	175.5	244	NOTE (2)	70.00	73.00	44.85	12.00	16.00	900	8.285	
	2.992	5.179	6.909	9.606		2.756	2.874	1.766	0.472	0.630		18.227	
100 4	100	178.6	233	321	NOTE (2)	102	102	64.5	18	23	1250	20.5	
	3.937	7.031	9.173	12.637		4.015	4.015	2.539	0.708	0.905		45.194	



2.4



- | NAME / MATERIAL | | |
|-----------------|----------------|---|
| NO. | PART NAME | MATERIAL |
| 1 | Handle Grip | Vinyl |
| 2 | Handle | A276 TYPE 304 |
| 3 | Locking Device | A276 TYPE 304 |
| 4 | Handle Nut | A276 TYPE 304 |
| 5 | Stem Washer | A276 TYPE 304 |
| 6 | Gland Nut | A276 TYPE 304 |
| 7 | Packing | PTFE |
| 8 | Thrust Washer | R-PTFE 15% GLASS-FILLED 9.Stem / ALLOY 20 |
| 9 | Stem | ALLOY 20 |
| 10 | Gasket | PTFE |
| 11 | Cap | ALLOY 20 ASTM A351 CN7M |
| 12 | Ball | ALLOY 20 ASTM A351 CN7M |
| 13 | Seat | R-PTFE 15% GLASS-FILLED |
| 14 | Body | ALLOY 20 ASTM A351 CN7M |

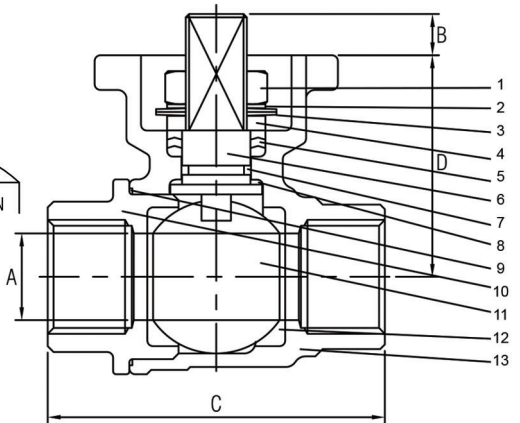
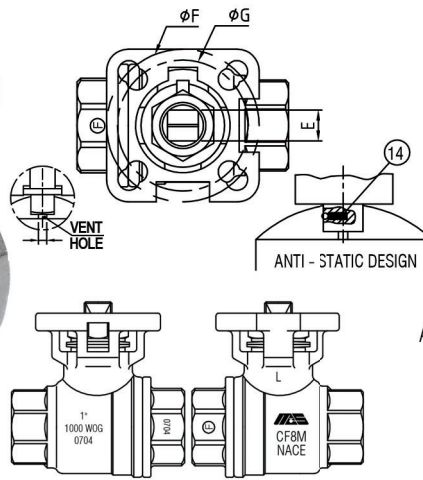
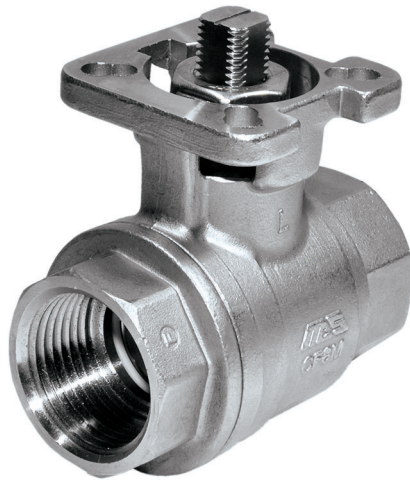


DIMENSIONS													
SIZE		mm/m A	mm/m B	mm/m C	mm/m D	mm/m E	mm/m F	mm/m G	mm/m H	mm/m I	mm/m J	CV	WEIGHT KGS/ LBS
15	1/2	12.5	52.6	60.5	96	M5	12.7	25.4	23.1	5.55	8.00	15	0.280
		0.492	2.071	2.382	3.78		0.5	1	0.909	0.219	0.315		0.616
20	3/4	20.0	50.25	72.5	119	M6	15.80	29.40	28.75	6.50	10	45	0.520
		0.787	2.333	2.854	4.685		0.622	1.157	1.132	0.256	0.394		1.144
25	1	24.7	62.35	85.5	119	M6	15.80	29.40	27.85	6.50	10	65	0.765
		0.972	2.455	3.366	4.685		0.622	1.157	1.096	0.256	0.394		1.683
32	1 1/4	32.0	79.90	93	149	M8	17.68	35.35	36.20	8.07	12.00	125	1.292
		1.260	3.146	3.661	5.866		0.696	1.392	1.425	0.317	0.480		2.842
40	1 1/2	38.1	84.8	110.5	149	M8	25	49.50	37.30	8.07	12.00	175	1.864
		1.500	3.339	4.350	5.866		0.984	1.949	1.469	0.317	0.480		4.101
50	2	50.0	94.6	128	174	M8	23.6	50	36.1	10.00	14.00	380	3.170
		1.968	3.724	5.039	6.850		0.929	1.969	1.421	0.394	0.551		6.974

G Series Investment Cast Stainless Steel Two Piece Full Port 1000 WOG Direct Mount Ball Valves

G2-ED

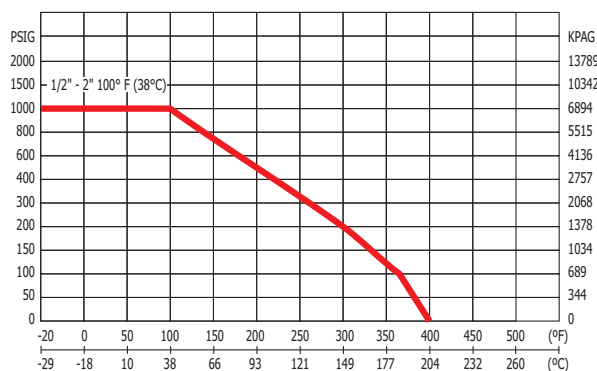
2.5



- Full port
- NPT threads to ANSI B1.20.1
- Two piece body
- Floating Ball
- Blowout-proof stem
- ISO 5211 Direct Mounting Pad
- Adjustable Live-loaded Packing
- Anti-static Device
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- 1000 PSI, WOG 1/2" to 2"
- **Compatible with Max-Air / MAS Actuators**

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Nut	A276 TYPE 304
2	Lock Washer	A276 TYPE 304
3	Belleville Washer	SS 301
4	Gland Nut	A276 TYPE 304
5	Packing	PTFE
6	Stem	A276 TYPE 316
7	Stem Seal	VITON-ORING
8	Thrust Washer	RPTFE (MG1241)
9	Gasket	PTFE
10	Cap	A351 GRADE CF8M
11	Ball	A351 GRADE CF8M
12	Seat	R-PTFE 15% GLASS-FILLED
13	Body	A351 GRADE CF8M
14	Spring & pin	A276 TYPE 304

PRESSURE TEMPERATURE RATING

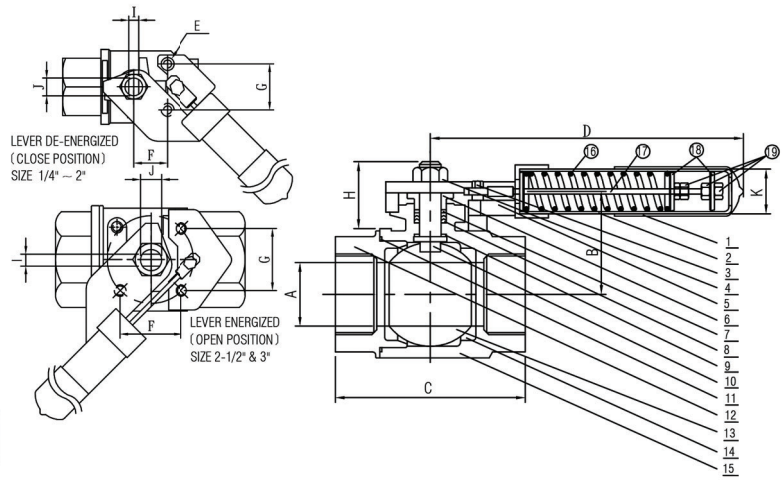
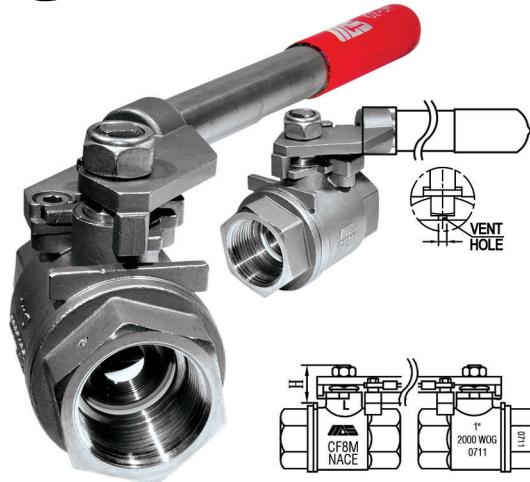


DIMENSIONS										
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	ISO 5211	WEIGHT KGS/ LBS
15	1/2	15.0	10.0	58.20	36.3	9.0	42.0	36.0	F03 / F04	0.208
		0.590	0.394	2.291	1.429	0.354	1.653	1.417		0.458
20	3/4	20.0	10.0	66.00	39.5	9.0	42.0	36.0	F03 / F04	0.398
		0.787	0.394	2.598	1.555	0.354	1.653	1.417		0.876
25	1	24.0	11.0	77.70	50.5	11.0	50.0	42.0	F04 / F05	0.703
		0.945	0.433	3.059	1.988	0.433	1.968	1.653		1.547
32	1 1/4	31.8	11.0	90.40	56.0	11.0	50.0	42.0	F04 / F05	1.040
		1.252	0.433	3.559	2.205	0.433	1.968	1.653		2.288
40	1 1/2	38.1	17.0	102.4	70.6	14.0	70.0	50.0	F05 / F07	1.690
		1.500	0.669	4.031	2.779	0.551	2.756	1.968		3.718
50	2	50.0	17.0	119.0	79.0	14.0	70.0	50.0	F05 / F07	2.700
		1.968	0.669	4.685	3.110	0.551	2.756	1.968		5.940

G Series Investment Cast Stainless Steel Two Piece Full Port 2000 WOG Deadman Spring Handle Ball Valves

G2-DM

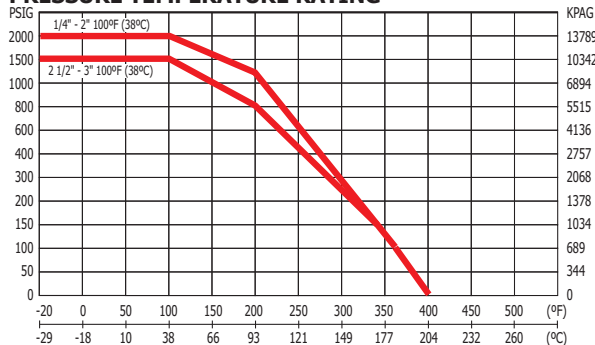
2.6



- Two piece body
- Full port
- NPT threads to ANSI B1.20.1
- Blowout-proof stem
- Adjustable packing nut
- Deadman handle
- Actuator mounting pad
- Floating ball
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- 2000 P.S.I. W.O.G. 1/4" to 2"

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle Housing	A269 GR. TP304
3	Anchor Screw	A276 TYPE 304
4	Handle Nut	C.S.Plated
5	Anchor	A351 GRADE CF8M
6	Gland Nut	A276 TYPE 304
7	Packing Washer	PEEK
8	Packing	RPTFE 50% S.S. FILLED
9	Thrust Washer	PEEK
10	Stem	A276 TYPE 316
11	Gasket	PTFE
12	Cap	A351 GRADE CF8M
13	Ball	A351 GRADE CF8M
14	Seat	R-PTFE 15% GLASS-FILLED
15	Body	A351 GRADE CF8M
16	Spring	A29 GRADE 9260
17	Rod	A276 TYPE 304
18	Washer	A276 TYPE 304
19	Nuts	A194 GRADE 8

PRESSURE TEMPERATURE RATING

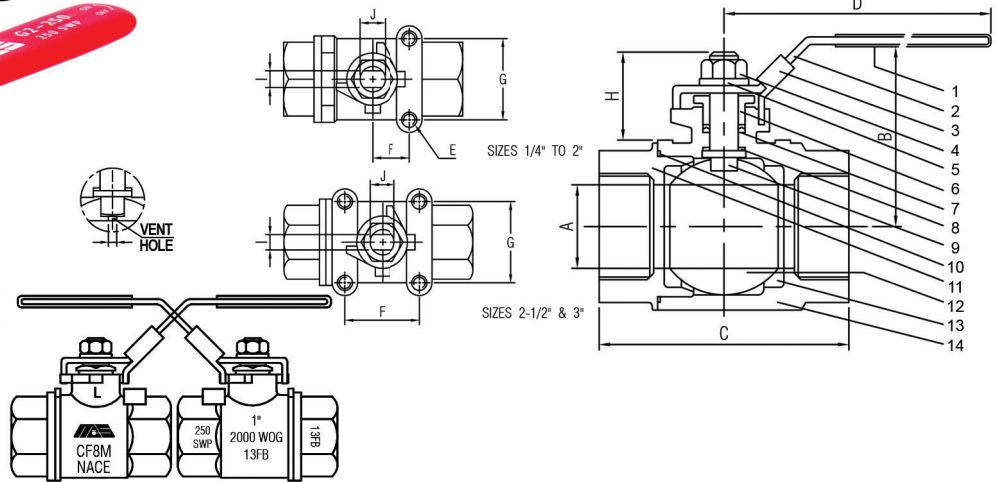
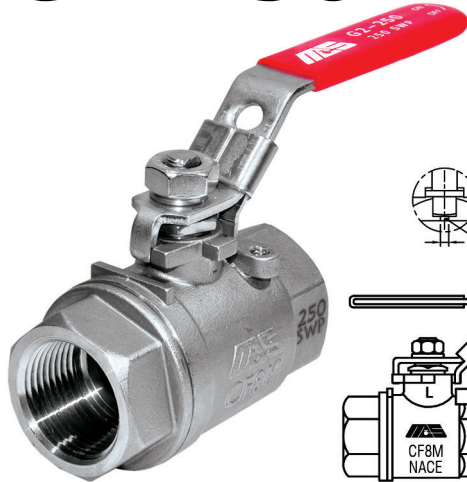


DIMENSIONS													
SIZE		mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in
A	B	C	D	E	F	G	H	I	J	K	CV	WEIGHT KGS/LBS	
8	1/4	9.6	26.5	55.4	180.5	M6	12.73	25.4	25.5	5.50	7.70	22.0	0.605
		0.374	1.043	2.181	7.106		0.501	1.000	1.004	0.217	0.303	0.866	1.334
10	3/8	9.6	26.5	55.4	180.5	M6	12.73	25.4	25.5	5.50	7.70	22.0	0.595
		0.374	1.043	2.181	7.106		0.501	1.000	1.004	0.217	0.303	0.866	1.312
15	1/2	12.7	29.0	62.0	180.5	M6	12.73	25.4	25.5	5.50	7.70	22.0	0.658
		0.500	1.142	2.441	7.106		0.501	1.000	1.004	0.217	0.303	0.866	1.451
20	3/4	20	36.2	73.1	232.5	M6	15.8	29.40	32.5	6.50	9.30	22.0	0.872
		0.787	1.425	2.878	9.154		0.622	1.157	1.280	0.256	0.367	0.866	1.922
25	1	25	39.3	86.0	232.5	M6	15.8	29.40	31.0	6.50	9.30	22.0	1.112
		0.984	1.547	3.386	9.154		0.622	1.157	1.220	0.256	0.367	0.866	2.451
32	1 1/4	32	51.3	94.0	287	M8	23.6	35.00	41.6	8.00	12.50	22.0	1.556
		1.260	2.021	3.700	11.299		0.929	1.378	1.638	0.315	0.492	0.866	3.430
40	1 1/2	38	57.2	116.0	290	M8	23.6	49.20	41.0	8.00	12.50	22.0	2.655
		1.496	2.253	4.567	11.417		0.929	1.937	1.614	0.315	0.492	0.866	5.853
50	2	50.8	67.6	134.0	313	M8	23.6	49.2	46.0	10.00	15.60	32.0	3.746
		2.000	2.662	5.276	12.323		0.929	1.937	1.811	0.394	0.614	1.260	8.258
65	2 1/2	65	82.7	164.0	313	M8	70.0	73.0	48.0	12.00	18.80	32.0	6.552
		2.559	3.255	6.457	12.323		2.756	2.874	1.890	0.472	0.740	1.260	14.444
80	3	78	92.7	180.0	313	M8	70.0	73.0	48.0	12.00	18.80	32.0	9.672
		3.071	3.649	7.086	12.323		2.756	2.874	1.890	0.472	0.740	1.260	21.323

G Series Investment Cast Stainless Steel 2000 WOG Two Piece Full Port 250 Steam Rated Ball Valves

G2-250

2.7

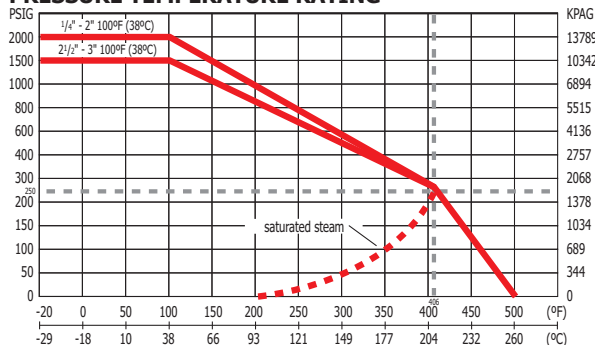


- Two piece body
- Full port
- Floating ball
- NPT ends to ANSI B1.20.1
- **250 PSIG saturated steam trim**
- Blowout proof stem
- Adjustable packing nut
- Locking lever handle
- Actuator mounting pad
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- 2000 PSI, WOG 1/4" to 2"
- 1500 PSI, WOG 2-1/2" to 3"

- Available with oval handle for sizes 1/4" - 2"
- 1/4" and 3/8" have reserve holes cast in, 1/2" to 2" mounting pads are tapped, 2-1/2" and 3" are dimpled.

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Packing	R-PTFE(TFM-4215)
8	Thrust Washer	R-PTFE(TFM-4215)
9	Stem	A276 TYPE 316
10	Gasket	R-PTFE(TFM-4215)
11	Cap	A351 GRADE CF8M
12	Ball	A351 GRADE CF8M
13	Seat	R-PTFE(TFM-4215)
14	Body	A351 GRADE CF8M

PRESSURE TEMPERATURE RATING

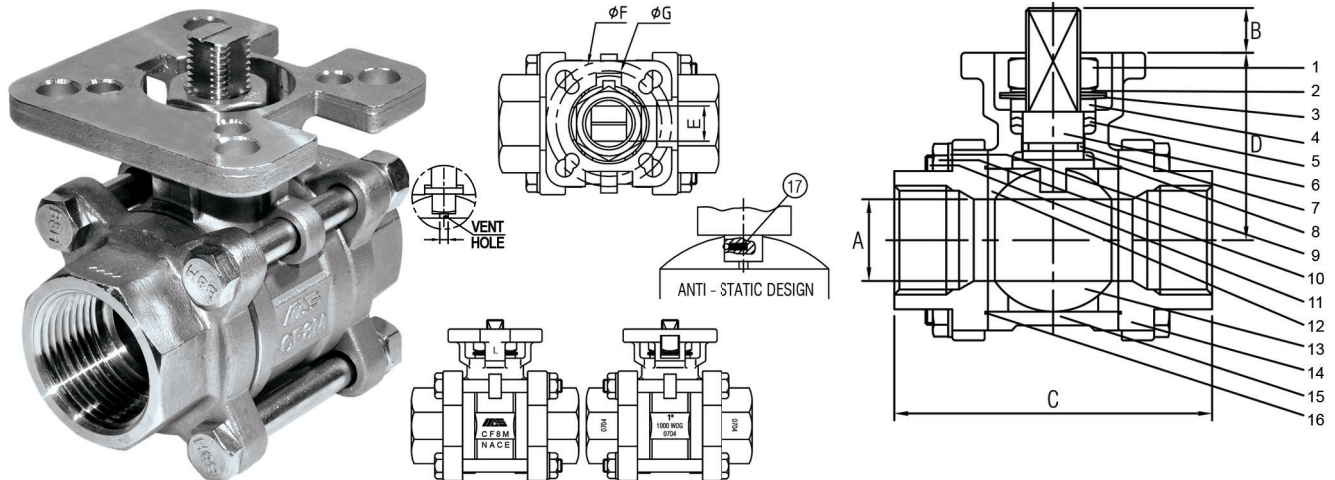


DIMENSIONS													
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	CV	WEIGHT KGS/ LBS
8	1/4	9.6	50.28	55.80	96	NOTE (1)	12.7	25.4	20.78	5.52	8.00	7	0.230
		0.378	1.980	2.197	3.780	(1)	0.5	1.00	0.818	0.217	0.315		0.506
10	3/8	9.6	50.28	55.80	96	NOTE (1)	12.7	25.4	20.78	5.52	8.00	7	0.225
		0.378	1.980	2.197	3.780	(1)	0.5	1.00	0.818	0.217	0.315		0.495
15	1/2	12.5	52.6	60.5	96	M5	12.7	25.4	23.1	5.55	8.00	15	0.280
		0.492	2.071	2.382	3.780		0.5	1.00	0.909	0.219	0.315		0.616
20	3/4	20	59.25	72.5	119	M6	15.80	29.40	28.75	6.50	10	45	0.520
		0.787	2.333	2.854	4.685		0.622	1.157	1.132	0.256	0.394		1.144
25	1	24.7	62.35	85.5	119	M6	15.80	29.40	27.85	6.50	10	65	0.765
		0.972	2.455	3.366	4.685		0.622	1.157	1.096	0.256	0.394		1.683
32	1 1/4	32	79.90	93	149	M8	17.68	35.35	36.20	8.07	12.00	125	1.292
		1.260	3.146	3.661	5.866		0.696	1.392	1.425	0.317	0.480		2.842
40	1 1/2	38.1	84.8	110.5	149	M8	25	49.50	37.30	8.07	12.00	175	1.864
		1.5	3.339	4.350	5.866		0.984	1.949	1.469	0.317	0.480		4.101
50	2	50	94.6	128	174	M8	23.6	50	36.1	10.00	14.00	380	3.170
		1.969	3.724	5.039	6.850		0.929	1.969	1.421	0.394	0.551		6.974
65	2 1/2	63.50	122.05	153.8	244	NOTE (2)	72.10	72.10	45.35	12.00	16.00	500	5.796
		2.500	4.805	6.055	9.606	(2)	2.839	2.839	1.758	0.472	0.630		12.751
80	3	76	131.5	175.5	244	NOTE (2)	70.00	73.00	44.85	12.00	16.00	900	8.285
		2.992	5.179	6.909	9.606	(2)	2.756	2.874	1.766	0.472	0.630		18.227

G Series Investment Cast Stainless Steel Three Piece Full Port 1000 WOG Direct Mount Ball Valves

G3-ED

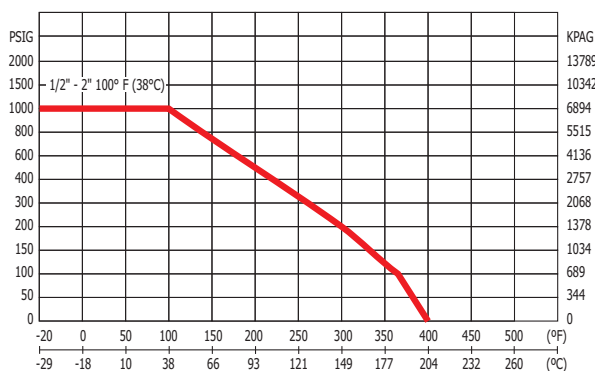
2.8



- Full port
- NPT Threads to ANSI B1.20.1
- Three piece body
- Floating ball
- Blowout-proof stem
- Adjustable live-loaded packing
- Anti-static device
- Floating Ball
- ISO 5211 direct mounting pad
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- 1000 PSI, WOG 1/2" to 2"
- **Compatible with Max-Air/MAS Actuators**

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Nut	A276 TYPE 304
2	Lock Washer	A276 TYPE 304
3	Belleville Washer	SS 301
4	Gland Nut	A276 TYPE 304
5	Packing	PTFE
6	Stem	A276 TYPE 316
7	Stem Seal	VITON-ORING
8	Thrust Washer	RPTFE (MG1241)
9	Bolt Washer	A276 TYPE 304
10	Hex Nut	A194 GRADE 8
11	Bolt	A193 GRADE B8
12	Seat	R-PTFE 15% GLASS-FILLED
13	Ball	A351 GRADE CF8M
14	Cap	A351 GRADE CF8M
15	Body	A351 GRADE CF8M
16	Gasket	PTFE
17	Spring & pin	A276 TYPE 304

PRESSURE TEMPERATURE RATING

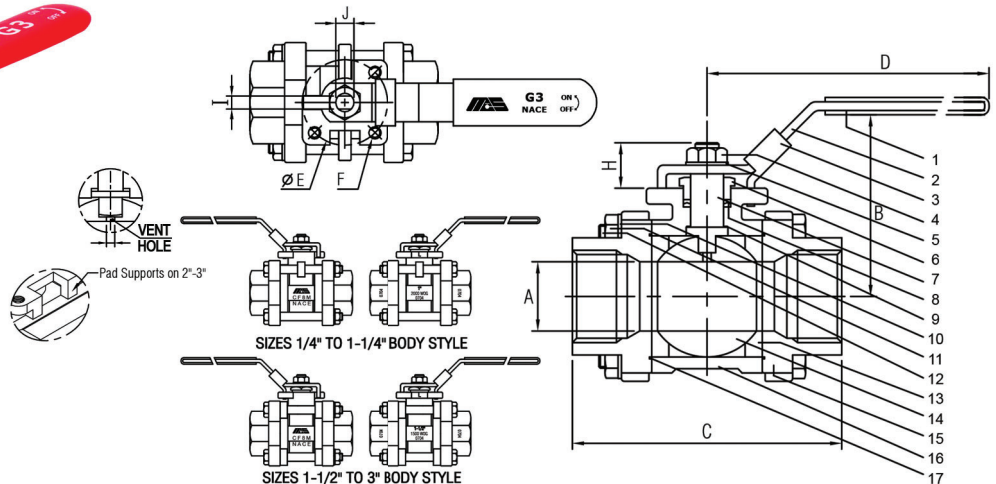


DIMENSIONS									
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	ISO 5211
15	1/2	15.0	10.0	67.30	36.3	9.0	42.0	36.0	F03 / F04
		0.590	0.394	2.650	1.429	0.354	1.653	1.417	
20	3/4	20.0	10.0	72.60	39.5	9.0	42.0	36.0	F03 / F04
		0.787	0.394	2.858	1.555	0.354	1.653	1.417	
25	1	24.0	11.0	87.75	50.5	11.0	70.0	50.0	F05 / F07
		0.945	0.433	3.455	1.988	0.433	2.756	1.968	
32	1 1/4	31.8	11.0	104.4	56.0	11.0	70.0	50.0	F05 / F07
		1.252	0.433	4.110	2.205	0.433	2.756	1.968	
40	1 1/2	38.1	17.0	116.35	70.6	14.0	70.0	50.0	F05 / F07
		1.500	0.669	4.581	2.779	0.551	2.756	1.968	
50	2	50.0	17.0	131.9	79.0	14.0	70.0	50.0	F05 / F07
		1.968	0.669	5.193	3.110	0.551	2.756	1.968	

G Series Investment Cast Stainless Steel Three Piece Full Port 2000 WOG 316 & 317 Ball Valves

G3/G3-7

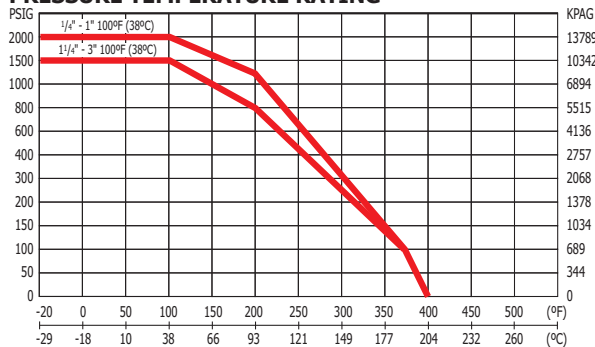
2.9



- Full port
- NPT ends to ANSI B1.20.1
- Three piece body
- Floating ball
- Blowout-proof stem
- Adjustable packing gland
- Locking lever handle
- ISO 5211 mounting pad
- 2000 PSI, WOG 1/4" to 1"
- 1500 PSI, WOG 1-1/4" to 3"
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156

NAME / MATERIAL			
NO.	PART NAME	MATERIAL G3	MATERIAL G3-7
1	Handle Grip	Vinyl	Vinyl
2	Handle	A276 TYPE 304	A276 TYPE 304
3	Locking Device	A276 TYPE 304	A276 TYPE 304
4	Handle Nut	A276 TYPE 304	A276 TYPE 304
5	Stem Washer	A276 TYPE 304	A276 TYPE 304
6	Gland Nut	A276 TYPE 304	A276 TYPE 304
7	Stem	A276 TYPE 316	A351 GRADE CG8M
8	Packing	PTFE	PTFE
9	Thrust Washer	R-PTFE 15% GLASS-FILLED	R-PTFE 15% GLASS-FILLED
10	Bolt Washer	A276 TYPE 304	A276 TYPE 304
11	Hex Nut	A194 GRADE 8	A194 GRADE 8
12	Bolt	A193 GRADE B8	A193 GRADE B8
13	Seat	R-PTFE 15% GLASS-FILLED	R-PTFE 15% GLASS-FILLED
14	Ball	A351 GRADE CF8M	A351 GRADE CG8M
15	Cap	A351 GRADE CF8M	A351 GRADE CG8M
16	Body	A351 GRADE CF8M	A351 GRADE CG8M
17	Gasket	PTFE	PTFE

PRESSURE TEMPERATURE RATING

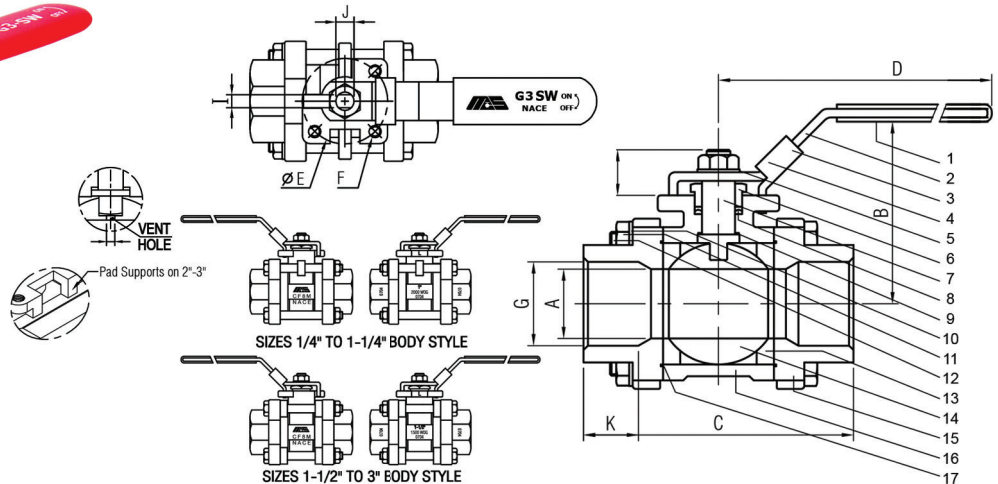
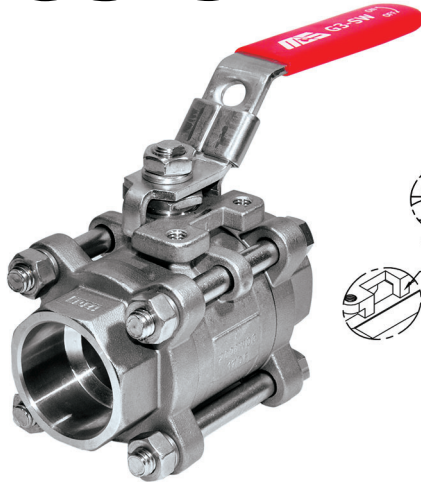


DIMENSIONS												
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	F	mm/in H	mm/in I	mm/in J	CV	WEIGHT KGS/ LBS
8	1/4	9.5	67	60	120	36	M6	11.50	5.50	7.70	10	0.434
		0.374	2.638	2.362	4.724	1.417		0.453	0.217	0.303		0.955
10	3/8	9.5	67	60	120	36	M6	12.50	5.50	7.70	10	0.420
		0.374	2.638	2.362	4.724	1.417		0.492	0.217	0.303		0.924
15	1/2	15	68.5	70	120	36	M6	14.50	5.50	7.70	26	0.620
		0.591	2.697	2.756	4.724	1.417		0.571	0.217	0.303		1.364
20	3/4	20	75	76	139	42	M6	18.00	6.50	9.30	50	0.910
		0.787	2.953	2.992	5.472	1.653		0.709	0.256	0.367		2.002
25	1	25	79	92	139	42	M6	18.00	6.50	9.30	68	1.190
		0.984	3.110	3.622	5.472	1.653		0.709	0.256	0.367		2.618
32	1 1/4	32	88.5	105	193	50	M8	23.50	8.00	12.50	120	1.930
		1.260	3.484	4.134	7.598	1.968		0.925	0.315	0.492		4.246
40	1 1/2	38	94.5	120	193	70	M8	22.50	8.00	12.50	170	2.780
		1.496	3.720	4.724	7.598	2.756		0.886	0.315	0.492		6.116
50	2	50.5	107	138	193	70	M8	25.00	10.00	15.60	360	4.750
		1.988	4.213	5.433	7.598	2.756		0.984	0.394	0.614		10.450
65	2 1/2	65	129.5	170.5	244	102	M8	32.50	12.00	18.80	510	8.630
		2.559	5.098	6.713	9.606	4.016		1.280	0.472	0.740		18.986
80	3	78	139.5	191	244	102	M8	31.00	12.00	18.80	900	13.460
		3.071	5.492	7.520	9.606	4.016		1.220	0.472	0.740		29.612

G Series Investment Cast Stainless Steel Three Piece Full Port 2000 WOG Socket Weld Ball Valves

G3-SW

2.10

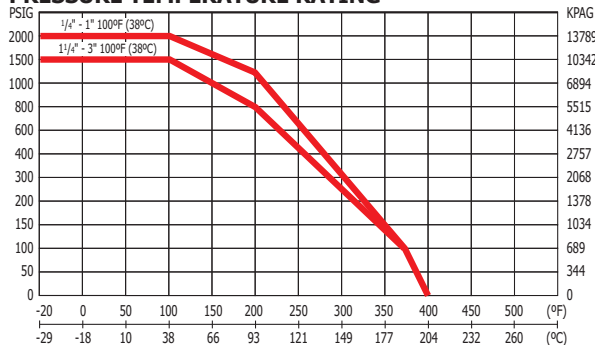


- Full port
- Socket Weld ends to ANSI B16.11
- Three piece body
- Floating ball
- Blowout-proof stem
- Adjustable packing gland
- Locking lever handle
- ISO 5211 mounting pad
- 2000 PSI, WOG 1/4" to 1"
- 1500 PSI, WOG 1-1/4" to 3"
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156

Optional model G3-BW (Butt-Weld end) available on request

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Stem	A276 TYPE 316
8	Packing	PTFE
9	Thrust Washer	R-PTFE 15% GLASS-FILLED
10	Bolt Washer	A276 TYPE 304
11	Hex Nut	A194 GRADE 8
12	Bolt	A193 GRADE B8
13	Seat	R-PTFE 15% GLASS-FILLED
14	Ball	A351 GRADE CF8M
15	Cap	A351 GRADE CF3M
16	Body	A351 GRADE CF8M
17	Gasket	PTFE

PRESSURE TEMPERATURE RATING



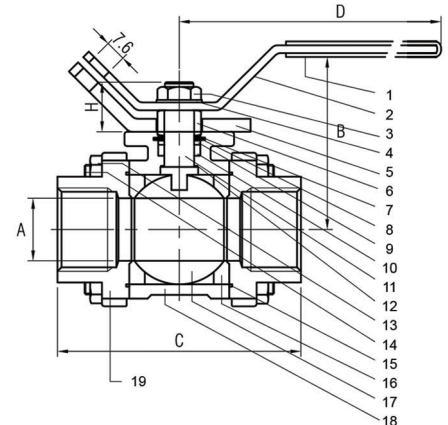
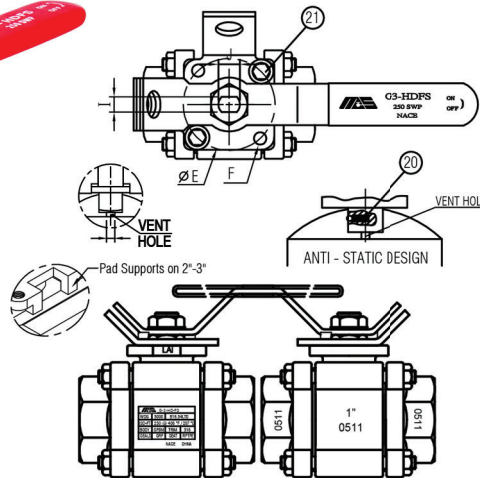
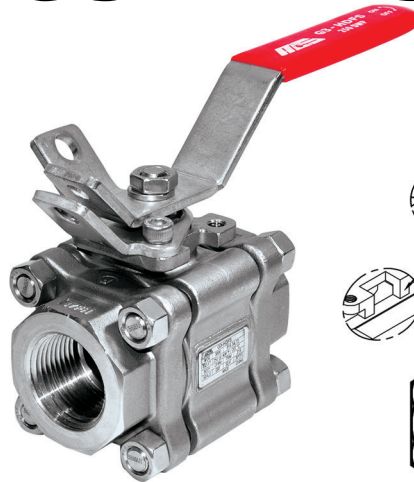
DIMENSIONS														
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	CV	WEIGHT KGS/ LBS
8	1/4	9.5	67	60	120	36	M6	14.2	11.50	5.50	7.70	12	10	0.415
		0.374	2.638	2.362	4.724	1.417		0.559	0.453	0.217	0.303	0.472		0.913
10	3/8	9.5	67	60	120	36	M6	17.6	12.50	5.50	7.70	12	10	0.400
		0.374	2.638	2.362	4.724	1.417		0.693	0.492	0.217	0.303	0.472		0.880
15	1/2	15	68.5	70	120	36	M6	21.7	14.50	5.50	7.70	17	26	0.600
		0.591	2.697	2.756	4.724	1.417		0.854	0.571	0.217	0.303	0.669		1.320
20	3/4	20	75	76	139	42	M6	27.1	18.00	6.50	9.30	17	50	0.880
		0.787	2.953	2.992	5.472	1.653		1.067	0.709	0.256	0.367	0.669		1.936
25	1	25	79	92	139	42	M6	33.8	18.00	6.50	9.30	19	68	1.150
		0.984	3.110	3.622	5.472	1.653		4.330	0.709	0.256	0.367	0.748		2.530
32	1 1/4	32	88.5	105	193	50	M8	42.6	23.50	8.00	12.50	21	120	1.870
		1.260	3.484	4.134	7.598	1.968		1.677	0.925	0.315	0.492	0.827		4.114
40	1 1/2	38	94.5	120	193	70	M8	48.7	22.50	8.00	12.50	23	170	2.670
		1.496	3.720	4.724	7.598	2.756		1.917	0.886	0.315	0.492	0.906		5.874
50	2	50.5	107	138	193	70	M8	61.0	25.00	10.00	15.60	24	360	4.620
		1.988	4.213	5.433	7.598	2.756		2.402	0.984	0.394	0.614	0.945		10.164
65	2 1/2	65	129.5	170.5	244	102	M8	73.8	32.50	12.00	18.80	31	510	8.250
		2.559	5.098	6.713	9.606	4.016		2.906	1.280	0.472	0.740	1.22		18.150
80	3	78	139.5	191	244	102	M8	90.0	31.00	12.00	18.80	32	900	13.000
		3.071	5.492	7.520	9.606	4.016		3.543	1.220	0.472	0.740	1.26		28.600

G Series Investment Cast Stainless Steel High Pressure API 607 Ball Valves

G3-HDFS

G3-HDFS-TSW (NPT x SW ends)
G3-HDFS-SW (SW ends)

2.11

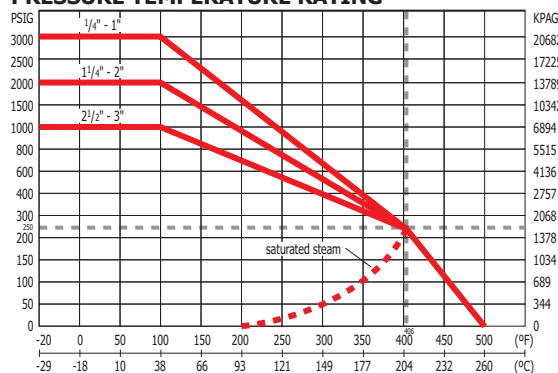


- Full port / Floating ball
- NPT threads to ANSI B1.20.1
- 3 piece body with blowout-proof stem
- Encapsulated bolt design
- Adjustable live loaded packing nut
- **250 PSIG saturated steam rated**
- Fire-safe certified to API 607
- Anti-static design
- Positive Lock-out device
- ISO 5211 mounting pad
- 3000 PSI, WOG 1/4" to 1"
- 2000 PSI, WOG 1-1/4" to 2"
- 1000 PSI, WOG 2-1/2" to 3"
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- ASME B16.34 Class 600, 900 & 1500 Wall Thickness

Also available;
• Model G3-HDFS-TSW (NPT x SW ends)
• Model G3-HDFS-SW (SW ends)

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Handle Nut	A276 TYPE 304
4	Handle Washer	A276 TYPE 304
5	Lock-Out Plate	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Lock Washer	A276 TYPE 304
8	Belleville Washer	S.S.301
9	Gland	A276 TYPE 304
10	Packing	GRAPHITE
11	Stem	A276 TYPE 316
12	Thrust Washer	R-PTFE (TFM4215)
13	Hex Nut	A194 GRADE 8MA
14	Stud Bolt	A193 GRADE B8MA
15	Gasket	S.S. 304 + GRAPHITE
16	Seat	R-PTFE (TFM4215)
17	Ball	A351 GRADE CF8M
18	Body	A351 GRADE CF8M
19	Cap	A351 GRADE CF8M A351 GRADE CF3M (FOR SW)
20	Spring & pin	A276 TYPE 304
21	Stopper	A276 TYPE 304

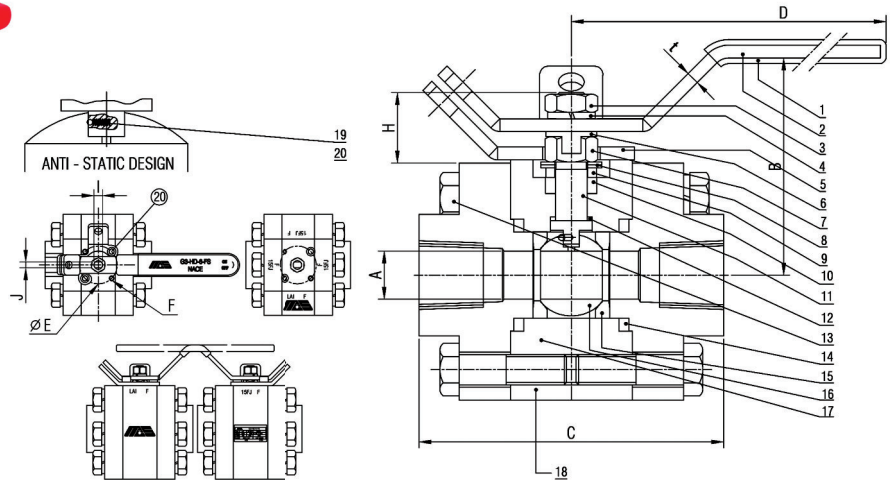
PRESSURE TEMPERATURE RATING



DIMENSIONS												
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in H	mm/in I	mm/in J	F	ISO 5211 FLANGE TYPE	CV
8	1/4	10	65.8	64.5	120	36	15.5	5.5	8.1	M6	F03	11
		0.37	2.59	2.54	4.72	1.417	0.61	0.22	0.32			
10	3/8	10	65.8	64.5	120	36	15.5	5.5	8.1	M6	F03	11
		0.37	2.59	2.54	4.72	1.417	0.61	0.22	0.32			
15	1/2	15	68.5	68.5	120	36	15.5	5.5	8.1	M6	F03	26
		0.50	2.70	2.70	4.72	1.417	0.61	0.22	0.32			
20	3/4	20	75	80.5	139	42	18.5	6.5	9.6	M6	F04	50
		0.75	2.95	3.17	5.47	1.654	0.73	0.26	0.38			
25	1	25	79	91.5	139	42	18.5	6.5	9.6	M6	F04	68
		1.00	3.11	3.60	5.47	1.654	0.73	0.26	0.38			
32	1 1/4	32	88.5	100.5	193	50	23.5	8	12.8	M8	F05	120
		1.25	3.48	3.96	7.60	1.969	0.93	0.32	0.50			
40	1 1/2	38	94.5	117	193	70	23.5	8	12.8	M8	F07	170
		1.50	3.72	4.61	7.60	2.756	0.93	0.32	0.50			
50	2	50	107	133.5	193	70	27.0	10	16.1	M8	F07	360
		2.00	4.21	5.26	7.60	2.756	1.06	0.39	0.63			
65	2 1/2	65	129.5	157.8	244	102	30.0	12	19.25	M8	F10	510
		2.50	5.10	6.21	9.61	4.016	1.18	0.47	0.76			
80	3	78	139.5	178	244	102	30.0	12	19.25	M8	F10	900
		3.00	5.49	7.01	9.61	4.016	1.18	0.47	0.76			

G3-HD-6-FS

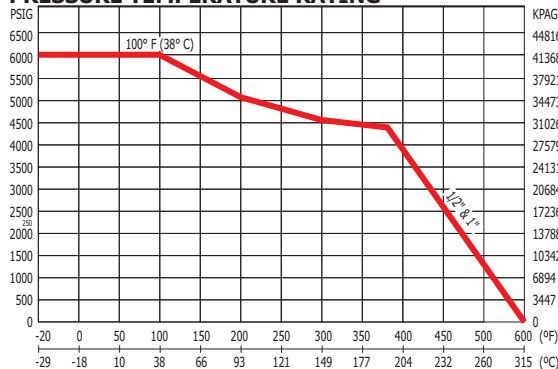
2.12



- ASME B16.34 class 2500 Design
- 3 piece forged body
- Full port
- NPT threads to ANSI B1.20.1
- Blowout proof stem
- Adjustable live loaded packing nut
- Anti-static design
- **Fire-safe certified to API-607**
- Positive lock-out device
- ISO 5211 mounting pad
- 6000 WOG (class 2500)
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Handle Nut	A276 TYPE 304
4	Handle Washer	A276 TYPE 304
5	Lock-Out Plate	A276 TYPE 304
6	Lock Washer	A276 TYPE 304
7	Gland Nut	A276 TYPE 304
8	Belleville Washer	S.S. 301
9	Gland	A276 TYPE 304
10	Packing	GRAPHITE
11	Stem	A276 TYPE 316
12	Thrust Washer	PEEK
13	Bolt	A193 GRADE B8MA
14	Gasket	S.S. 304 + GRAPHITE
15	Seat	PEEK
16	Ball	A351 GRADE CF8M
17	Body	A182 GRADE F316
18	Cap	A182 GRADE F316
19	Spring & pin	A276 TYPE 304
20	Stopper	A276 TYPE 304

PRESSURE TEMPERATURE RATING

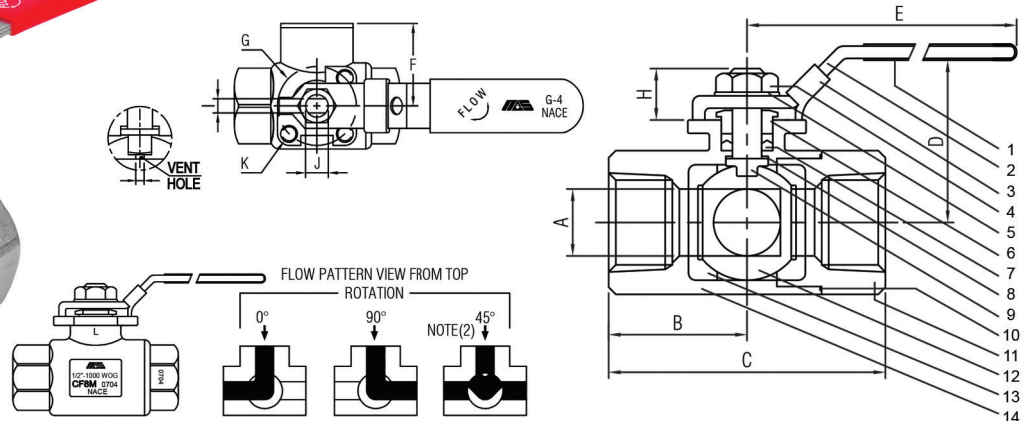
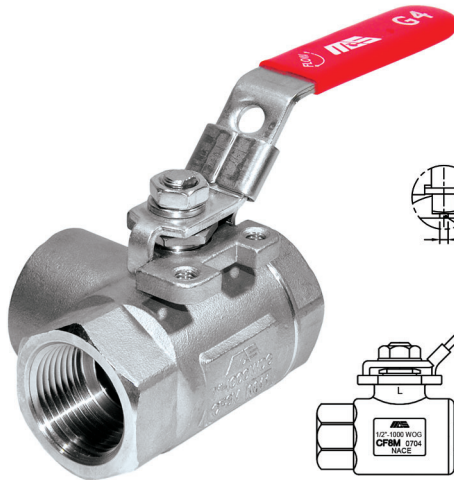


DIMENSIONS												
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in H	mm/in I	mm/in J	mm/in t	F	ISO 5211 FLANGE TYPE	WEIGHT KGS/LBS
15 1/2	15 0.590	68 2.677	95 3.740	153 6.023	36 1.417	16 0.787	10 0.394	6 0.236	4 0.157	M5	F03	3.6 7.9
25 1	25 1.00	94 3.700	111 4.370	183 7.204	42 1.654	26.5 1.043	14 0.551	9 0.354	6 0.235	M5	F04	5.4 11.9

G Series Investment Cast Stainless Steel 1000 WOG 3 Port-Diverter Ball Valves

G4

2.13

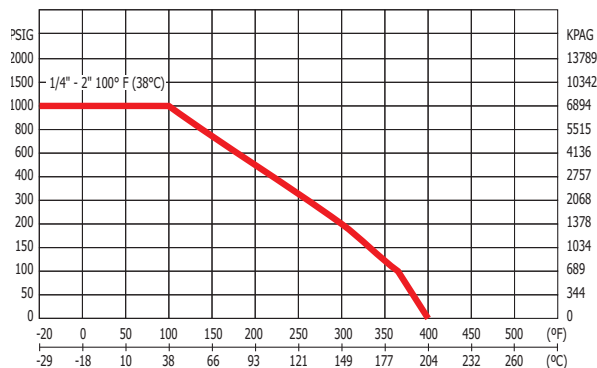


- Three way L-port
- Reduced port
- NPT ends to ANSI B1.20.1
- Two piece body with floating ball
- Blowout-proof stem
- Adjustable packing gland
- Locking lever handle
- ISO 5211 mounting pad
- Complies with NACE MR-0103 and supplier requirements of NACE MR-0175 / ISO 15156
- 1000 PSI, WOG 1/4" to 2"

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Packing	PTFE
8	Thrust Washer	R-PTFE 15% Glass-Filled
9	Stem	A276 TYPE 316
10	Gasket	PTFE
11	Cap	A351 GRADE CF8M
12	Ball	A351 GRADE CF8M
13	Seat	R-PTFE 15% Glass-Filled
14	Body	A351 GRADE CF8M

NOTE: OPEN PORT PRESSURE MUST EXCEED CLOSED PORT PRESSURE.

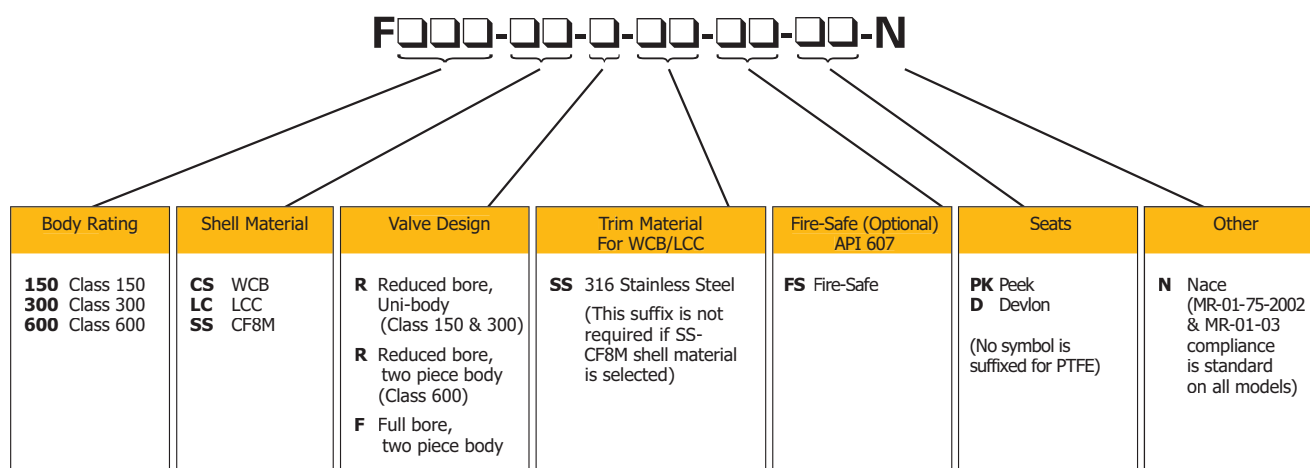
PRESSURE TEMPERATURE RATING



DIMENSIONS														
SIZE		mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	mm/in	K	CV
8	1/4	11.1	29.35	58.70	50.80	100.0	30.00	36.00	15.30	5.45	7.70	M6x1.0	4	0.390
		0.44	1.16	2.31	2.00	3.94	1.18	1.42	0.60	0.22	0.30			0.858
10	3/8	12.70	29.35	58.70	50.80	100.0	30.00	36.00	15.30	5.45	7.70	M6x1.0	5.4	0.360
		0.50	1.16	2.31	2.00	3.94	1.18	1.42	0.60	0.22	0.30			0.792
15	1/2	12.7	29.35	58.70	50.80	100.0	30.00	36.00	15.30	5.45	7.70	M6x1.0	5.4	0.330
		0.50	1.16	2.31	2.00	3.94	1.18	1.42	0.60	0.22	0.30			0.726
20	3/4	17.30	38.10	76.20	58.50	130.0	38.10	36.00	17.00	6.45	9.30	M6x1.0	12	0.660
		0.68	1.50	3.00	2.29	5.12	1.50	1.42	0.67	0.25	0.37			1.452
25	1	20.60	40.75	82.00	62.35	130.0	42.67	42.00	18.40	6.45	9.30	M6x1.0	15	0.850
		0.81	1.60	3.23	2.46	5.12	1.68	1.65	0.72	0.25	0.37			1.870
32	1 1/4	25.40	51.00	102.0	74.10	155.0	51.00	50.00	23.00	8.00	12.50	M8x1.25	21	1.490
		1.00	2.01	4.02	2.92	6.10	2.01	1.97	0.91	0.32	0.49			3.278
40	1 1/2	31.80	55.50	111.0	78.85	155.0	61.00	50.00	23.00	8.00	12.50	M8x1.25	34	2.040
		1.25	2.19	4.37	3.10	6.10	2.40	1.97	0.91	0.32	0.49			4.488
50	2	38.10	68.50	137.0	94.20	175.0	71.37	50.00	25.40	10.00	15.60	M8x1.25	47	3.160
		1.50	2.70	5.39	3.71	6.89	2.81	1.97	1.00	0.39	0.61			6.952

ORDERING CODES

3.1



The order code system lets you specify your pressure class, material, design (reduced or full port), trim materials and whether or not you require Fire-Safe materials to API 607.

So for instance, a 150 pressure class in carbon steel with reduced port and stainless trims with fire-safe seals would be indicated as:
F150-CS-R-SS-FS-N

Refer to the chart above for feature designations.

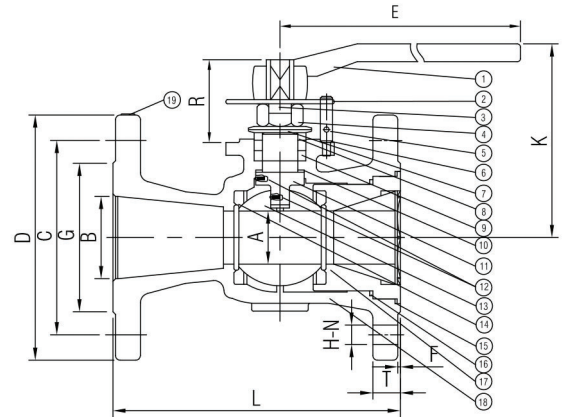
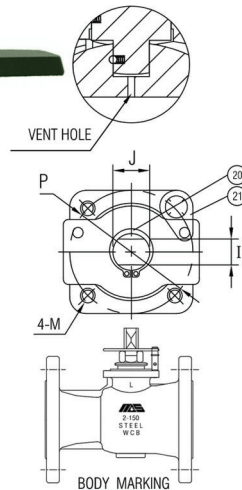
Please contact us for more information on:

- Special Trims
- Manual Operators
- Pneumatic Operators
- Electric Operators
- Control Packages

**F Series
Flanged Carbon Steel
Class 150
One Piece Reduced Port
Ball Valves**

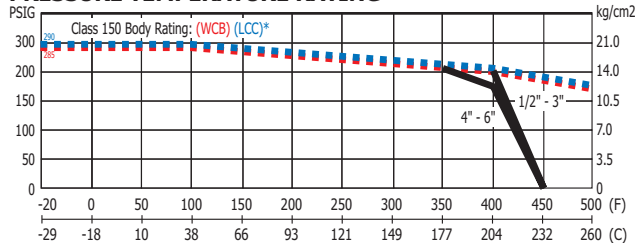
F150-CS-R-SS-FS-N

3.2



- One piece body, Reduced port
- ASME B16.34 Class 150
- Cavity Relief Seat
- ISO 5211 Mounting pad
- Blowout-proof stem
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
Complies with manufacturer requirements of NACE MR0175/ISO15156
- **F150-LC-R-SS-FS-N (LCC body) is available**

PRESSURE TEMPERATURE RATING



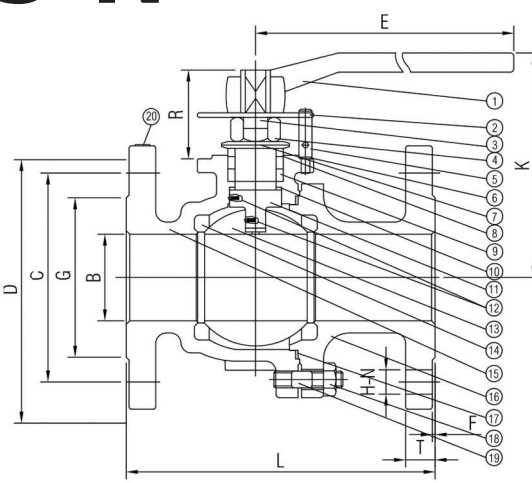
*LCC body rated to -50F/-46C

NAME / MATERIAL				
NO.	PART NAME	CS	LC	QTY
1	HANDLE	DUCTILE IRON		1
2	STOPPER PLATE	A276 TYPE 304		1
3	LOCK WASHER	A276 TYPE 304		1
4	GLAND NUT	CARBON STEEL		1
5	STOPPER PIN	A276 TYPE 304		1
6	LOCK WASHER	A276 TYPE 304		1
7	BELLEVILLE WASHER	S.S.301		2
8	GLAND	A276 TYPE 304		1
9	PACKING	GRAPHITE		1 SET
10	THRUST WASHER	RPTFE 15% GFT		1
11	STEM	A276 TYPE 316		1
12	ANTI-STATIC DEVICE	A276 TYPE 304		2 SETS
13	BALL	A351 CF8M		1
14	SEAT	PTFE (TFM-1600)		2
15	BODY SEAL	GRAPHITE		1
16	BODY SEAL	PTFE		
17	BODY INSERT	A216 WCB	A352 LCC	1
18	BODY	A216 WCB	A352 LCC	1
19	IDENTIFICATION PLATE	A276 TYPE 304		1
20	RETAINING RING	CARBON STEEL		1
21	LOCK PLATE	A276 TYPE 304		1

DIMENSIONS																			
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
2	38	50	120.5	152	230	1.6	92	19	14	20	125	178	5/16-UNC	4	70	15.9	49	F07	8.00
	1.50	1.97	4.75	5.98	9.06	0.06	3.62	0.75	0.55	0.79	4.92	7.00			2.76	0.63	1.93		17.60
3	58	76	152.5	190	400	1.6	127	19	17	25	168	203	3/8-UNC	4	70	19.1	59	F07	15.70
	2.28	3.00	6.00	7.48	15.75	0.06	5.00	0.75	0.67	0.98	6.61	8.00			2.76	0.75	2.32		34.54
4	76	102	190.5	229	400	1.6	157	19	17	25	183	229	3/8-UNC	8	70	23.9	59	F07	24.60
	3.00	4.02	7.50	9.02	15.75	0.06	6.18	0.75	0.67	0.98	7.20	9.02			2.76	0.94	2.32		54.12
6	114	152	241.5	279	750	1.6	216	22	23	34	245	267	1/2-UNC	8	125	25.4	73	F12	49.50
	4.49	5.98	9.50	10.98	29.53	0.06	8.50	0.88	0.91	1.34	9.65	10.51			4.92	1.00	2.87		108.90



3.3



-
- PSIG
- Class 150 Body Rating: (WCB) (LCC)*
- kg/cm²
- 6" - 4"
- 295 285
- 204 232
- 177 149
- 150 121
- 100 66
- 50 38
- 0 10
- 20 -29
- 500 (F)
- 260 (C)

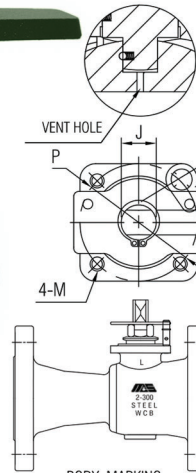
*LCC body rated to -50F/-46C

Technical data, dimensions, materials & specifications are subject to change without notice. MAS JUNE 2019

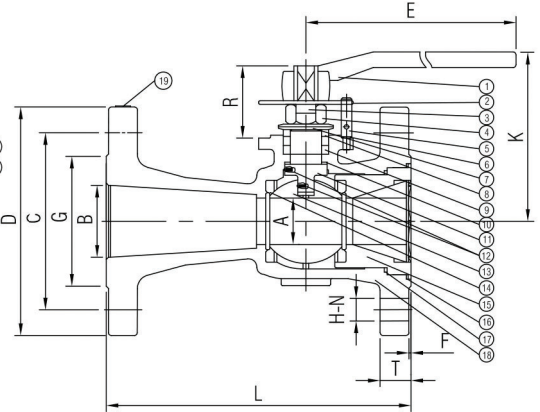
F Series Flanged Carbon Steel Class 300 One Piece Reduced Port Ball Valves

F300-CS-R-SS-FS-N

3.4

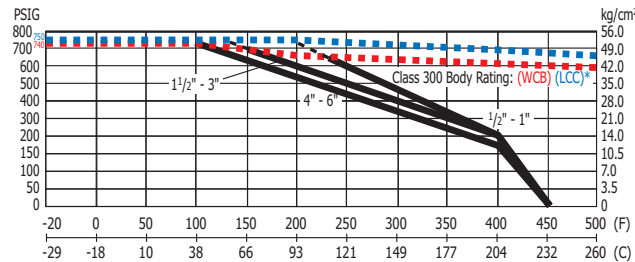


BODY MARKING



- Reduced port, One piece body
- ASME B16.34 Class 300
- Cavity Relief Seat
- Blowout-proof stem
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- **F300-LC-R-SS-FS-N (LCC body) is available**

PRESSURE TEMPERATURE RATING



*LCC body rated to -50F/-46C

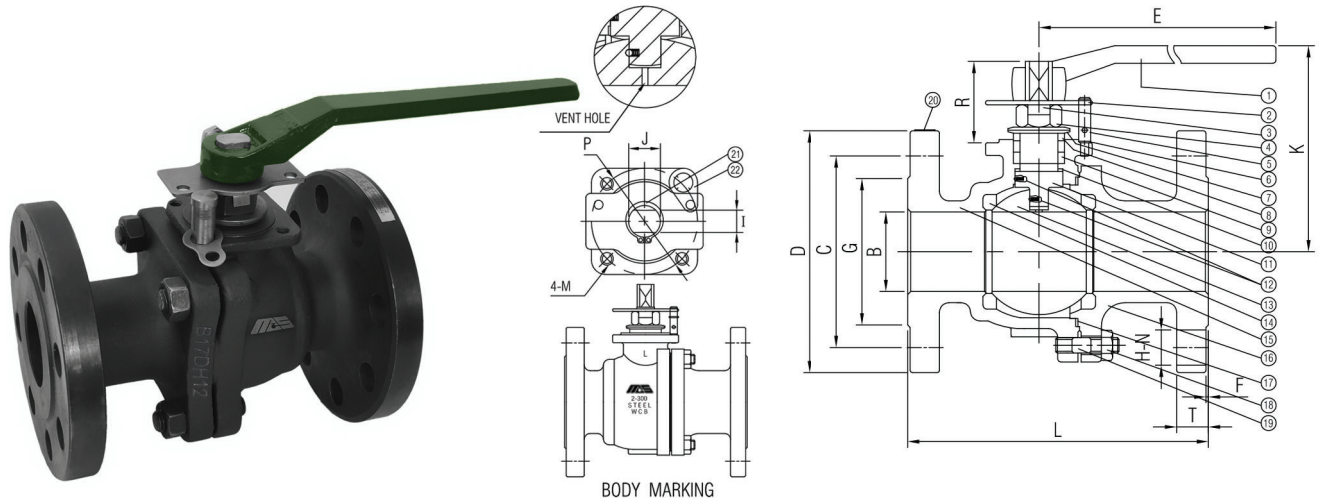
NAME / MATERIAL				
NO.	PART NAME	CS	LC	QTY
1	HANDLE	DUCTILE IRON		1
2	STOPPER PLATE	A276 TYPE 304		1
3	LOCK WASHER	A276 TYPE 304		1
4	GLAND NUT	CARBON STEEL		1
5	STOPPER PIN	A276 TYPE 304		1
6	LOCK WASHER	A276 TYPE 304		1
7	BELLEVILLE WASHER	S.S.301		2
8	GLAND	A276 TYPE 304		1
9	PACKING	GRAPHITE		1 SET
10	THRUST WASHER	RPTFE 15% GFT		1
11	STEM	A276 TYPE 316		1
12	ANTI-STATIC DEVICE	A276 TYPE 304		2 SETS
13	BALL	A351 CF8M		1
14	SEAT	PTFE (TFM-1600)		2
15	BODY INSERT	A216 WCB	A352 LCC	1
16	BODY SEAL	GRAPHITE		1
17	BODY SEAL	PTFE		1
18	BODY	A216 WCB	A352 LCC	1
19	IDENTIFICATION PLATE	A276 TYPE 304		1
20	RETAINING RING	CARBON STEEL		1
21	LOCK PLATE	A276 TYPE 304		1

DIMENSIONS																				
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	CV	WEIGHT KGS/LBS
2	38	50	127	165	230	1.6	92	19	14	20	125	216	5/16-UNC	8	70	22.3	49	F07	150	11.19
	1.50	1.97	5.00	6.50	9.06	0.06	3.62	0.75	0.55	0.79	4.92	8.50			2.76	0.88	1.93			
3	58	76	168	210	400	1.6	127	22	17	25	168	283	3/8-UNC	8	70	28.5	59	F07	350	23.47
	2.28	3.00	6.61	8.27	15.75	0.06	5.00	0.88	0.67	0.98	6.61	11.12			2.76	1.12	2.32			
4	76	102	200	254	400	1.6	157	22	17	25	183	305	3/8-UNC	8	70	31.8	59	F07	500	35.72
	3.00	4.02	7.87	10.00	15.75	0.06	6.18	0.88	0.67	0.98	7.20	12.00			2.76	1.25	2.32			
6	114	152	270	318	750	1.6	216	22	23	34	245	403	1/2-UNC	12	125	36.6	73	F12	1200	79.21
	4.49	5.98	10.63	12.52	29.53	0.06	8.50	0.88	0.91	1.34	9.65	15.87			4.92	1.44	2.87			

F Series Flanged Carbon Steel Class 300 Two Piece Full Port Ball Valves

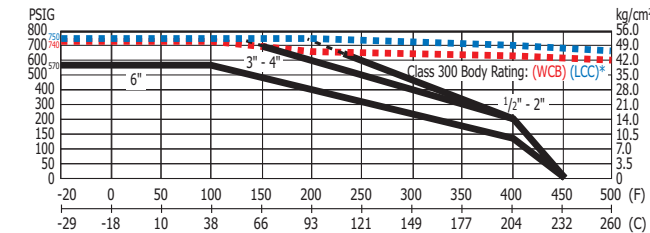
F300-CS-F-SS-FS-N

3.5



- Full port, Two piece body
- ASME B16.34 Class 300
- Cavity Relief Seat
- Blowout-proof stem
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- **F300-LC-F-SS-FS-N (LCC body) is available**

PRESSURE TEMPERATURE RATING



*LCC body rated to -50F/-46C

NAME / MATERIAL				
NO.	PART NAME	CS	LC	QTY
1	HANDLE	DUCTILE IRON		1
2	STOPPER PLATE	A276 TYPE 304		1
3	LOCK WASHER	A276 TYPE 304		1
4	GLAND NUT	CARBON STEEL		1
5	STOPPER PIN	A276 TYPE 304		1
6	LOCK WASHER	A276 TYPE 304		1
7	BELLEVILLE WASHER	S.S.301		2
8	GLAND	A276 TYPE 304		1
9	PACKING	GRAPHITE		1 SET
10	THRUST WASHER	RPTFE 15% GFT		1
11	STEM	A276 TYPE 316		1
12	ANTI-STATIC DEVICE	A276 TYPE 304		2 SETS
13	BALL	A351 CF8M		1
14	SEAT	PTFE (TFM-1600)		2
15	BODY	A216 WCB	A352 LCC	1
16	CAP	A216 WCB	A352 LCC	1
17	BODY SEAL	GRAPHITE		1
18	BOLT NUT	A194 GRADE 2HM	A194 GRADE 7M	1 SET
19	STUD BOLT	A193 GRADE B7M	A320 GRADE L7M	1 SET
20	IDENTIFICATION PLATE	A276 TYPE 304		1
21	RETAINING RING	CARBON STEEL		1
22	LOCK PLATE	A276 TYPE 304		1

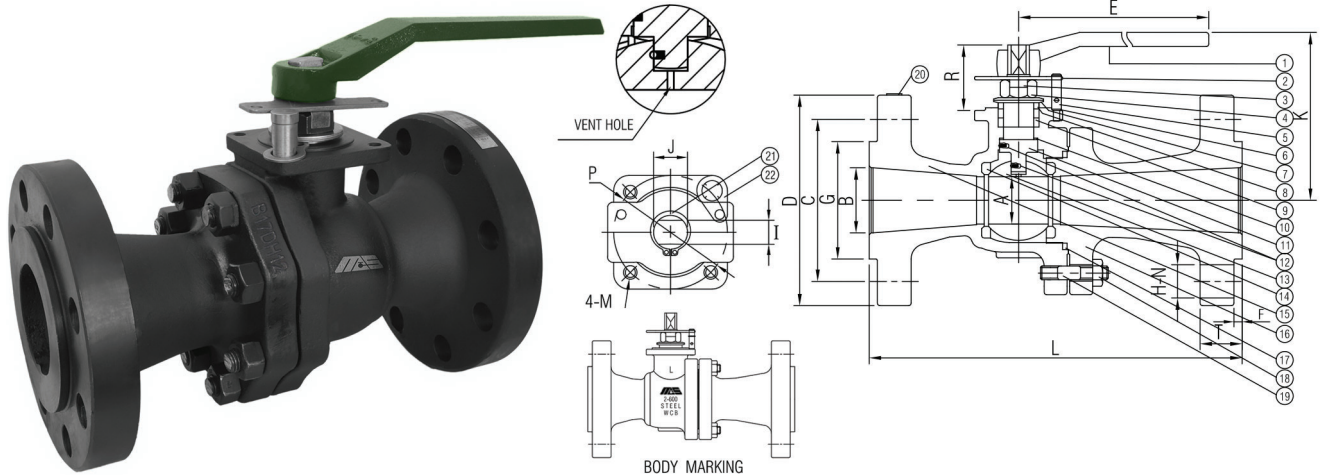
DIMENSIONS																			
SIZE	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	CV	WEIGHT KGS/LBS
1/2	15	66.5	95	130	1.6	35	16	8	11	83	140	1/4-UNC	4	36	14.2	27	F03	15	2.20
	0.59	2.62	3.75	5.12	0.06	1.38	0.62	0.31	0.43	3.27	5.50			1.42	0.56	1.06			4.84
3/4	19	82.5	117	130	1.6	43	19	8	11	86	152	1/4-UNC	4	36	15.8	27	F03	35	3.29
	0.75	3.25	4.62	5.12	0.06	1.69	0.75	0.31	0.43	3.39	6.00			1.42	0.62	1.06			7.23
1	24	89	124	160	1.6	51	19	10	14	104	165	1/4-UNC	4	50	17.5	35.5	F05	60	4.76
	0.95	3.50	4.88	6.30	0.06	2.00	0.75	0.39	0.55	4.09	6.50			1.97	0.69	1.40			10.47
1 1/2	38	114.5	156	230	1.6	73	22	14	20	125	190	5/16-UNC	4	70	20.6	49	F07	190	9.14
	1.50	4.50	6.14	9.06	0.06	2.88	0.88	0.55	0.79	4.92	7.50			2.76	0.81	1.93			20.10
2	50	127	165	230	1.6	92	19	14	20	134.5	216	5/16-UNC	8	70	22.3	49	F07	320	12.80
	1.97	5.00	6.50	9.06	0.06	3.62	0.75	0.55	0.79	5.30	8.50			2.76	0.88	1.93			28.16
2 1/2	65	149.4	190.5	400	1.6	104.6	22	17	25	170.5	241	3/8-UNC	8	102	25.4	61	F10	600	22.73
	2.56	5.88	7.50	15.75	0.06	4.12	0.88	0.67	0.98	6.71	9.50			4.02	1.00	2.40			50.00
3	76	168	210	400	1.6	127	22	17	25	181.5	282	3/8-UNC	8	102	28.5	61	F10	960	29.60
	3.00	6.62	8.27	15.75	0.06	5.00	0.88	0.67	0.98	7.15	11.12			4.02	1.12	2.40			65.12
4	100	200	254	750	1.6	157	22	23	34	205.5	305	1/2-UNC	8	125	31.8	73	F12	1650	50.40
	3.94	7.87	10.00	29.53	0.06	6.18	0.88	0.91	1.34	8.09	12.00			4.92	1.25	2.87			110.88
6	150	270	318	1000	1.6	216	22	27	40	289.5	403	5/8-UNC	12	140	36.6	90	F14	4200	107.3
	5.91	10.63	12.52	39.37	0.06	8.50	0.88	1.06	1.57	11.40	15.87			5.51	1.44	3.54			236.06

Technical data, dimensions, materials & specifications are subject to change without notice. MAS JUNE 2019

F Series Flanged Carbon Steel Class 600 Two Piece Reduced Port Ball Valves

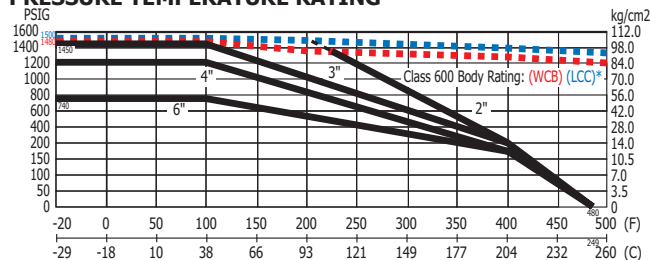
F600-CS-R-SS-FS-N

3⁶



- Reduced port, Two piece body
- ASME B16.34 Class 600
- Cavity Relief Seat
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Blowout-proof stem
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- **F600-LC-R-SS-FS-N (LCC body) is available**

PRESSURE TEMPERATURE RATING



*LCC body rated to -50F/-46C

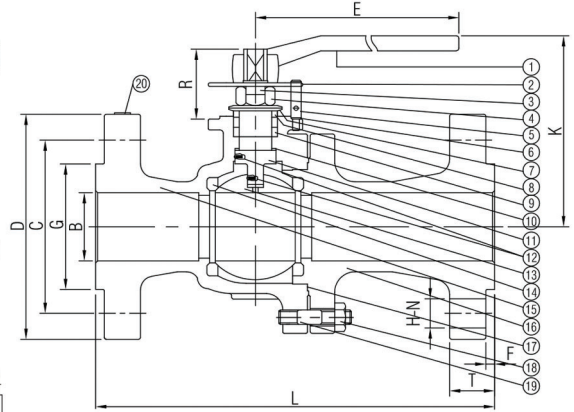
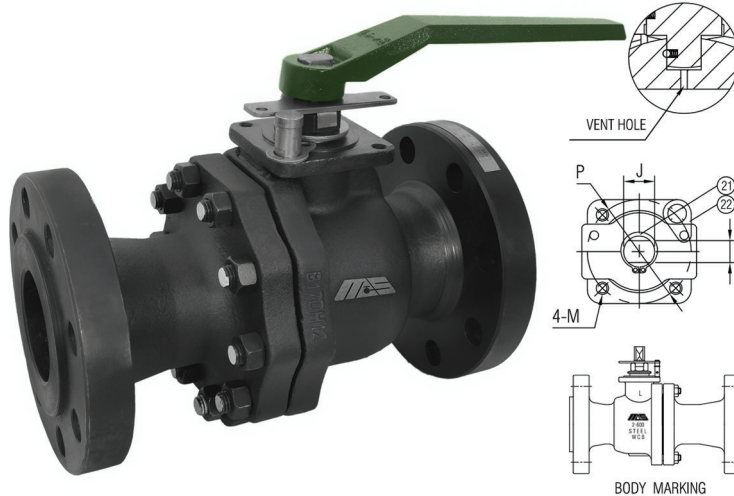
NAME / MATERIAL				
NO.	PART NAME	CS	LC	QTY
1	HANDLE	DUCTILE IRON		1
2	STOPPER PLATE	A276 TYPE 304		1
3	LOCK WASHER	A276 TYPE 304		1
4	GLAND NUT	CARBON STEEL		1
5	STOPPER PIN	A276 TYPE 304		1
6	LOCK WASHER	A276 TYPE 304		1
7	BELLEVILLE WASHER	S.S.301		2
8	GLAND	A276 TYPE 304		1
9	PACKING	GRAPHITE		1 SET
10	THRUST WASHER	RPTFE 15% GFT		1
11	STEM	A276 TYPE 316		1
12	ANTI-STATIC DEVICE	A276 TYPE 304		2 SETS
13	BALL	A351 CF8M		1
14	SEAT	PTFE + 25% CARBON		2
15	BODY	A216 WCB	A352 LCC	1
16	CAP	A216 WCB	A352 LCC	1
17	BODY SEAL	304 + GRAPHITE		1
18	BOLT NUT	A194 GRADE 2HM	A194 GRADE 7M	1
19	STUD BOLT	A193 GRADE B7M	A320 GRADE L7M	1
20	IDENTIFICATION PLATE	A276 TYPE 304		1
21	RETAINING RING	CARBON STEEL		1
22	LOCK PLATE	A276 TYPE 304		1

DIMENSIONS																			
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
2	38	50	127	165	230	6.35	92	19	14	20	144.5	292	5/16-UNC	8	70	31.8	49	F07	15.72
	1.50	1.97	5.00	6.50	9.06	0.25	3.62	0.75	0.55	0.79	5.69	11.50			2.76	1.25	1.93		34.58
3	58	76	168	210	400	6.35	127	22.3	17	25	180	356	3/8-UNC	8	70	38.1	59	F07	33.05
	2.28	3.00	6.61	8.27	15.75	0.25	5.00	0.88	0.67	0.98	7.09	14.02			2.76	1.50	2.32		72.71
4	76	102	216	273	400	6.35	157	25.4	17	25	194	432	3/8-UNC	8	70	44.5	59	F07	61.64
	3.00	4.02	8.50	10.75	15.75	0.25	6.18	1.00	0.67	0.98	7.64	17.00			2.76	1.75	2.32		135.61
6	114	152	292	356	750	6.35	216	28.5	23	34	256	559	1/2-UNC	12	125	54.1	73	F12	131.83
	4.49	5.98	11.50	14.02	29.53	0.25	8.50	1.12	0.91	1.34	10.08	22.00			4.92	2.13	2.87		290.03

F Series Flanged Carbon Steel Class 600 Two Piece Full Port Ball Valves

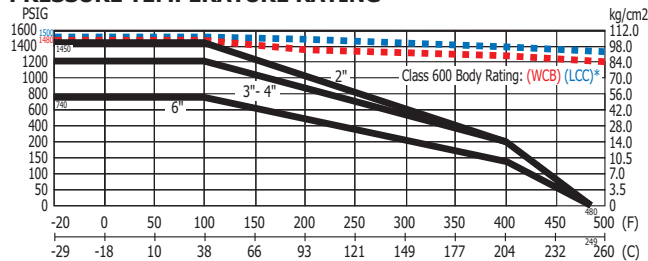
F600-CS-F-SS-FS-N

3⁷



- Full port, Two piece body
- ASME B16.34 Class 600
- Cavity Relief Seat
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Blowout-proof stem
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- **F600-LC-F-SS-FS-N (LCC body) is available**

PRESSURE TEMPERATURE RATING



*LCC body rated to -50F/-46C

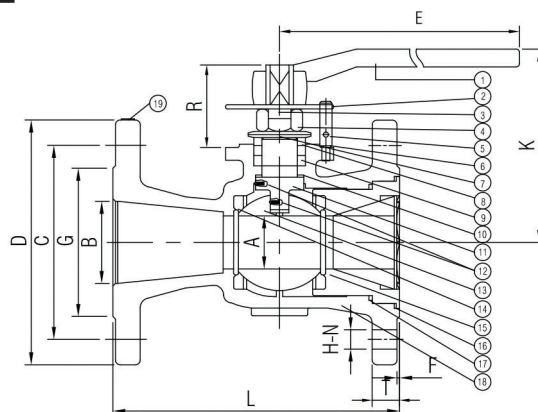
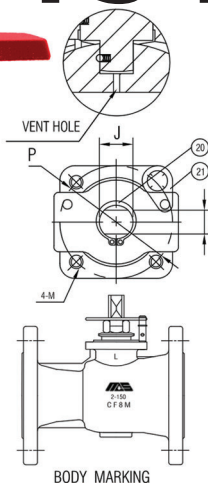
NAME / MATERIAL				
NO.	PART NAME	CS	LC	QTY
1	HANDLE	DUCTILE IRON		1
2	STOPPER PLATE	A276 TYPE 304		1
3	LOCK WASHER	A276 TYPE 304		1
4	GLAND NUT	CARBON STEEL		1
5	STOPPER PIN	A276 TYPE 304		1
6	LOCK WASHER	A276 TYPE 304		1
7	BELLEVILLE WASHER	S.S. 301		2
8	GLAND	A276 TYPE 304		1
9	PACKING	GRAPHITE		1 SET
10	THRUST WASHER	RPTFE 15% GFT		1
11	STEM	A276 TYPE 316		1
12	ANTI-STATIC DEVICE	A276 TYPE 304		2 SETS
13	BALL	A351 CF8M		1
14	SEAT	PTFE+25%CARBON		2
15	BODY	A216 WCB	A352 LCC	1
16	CAP	A216 WCB	A352 LCC	1
17	BODY SEAL	304+ GRAPHITE		1
18	BOLT NUT	A194 GRADE 2HM	A194 GRADE 7M	1 SET
19	STUD BOLT	A193 GRADE B7M	A320 GRADE L7M	1 SET
20	IDENTIFICATION PLATE	A276 TYPE 304		1
21	RETAINING RING	CARBON STEEL		1
22	LOCK PLATE	A276 TYPE 304		1

DIMENSIONS																		
SIZE	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
2	50	127	165	230	6.35	92	19	14	20	158	292	5/16-UNC	8	70	31.8	49	F07	17.26
	1.97	5.00	6.50	9.06	0.25	3.62	0.75	0.55	0.79	6.22	11.50			2.76	1.25	1.93		
3	76	168	210	400	6.35	127	22.3	17	25	194	356	3/8-UNC	8	102	38.1	61	F10	39.25
	3.00	6.61	8.27	15.75	0.25	5.00	0.88	0.67	0.98	7.64	14.02			4.02	1.50	2.40		
4	100	216	273	460	6.35	157	25.4	23	34	215.5	432	1/2-UNC	8	125	44.5	73	F12	71.74
	3.94	8.50	10.75	18.11	0.25	6.18	1.00	0.91	1.34	8.48	17.00			4.92	1.75	2.87		
6	150	292	356	1000	6.35	216	28.5	27	40	301.5	559	5/8-UNC	12	140	54.1	90	F14	161.62
	5.91	11.50	14.02	39.37	0.25	8.50	1.12	1.06	1.57	11.87	22.00			5.51	2.13	3.54		

F Series Flanged Stainless Steel Class 150 One Piece Reduced Port Ball Valves

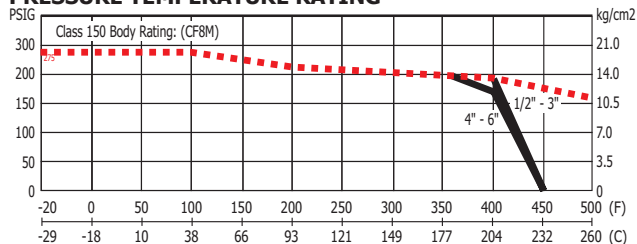
F150-SS-R-FS-N

3.8



- Reduced port, One piece body
- ASME B16.34 Class 150
- Cavity Relief Seat
- Blowout-proof stem
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

PRESSURE TEMPERATURE RATING



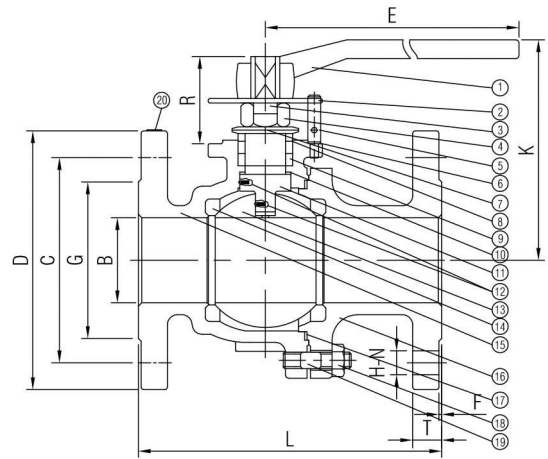
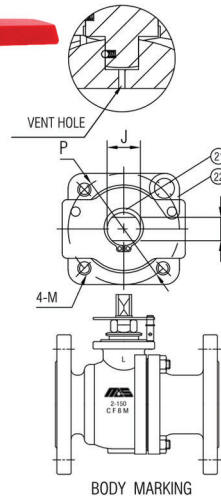
NAME / MATERIAL			
NO.	PART NAME	MATERIAL	QTY
1	HANDLE	DUCTILE IRON	1
2	STOPPER PLATE	A276 TYPE 304	1
3	LOCK WASHER	A276 TYPE 304	1
4	GLAND NUT	A276 TYPE 304	1
5	STOPPER PIN	A276 TYPE 304	1
6	LOCK WASHER	A276 TYPE 304	1
7	BELLEVILLE WASHER	S.S.301	2
8	GLAND	A276 TYPE 304	1
9	PACKING	GRAPHITE	1 SET
10	THRUST WASHER	RPTFE 15% GFT	1
11	STEM	A276 TYPE 316	1
12	ANTI-STATIC DEVICE	A276 TYPE 304	2 SETS
13	BALL	A351 CF8M	1
14	SEAT	PTFE (TFM-1600)	2
15	BODY INSERT	A351 CF8M	1
16	BODY SEAL	GRAPHITE	1
17	BODY SEAL	PTFE	1
18	BODY	A351 CF8M	1
19	IDENTIFICATION PLATE	A276 TYPE 304	1
20	RETAINING RING	CARBON STEEL	1
21	LOCK PLATE	A276 TYPE 304	1

DIMENSIONS																			
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
2	38	50	120.5	152	230	1.6	92	19	14	20	125	178	5/16-UNC	4	70	15.9	49	F07	8.00
	1.50	1.97	4.75	5.98	9.06	0.06	3.62	0.75	0.55	0.79	4.92	7.00			2.76	0.63	1.93		17.60
3	58	76	152.5	190	400	1.6	127	19	17	25	168	203	3/8-UNC	4	70	19.1	59	F07	15.70
	2.28	3.00	6.00	7.48	15.75	0.06	5.00	0.75	0.67	0.98	6.61	8.00			2.76	0.75	2.32		34.54
4	76	102	190.5	229	400	1.6	157	19	17	25	183	229	3/8-UNC	8	70	23.9	59	F07	24.60
	3.00	4.02	7.50	9.02	15.75	0.06	6.18	0.75	0.67	0.98	7.20	9.02			2.76	0.94	2.32		54.12
6	114	152	241.5	279	750	1.6	216	22	23	34	245	267	1/2-UNC	8	125	25.4	73	F12	49.50
	4.49	5.98	9.50	10.98	29.53	0.06	8.50	0.88	0.91	1.34	9.65	10.51			4.92	1.00	2.87		108.90

F Series Flanged Stainless Steel Class 150 Two Piece Full Port Ball Valves

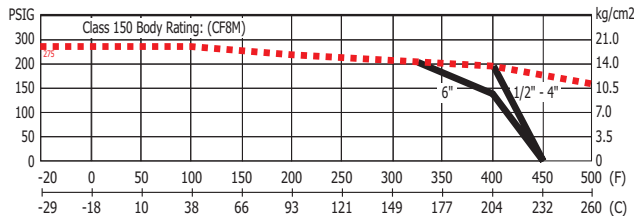
F150-SS-F-FS-N

3.9



- Full port, Two piece body
- ASME B16.34 Class 150
- Cavity Relief Seat
- Blowout-proof stem
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
Complies with manufacturer requirements of NACE MR0175/ISO15156

PRESSURE TEMPERATURE RATING



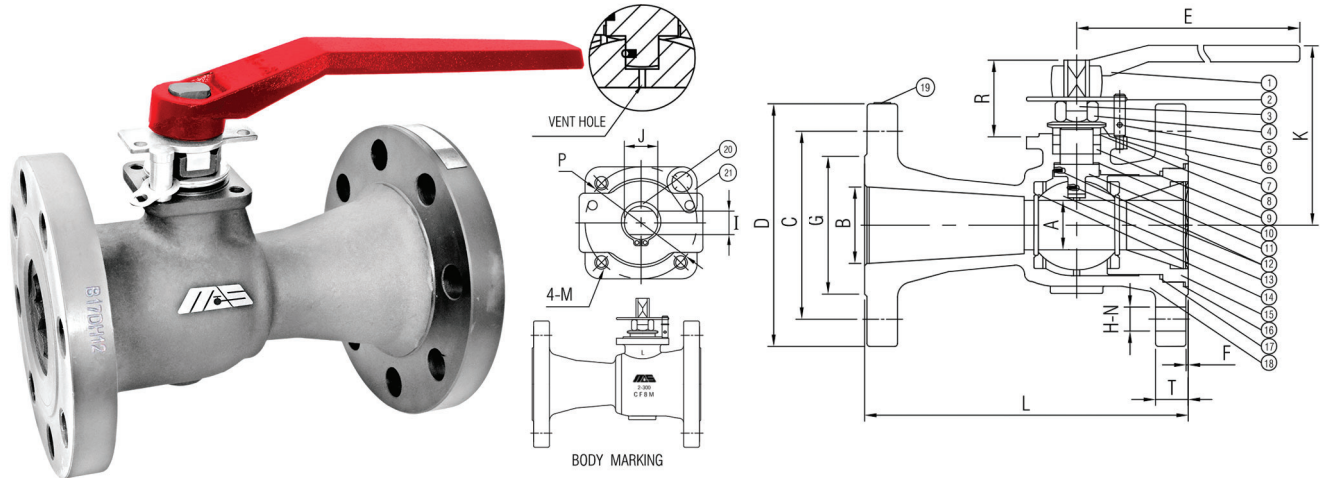
NAME / MATERIAL			
NO.	PART NAME	MATERIAL	QTY
1	HANDLE	DUCTILE IRON	1
2	STOPPER PLATE	A276 TYPE 304	1
3	LOCK WASHER	A276 TYPE 304	1
4	GLAND NUT	A276 TYPE 304	1
5	STOPPER PIN	A276 TYPE 304	1
6	LOCK WASHER	A276 TYPE 304	1
7	BELLEVILLE WASHER	S.S. 301	2
8	GLAND	A276 TYPE 304	1
9	PACKING	GRAPHITE	1 SET
10	THRUST WASHER	RPTFE 15% GFT	1
11	STEM	A276 TYPE 316	1
12	ANTI-STATIC DEVICE	A276 TYPE 304	2 SETS
13	BALL	A351 CF8M	1
14	SEAT	PTFE (TFM-1600)	2
15	BODY	A351 CF8M	1
16	CAP	A351 CF8M	1
17	BODY SEAL	GRAPHITE	1
18	BOLT NUT	A194 GRADE 8MA	1 SET
19	STUD BOLT	A193 GRADE B8M	1 SET
20	IDENTIFICATION PLATE	A276 TYPE 304	1
21	RETAINING RING	CARBON STEEL	1
22	LOCK PLATE	A276 TYPE 304	1

DIMENSIONS																		
SIZE	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
1/2	15	60.5	89	130	1.6	35	16	8	11	83	108	1/4-UNC	4	36	11.2	27	F03	1.64
	0.59	2.38	3.50	5.12	0.06	1.38	0.62	0.31	0.43	3.27	4.25			1.42	0.44	1.06		
3/4	19	70	98.5	130	1.6	43	16	8	11	86	117	1/4-UNC	4	36	11.2	27	F03	2.00
	0.75	2.75	3.88	5.12	0.06	1.69	0.62	0.31	0.43	3.39	4.62			1.42	0.44	1.06		
1	24	79	108	160	1.6	51	16	10	14	104	127	1/4-UNC	4	50	11.2	35.5	F05	3.15
	0.95	3.12	4.25	6.30	0.06	2.00	0.62	0.39	0.55	4.09	5.00			1.97	0.44	1.40		
1 1/2	38	98.5	127	230	1.6	73	16	14	20	125	165	5/16-UNC	4	70	14.3	49	F07	6.26
	1.50	3.88	5.00	9.06	0.06	2.88	0.62	0.55	0.79	4.92	6.50			2.76	0.56	19.3		
2	50	120.5	152	230	1.6	92	19	14	20	134.5	178	5/16-UNC	4	70	15.9	49	F07	9.30
	1.97	4.75	5.98	9.06	0.06	3.62	0.75	0.55	0.79	5.30	7.00			2.76	0.63	1.93		
2 1/2	65	139.7	178	400	1.6	104.6	19	17	25	170.5	190	3/8-UNC	4	102	17.5	61	F10	16.82
	2.56	5.50	7.00	15.75	0.06	4.12	0.75	0.67	0.98	6.71	7.50			4.02	0.69	2.40		
3	76	152.5	190	400	1.6	127	19	17	25	181.5	203	3/8-UNC	4	102	19.1	61	F10	22.00
	3.00	6.00	7.48	15.75	0.06	5.00	0.75	0.67	0.98	7.15	8.00			4.02	0.75	2.40		
4	100	190.5	229	460	1.6	157	19	23	34	205.5	229	1/2-UNC	8	125	23.9	73	F12	37.00
	3.94	7.50	9.02	18.11	0.06	6.18	0.75	0.91	1.34	8.09	9.02			4.92	0.94	2.87		
6	150	241.5	279	1000	1.6	216	22	27	40	289.5	394	5/8-UNC	8	140	25.4	90	F14	85.30
	5.91	9.50	10.98	39.37	0.06	8.50	0.88	1.06	1.57	11.40	15.51			5.51	1.00	3.54		

F Series Flanged Stainless Steel Class 300 One Piece Reduced Port Ball Valves

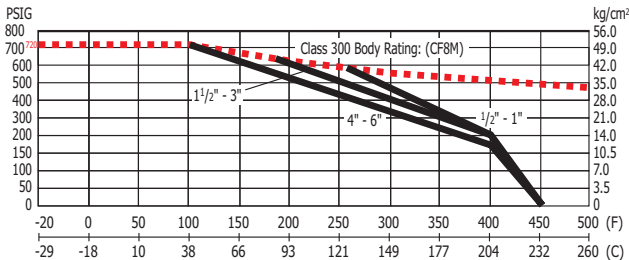
F300-SS-R-FS-N

3.10



- Reduced port, One piece body
- ASME B16.34 Class 300
- Cavity Relief Seat
- Blowout-proof stem
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

PRESSURE TEMPERATURE RATING



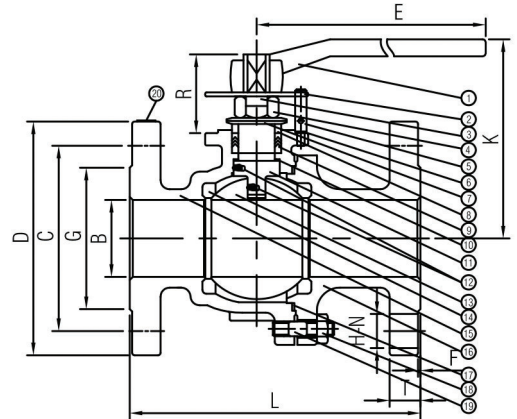
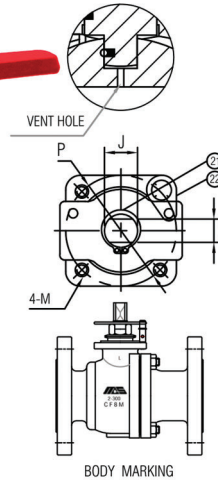
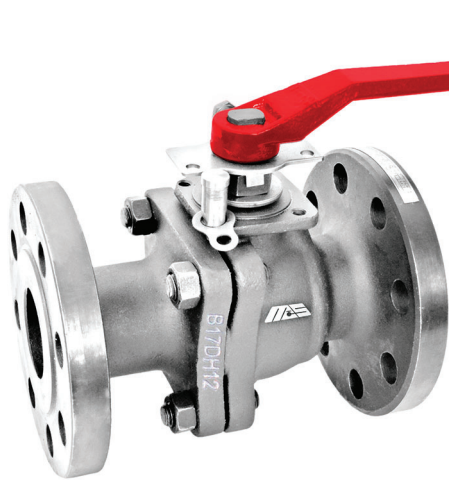
NAME / MATERIAL			
NO.	PART NAME	MATERIAL	QTY
1	HANDLE	DUCTILE IRON	1
2	STOPPER PLATE	A276 TYPE 304	1
3	LOCK WASHER	A276 TYPE 304	1
4	GLAND NUT	A276 TYPE 304	1
5	STOPPER PIN	A276 TYPE 304	1
6	LOCK WASHER	A276 TYPE 304	1
7	BELLEVILLE WASHER	S.S.301	2
8	GLAND	A276 TYPE 304	1
9	PACKING	GRAPHITE	1 SET
10	THRUST WASHER	RPTFE 15% GFT	1
11	STEM	A276 TYPE 316	1
12	ANTI-STATIC DEVICE	A276 TYPE 304	2 SETS
13	BALL	A351 CF8M	1
14	SEAT	PTFE (TFM-1600)	2
15	BODY INSERT	A351 CF8M	1
16	BODY SEAL	GRAPHITE	1
17	BODY SEAL	PTFE	1
18	BODY	A351 CF8M	1
19	IDENTIFICATION PLATE	A276 TYPE 304	1
20	RETAINING RING	CARBON STEEL	1
21	LOCK PLATE	A276 TYPE 304	1

DIMENSIONS																			
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
2	38	50	127	165	230	1.6	92	19	14	20	125	216	5/16-UNC	8	70	22.3	49	F07	11.19
	1.50	1.97	5.00	6.50	9.06	0.06	3.62	0.75	0.55	0.79	4.92	8.50			2.76	0.88	1.93		24.62
3	58	76	168	210	400	1.6	127	22	17	25	168	282	3/8-UNC	8	70	28.5	59	F07	23.47
	2.28	3.00	6.61	8.27	15.75	0.06	5.00	0.88	0.67	0.98	6.61	11.12			2.76	1.12	2.32		51.63
4	76	102	200	254	400	1.6	157	22	17	25	183	305	3/8-UNC	8	70	31.8	59	F07	35.72
	3.00	4.02	7.87	10.00	15.75	0.06	6.18	0.88	0.67	0.98	7.20	12.00			2.76	1.25	2.32		78.58
6	114	152	270	318	750	1.6	216	22	23	34	245	403	1/2-UNC	12	125	36.6	73	F12	79.21
	4.49	5.98	10.63	12.52	29.53	0.06	8.50	0.88	0.91	1.34	9.65	15.87			4.92	1.44	2.87		174.26

F Series Flanged Stainless Steel Class 300 Two Piece Full Port Ball Valves

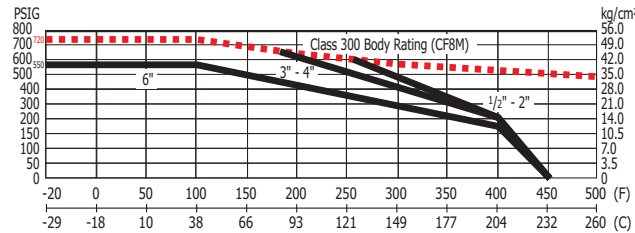
F300-SS-F-FS-N

3.11



- Full port, Two piece body
- ASME B16.34 Class 300
- Cavity Relief Seat
- Blowout-proof stem
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

PRESSURE TEMPERATURE RATING



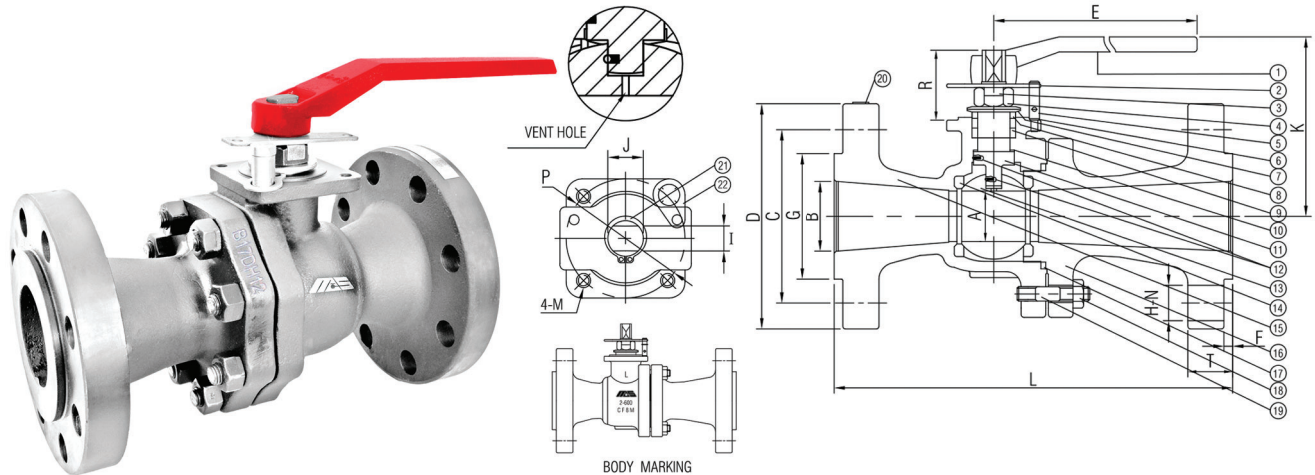
NAME / MATERIAL			
NO.	PART NAME	MATERIAL	QTY
1	HANDLE	DUCTILE IRON	1
2	STOPPER PLATE	A276 TYPE 304	1
3	LOCK WASHER	A276 TYPE 304	1
4	GLAND NUT	A276 TYPE 304	1
5	STOPPER PIN	A276 TYPE 304	1
6	LOCK WASHER	A276 TYPE 304	1
7	BELLEVILLE WASHER	S.S. 301	2
8	GLAND	A276 TYPE 304	1
9	PACKING	GRAPHITE	1 SET
10	THRUST WASHER	RPTFE 15% GFT	1
11	STEM	A276 TYPE 316	1
12	ANTI-STATIC DEVICE	A276 TYPE 304	2 SETS
13	BALL	A351 CF8M	1
14	SEAT	PTFE (TFM-1600)	2
15	BODY	A351 CF8M	1
16	CAP	A351 CF8M	1
17	BODY SEAL	GRAPHITE	1
18	BOLT NUT	A194 GRADE 8MA	1 SET
19	STUD BOLT	A193 GRADE B8M	1 SET
20	IDENTIFICATION PLATE	A276 TYPE 304	1
21	RETAINING RING	CARBON STEEL	1
22	LOCK PLATE	A276 TYPE 304	1

DIMENSIONS																		
SIZE	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
1/2	15	66.5	95	130	1.6	35	16	8	11	83	140	1/4-UNC	4	36	14.2	27	F03	2.20
	0.59	2.62	3.75	5.12	0.06	1.38	0.62	0.31	0.43	3.27	5.50	1/4-UNC	4	1.42	0.56	1.06		4.84
3/4	19	82.5	117	130	1.6	43	19	8	11	86	152.5	1/4-UNC	4	36	15.8	27	F03	3.29
	0.75	3.25	4.62	5.12	0.06	1.69	0.75	0.31	0.43	3.39	6.00	1/4-UNC	4	1.42	0.62	1.06		7.23
1	24	89	124	160	1.6	51	19	10	14	104	165	1/4-UNC	4	50	17.5	35.5	F05	4.76
	0.95	3.50	4.88	6.30	0.06	2.00	0.75	0.39	0.55	4.09	6.50	1/4-UNC	4	1.97	0.69	1.40		10.47
1 1/2	38	114.5	156	230	1.6	73	22	14	20	125	190.5	5/16-UNC	4	70	20.6	49	F07	9.14
	1.50	4.50	6.14	9.06	0.06	2.88	0.88	0.55	0.79	4.92	7.50	5/16-UNC	4	2.76	0.81	1.93		20.10
2	50	127	165	230	1.6	92	19	14	20	134.5	216	5/16-UNC	8	70	22.3	49	F07	12.80
	1.97	5.00	6.50	9.06	0.06	3.62	0.75	0.55	0.79	5.30	8.50	5/16-UNC	8	2.76	0.88	1.93		28.16
2 1/2	65	149.4	190.5	400	1.6	104.6	22	17	25	170.5	241.3	3/8-UNC	8	102	25.4	61	F10	22.73
	2.56	5.88	7.50	15.75	0.06	4.12	0.88	0.67	0.98	6.71	9.50	3/8-UNC	8	4.02	1.00	2.40		50.00
3	76	168	210	400	1.6	127	22	17	25	181.5	283	3/8-UNC	8	102	28.5	61	F10	29.60
	3.00	6.62	8.27	15.75	0.06	5.00	0.88	0.67	0.98	7.15	11.14	3/8-UNC	8	4.02	1.12	2.40		65.12
4	100	200	254	750	1.6	157	22	23	34	205.5	305	1/2-UNC	8	125	31.8	73	F12	50.40
	3.94	7.87	10.00	29.53	0.06	6.18	0.88	0.91	1.34	8.09	12.00	1/2-UNC	8	4.92	1.25	2.87		110.88
6	150	270	318	1000	1.6	216	22	27	40	289.5	403	5/8-UNC	12	140	36.6	90	F14	107.3
	5.91	10.63	12.52	39.37	0.06	8.50	0.88	1.06	1.57	11.40	15.87	5/8-UNC	12	5.51	1.44	3.54		236.0

F Series Flanged Stainless Steel Class 600 Two Piece Reduced Port Ball Valves

F600-SS-R-FS-N

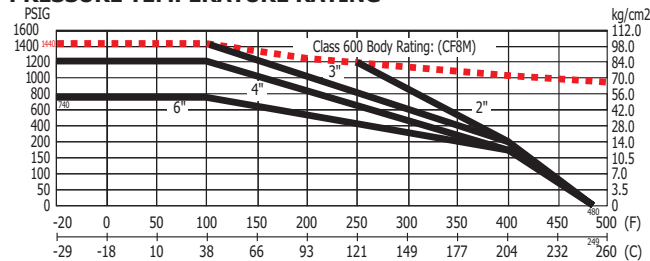
3.12



- Reduced port, Two piece body
- ASME B16.34 Class 600
- Cavity Relief Seat
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

NAME / MATERIAL			
NO.	PART NAME	MATERIAL	QTY
1	HANDLE	DUCTILE IRON	1
2	STOPPER PLATE	A276 TYPE 304	1
3	LOCK WASHER	A276 TYPE 304	1
4	GLAND NUT	A276 TYPE 304	1
5	STOPPER PIN	A276 TYPE 304	1
6	LOCK WASHER	A276 TYPE 304	1
7	BELLEVILLE WASHER	S.S. 301	2
8	GLAND	A276 TYPE 304	1
9	PACKING	GRAPHITE	1 SET
10	THRUST WASHER	RPTFE 15% GFT	1
11	STEM	A276 TYPE 316	1
12	ANTI-STATIC DEVICE	A276 TYPE 304	2 SETS
13	BALL	A351 CF8M	1
14	SEAT	PTFE+25% CARBON	2
15	BODY	A351 CF8M	1
16	CAP	A351 CF8M	1
17	BODY SEAL	304+GRAPHITE	1
18	BOLT NUT	A194 GRADE 8MA	1 SET
19	STUD BOLT	A193 GRADE B8M	1 SET
20	IDENTIFICATION PLATE	A276 TYPE 304	1
21	RETAINING RING	CARBON STEEL	1
22	LOCK PLATE	A276 TYPE 304	1

PRESSURE TEMPERATURE RATING

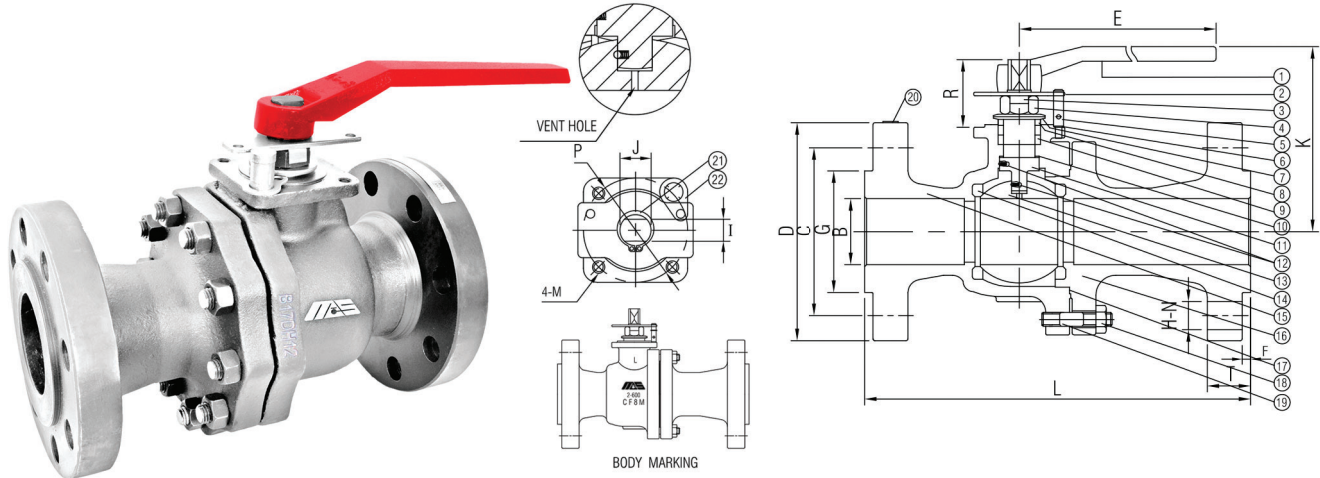


DIMENSIONS																																	
SIZE	mm/in	A	B	mm/in	C	D	E	mm/in	F	mm/in	G	mm/in	H	mm/in	I	mm/in	J	mm/in	K	mm/in	L	in	M	mm/in	N	mm/in	P	mm/in	T	mm/in	R	ISO FLG	WEIGHT KGS/LBS
2	38	50	127	165	230	6.35	92	19	14	20	144.5	292	5/16-UNC	8	70	31.8	49	F07	15.72														
	1.50	1.97	5.00	6.50	9.06	0.25	3.62	0.75	0.55	0.79	5.69	11.50			2.76	1.25	1.93		34.58														
3	58	76	168	210	400	6.35	127	22.3	17	25	180	356	3/8-UNC	8	70	38.1	59	F07	33.05														
	2.28	3.00	6.61	8.27	15.75	0.25	5.00	0.88	0.67	0.98	7.09	14.02			2.76	1.50	2.32		72.71														
4	76	102	216	273	400	6.35	157	25.4	17	25	194	432	3/8-UNC	8	70	44.5	59	F07	61.64														
	3.00	4.02	8.50	10.75	15.75	0.25	6.18	1.00	0.67	0.98	7.64	17.00			2.76	1.75	2.32		135.61														
6	114	152	292	356	750	6.35	216	28.5	23	34	256	559	1/2-UNC	12	125	54.1	73	F12	131.83														
	4.49	5.98	11.50	14.02	29.53	0.25	8.50	1.12	0.91	1.34	10.08	22.00			4.92	2.13	2.87		290.03														

F Series Flanged Stainless Steel Class 600 Two Piece Full Port Ball Valves

F600-SS-F-FS-N

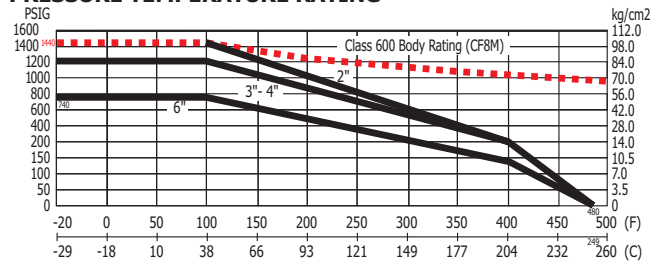
3.13



- Full port, Two piece body
- ASME B16.34 Class 600
- Cavity Relief Seat
- ISO 5211 Mounting pad
- Floating Ball, Anti-static device
- Open/Closed lockout capability
- **API 607 Fire-safe**
- Complies to NACE MR-0103
Complies with manufacturer requirements of NACE MR0175/ISO15156

NAME / MATERIAL			
NO.	PART NAME	MATERIAL	QTY
1	HANDLE	DUCTILE IRON	1
2	STOPPER PLATE	A276 TYPE 304	1
3	LOCK WASHER	A276 TYPE 304	1
4	GLAND NUT	A276 TYPE 304	1
5	STOPPER PIN	A276 TYPE 304	1
6	LOCK WASHER	A276 TYPE 304	1
7	BELLEVILLE WASHER	S.S. 301	2
8	GLAND	A276 TYPE 304	1
9	PACKING	GRAPHITE	1 SET
10	THRUST WASHER	RPTFE 15% GFT	1
11	STEM	A276 TYPE 316	1
12	ANTI-STATIC DEVICE	A276 TYPE 304	2 SETS
13	BALL	A351 CF8M	1
14	SEAT	PTFE +25% CARBON	2
15	BODY	A351 CF8M	1
16	CAP	A351 CF8M	1
17	BODY SEAL	304+GRAPHITE	1
18	BOLT NUT	A194 GRADE 8MA	1 SET
19	STUD BOLT	A193 GRADE B8M	1 SET
20	IDENTIFICATION PLATE	A276 TYPE 304	1
21	RETAINING RING	CARBON STEEL	1
22	LOCK PLATE	A276 TYPE 304	1

PRESSURE TEMPERATURE RATING

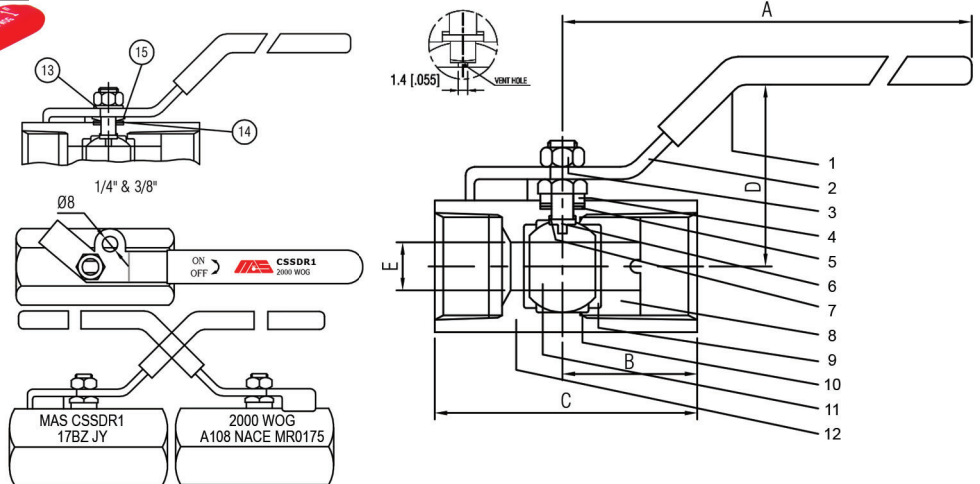


DIMENSIONS																		
SIZE	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	mm/in L	in M	mm/in N	mm/in P	mm/in T	mm/in R	ISO FLG	WEIGHT KGS/LBS
2	50	127	165	230	6.35	92	19	14	20	158	292	5/16	8	70	31.8	49	F07	17.26
	1.97	5.00	6.50	9.06	0.25	3.62	0.75	0.55	0.79	6.22	11.50	-UNC		2.76	1.25	1.93		37.97
3	76	168	210	400	6.35	127	22.3	17	25	194	356	3/8	8	102	38.1	61	F10	39.25
	3.00	6.61	8.27	15.75	0.25	5.00	0.88	0.67	0.98	7.64	14.02	-UNC		4.02	1.50	2.40		86.35
4	100	216	273	460	6.35	157	25.4	23	34	215.5	432	1/2	8	125	44.5	73	F12	71.74
	3.94	8.50	10.75	18.11	0.25	6.18	1.00	0.91	1.34	8.48	17.00	-UNC		4.92	1.75	2.87		157.83
6	150	292	356	1000	6.35	216	28.5	27	40	301.5	559	5/8	12	140	54.1	90	F14	161.62
	5.91	11.50	14.02	39.37	0.25	8.50	1.12	1.06	1.57	11.87	22.00	-UNC		5.51	2.13	3.54		355.56

C Series Carbon Steel Bar Stock 2000 WOG One Piece End Entry Ball Valves

CSSDR1

4.1



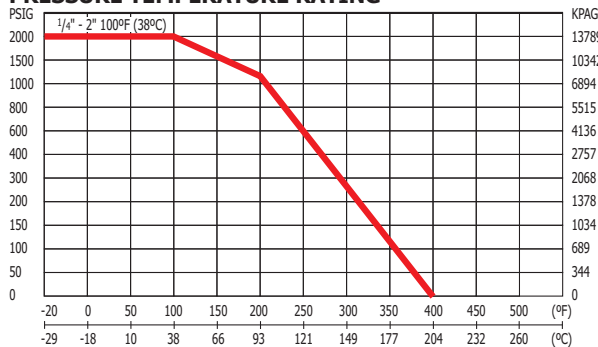
- Reduced port
- 2000 WOG Rating To ASME B31.3
- NPT Threads To ANSI B1.20.1
- One piece body
- Blowout-proof stem
- 2000 P.S.I. W.O.G. 1/4" - 2"
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	C.S. Plated
3	Handle Nut	C.S. Plated
4	Packing Bushing	A276 TYPE 304
5	Packing	PTFE
6	Stem	A276 TYPE 316
7	Thrust Washer	R-PTFE 15% GLASS-FILLED
8	Seat Retainer	C.S. A108 GR 1020
9	Seat	R-PTFE 15% GLASS-FILLED
10	Gasket	PTFE
11	Ball	A351 GRADE CF8M
12	Body	1/4"~1-1/2" C.S. A108 GR 1020 2" C.S. A105N
13	Stem Washer	A276 TYPE 304
14	Spring Washer	A276 TYPE 304
15	Belleville Washer	S.S. 301

NOTES:

1. THE SUPPLEMENTARY REQUIREMENTS S1, S5 AND S9 ARE MET FOR A108 GRADE 1020.
2. A 108 GRADE 1020 MEETS MECHANICAL PROPERTIES OF A105.
3. OVAL HANDLES OPTIONALLY AVAILABLE.

PRESSURE TEMPERATURE RATING

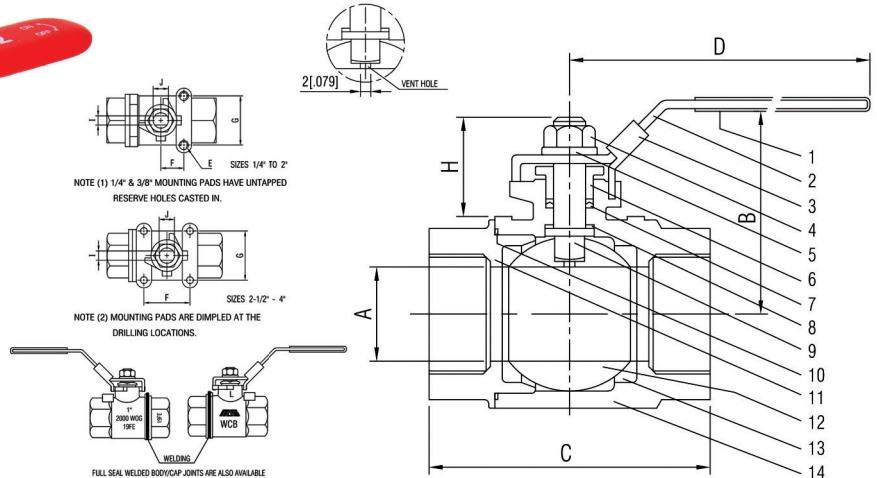


DIMENSIONS							
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	CV
8	1/4	71.00	23.90	43.10	30.0	5.00	1.5
		2.80	0.94	1.70	1.80	0.17	
10	3/8	85.50	26.05	47.35	33.35	7.00	3.5
		3.37	1.03	1.86	1.31	0.28	
15	1/2	109.47	32.95	61.72	54.41	9.20	5.7
		4.31	1.30	2.43	2.14	0.36	
20	3/4	112.5	37.25	69.85	55.00	12.50	10
		4.43	1.47	2.75	2.17	0.49	
25	1	112.5	44.50	85.73	61.50	15.00	16
		4.43	1.75	3.38	2.42	0.60	
32	1 1/4	147.5	48.60	93.67	73.50	20.00	25
		5.81	1.91	3.69	2.89	0.79	
40	1 1/2	147.5	52.55	101.6	75.00	24.00	40
		5.81	2.07	4.00	2.95	0.94	
50	2	154.0	57.70	114.3	85.50	32.00	62
		6.06	2.27	4.50	3.37	1.26	

C Series Carbon Steel 2000 WOG Two Piece Full Port Ball Valves

C2

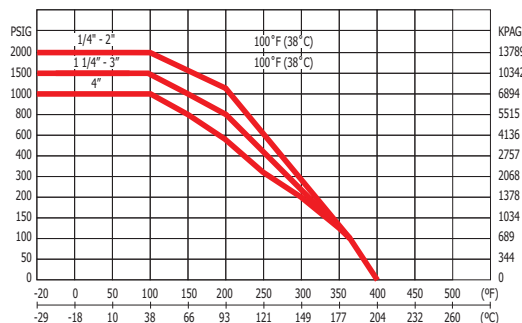
4.2



- Two piece body
- Full port
- NPT threads to ANSI B1.20.1
- Blowout proof stem
- Adjustable packing nut
- Locking lever handle
- Actuator mounting pad
- Floating ball
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- 2000 P.S.I W.O.G 1/4 - 2
- 1500 P.S.I W.O.G 2-1/2 - 3
- 1000 P.S.I W.O.G 4

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	C.S. A108
7	Packing	PTFE
8	Thrust Washer	R-PTFE 15% GLASS-FILLED
9	Stem	A276 TYPE 316
10	Gasket	PTFE
11	Cap	A216 GRADE WCB
12	Ball	A351 GRADE CFBM
13	Seat	R-PTFE 15% GLASS-FILLED
14	Body	A216 GRADE WCB

PRESSURE TEMPERATURE RATING

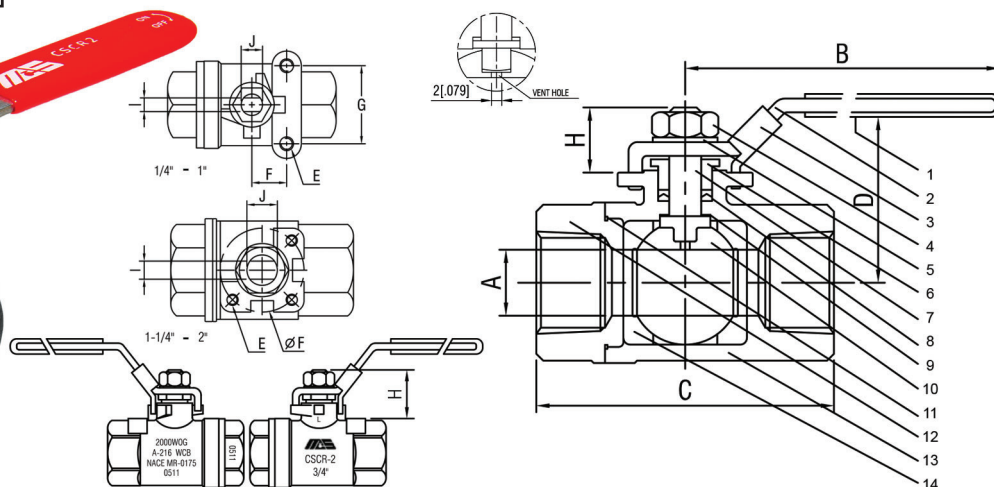
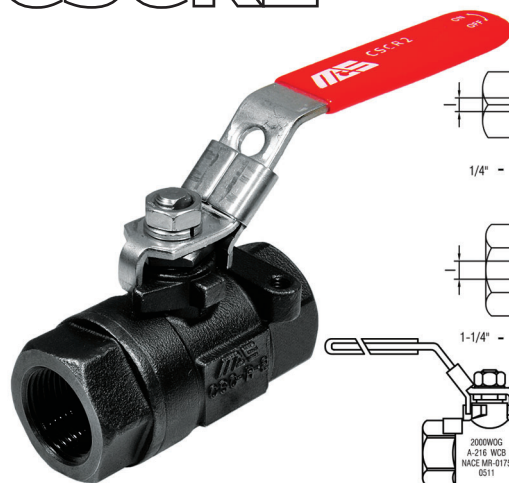


DIMENSIONS												
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	CV	WEIGHT KGS/LBS
8 1/4	9.6	50.28	55.80	96	NOTE (1)	12.7	25.4	20.78	5.52	8.00	7	0.230
	0.378	1.980	2.197	3.780		0.5	1.00	0.818	0.217	0.315		0.506
10 3/8	9.6	50.28	55.80	96	NOTE (1)	12.7	25.4	20.78	5.52	8.00	7	0.225
	0.378	1.980	2.197	3.780		0.5	1.00	0.818	0.217	0.315		0.495
15 1/2	12.5	52.6	60.5	96	M5	12.7	25.4	23.1	5.55	8.00	15	0.280
	0.492	2.071	2.382	3.78		0.5	1.00	0.909	0.219	0.315		0.616
20 3/4	20	59.25	72.5	119	M6	15.80	29.40	28.75	6.50	10	45	0.520
	0.787	2.333	2.854	4.685		0.622	1.157	1.132	0.256	0.394		1.144
25 1	24.7	62.35	85.5	119	M6	15.80	29.40	27.85	6.50	10	65	0.765
	0.972	2.455	3.366	4.685		0.622	1.157	1.096	0.256	0.394		1.683
32 1 1/4	32	79.90	93	149	MB	17.68	35.35	36.20	8.07	12.00	125	1.292
	1.260	3.146	3.661	5.866		0.696	1.392	1.425	0.317	0.480		2.842
40 1 1/2	38.1	84.8	110.5	149	MB	25	49.50	37.30	8.07	12.00	175	1.864
	1.5	3.339	4.350	5.866		0.984	1.949	1.469	0.317	0.480		4.101
50 2	50	94.6	128	174	MB	23.6	50	36.1	10.00	14.00	380	3.170
	1.969	3.724	5.039	6.850		0.929	1.969	1.421	0.394	0.551		6.974
65 2 1/2	63.50	122.05	153.8	244	NOTE (2)	72.10	72.10	45.35	12.00	16.00	500	5.796
	2.500	4.805	6.055	9.606		2.839	2.839	1.785	0.472	0.630		12.751
80 3	76	131.55	175.5	244	NOTE (2)	70.00	73.00	44.85	12.00	16.00	900	8.285
	2.992	5.179	6.909	9.606		2.756	2.874	1.766	0.472	0.630		18.227
100 4	100	178.6	233	321	NOTE (2)	102	102	64.5	18	23	1250	20.5
	3.937	7.031	9.173	12.637		4.015	4.015	2.539	0.708	0.905		45.194

C Series Carbon Steel 2000 WOG Two Piece Large Port Ball Valves

LSSR2 (LCC body/cap)
for -50°F/-46°C service is available

4.3



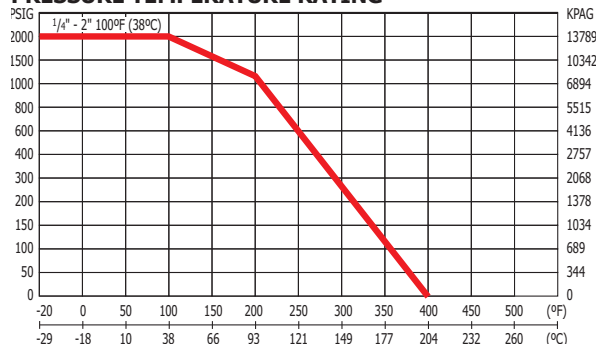
- Large port
- Locking lever handle
- NPT ends to ANSI B1.20.1
- Two piece body
- Blowout-proof stem
- Adjustable packing gland
- Actuator mounting pad
- 2000 p.s.i., W.O.G.
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

- **Optional; Model LSSR2**
(LCC body/cap) for -50°F/-46°C
service is available

NAME / MATERIAL			
NO.	PART NAME	MATERIAL CSCR-2	LSSR-2
1	Handle Grip	Vinyl	
2	Handle	A276 TYPE 304	
3	Locking Device	A276 TYPE 304	
4	Handle Nut	A276 TYPE 304	
5	Stem Washer	A276 TYPE 304	
6	Gland Nut	C.S.A108	
7	Stem	A276 TYPE 316	
8	Packing	PTFE	
9	Thrust Washer	R-PTFE 15% GLASS-FILLED	
10	Ball	A351 GRADE CF8M	
11	Gasket	PTFE	
12	Cap	A216 GRADE WCB	*(A352 LCC)
13	Body	A216 GRADE WCB	*(A352 LCC)
14	Seat	R-PTFE 15% GLASS-FILLED	

All mounting pads are not tapped, but have reserve holes cast in (except 3/4" and 1" which are dimpled).
Recommended tapping sizes are listed for reference only.

PRESSURE TEMPERATURE RATING

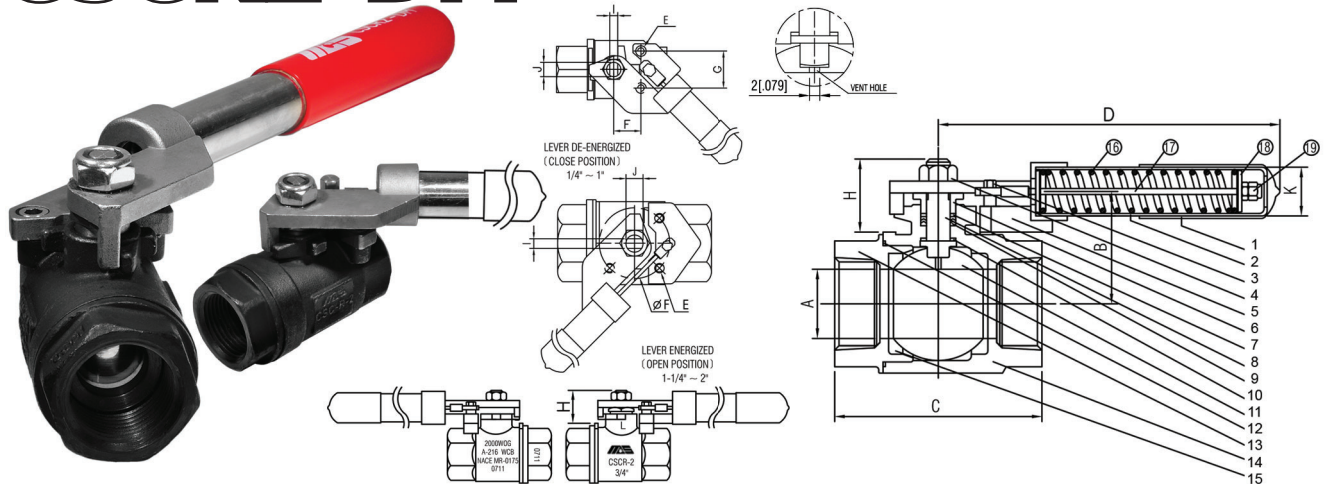


DIMENSIONS													
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	CV	WEIGHT KGS/LBS
8	1/4	11	103.5	58.5	54	M6	12.7	28.45	24.50	5.50	7.70	8	0.347
		0.433	4.075	2.303	2.13		0.5	1.12	0.965	0.217	0.303		0.763
10	3/8	12.5	103.5	58.5	54	M6	12.7	28.45	24.50	5.50	7.70	10	0.331
		0.492	4.075	2.303	2.13		0.5	1.12	0.965	0.217	0.303		0.728
15	1/2	12.5	103.5	61.5	57	M6	12.7	28.45	22.50	5.50	7.70	15	0.314
		0.492	4.075	2.421	2.24		0.5	1.12	0.886	0.217	0.303		0.691
20	3/4	17.5	125	79.5	65.5	M6	22.1	34.8	27.50	6.50	9.30	30	0.602
		0.689	4.921	3.130	2.58		0.87	1.37	1.083	0.256	0.367		1.324
25	1	20.6	125	88.5	69.5	M6	22.1	34.8	27.50	6.50	9.30	40	0.781
		0.866	4.921	3.484	2.74		0.87	1.37	1.083	0.256	0.367		1.718
32	1 1/4	25	193	102	88.5	M8	50		24.50	8.00	12.50	48	1.477
		0.964	7.598	4.016	3.484		1.968		0.965	0.315	0.492		3.249
40	1 1/2	31.8	193	111	94.5	M8	50		24.50	8.00	12.50	80	1.987
		1.252	7.598	4.370	3.720		1.968		0.965	0.315	0.492		4.371
50	2	38	193	137	107	M8	50		26.00	10.00	15.60	108	2.633
		1.496	7.598	5.394	4.213		1.968		1.024	0.394	0.614		5.793

C Series Carbon Steel 2000 WOG Two Piece Large Port Deadman Spring Handle Ball Valves

CSCR2-DM

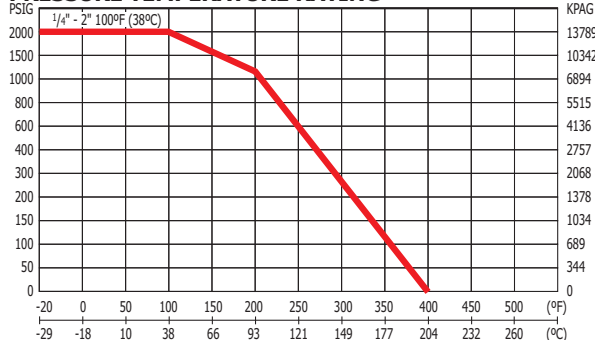
4.4



- Large port
- NPT ends to ANSI B1.20.1
- Two piece body
- Blowout-proof stem
- Adjustable packing gland
- Deadman handle
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle Housing	A269 GR.TP304
3	Anchor Screw	A276 TYPE 304
4	Handle Nut	C.S. Plated
5	Anchor	A351 GRADE CF8M
6	Gland Nut	A276 TYPE 304
7	Packing Washer	PEEK
8	Stem	A276 TYPE 316
9	Packing	RPTFE 50% S/S FILLED
10	Thrust Washer	PEEK
11	Ball	A351 GRADE CF8M
12	Gasket	PTFE
13	Cap	A216 GRADE WCB
14	Body	A216 GRADE WCB
15	Seat	R-PTFE 15% GLASS-FILLED
16	Spring	A29 GRADE 9260
17	Rod	A276 TYPE 304
18	Washer	A276 TYPE 304
19	Nuts	A194 GRADE 8

PRESSURE TEMPERATURE RATING

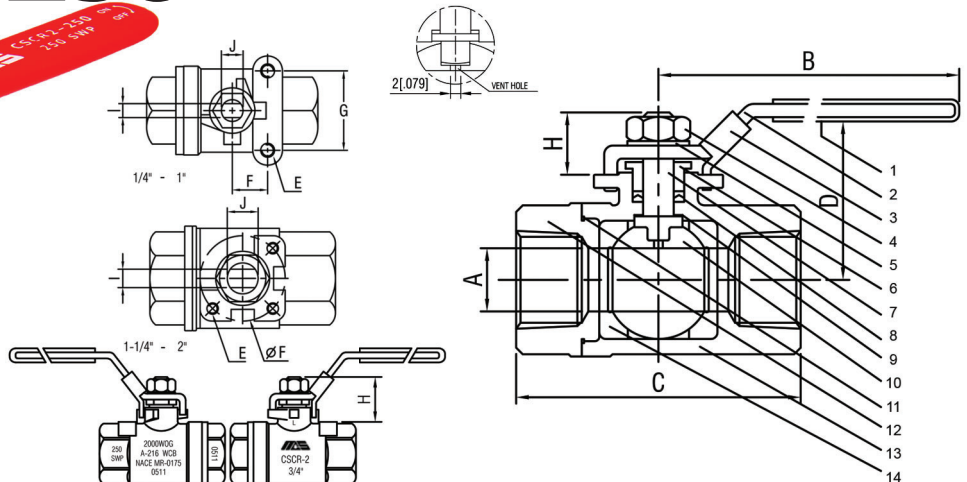


DIMENSIONS													
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	CV
8	1/4	11	29.3	58.5	180.5	M6	12.7	28.45	28.50	5.50	7.70	22.0	8
		0.433	1.154	2.303	7.106		0.5	1.12	1.122	0.217	0.303	0.866	
10	3/8	12.7	29.3	58.5	180.5	M6	12.7	28.45	28.50	5.50	7.70	22.0	10
		0.500	1.154	2.303	7.106		0.5	1.12	1.122	0.217	0.303	0.866	
15	1/2	12.7	29.3	61.5	180.5	M6	12.7	28.45	26.50	5.50	7.70	22.0	15
		0.500	1.154	2.421	7.106		0.5	1.12	1.043	0.217	0.303	0.866	
20	3/4	17.5	35.9	79.5	232.5	M6	22.5	35.35	32.00	6.50	9.30	22.0	30
		0.689	1.415	3.130	9.154		0.886	1.392	1.260	0.256	0.367	0.866	
25	1	20.6	38.4	87.5	232.5	M6	22.0	35.35	32.00	6.50	9.30	22.0	40
		0.866	1.514	3.443	9.154		0.886	1.392	1.260	0.256	0.367	0.866	
32	1 1/4	25.4	48.6	102	287	M8	50	35.35	29.50	8.00	12.50	22.0	48
		1.00	1.913	4.016	11.29		1.968	1.392	1.161	0.315	0.492	0.866	
40	1 1/2	31.8	51.4	111	290	M8	50	35.35	29.50	8.00	12.50	22.0	80
		1.252	2.023	4.370	11.417		1.968	1.392	1.161	0.315	0.492	0.866	
50	2	38.1	59.5	136	313	M8	50	35.35	31.00	10.00	15.60	32.0	108
		1.500	2.341	5.354	12.32		1.968	1.392	1.260	0.394	0.614	1.260	

C Series Carbon Steel 2000 WOG Two Piece Large Port 250 Steam Rated Ball Valves

CSCR2-250

4.5

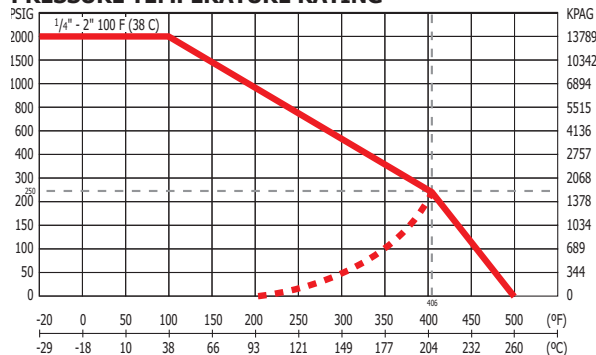


- Large port
- NPT threads to ANSI B1.20.1
- Two piece body
- 250 PSIG Steam Trim
- Blowout-proof stem
- Adjustable packing gland
- Locking lever handle
- Actuator mounting pad
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- 2000 p.s.i., W.O.G.

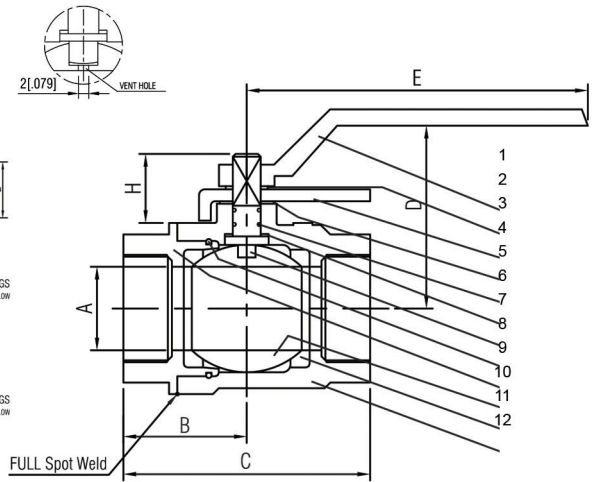
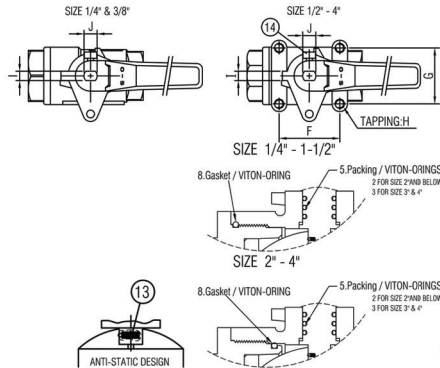
All mounting pads are not tapped, but have reserve holes cast in (except 3/4" and 1" which are dimpled).
Recommended tapping sizes are listed for reference only.

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	C.S.A108
7	Stem	A276 TYPE 316
8	Packing	R-PTFE (TFM-4215)
9	Thrust Washer	R-PTFE (TFM-4215)
10	Ball	A351 GRADE CF8M
11	Gasket	R-PTFE (TFM-4215)
12	Cap	A216 GRADE WCB
13	Body	A216 GRADE WCB
14	Seat	R-PTFE (TFM-4215)

PRESSURE TEMPERATURE RATING



DIMENSIONS													
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	CV	WEIGHT KGS/LBS
8	1/4	11	103.5	58.5	54	M6	12.7	28.45	24.50	5.50	7.70	8	0.347
		0.433	4.075	2.303	2.13		0.5	1.12	0.965	0.217	0.303		0.763
10	3/8	12.5	103.5	58.5	54	M6	12.7	28.45	24.50	5.50	7.70	10	0.331
		0.492	4.075	2.303	2.13		0.5	1.12	0.965	0.217	0.303		0.728
15	1/2	12.5	103.5	61.5	57	M6	12.7	28.45	22.50	5.50	7.70	15	0.314
		0.492	4.075	2.421	2.24		0.5	1.12	0.886	0.217	0.303		0.691
20	3/4	17.5	125	79.5	65.5	M6	22.1	34.8	27.50	6.50	9.30	30	0.602
		0.689	4.921	3.130	2.58		0.87	1.37	1.083	0.256	0.367		1.324
25	1	20.6	125	88.5	69.5	M6	22.1	34.8	27.50	6.50	9.30	40	0.781
		0.866	4.921	3.484	2.74		0.87	1.37	1.083	0.256	0.367		1.718
32	1 1/4	25	193	102	88.5	M8	50		24.50	8.00	12.50	48	1.477
		0.964	7.598	4.016	3.484		1.968		0.965	0.315	0.492		3.249
40	1 1/2	31.8	193	111	94.5	M8	50		24.50	8.00	12.50	80	1.987
		1.252	7.589	4.370	3.720		1.968		0.965	0.315	0.492		4.371
50	2	38	193	137	107	M8	50		26.00	10.00	15.60	108	2.633
		1.496	7.589	5.394	4.213		1.968		1.024	0.394	0.614		5.793

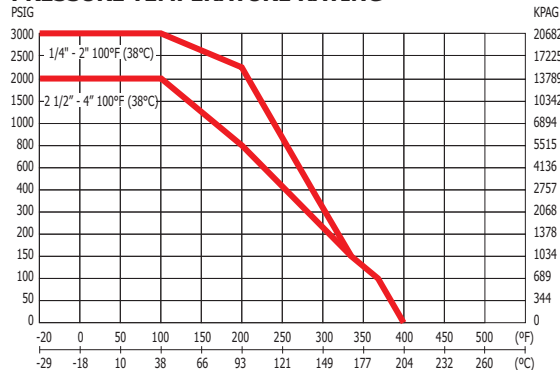


- Full port
- NPT to ANSI B1.20.1
- Full sealwelded 2 piece body
- Blowout-proof stem
- Anti-static device
- Locking device
- Actuator mounting pad
- 3000 PSI, W.O.G. 1/4" to 2"
- 2000 PSI, W.O.G. 2 1/2" to 4"
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156

Mounting pads on 2" are tapped. All others have reserve holes. Recommended tapping sizes listed in (H) are for reference only (1/4" & 3/8" are not provided with mounting pads).

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle	A536 Grade 65-45-12 Ductile-Iron
2	Retainer Spring	Carbon Steel
3	Lockable Stop Plate	C.S. Plated A276 TYPE 304
4	Stem Bearing	NYLON
5	Packing	VITON-ORINGS(2)
6	Thrust Washer	R-PTFE 15% GLASS-FILLED
7	Stem	A276 TYPE 316
8	Gasket	VITON-ORING (1)
9	Cap	A216 GRADE WCB
10	Ball	A351 GRADE CF8M
11	Seat	R-PTFE 15% GLASS-FILLED
12	Body	A216 GRADE WCB
13	Spring & pin	A276 TYPE 304
14	Screw	A307 Carbon Steel

PRESSURE TEMPERATURE RATING

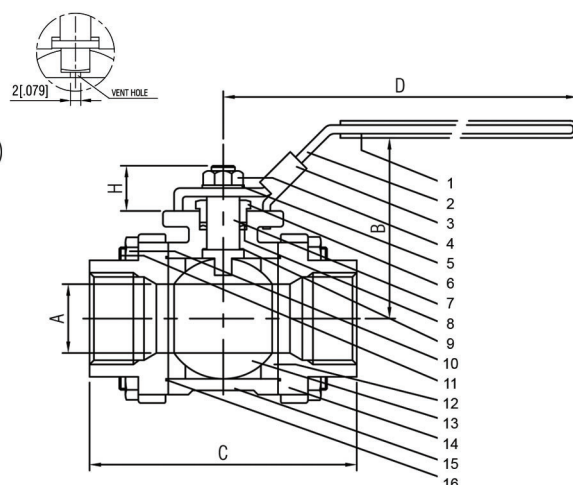
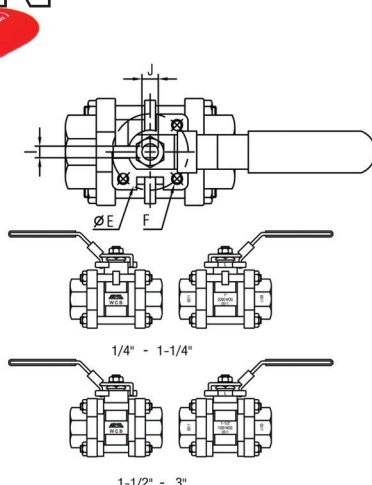


DIMENSIONS													
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in F	mm/in G	mm/in H	mm/in I	mm/in J	note I H	CV
8	1/4	9.50	30.30	62.00	51.50	130				5.90	9.70		11
		0.374	1.193	2.441	2.028	5.12				0.232	0.382		0.779
10	3/8	9.50	30.30	62.00	51.50	130				5.90	9.70		11
		0.374	1.193	2.441	2.028	5.12				0.232	0.382		0.761
15	1/2	12.70	35.00	69.00	54.50	130	25.40	35.00	19.00	5.90	9.70	M6	15
		0.500	1.378	2.717	2.146	5.12	1.000	1.378	0.748	0.232	0.382		1.166
20	3/4	20.00	45.00	85.00	64.30	160	44.20	41.00	25.00	8.00	11.70	M6	45
		0.787	1.772	3.346	2.531	6.30	1.740	1.614	0.984	0.315	0.461		2.068
25	1	25.00	44.51	86.00	67.40	160	44.20	44.00	25.50	8.00	11.70	M6	65
		0.984	1.752	3.385	2.654	6.30	1.740	1.732	1.004	0.315	0.461		2.970
32	1 1/4	31.80	50.35	97.85	75.00	230	47.20	54.00	37.6	12.00	16.90	M8	125
		1.252	1.982	3.852	2.953	9.06	1.858	2.126	1.480	0.472	0.665		5.258
40	1 1/2	38.10	55.00	109.0	81.00	230	47.20	60.00	36.25	12.00	16.90	M8	175
		1.500	2.165	4.291	3.189	9.06	1.858	2.362	1.427	0.472	0.665		6.556
50	2	50	64.50	128.0	93.40	231.0	47.50	74.00	34.40	12.00	16.90	M8	380
		1.968	2.539	5.039	3.677	9.094	1.870	2.913	1.354	0.472	0.665		9.656
65	2 1/2	65.00	81.90	164.0	114.8	400	70.00	81.00	38.50	14.00	20.90	M8	500
		2.559	3.224	6.457	4.520	15.75	2.750	3.189	1.516	0.551	0.823		19.712
80	3	76.00	88.5	175.5	124.8	400	70.00	92.00	42.75	14.00	20.90	M8	900
		2.992	3.484	6.909	4.913	15.75	2.750	3.622	1.683	0.551	0.823		24.141
100	4	100.0	106.0	211.0	140.7	460	88.40	125.0	57.00	17.00	28.90	M8	1250
		3.937	4.173	8.307	5.539	18.11	3.480	4.921	2.244	0.669	1.138		43.652

C Series Carbon Steel 2000 WOG Three Piece Full Port Ball Valves

CSSF3-N

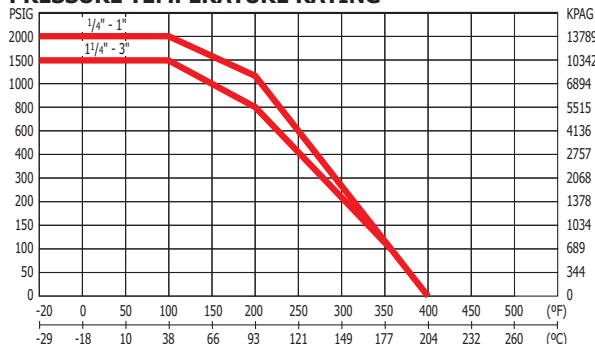
4.7



- Full port
- NPT threads to ANSI B1.20.1
- Three piece body
- Floating ball
- Blowout-proof stem
- Adjustable packing nut
- Locking lever handle
- ISO 5211 mounting pad
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- 2000 PSI, W.O.G. 1/4" to 1"
- 1500 PSI, W.O.G. 1 1/4" to 3"

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	C.S.A108
7	Stem	A276 TYPE 316
8	Packing	PTFE
9	Thrust Washer	R-PTFE 15% GLASS-FILLED
10	Hex Nut	A194 GRADE 2HM
11	Stud Bolt	A193 GRADE B7M
12	Seat	R-PTFE 15% GLASS-FILLED
13	Ball	A351 GRADE CF8M
14	Cap	A216 GRADE WCB
15	Body	A216 GRADE WCB
16	Gasket	PTFE

PRESSURE TEMPERATURE RATING



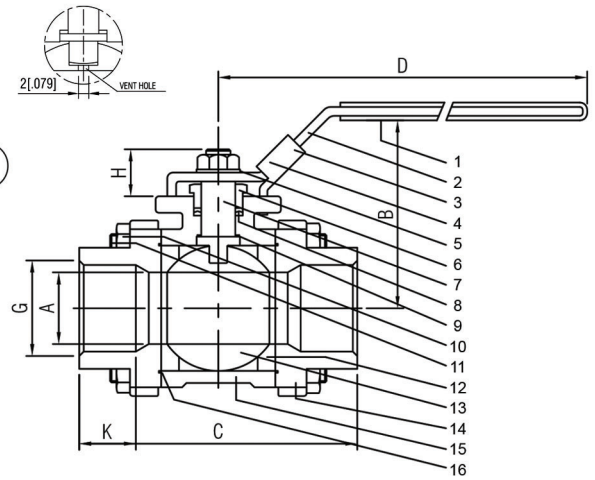
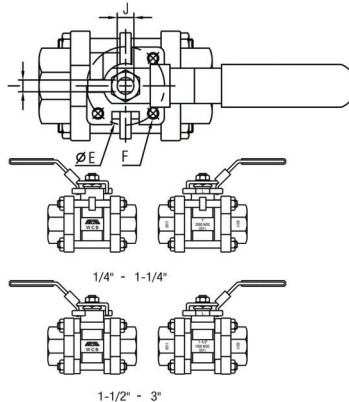
DIMENSIONS											
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	F	mm/in H	mm/in I	mm/in J	CV
8	1/4	9.5	67	60	120	36	M6	11.50	5.50	7.70	10
		0.374	2.638	2.362	4.724	1.417		0.453	0.217	0.303	0.434
10	3/8	9.5	67	60	120	36	M6	12.50	5.50	7.70	10
		0.374	2.638	2.362	4.724	1.417		0.492	0.217	0.303	0.924
15	1/2	15	68.5	70	120	36	M6	14.50	5.50	7.70	26
		0.591	2.697	2.756	4.724	1.417		0.571	0.217	0.303	1.364
20	3/4	20	75	76	139	42	M6	18.00	6.50	9.30	50
		0.787	2.953	2.992	5.472	1.653		0.709	0.256	0.367	2.002
25	1	25	79	92	139	42	M6	18.00	6.50	9.30	68
		0.984	3.110	3.622	5.472	1.653		0.709	0.256	0.367	1.190
32	1 1/4	32	88.5	105	193	50	M8	23.50	8.00	12.50	120
		1.260	3.484	4.134	7.598	1.968		0.925	0.315	0.492	2.618
40	1 1/2	38	94.5	120	193	70	M8	22.50	8.00	12.50	170
		1.496	3.720	4.724	7.598	2.756		0.886	0.315	0.492	1.930
50	2	50.5	107	138	193	70	M8	25.00	10.00	15.60	360
		1.988	4.213	5.433	7.598	2.756		0.984	0.394	0.614	4.750
65	2 1/2	65	129.5	170.5	244	102	M8	32.50	12.00	18.80	510
		2.559	5.098	6.713	9.606	4.016		1.280	0.472	0.740	18.986
80	3	78	139.5	191	244	102	M8	31.00	12.00	18.80	900
		3.071	5.492	7.520	9.606	4.016		1.220	0.472	0.740	13.460

C Series Carbon Steel 2000 WOG Three Piece Full Port Socket Weld Ball Valves

CSSF3-N-SW

CSSF3-N-BW
(butt-weld) available on request

4.8

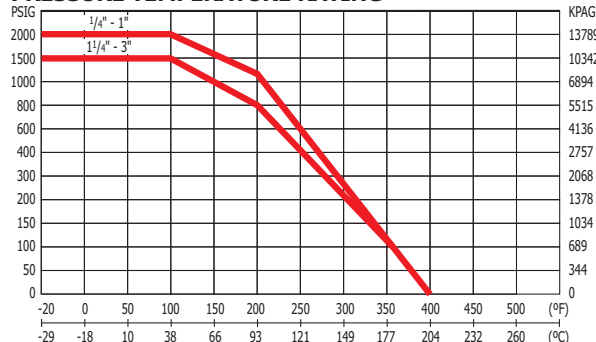


- Full port
- Socket Weld ends to ANSI B16.11
- Three Piece body
- Floating ball
- Blowout-proof stem
- Adjustable packing nut
- Locking lever handle
- ISO 5211 mounting pad
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- 2000 PSI, W.O.G. 1/4" to 1"
- 1500 PSI, W.O.G. 1 1/4" to 3"

CSSF3-N-BW (butt-weld) available on request

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Locking Device	A276 TYPE 304
4	Handle Nut	A276 TYPE 304
5	Stem Washer	A276 TYPE 304
6	Gland Nut	C.S.A108
7	Stem	A276 TYPE 316
8	Packing	PTFE
9	Thrust Washer	R-PTFE 15% GLASS-FILLED
10	Hex Nut	A194 GRADE 2HM
11	Stud Bolt	A193 GRADE B7M
12	Seat	R-PTFE 15% GLASS-FILLED
13	Ball	A351 GRADE CF8M
14	Cap	A216 GRADE WCB
15	Body	A216 GRADE WCB
16	Gasket	PTFE

PRESSURE TEMPERATURE RATING



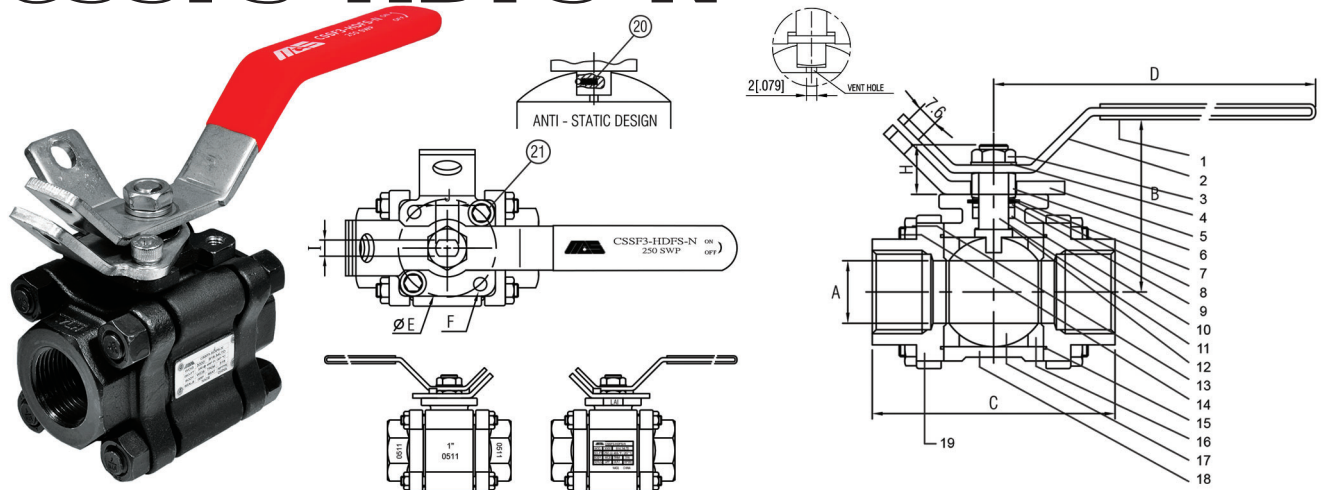
DIMENSIONS														
SIZE		mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	F	mm/in G	mm/in H	mm/in I	mm/in J	mm/in K	CV	WEIGHT KGS/LBS
8	1/4	9.5	67	60	120	36	M6	14.2	11.50	5.50	7.70	12	10	0.415
		0.374	2.638	2.362	4.724	1.417		0.559	0.453	0.217	0.303	0.472		0.913
10	3/8	9.5	67	60	120	36	M6	17.6	12.50	5.50	7.70	12	10	0.400
		0.374	2.638	2.362	4.724	1.417		0.693	0.492	0.217	0.303	0.472		0.880
15	1/2	15	68.5	70	120	36	M6	21.7	14.50	5.50	7.70	17	26	0.600
		0.591	2.697	2.756	4.724	1.417		0.854	0.571	0.217	0.303	0.669		1.320
20	3/4	20	75	76	139	42	M6	27.1	18.00	6.50	9.30	17	50	0.880
		0.787	2.953	2.992	5.472	1.653		1.067	0.709	0.256	0.367	0.669		1.936
25	1	25	79	92	139	42	M6	33.8	18.00	6.50	9.30	19	68	1.150
		0.984	3.110	3.622	5.472	1.653		1.330	0.709	0.256	0.367	0.748		2.530
32	1 1/4	32	88.5	105	193	50	M8	42.6	23.50	8.00	12.50	21	120	1.870
		1.260	3.484	4.134	7.598	1.968		1.677	0.925	0.315	0.492	0.827		4.114
40	1 1/2	38	94.5	120	193	70	M8	48.7	22.50	8.00	12.50	23	170	2.670
		1.496	3.720	4.724	7.598	2.756		1.917	0.886	0.315	0.492	0.906		5.874
50	2	50.5	107	138	193	70	M8	61.0	25.00	10.00	15.60	24	360	4.620
		1.988	4.213	5.433	7.598	2.756		2.402	0.984	0.394	0.614	0.945		10.164
65	2 1/2	65	129.5	170.5	244	102	M8	73.8	32.50	12.00	18.80	31	510	8.250
		2.559	5.098	6.713	9.606	4.016		2.906	1.280	0.472	0.740	1.22		18.150
80	3	78	139.5	191	244	102	M8	90.0	31.00	12.00	18.80	32	900	13.000
		3.071	5.492	7.520	9.606	4.016		3.543	1.220	0.472	0.740	1.26		28.600

C Series Carbon Steel High Pressure Three Piece API 607 Ball Valves

CSSF3-HDFS-N

OPTIONAL: SW BW TSW

4.9

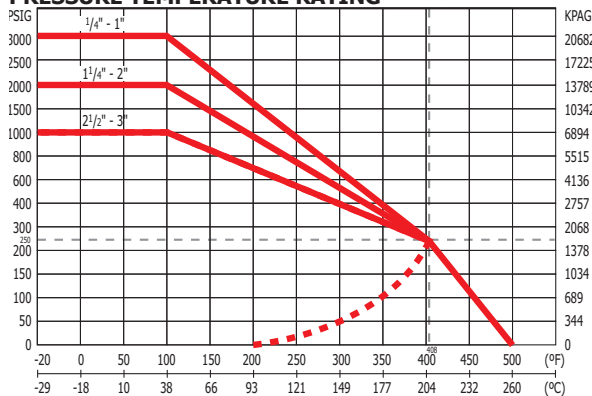


- Three piece body / Full port
- NPT threads to ANSI B1.20.1
- Anti-static design
- Blowout proof stem
- Adjustable live loading packing nut
- Positive lock-out device
- ISO 5211 mounting pad
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- Fire-safe certified to API-607
- 250 PSIG steam rated
- 3000 P.S.I. W.O.G. 1/4" to 1"
- 2000 P.S.I. W.O.G. 1-1/4" to 2"
- 1000 P.S.I. W.O.G. 2-1/2" to 3"
- ASME B16.34 Class 600, 900 & 1500 Wall Thickness

CSSF3-HDFS-N-SW (socketweld) available on request
CSSF3-HDFS-N-BW (butt-weld) available on request
CSSF3-HDFS-N-TSW (npt x sw) available on request

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Handle Nut	A276 TYPE 304
4	Handle Washer	A276 TYPE 304
5	Lock-Out Plate	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Lock Washer	A276 TYPE 304
8	Belleville Washer	S.S.301
9	Gland	A276 TYPE 304
10	Packing	GRAPHITE
11	Stem	A276 TYPE 316
12	Thrust Washer	R-PTFE (TFM4215)
13	Hex Nut	A194 GRADE 2HM
14	Stud Bolt	A193 GRADE B7M
15	Gasket	S.S. 304 + GRAPHITE
16	Seat	R-PTFE (TFM4215)
17	Ball	A351 GRADE CF8M
18	Body	A216 GRADE WCB
19	Cap	A216 GRADE WCB
20	Spring & pin	A276 TYPE 304
21	Stopper	A276 TYPE 304

PRESSURE TEMPERATURE RATING



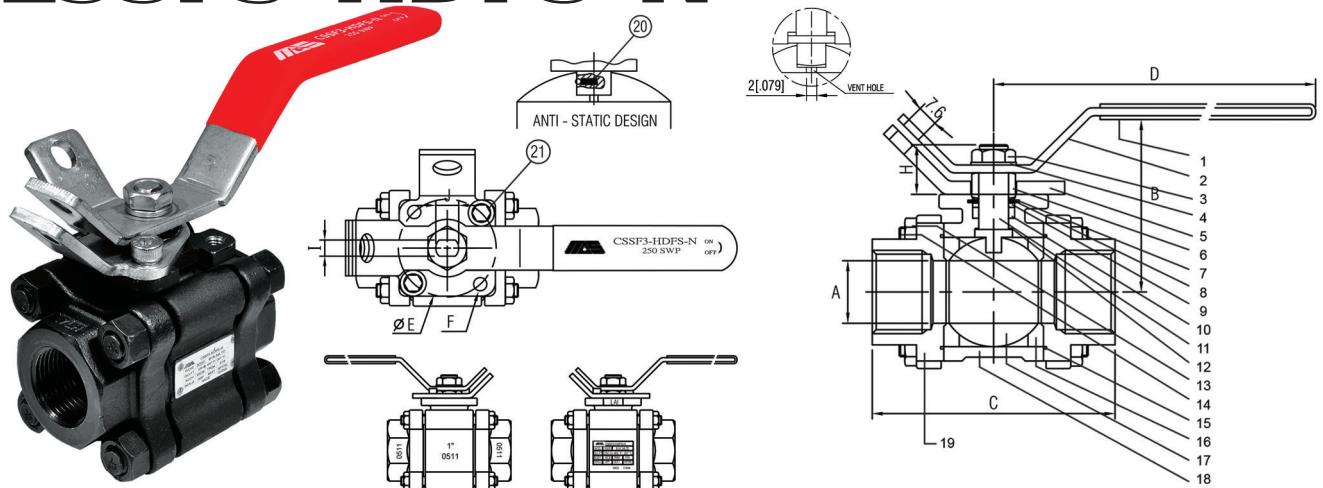
DIMENSIONS													
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in H	mm/in I	mm/in J	F	ISO FLG TYPE	CV	WEIGHT KGS/LBS	
8 1/4	10	65.8	64.5	120	36	15.5	5.5	8.1	M6	F03	11	0.68	
	0.37	2.59	2.54	4.72	1.417	0.61	0.22	0.32				1.499	
10 3/8	10	65.8	64.5	120	36	15.5	5.5	8.1	M6	F03	11	0.68	
	0.37	2.59	2.54	4.72	1.417	0.61	0.22	0.32				1.499	
15 1/2	15	68.5	68.5	120	36	15.5	5.5	8.1	M6	F03	26	0.82	
	0.50	2.70	2.70	4.72	1.417	0.61	0.22	0.32				1.808	
20 3/4	20	75	80.5	139	42	18.5	6.5	9.6	M6	F04	50	1.35	
	0.75	2.95	3.17	5.47	1.654	0.73	0.26	0.38				2.976	
25 1	25	79	91.5	139	42	18.5	6.5	9.6	M6	F04	68	1.82	
	1.00	3.11	3.60	5.47	1.654	0.73	0.26	0.38				4.012	
32 1 1/4	32	88.5	100.5	193	50	23.5	8	12.8	M8	F05	120	2.81	
	1.25	3.48	3.96	7.60	1.969	0.93	0.32	0.50				6.195	
40 1 1/2	38	94.5	117	193	70	23.5	8	12.8	M8	F07	170	4.64	
	1.50	3.72	4.61	7.60	2.756	0.93	0.32	0.50				10.229	
50 2	50	107	133.5	193	70	27	10	16.1	M8	F07	360	7.64	
	2.00	4.21	5.26	7.60	2.756	1.06	0.39	0.63				16.843	
65 2 1/2	65	129.5	157.8	244	102	30	12	19.25	M8	F10	510	10.77	
	2.50	5.10	6.21	9.61	4.016	1.18	0.47	0.76				23.744	
80 3	78	139.5	178	244	102	30	12	19.25	M8	F10	900	15.70	
	3.00	5.49	7.01	9.61	4.016	1.18	0.47	0.76				34.612	

C Series
LCC Body/Cap Carbon Steel
High Pressure WOG
Three Piece API 607
Ball Valves

LSSF3-HDFS-N

OPTIONAL: SW BW TSW

4.10

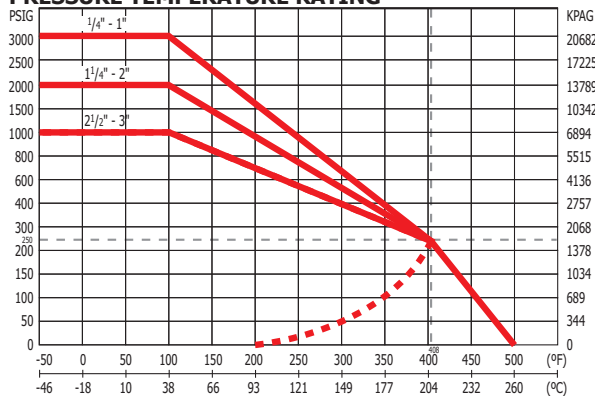


- Three piece body / Full port
- NPT threads to ANSI B1.20.1
- Anti-static design
- Blowout proof stem
- Adjustable live loading packing nut
- Positive lock-out device
- ISO 5211 mounting pad
- Complies to NACE MR-0103
- Complies with manufacturer requirements of NACE MR0175/ISO15156
- Fire-safe certified to API-607
- 250 PSIG steam rated
- 3000 P.S.I. W.O.G. 1/4" to 1"
- 2000 P.S.I. W.O.G. 1-1/4" to 2"
- 1000 P.S.I. W.O.G. 2-1/2" to 3"
- ASME B16.34 Class 600, 900 & 1500 Wall Thickness

LSSF3-HDFS-N-SW (socketweld) available on request
LSSF3-HDFS-N-BW (butt-weld) available on request
LSSF3-HDFS-N-TSW (npt x sw) available on request

NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle Grip	Vinyl
2	Handle	A276 TYPE 304
3	Handle Nut	A276 TYPE 304
4	Handle Washer	A276 TYPE 304
5	Lock-Out Plate	A276 TYPE 304
6	Gland Nut	A276 TYPE 304
7	Lock Washer	A276 TYPE 304
8	Belleville Washer	S.S.301
9	Gland	A276 TYPE 304
10	Packing	GRAPHITE
11	Stem	A276 TYPE 316
12	Thrust Washer	R-PTFE (TFM4215)
13	Hex Nut	A194 GRADE 2HM
14	Stud Bolt	A193 GRADE B7M
15	Gasket	S.S. 304 + GRAPHITE
16	Seat	R-PTFE (TFM4215)
17	Ball	A351 GRADE CF8M
18	Body	A352 GRADE LCC
19	Cap	A352 GRADE LCC
20	Spring & pin	A276 TYPE 304
21	Stopper	A276 TYPE 304

PRESSURE TEMPERATURE RATING

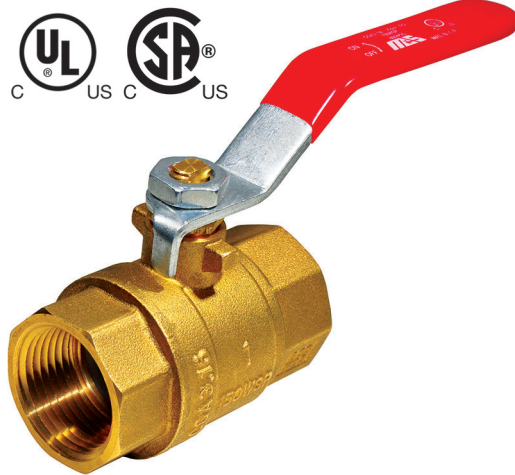


DIMENSIONS												
SIZE	mm/in A	mm/in B	mm/in C	mm/in D	mm/in E	mm/in H	mm/in I	mm/in J	F	ISO FLG TYPE	CV	WEIGHT KGS/LBS
8 1/4	10	65.8	64.5	120	36	15.5	5.5	8.1	M6	F03	11	0.68
	0.37	2.59	2.54	4.72	1.417	0.61	0.22	0.32				1.499
10 3/8	10	65.8	64.5	120	36	15.5	5.5	8.1	M6	F03	11	0.68
	0.37	2.59	2.54	4.72	1.417	0.61	0.22	0.32				1.499
15 1/2	15	68.5	68.5	120	36	15.5	5.5	8.1	M6	F03	26	0.82
	0.50	2.70	2.70	4.72	1.417	0.61	0.22	0.32				1.808
20 3/4	20	75	80.5	139	42	18.5	6.5	9.6	M6	F04	50	1.35
	0.75	2.95	3.17	5.47	1.654	0.73	0.26	0.38				2.976
25 1	25	79	91.5	139	42	18.5	6.5	9.6	M6	F04	68	1.82
	1.00	3.11	3.60	5.47	1.654	0.73	0.26	0.38				4.012
32 1 1/4	32	88.5	100.5	193	50	23.5	8	12.8	M8	F05	120	2.81
	1.25	3.48	3.96	7.60	1.969	0.93	0.32	0.50				6.195
40 1 1/2	38	94.5	117	193	70	23.5	8	12.8	M8	F07	170	4.64
	1.50	3.72	4.61	7.60	2.756	0.93	0.32	0.50				10.229
50 2	50	107	133.5	193	70	27	10	16.1	M8	F07	360	7.64
	2.00	4.21	5.26	7.60	2.756	1.06	0.39	0.63				16.843
65 2 1/2	65	129.5	157.8	244	102	30	12	19.25	M8	F10	510	10.77
	2.50	5.10	6.21	9.61	4.016	1.18	0.47	0.76				23.744
80 3	78	139.5	178	244	102	30	12	19.25	M8	F10	900	15.70
	3.00	5.49	7.01	9.61	4.016	1.18	0.47	0.76				34.612

B Series Forged Brass 600 WOG Ball Valves

B-1-F

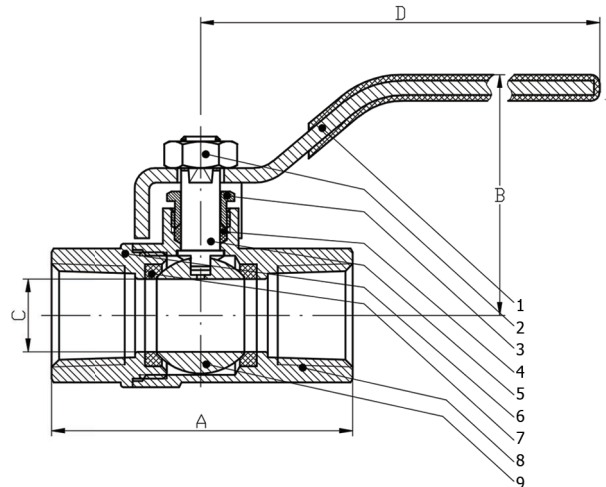
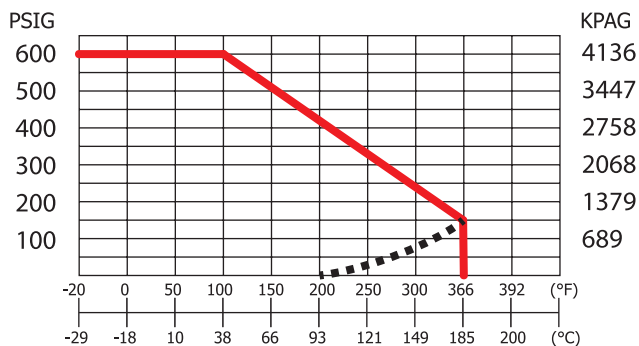
5.1



- Forged 2 piece construction
- Full port
- ASME B1.20.1 NPT ends
- Blowout-proof stem, Chrome plated ball
- Adjustable packing gland
- Class 150 WSP, 600 WOG
- Certified to: CSA 9.1 / ANSI Z21.15 (1/2 PSIG) - 1/4"-2"
- CGA-CR91-002/ASME B16.44 (5PSIG) - 1/4"-2"
- CGA-3.16/ASME B16.33 (125 PSIG) - 1/4" - 2" -40° to 120° F
- cUL, MHKZ7, YQNZ7, YRBX7, YRPV7, YSDT7

- Suitable for use with natural gas, manufactured gas and liquefied petroleum gases (distributed as vapour with or without the admixture of air), or mixtures thereof. Not for use on "Sour Gas".

PRESSURE TEMPERATURE RATING



B-1-F PART / MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36 ZINC PLATED
2	Lever Nut	Steel ASTM A36 ZINC PLATED
3	Packing Nut	Brass ASTM B124-C37700
4	Packing	PTFE
5	Stem	Brass ASTM B124-C37700
6	Cap	Brass ASTM B283-C37700
7	Seats	PTFE
8	Body	Brass ASTM B283-C37700
9	Ball	ASTM B124-C37700 Chrome Plated

B-1-F DIMENSIONS						
Size	A mm/in	B mm/in	C mm/in	D mm/in	CV	Weight Kg/LBS
1/4	44.5	39.3	10	90	8	0.128
	1.75	1.55	0.39	3.54		0.282
3/8	44.5	39.3	10	90	8	0.133
	1.75	1.55	0.39	3.54		0.293
1/2	54.6	42.3	14.5	90	15	0.193
	2.15	1.67	0.57	3.54		0.425
3/4	60.8	50.0	19.5	98	30	0.285
	2.39	1.97	0.77	3.86		0.628
1	73.6	62	25	118	60	0.479
	2.9	2.44	0.98	4.65		1.06
1 1/4	84	70	32	128	110	0.692
	3.307	2.75	1.26	5.04		1.54
1 1/2	95.5	80	39	140	130	1.072
	3.76	3.15	1.535	5.51		2.38
2	108	85.3	49.5	140	360	1.46
	4.25	3.36	1.95	5.51		3.216
2 1/2	138.6	117	64	220	450	3.397
	5.46	4.606	2.52	8.66		7.482
3	153.3	124.3	74	220	620	4.455
	6.04	4.894	2.91	8.66		9.813

* NOTES:

- 1) cUL listings are not applicable to 2 1/2"-3"

B-1-F-LF-SS

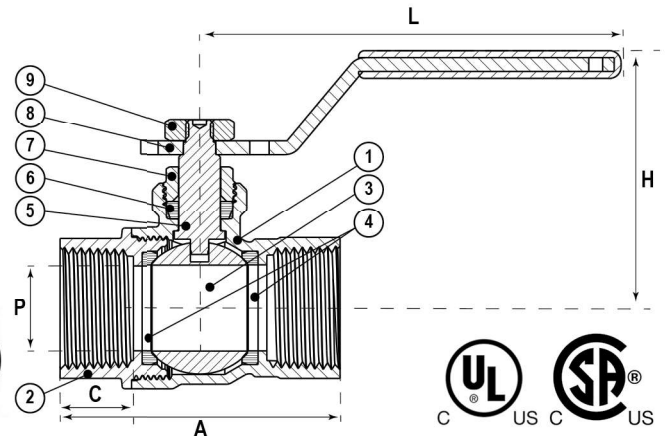


OPTIONS



1/4" - 2"
B-1W-F-LF-SS
(Wing Handle)

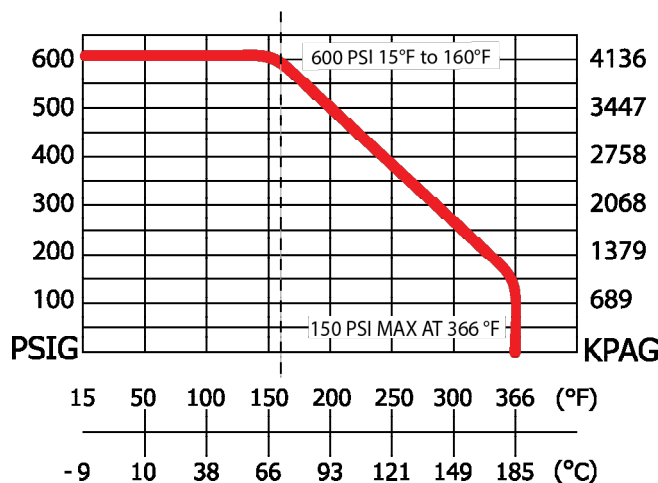
B-1-F-LF-SS
150WSP 600WOG
NSF/ANSI 61
NSF/ANSI 372
CSA B125.14-Lead Free



- Forged 2 piece construction
- Full port
- Manufactured to MSS SP-110
- ASME B1.20.1 NPT ends
- Blowout-proof stem
- SS Ball & Stem
- Adjustable packing gland
- Class 150 WSP, 600 WOG
- **Certifications:**
Lead Free CSA B125.14
NSF-61, NSF-372
ANSI Z21.15/CSA 9.1 (1/2 PSIG)
ASME B16.44/CGA-CR91-002 (2 & 5 PSIG)
ASME B16.33/CGA-3.16 (125 PSIG)
cUL listed (MH61197)
MHKZ, MHKZ7, YRPV, YRPV7, YSDT, YSDT7,
YQNZ, YQNZ7, YRBX, YRBX7

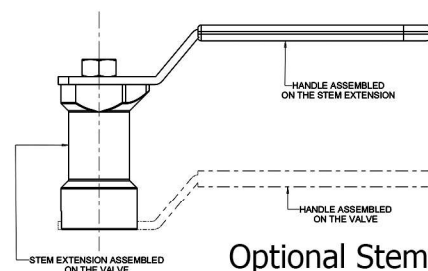
- Suitable for use with natural gas, manufactured gas and liquefied petroleum gases (distributed as vapour with or without the admixture of air), or mixtures thereof. Not for use on "Sour Gas".

PRESSURE TEMPERATURE RATING



PART / MATERIAL		
NO.	PART NAME	MATERIAL
1	BODY	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
2	FIXED-END	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
3	BALL	STAINLESS STEEL TYPE 316 STAINLESS STEEL ASTM A276 TYPE 316
4	SEAT (2)	PTFE
5	STEM	STAINLESS STEEL TYPE 316 STAINLESS STEEL ASTM A276 TYPE 316
6	PACKING-RING	PTFE TF1502
7	PACKING-NUT	BRASS CW617N EN 12164 BRASS ASTM B124 C37700
8	RED HANDLE MAS B-1-F-LF-SS	STEEL Fe P11 EN 10111 DACROMET PLATED STEEL DACROMET PLATED
9	NUT	STEEL Fe42 EN 10025 ZINC PLATED STEEL ASTM A36 ZINC PLATED

DIMENSIONS						
Size	A in	C in	H in	L in	P in	Weight LBS
1/2	2.17	0.61	1.93	3.58	0.50	0.463
3/4	2.40	0.63	2.05	3.58	0.73	0.644
1	2.91	0.75	2.36	4.96	0.98	1.168
1 1/4	3.31	0.77	2.60	4.96	1.23	1.709
1 1/2	3.54	0.77	2.87	5.55	1.46	2.524
2	4.09	0.79	3.25	5.55	1.95	4.299



Optional Stem Extension

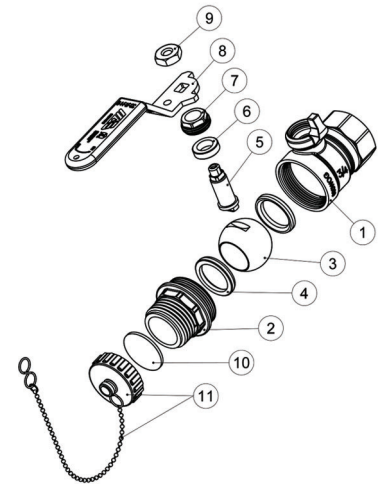
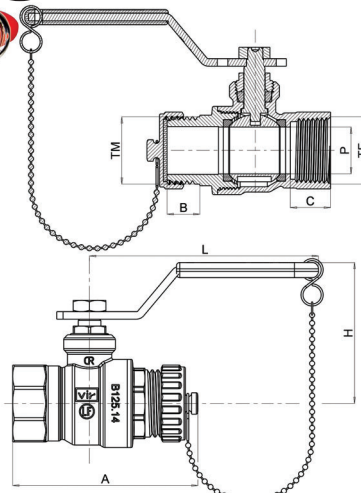
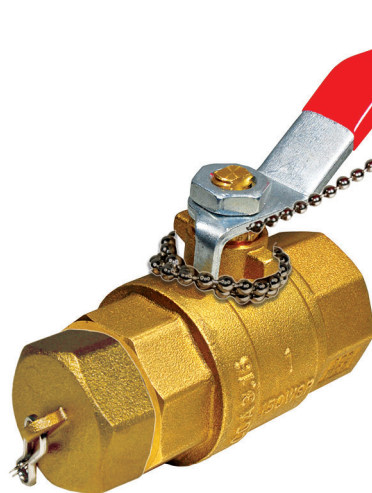
B Series Lead Free DZR Brass 600 WOG Ball Valves with Drain Cap



Meeting the Industry's
Lowest Lead-free
Requirements

B-1-F-LF-CC

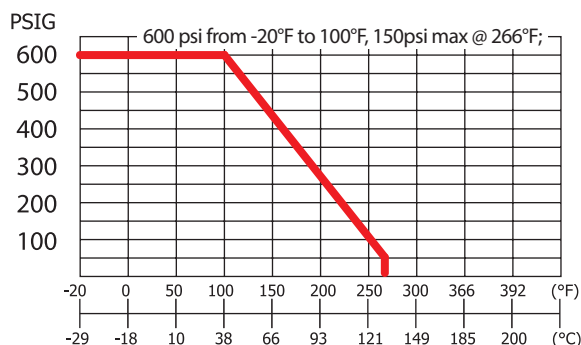
5.3



- 600# WOG
- Lead free brass body
- Full port
- Adjustable packing
- FNPT x Hose end
- Threaded end (ASME B1.20.1-NPT)
- Male NH (ASME B1.20.7)
- Chrome plated ball
- Virgin PTFE seats
- MSS-SP-110
- Blow-out proof stem
- Drain cap with chain
- AB1953, NSF/ANSI 61 & 372 certified
- CSA B125.14-17

PART / MATERIAL		
NO.	PART NAME	MATERIAL
1	BODY	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
2	FIXED-END	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
3	BALL	BRASS CW509L EN 12164 (AB) CHROM.PL. BRASS ASTM B927 C27450 (AB) CHROM.PL.
4	SEAT (2)	PTFE
5	STEM	BRASS CW511L EN 12164 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
6	PACKING-RING	PTFE
7	PACKING-NUT	BRASS CW617N EN 12164 BRASS ASTM B124 C37700
8	RED HANDLE MAS B-1-F-LF-CC	STEEL Fe P11 EN 10111 DACROMET P. STEEL DACROMET PLATED
9	NUT	STEEL Fe42 EN 10025 ZINC PLATED STEEL ASTM A36 ZINC PLATED
10	DRAIN CAP GASKET	EPDM PEROX NSF APPROVED EPDM PEROX NSF APPROVED
11	DRAIN CAP +CHAIN	BRASS CW617N EN 12165 BRASS ASTM B283 C37700

PRESSURE TEMPERATURE RATING



KPAG
4136
3447
2758
2068
1379
689

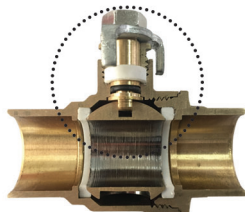
DIMENSIONS									
Size	TF	TM	A in	C in	B in	H in	L in	P in	Weight LBS
1/2	1/2-14 NPT	3/4-11.5 NH	2.50	0.61	0.51	2.07	3.60	0.50	0.52
3/4	3/4-14 NPT	3/4-11.5 NH	2.89	0.63	0.51	2.20	3.60	0.73	0.70

B Series Forged Brass 600 WOG Ball Valves

B-2-F

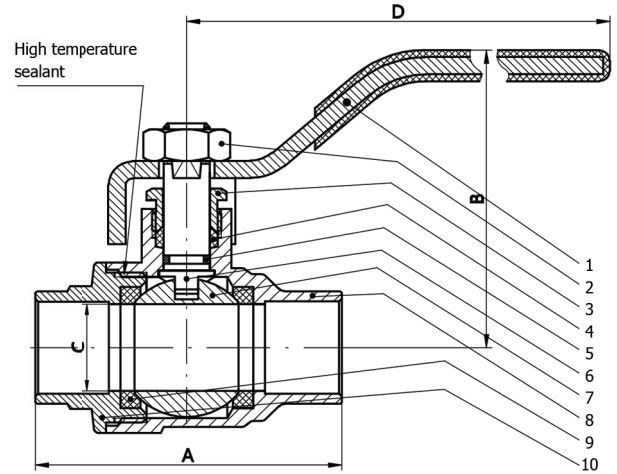
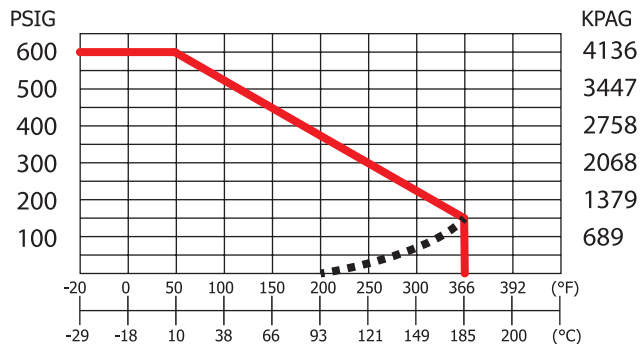


- Forged 2 piece construction
- Full port
- ANSI B16.22 solder ends (CXC)
- Blowout-proof stem
- Chrome plated ball
- Adjustable packing gland
- Secondary stem seal
- 150 WSP, 600 WOG



Secondary Stem Seal

PRESSURE TEMPERATURE RATING



B-2-F PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36 Zinc Plated
2	Lever Nut	Steel ASTM A36 Zinc Plated
3	Packing Nut	ASTM B124 C37700
4	Packing	PTFE
5	O-ring	FKM
6	Stem	Brass ASTM B124 C37700
7	Ball	Brass ASTM B124 C37700 Chrome Plated
8	Body	Brass ASTM B283 C37700
9	Seats	PTFE
10	Cap	Brass ASTM B283 C37700

B-2-F DIMENSIONS						
Size	A mm/in	B mm/in	C mm/in	D mm/in	CV	Weight Kg/LBS
3/8	44.50	40.80	10.00	90.00	8	0.124
	1.752	1.606	0.39	3.54		0.273
1/2	54.30	45.00	14.50	90.00	15	0.168
	2.14	1.772	0.57	3.54		0.37
3/4	71.40	50.00	19.50	98.00	30	0.277
	2.81	1.969	0.77	3.858		0.611
1	86.30	63.00	25.00	118.00	60	0.446
	3.40	2.48	0.98	4.646		0.983
1 1/4	99.20	68.00	32.00	128.00	110	0.643
	3.905	2.68	1.26	5.04		1.416
1 1/2	115.80	82.00	39.00	140.00	130	1.086
	4.56	3.23	1.535	5.51		2.392
2	139.80	90.00	49.50	140.00	360	1.484
	5.504	3.54	1.95	5.51		3.269
2 1/2	164.60	120.00	64.00	220.00	450	3.239
	6.48	4.72	2.52	8.66		7.134
3	185.30	127.50	74.00	220.00	620	4.376
	7.30	5.02	2.91	8.66		9.639

*NOTES:

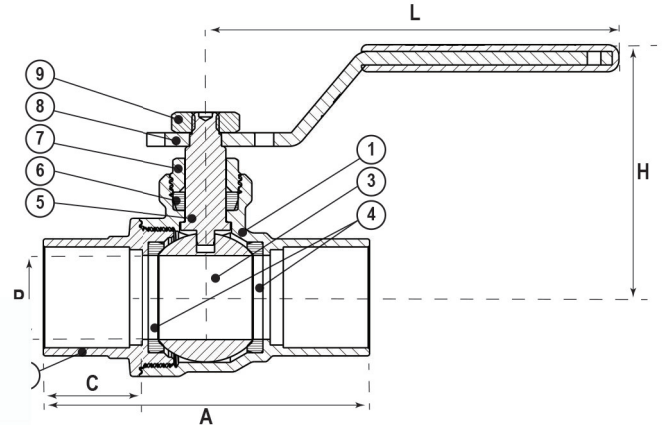
- 1) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitation of the solder used for the joints. Refer to ANSI B16-22, Table I.1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 2) Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.

B-2-F-LF-SS

5.5



B-2-F-LF-SS
150WSP 600WOG
NSF/ANSI 61
NSF/ANSI 372
ON
OFF
CSA B125.14-Lead Free



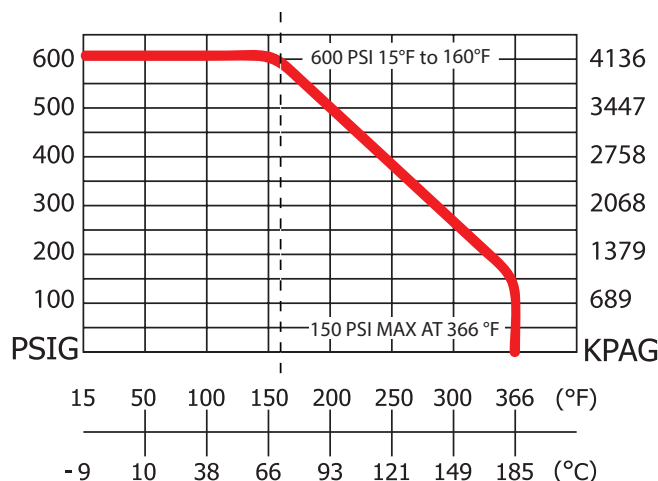
- Forged 2 piece construction
- Full port
- Manufactured to MSS SP-110
- ANSI B16.22 solder ends (CXC)
- Blowout-proof stem
- SS Ball & Stem
- Adjustable packing gland
- 150 WSP, 600 WOG
- **Certifications:**
Lead Free CSA B125.14
NSF-61, NSF-372

***NOTES:**

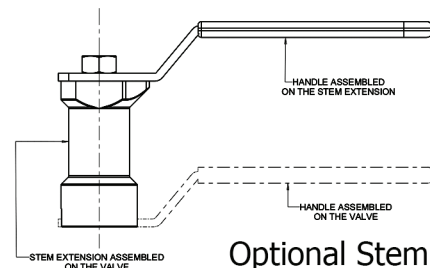
- 1) Use 95.5 Tin Antimony ASTM B32 Alloy Grade 9.5 TA solder.
- 2) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitations of the solder used for the joints. Refer to ANSI B16-22 - Table I.1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 3) Exercise caution during installation by applying heat away from the valve body.
Excessive direct flame may damage body seats and seals.

PART / MATERIAL		
NO.	PART NAME	MATERIAL
1	BODY	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
2	FIXED-END	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
3	BALL	STAINLESS STEEL TYPE 316 STAINLESS STEEL ASTM A276 TYPE 316
4	SEAT (2)	PTFE
5	STEM	STAINLESS STEEL TYPE 316 STAINLESS STEEL ASTM A276 TYPE 316
6	PACKING-RING	PTFE TF1502
7	PACKING-NUT	BRASS CW617N EN 12164 BRASS ASTM B124 C37700
8	RED HANDLE MAS B-1-F-LF-SS	STEEL Fe P11 EN 10111 DACROMET PLATED STEEL DACROMET PLATED
9	NUT	STEEL Fe42 EN 10025 ZINC PLATED STEEL ASTM A36 ZINC PLATED

PRESSURE TEMPERATURE RATING



DIMENSIONS						
Size	A in	C in	H in	L in	P in	Weight LBS
1/2	2.20	0.51	2.07	3.58	0.50	0.430
3/4	2.86	0.75	2.20	3.58	0.73	0.606
1	3.52	0.91	2.56	4.96	0.95	1.102
1 1/4	3.83	0.98	2.76	4.96	1.22	1.532
1 1/2	4.25	1.09	3.15	5.55	1.46	2.392
2	5.31	1.34	3.50	5.55	1.95	4.112



Optional Stem Extension

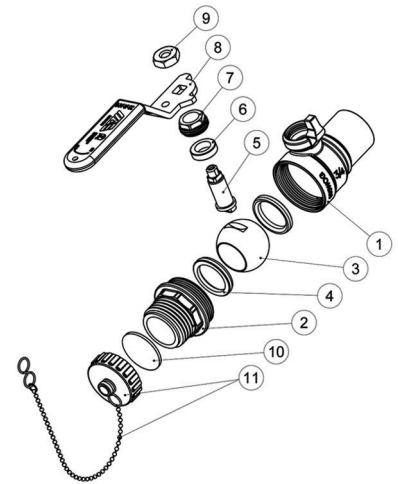
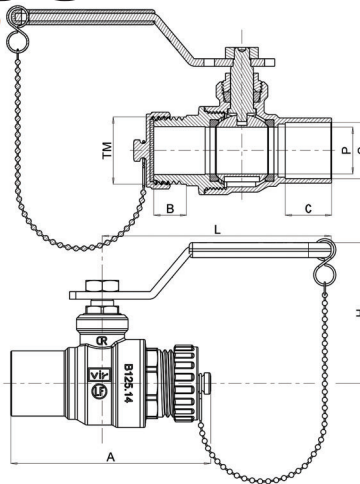
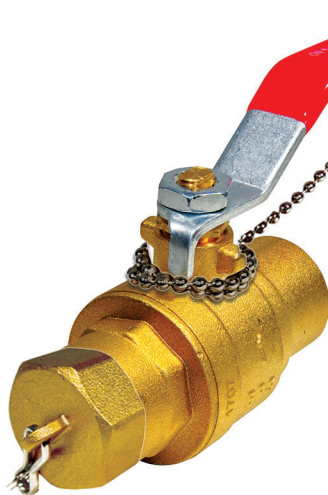
B Series Lead Free DZR Brass 600 WOG Ball Valves with Drain Cap



Meeting the Industry's
Lowest Lead-free
Requirements

B-2-F-LF-CC

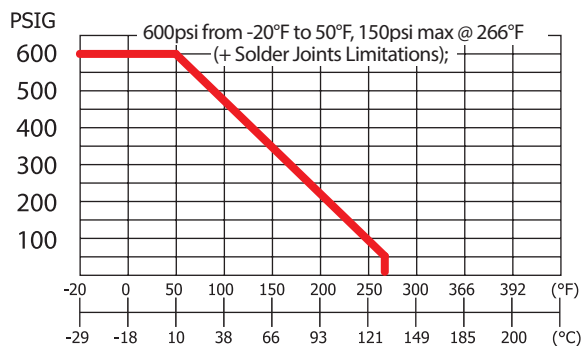
5.6



- 600# WOG
- Lead free brass body
- Full port
- Adjustable packing
- Solder x Hose end
- Solder end (ASME B16.22)
- Chrome plated ball
- Virgin PTFE seats
- MSS-SP-110
- Blow-out proof stem
- Drain cap with chain
- AB1953, NSF/ANSI 61 & 372 certified
- CSA B125.14-17

PART / MATERIAL		
NO.	PART NAME	MATERIAL
1	BODY	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
2	FIXED-END	BRASS CW511L EN 12165 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
3	BALL	BRASS CW509L EN 12164 (AB) CHROM.PL. BRASS ASTM B927 C27450 (AB) CHROM.PL.
4	SEAT (2)	PTFE
5	STEM	BRASS CW511L EN 12164 (DZR AB) BRASS ASTM B927 C27453 (DZR AB)
6	PACKING-RING	PTFE
7	PACKING-NUT	BRASS CW617N EN 12164 BRASS ASTM B124 C37700
8	RED HANDLE MAS B-1-F-LF-CC	STEEL Fe P11 EN 10111 DACROMET P. STEEL DACROMET PLATED
9	NUT	STEEL Fe42 EN 10025 ZINC PLATED STEEL ASTM A36 ZINC PLATED
10	DRAIN CAP GASKET	EPDM PEROX NSF APPROVED EPDM PEROX NSF APPROVED
11	DRAIN CAP +CHAIN	BRASS CW617N EN 12165 BRASS ASTM B283 C37700

PRESSURE TEMPERATURE RATING



KPAG
4136
3447
2758
2068
1379
689

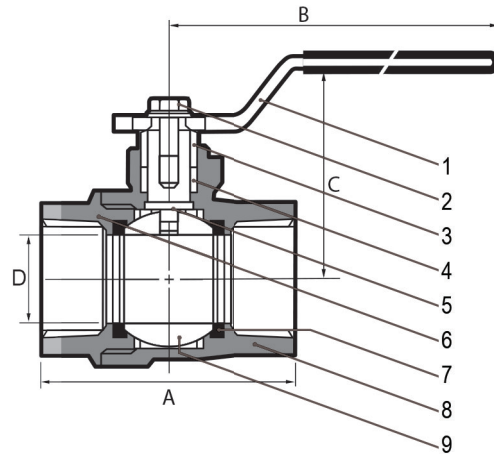
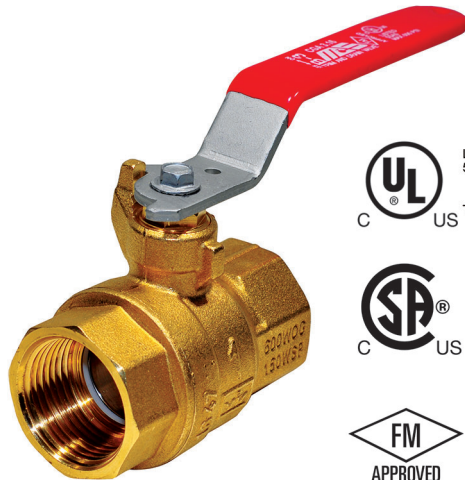
DIMENSIONS									
Size	S in	TM	A in	C in	B in	H in	L in	P in	Weight LBS
1/2	0.627-0.631	3/4-11.5 NH	2.52	0.51	0.51	2.07	3.60	0.50	0.49
3/4	0.877-0.881	3/4-11.5 NH	3.12	0.75	0.51	2.20	3.60	0.73	0.66

B Series Forged Brass 600 WOG Ball Valves

B-3

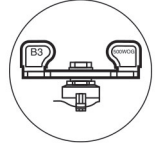
B-3-SS-LL
(SS Trim) is available for 1/4" to 2"

5.7



OPTIONS

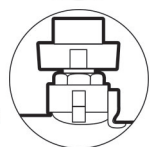
1/4 to 2"
B3W
(Wing handle)



1/4 to 2"
B3LL
(Latch lock handle)



1" to 2"
B3SH
(Square Head Operator)



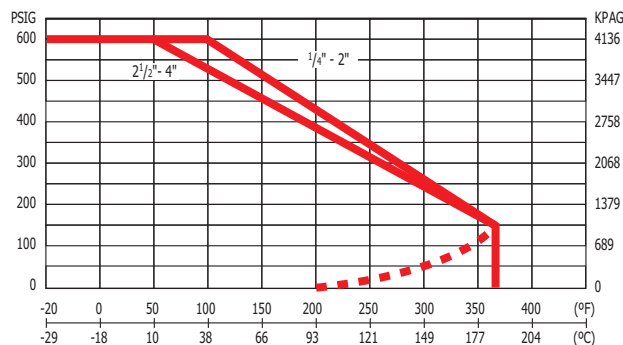
- Forged 2 piece construction, Full port
- ANSI B1.20.1 NPT ends
- Blowout-proof stem, Chrome plated ball
- Adjustable packing gland
- Class 150 WSP, 600 WOG
- Certified to:
ANSI Z21.15/CSA 9.1 (1/2 PSIG)
ASME B16.44/CGA-CR91-002 (2 & 5 PSIG)
ASME B16.33/CGA-3.16 (125 PSIG)
-40° to 120°F
cULus 55AO Trim & Drain

B-3 PART/MATERIAL			
NO.	PART NAME	B3 MATERIAL	B-3-SS-LL MATERIAL
1	Lever	Steel ASTM A36	(AISI 430SS)
2	Lever Screw	Steel ASTM A36	(AISI 430SS)
3	Packing Nut	Brass ASTM B124-C37700	
4	Packing	PTFE	
5	Stem	Brass ASTM B124-C37700	(ASTM A276 Type 316SS)
6	Cap	Brass ASTM B283-C37700	
7	Seats	PTFE	
8	Body	Brass ASTM B283-C37700	
9	Ball	Brass ASTM B124-C37700 Chrome Plated	(ASTM A276 Type 316SS)
10	Wing and Latch lock handles	Steel A36 Zinc Plated	

B-3-SS-LL (SS Trim) is available from 1/4" to 2"

B-3 DIMENSIONS										
Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	*2 1/2	*3
A	44	44	54	62.2	72.4	83.2	96.4	110.3	150	173.2
mm/in	1.73	1.73	2.12	2.44	2.84	3.27	3.79	4.34	5.90	6.81
B	81	81	91.5	91.5	126.5	126.5	141.5	141.5	281	281
mm/in	3.18	3.18	3.60	3.60	4.98	4.98	5.57	5.57	11.06	11.06
C	39	39	53.4	57	65.3	70	83	90.5	118	130
mm/in	1.55	1.54	2.12	2.26	2.57	2.76	3.28	3.58	4.65	5.20
D	10	10	15	20	25	32	40	50	65	80
mm/in	0.39	0.39	0.59	0.78	0.98	1.25	1.57	1.96	2.55	3.14
CV	8	8	15	30	60	110	130	360	450	620
Weight	0.25	0.25	0.50	0.75	1.2	1.8	2.7	3.9	8.4	11
lb/kg	0.12	0.12	0.23	0.34	0.55	0.82	1.23	1.8	3.8	5.0

PRESSURE TEMPERATURE RATING



*NOTES:

- 1) 2 1/2" and 3" sizes are certified for 1/2 to 5 PSIG gas services only
- 2) Gas certifications listed are not applicable to 4" size.
- 3) UL listings are not applicable to 2 1/2" - 4"

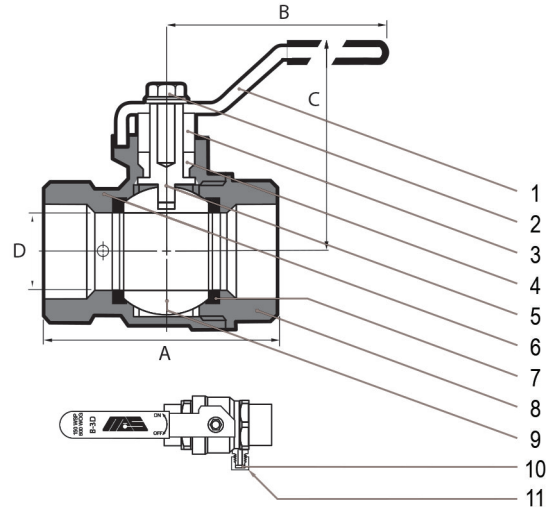
B Series Forged Brass 600 WOG Ball Valves with Drain

B-3D

5.8



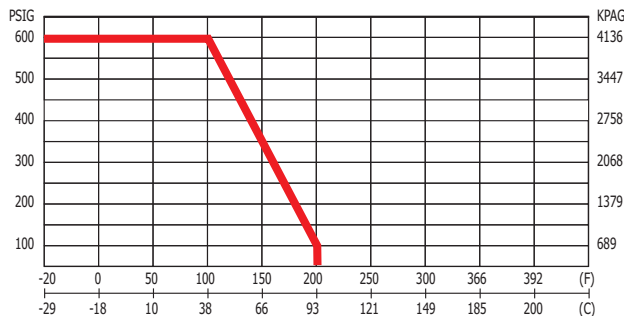
- Forged 2 piece construction
- Full port
- ANSI B1.20.1 NPT ends
- Blowout-proof stem
- Chrome plated ball
- Adjustable packing gland
- Class 150, 600 WOG



B-3D PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36
2	Lever Screw	Steel ASTM A36
3	Packing Nut	Brass ASTM B124-C37700
4	Packing	PTFE
5	Stem	Brass ASTM B124-C37700
6	Cap	Brass B-283-C37700
7	Seat	PTFE
8	Body	Brass B-283-C37700
9	Ball	Brass B124 / B283-C37700 Chrome plated
10	Drain Cap Washer	NBR
11	Drain Cap	Brass B124-C37700

B-3D DIMENSIONS			
Size	1/2	3/4	1
A	61.5	70.6	81.0
mm/in	2.42	2.77	3.18
B	91.5	91.5	126.5
mm/in	3.60	3.60	4.98
C	54.4	57.8	66.3
mm/in	2.14	2.28	2.61
D	15.0	20.0	25.0
mm/in	0.59	0.78	0.98
CV	15	30	60
Weight	0.56	0.78	1.25
lb/kg	0.26	0.36	0.57

PRESSURE TEMPERATURE RATING

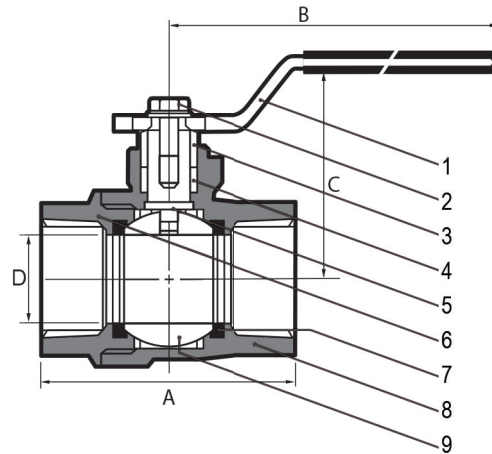
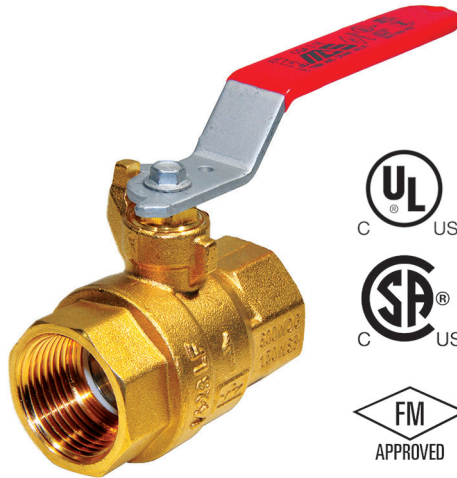


*NOTES:

- 1) It is not recommended to use this drain feature valve in any hostile fluid, gas or high temperature application.
- 2) Always depressurize the system before removing the drain cap.

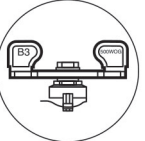
B-3-LF

5.9



OPTIONS

1/4 to 2"
B3WLF
(Wing handle)



1/4 to 2"
B3LLF
(Latch lock handle)



1" to 2"
B3SHLF
(Square Head Operator)



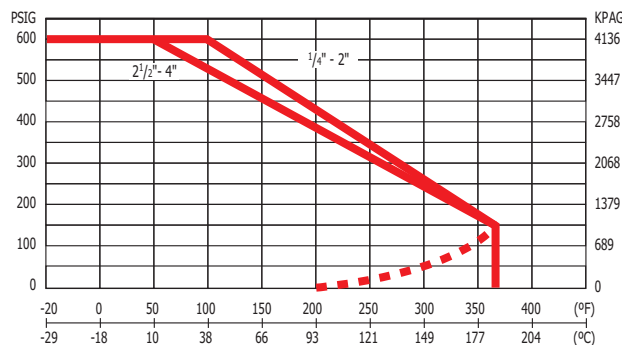
- Forged 2 piece construction, Full port
- ANSI B1.20.1 NPT ends
- Blowout-proof stem, Chrome plated ball
- Adjustable packing gland
- Class 150 WSP, 600 WOG

- Certified to:
ANSI Z21.15/CSA 9.1 (1/2 PSIG)
ASME B16.44/CGA-CR91-002 (2 & 5 PSIG)
ASME B16.33/CGA-3.16 (125 PSIG)
-40° to 149°F
cULus 55AO Trim & Drain
CSA B125.14-17

NSF/ANSI 61 drinking water system components

NSF/ANSI 372 lead free (0.25% max lead content)

PRESSURE TEMPERATURE RATING



*NOTES:

- 1) 2 1/2" and 3" sizes are certified for 1/2 to 5 PSIG gas services only
- 2) Gas certifications listed are not applicable to 4" size.
- 3) UL listings are not applicable to 2 1/2" - 4"

B-3-LF PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36 Zinc Plated
2	Lever Screw	Steel ASTM A36 Zinc Plated
3	Packing Nut	Brass ASTM B124-C37700
4	Packing	PTFE
5	Stem	Brass ASTM DS-561 C28500 (AB)
6	Cap	Brass ASTM DS-561 C28500 (AB)
7	Seats	PTFE
8	Body	Brass ASTM DS-561 C28500 (AB)
9	Ball	Brass ASTM DS-561 C28500 (AB) Chrome Plated
10	Wing and Latch lock handles	Steel A36 Zinc Plated

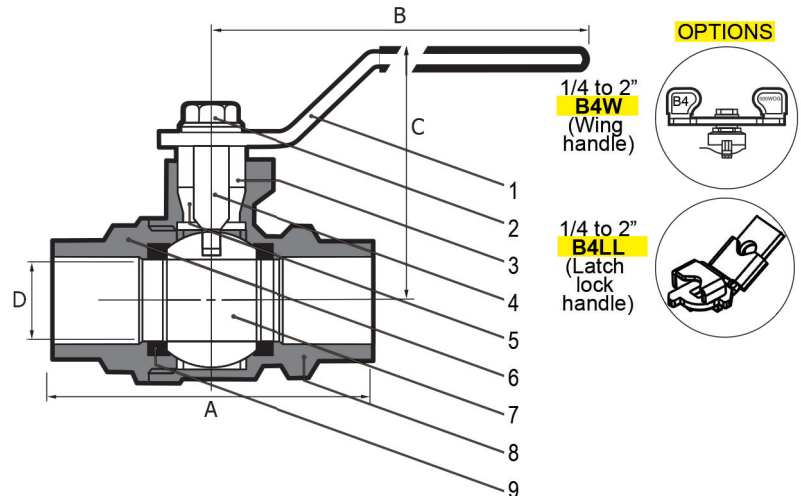
B-3-LF DIMENSIONS											
Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	*2 1/2	*3	*4
A	44	44	54	62.2	72.4	83.2	96.4	110.3	150	173.2	192
mm/in	1.73	1.73	2.12	2.44	2.84	3.27	3.79	4.34	5.90	6.81	7.55
B	81	81	91.5	91.5	126.5	126.5	141.5	141.5	281	281	281
mm/in	3.18	3.18	3.60	3.60	4.98	4.98	5.57	5.57	11.06	11.06	11.06
C	39	39	53.4	57	65.3	70	83	90.5	118	130	143
mm/in	1.55	1.54	2.12	2.26	2.57	2.76	3.28	3.58	4.65	5.20	5.62
D	10	10	15	20	25	32	40	50	65	80	100
mm/in	0.39	0.39	0.59	0.78	0.98	1.25	1.57	1.96	2.55	3.14	3.93
CV	8	8	15	30	60	110	130	360	450	620	1200
Weight	0.25	0.25	0.50	0.75	1.2	1.8	2.7	3.9	8.4	11	16.5
lb/kg	0.12	0.12	0.23	0.34	0.55	0.82	1.23	1.8	3.8	5.0	9.5

B Series Forged Brass 600 WOG Ball Valves

B-4

B-4-SS-LL
(SS Trim) is available for 1/4" to 2"

5.10



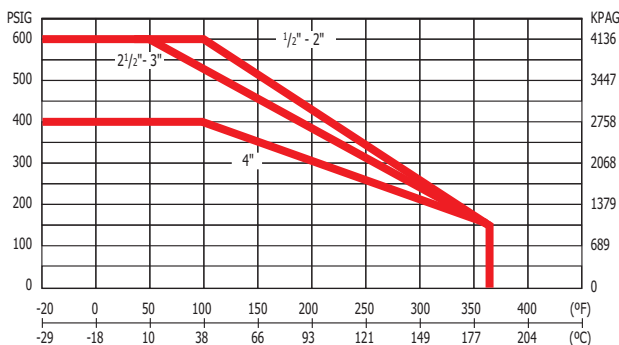
- Forged 2 piece construction
- Full port
- ANSI B16.22 solder ends (CXC)
- Blowout-proof stem
- Chrome plated ball
- Adjustable packing gland
- Class 150, 600 WOG

B-4-SS-LL (SS Trim) is available from 1/4" to 2"

B-4 PART/MATERIAL			
NO.	PART NAME	B4 MATERIAL	B-4-SS-LL MATERIAL
1	Lever	Steel ASTM A36	AISI 430SS
2	Lever Screw	Steel ASTM A36	AISI 430SS
3	Packing Nut	Brass ASTM B124-C37700	
4	Stem	Brass ASTM B124-C37700	ASTM A276 Type 316SS
5	Packing	PTFE	
6	Cap	Brass ASTM B283-C37700	
7	Ball	Brass ASTM B124-C37700 Chrome Plated	ASTM A276 Type 316SS
8	Body	Brass ASTM B283-C37700	
9	Seats	PTFE	(ASTM A276 Type 316SS)
10	Wing and Latch lock handles	Steel ASTM A36 Zinc Plated	

B-4 DIMENSIONS									
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	53.5	73	86	99	115	140	169	196	237
mm/in	2.12	2.87	3.38	3.89	4.57	5.51	6.65	7.72	9.33
B	91.5	91.5	126.5	126.5	141.5	141.5	280	280	281
mm/in	3.60	3.60	4.98	4.98	5.57	5.57	11.02	11.02	11.06
C	54	57	65	70	83	90	119	130	143
mm/in	2.12	2.26	2.62	2.83	3.23	3.54	4.69	5.12	5.63
D	15	20	25	32	40	50	65	78	100
mm/in	0.59	0.78	0.98	1.25	1.57	1.96	2.56	3.07	3.94
CV	15	30	60	110	130	360	450	620	1200
Weight	0.45	0.65	1.0	1.5	2.4	3.8	7.5	10.4	17.2
lb/kg	0.21	0.30	0.46	0.69	1.0	1.7	3.4	4.7	7.8

PRESSURE TEMPERATURE RATING



*NOTES:

- 1) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitations of the solder used for the joints. Refer to ANSI B16-22 - Table I.1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 2) Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.

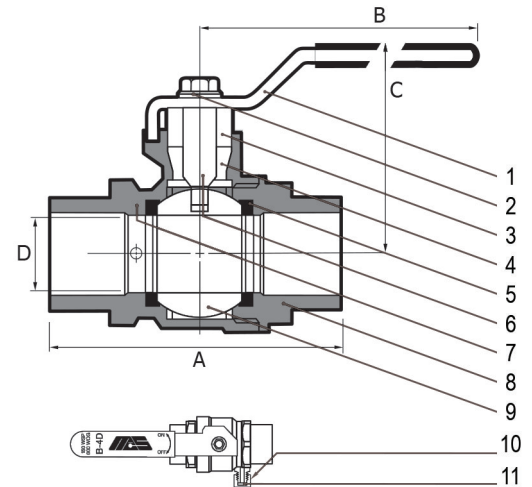
B Series Forged Brass 600 WOG Ball Valves with Drain

B-4D

5.11



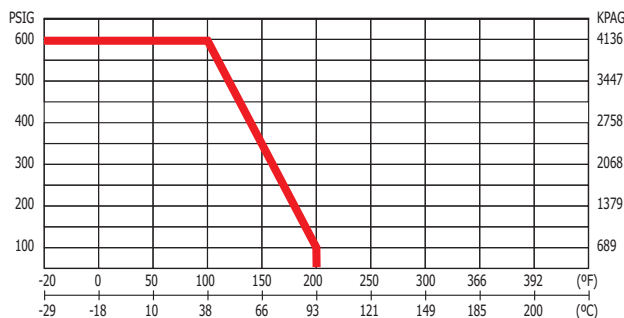
- Forged 2 piece construction
- Full port
- ANSI B16.22 solder ends (CXC)
- Blowout-proof stem
- Chrome plated ball
- Adjustable packing gland
- Class 150, 600 WOG



B-4D PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36
2	Lever Screw	Steel ASTM A36
3	Packing Nut	Brass ASTM B124-C37700
4	Packing	PTFE
5	Seats	PTFE
6	Stem	Brass ASTM B124-C37700
7	Cap	Brass ASTM B-283-C37700
8	Body	Brass ASTM B-283-C37700
9	Ball	Brass ASTM B283 / B124-C37700 Chrome Plated
10	Drain Cap	ASTM Brass B124-C37700
11	Drain Cap Washer	NBR

B-4D DIMENSIONS			
Size	1/2	3/4	1
A	58	76.5	89.5
mm/in	2.28	3.01	3.52
B	91.5	91.5	126.5
mm/in	3.60	3.60	4.98
C	54.4	57.5	65.3
mm/in	2.15	2.27	2.57
D	15.0	20.0	25.0
mm/in	0.59	0.79	0.99
CV	15	30	60
Weight	0.50	0.75	1.2
lb/kg	0.23	0.34	0.55

PRESSURE TEMPERATURE RATING



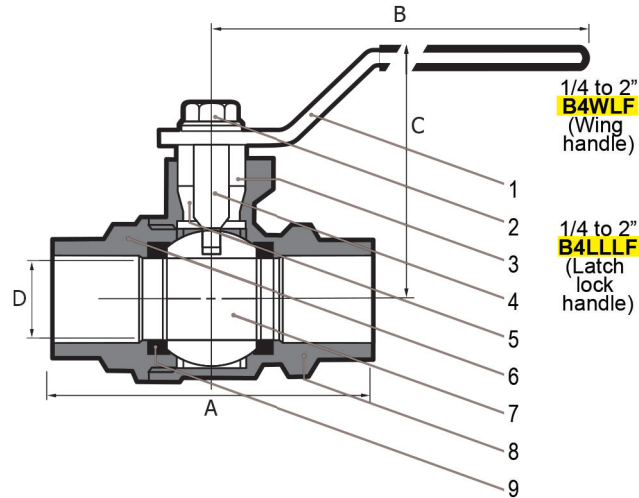
*NOTES:

- 1) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitations of the solder used for the joints. Refer to ANSI B16-22 - Table I.1 for the maximum recommended pressure-temperature ratings for solder joints.
- 2) Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.
- 3) It is not recommended to use this drain feature valve with any hostile fluid, gas or high temperature application.
- 4) Always depressurize the system before removing the drain cap.

Technical data, dimensions, materials & specifications are subject to change without notice. • MAS JUN 2022 • www.mastewart.com •

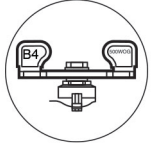
B-4-LF

5.12



OPTIONS

1/4 to 2"
B4WLF
(Wing handle)



1/4 to 2"
B4LLF
(Latch lock handle)



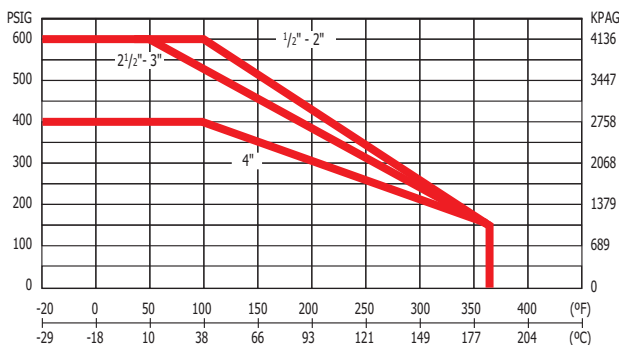
- Forged 2 piece construction
- Full port
- ANSI B16.22 solder ends (CXC)
- Blowout-proof stem
- Chrome plated ball
- Adjustable packing gland
- Class 150, 600 WOG
- CSA B125.14-17

**NSF/ANSI 61 drinking water
system components**
NSF/ANSI 372 lead free
(0.25% max lead content)

B-4-LF PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36 Zinc Plated
2	Lever Screw	Steel ASTM A36 Zinc Plated
3	Packing Nut	Brass ASTM B124-C37700
4	Stem	Brass DS-561 C28500 (AB)
5	Packing	PTFE
6	Cap	Brass ASTM DS-561 C28500 (AB)
7	Ball	Brass ASTM DS-561 C28500 (AB) Chrome Plated
8	Body	Brass ASTM DS-561 C28500 (AB)
9	Seats	PTFE
10	Wing and Latch lock handles	Steel A36 Zinc Plated

B-4-LF DIMENSIONS									
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	53.5	73	86	99	115	140	169	196	237
mm/in	2.12	2.87	3.38	3.89	4.57	5.51	6.65	7.72	9.33
B	91.5	91.5	126.5	126.5	141.5	141.5	280	280	281
mm/in	3.60	3.60	4.98	4.98	5.57	5.57	11.02	11.02	11.06
C	54	57	65	70	83	90	119	130	143
mm/in	2.12	2.26	2.62	2.83	3.23	3.54	4.69	5.12	5.63
D	15	20	25	32	40	50	65	78	100
mm/in	0.59	0.78	0.98	1.25	1.57	1.96	2.56	3.07	3.94
CV	15	30	60	110	130	360	450	620	1200
Weight	0.45	0.65	1.0	1.5	2.4	3.8	7.5	10.4	17.2
lb/kg	0.21	0.30	0.46	0.69	1.0	1.7	3.4	4.7	7.8

PRESSURE TEMPERATURE RATING



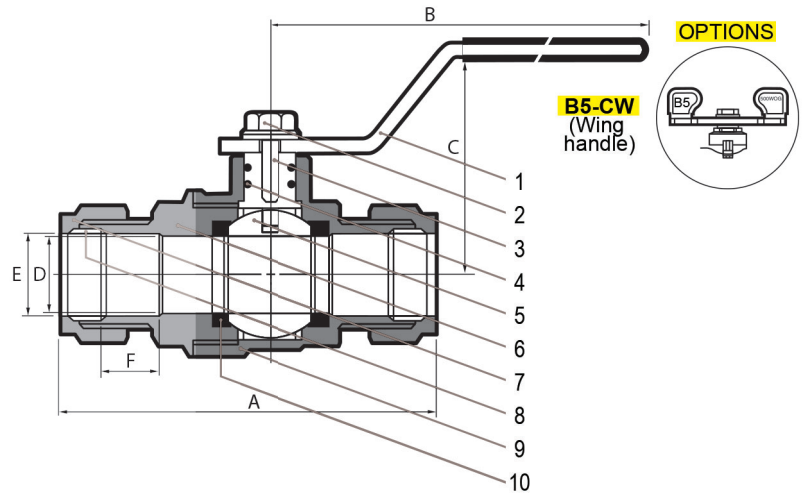
*NOTES:

- 1) Use 95.5 Tin Antimony ASTM B32 Alloy Grade 9.5 TA solder.
- 2) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitations of the solder used for the joints. Refer to ANSI B16-22 - Table I.1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 3) Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.

B Series Compression End Forged Brass 600 WOG Ball Valves

B-5C

5.13

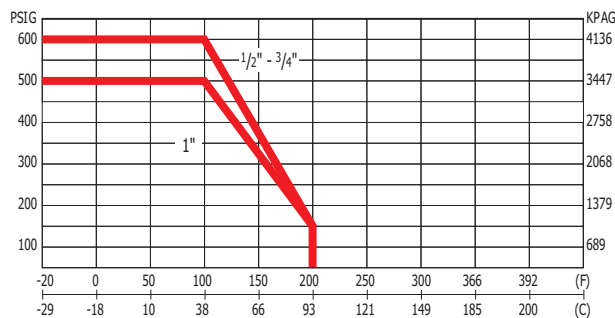


- Forged 2 piece construction
- Full port
- **Compression ends for use with type K L & M copper tube**
- Blowout-proof stem
- Chrome plated ball
- Class 150, 600 WOG (1/2" & 3/4")
500 WOG (1")

B-5C PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36
2	Lever Screw	Steel ASTM A36
3	Stem	Brass ASTM B124-C37700
4	O Ring	NBR
5	Ball	Brass ASTM B283-C37700 Chrome Plated
6	Cap	Brass ASTM B283-C37700
7	End Nut	Brass ASTM B283-C37700
8	Ferrule	Brass ASTM C27200
9	Body	Brass ASTM B283-C37700
10	Seats	PTFE
11	Wing Handle	Steel Zinc Plated

B-5C DIMENSIONS								
Size (mm/in)	A	B	C	D	E	F	CV	Weight lb/kg
1/2	75	91.5	45	15	15.97	12.7	15	0.6
	2.95	3.60	1.77	0.61	0.65	0.52		0.28
3/4	87	91.5	48.5	20	22.32	14	30	0.85
	3.42	3.60	1.98	0.79	0.91	0.57		0.39
1	96	126.5	52.5	25	28.7	16	60	1.30
	3.77	4.98	2.07	0.98	1.17	0.65		0.59

PRESSURE TEMPERATURE RATING

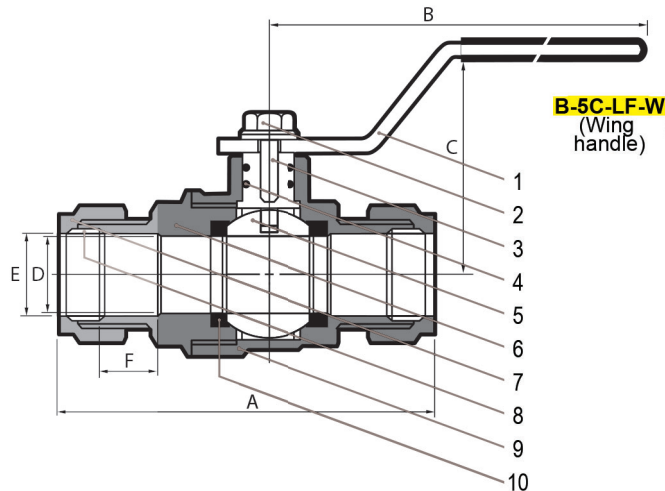


*NOTES:

- Compression end limits below;
- 300 PSIG @ 15F to 160F (-9.4C to 71C)
- 150 PSIG @ 200F (93C)

B-5C-LF

5.14



OPTIONS



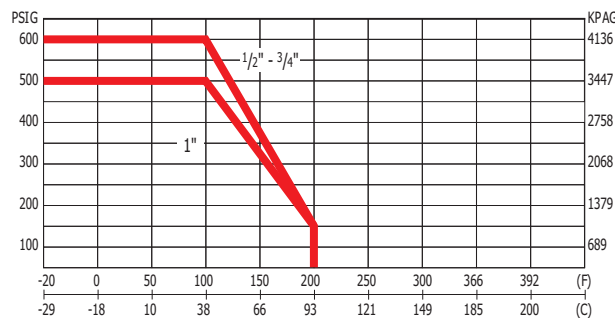
- Forged 2 piece construction
- Full port
- **Compression ends for use with type K L & M copper tube**
- Blowout-proof stem
- Chrome plated ball
- Class 150, 600 WOG (1/2" & 3/4")
500 WOG (1")

**NSF/ANSI 61 drinking water
system components**
NSF/ANSI 372 lead free
(0.25% max lead content)

B-5C-LF PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36
2	Lever Screw	Steel ASTM A36
3	Stem	Brass ASTM DS-561 C28500AB
4	O Ring	NBR NSF Approved
5	Ball	Brass ASTM DS-561 C28500AB Chrome Plated
6	Cap	Brass ASTM DS-561 C28500AB
7	End Nut	Brass ASTM B283-C37700
8	Ferrule	Brass ASTM C27200
9	Body	Brass ASTM DS-561 C28500AB
10	Seats	PTFE
11	Wing Handle	Steel Zinc Plated

B-5C-LF DIMENSIONS								
Size (mm/in)	A	B	C	D	E	F	CV	Weight lb/kg
1/2	73.7	91.5	45.2	14.9	15.93	12.7	15	0.6
	2.90	3.60	1.78	0.59	0.627	0.50		0.28
3/4	87.1	91.5	48.5	20	22.35	13.9	30	0.85
	3.43	3.60	1.91	0.79	0.880	0.55		0.39
1	100.3	126.5	52.5	25	28.65	16	60	1.30
	3.95	4.98	2.07	0.98	1.128	0.63		0.59

PRESSURE TEMPERATURE RATING



*NOTES:

- Compression end limits below;
- 300 PSIG @ 15F to 160F (-9.4C to 71C)
- 150 PSIG @ 200F (93C)

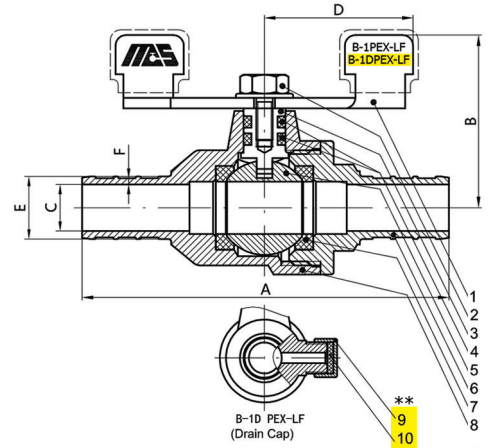
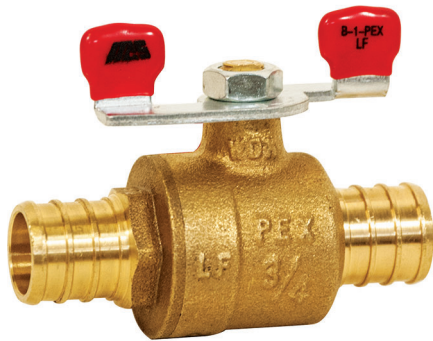
B Series Lead Free Forged Brass PEX 400 WOG Ball Valves B-1DPEX-LF Drain Option



Meeting the Industry's
Lowest Lead-free
Requirements

B-1PEX-LF / B-1DPEX-LF 5^{.15}

NSF-61/372



- Forged 2-piece construction
- Reduced port
- CSA B137.5 ASTM F1807 PEX ends
- Blowout-proof stem
- Chrome plated ball
- O-ring stem seals
- 400 WOG
- CSA B125.3-12 Plumbing Fittings / ASME 112.4.14
- NSF/ANSI 61 Drinking Water System Components
- NSF/ANSI 372 Lead Free (0.25% max lead content)
- ** Drain available on model B-1DPEX-LF

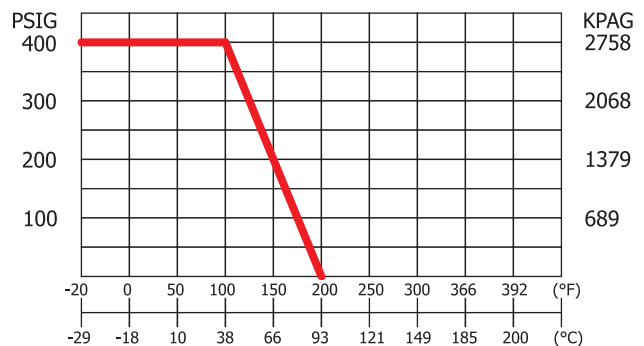
B-1PEX-LF B-1-D-PEX-LF PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle	Steel ASTM A36 ZINC PLATED
2	Handle NUT	Steel ASTM A36 ZINC PLATED
3	Stem	Brass ASTM B432 C46500
4	O Ring	NBR
5	Ball	Brass ASTM B432 C46500 Chrome Plated
6	Cap	Brass ASTM B432 C46500
7	Seat	PTFE
8	Body	Brass ASTM B432 C46500
9	** Drain Cap	Brass ASTM C37700
10	** Drain Cap Washer	NBR

B-1PEX-LF B-1-D-PEX-LF DIMENSIONS										
Size	A mm/in	** A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	F mm/in	CV	** Weight Kg/LBS	Weight Kg/LBS
1/2	63	68.5	33.5	8.95	27	11.96	0.828Min	7	0.123	0.102
	2.48	2.697	1.319	0.352	1.102	0.471	0.033Min		0.271	0.225
3/4	68.3	74	36.5	13.22	27	16.94	1.081Min	13	0.187	0.158
	2.69	2.913	1.437	0.52	1.102	0.667	0.043Min		0.412	0.348
1	85.4	91	42.7	17.79	27	21.74	1.196Min	27	0.312	0.270
	3.362	3.583	1.72	0.7	1.102	0.856	0.047Min		0.688	0.595

Table A1: Pressure Rating for PEX SDR9
Water Distribution Systems

Rated Temperature °C / °F	Pressure Rating for Water KPA / (PSI)
23 / 73	1105 / (160)
82 / 180	690 / (100)
93 / 200	550 / (80)

PRESSURE TEMPERATURE RATING

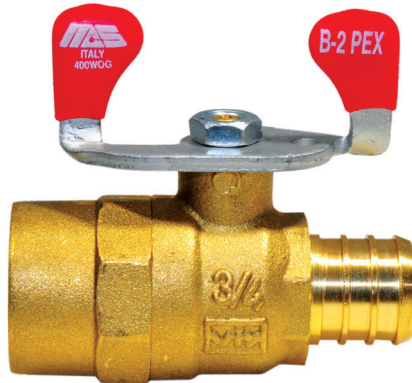


*NOTES:

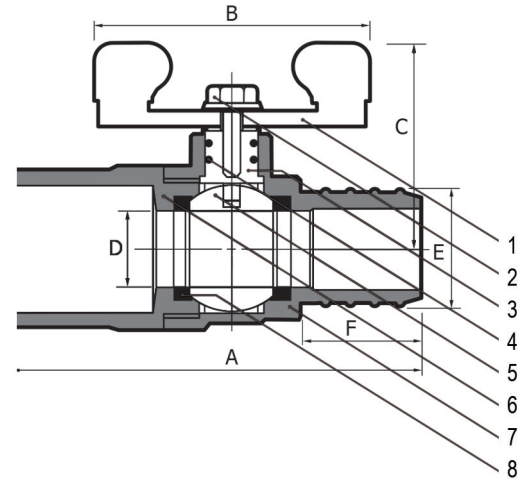
- 1) The safe working pressure-temperature rating for this valve in a PEX piping system is dependent not only on the valve rating but also the limitations of the PEX pipe used. Refer to the CSA-B137 standard Table A1 above for these limits.
- 2) It is not recommended to use the drain feature valve B-1D PEX with any hostile fluid, gas or high temperature application.
- 3) Always depressurize system before removing the B-1D PEX drain cap.

B Series Forged Brass PEX X Solder 400 WOG Ball Valve

B-2PEX



- Forged 2-piece construction
- Reduced port
- B16.22 solder end X ASTM F1807-08 PEX end (CXPEX)
- Blowout-proof stem
- Chrome plated ball
- O-ring stem seals
- *400 WOG



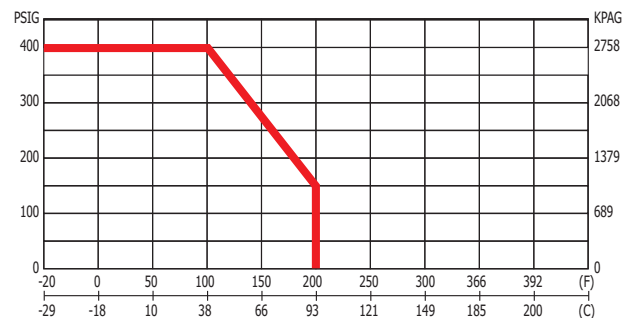
B-2PEX PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle	Steel ASTM A36
2	Lever Screw	Steel ASTM A36
3	Stem	Brass ASTM B124-C37700
4	O-Ring	NBR
5	Ball	Brass ASTM B124-C37700 Chrome Plated
6	Cap	Brass B283-C37700.
7	Body	Brass B283-C37700
8	Seat	PTFE

B-2PEX DIMENSIONS								
Size (mm/in)	A	B	C	D	E	F	CV	Weight lb/kg
1/2	54.1	26.2	39.9	8.9	12.0	16.0	7	0.243
	2.13	1.03	1.57	0.35	0.47	0.63		0.11
3/4	60.9	26.2	41.9	13.5	16.9	16.0	13	0.324
	2.40	1.03	1.65	0.53	0.67	0.63		0.15

Table A1: Pressure Rating for PEX SDR9
Water Distribution Systems

Rated Temperature °C / °F	Pressure Rating for Water KPA / (PSI)
23 / 73	1105 / (160)
82 / 180	690 / (100)
93 / 200	550 / (80)

PRESSURE TEMPERATURE RATING



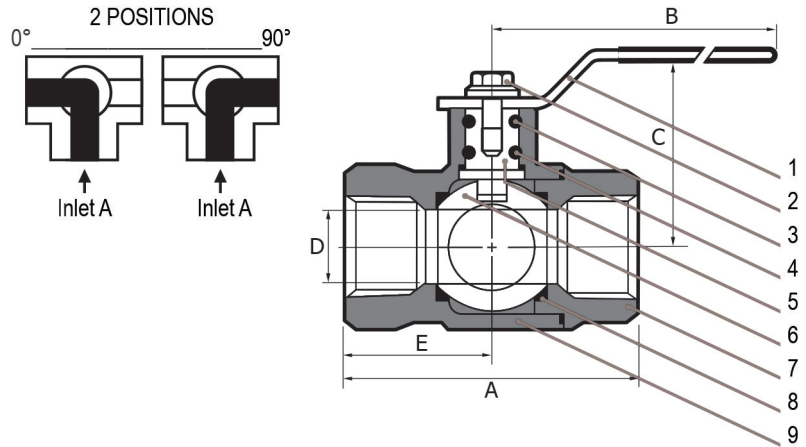
*NOTES:

- 1) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitation of the solder used for the joints. Refer to ANSI B16-22, Table I.1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 2) Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.
- 3) The safe working pressure-temperature rating for this valve in a PEX piping system is dependent not only on the valve seat rating but also the limitations of the PEX pipe used. Refer to the CSA-B137 standard Table A1 below for these limits.

B Series Forged Brass 3-Port Diverter 400 WOG Ball Valves

B-3L

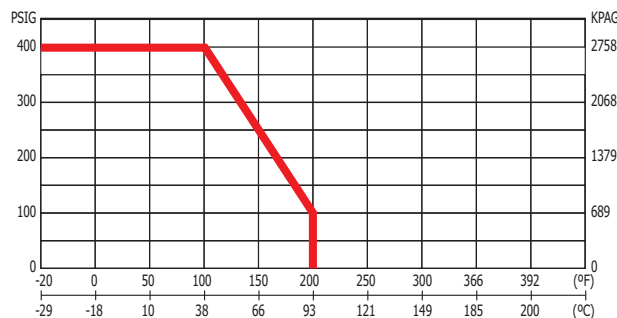
5.17



- Forged 2 piece construction
- Reduced L-Port
- 2 seat design
- ANSI B1.20.1 NPT ends
- Blowout-Proof Stem
- Chrome Plated Ball
- Oring stem seals
- Panel Mounting Holes
- Class 150, 400 WOG

B3-L PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36.
2	Lever Screw	Steel ASTM A36.
3	Stem O Ring	NBR
4	Stem O Ring	Viton
5	Stem	Brass ASTM B124-C37700
6	Ball	Brass ASTM B124-C37700 Chrome Plated
7	Cap	Brass ASTM B283-C37700
8	Seat	PTFE
9	Body	Brass ASTM B283-C37700

PRESSURE TEMPERATURE RATING



B3-L DIMENSIONS									
Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	49.0	56.0	68.0	80.0	91.0	102.0	120.0	142.0	169.0
mm/in	1.93	2.20	2.68	3.15	3.58	4.02	4.72	5.59	6.65
B	81.0	81.0	91.5	91.5	126.5	126.5	141.5	141.5	281.3
mm/in	3.19	3.19	3.60	3.60	4.98	4.98	5.57	5.57	11.07
C	34.5	34.5	47.5	50.5	54.0	59.5	73.4	81.5	103.3
mm/in	1.36	1.36	1.87	1.99	2.13	2.34	2.89	3.21	4.07
D	10.0	10.0	15.2	20.2	25.0	32.0	40.0	50.0	65.0
mm/in	0.39	0.39	0.59	0.80	0.98	1.26	1.57	1.97	2.56
E	28.5	28.5	34.0	40.0	45.5	51.0	60.0	71.0	84.5
mm/in	0.96	0.96	1.34	1.57	1.79	2.01	2.36	2.80	3.33
CV	1.2	3	5.5	12	18	30	39	65	115
Weight	0.08	0.09	0.17	0.25	0.41	0.60	1.01	1.70	2.66
lb/kg	0.167	0.205	0.384	0.551	0.896	1.315	2.215	3.750	5.851

*NOTES:

- 1) The flow path pressure (A to B, or A to C) must exceed any closed port back pressure for proper seat sealing.

BZ Series Cast Bronze 600 WOG Ball Valves

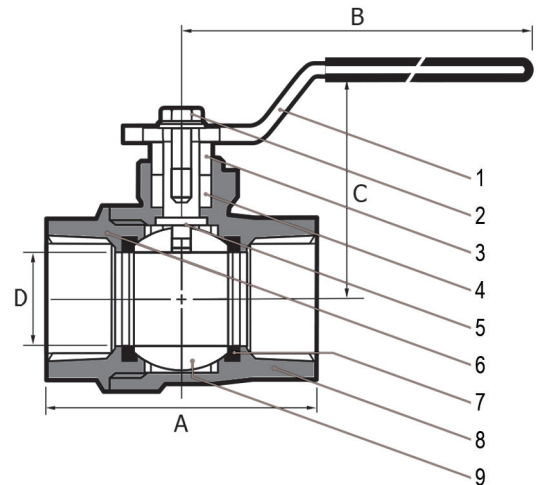
BZ-3

BZ-3-SS
(SS Trim) is available for 1/2" to 3"

5.18



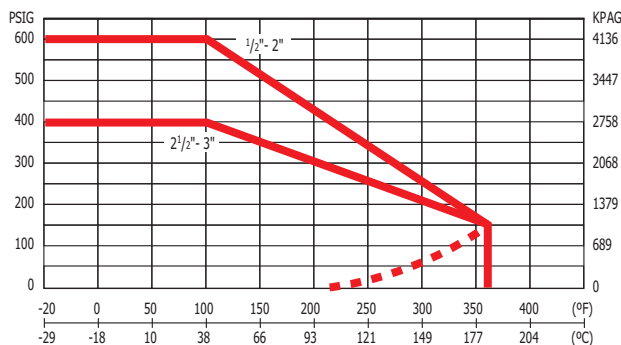
- Cast 2 piece construction
- Full Port
- ANSI B1.20.1 NPT ends
- Blowout-Proof Stem
- Chrome plated ball
- Adjustable Packing Gland
- Class 150 WSP
- 1/2" to 2": 600 WOG
- 2 1/2" to 3": 400 WOG



BZ-3 PART/MATERIAL			BZ-3-SS MATERIAL
NO.	PART NAME	MATERIAL	MATERIAL
1	Lever	Steel ASTM A36.	INOX STEEL AISI 430
2	Lever Screw	Steel ASTM A36.	INOX STEEL AISI 430
3	Packing Nut	Brass ASTM B124-C37700	
4	Stem Packing	PTFE	
5	Stem	Brass ASTM B124-C37700	SS ASTM A276 TYPE 316
6	Cap	Bronze ASTM B-62 / B30-C83600	
7	Seat	PTFE	
8	Body	Bronze ASTM B-62 / B30-C83600	
9	Ball	Brass ASTM B124 / B283-C37700 / B30-C85700 Chrome plated	SS ASTM A276 TYPE 316

BZ-3-SS (SS Trim) is available from 1/2" to 3"

PRESSURE TEMPERATURE RATING



BZ-3 DIMENSIONS								
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	57.0	67.0	77.0	91.0	103.0	122.0	153.0	179.2
mm/in	2.24	2.64	3.03	3.58	4.06	4.80	6.02	7.06
B	91.5	91.5	126.5	126.5	141.5	141.5	281.3	281.3
mm/in	3.60	3.60	4.98	4.98	5.57	5.57	11.06	11.06
C	54.0	57.5	65.3	71.0	83.0	91.0	119.3	131
mm/in	2.13	2.26	2.57	2.80	3.28	3.58	4.70	5.16
D	15.0	20.0	25.0	32.0	40.0	50.0	65.0	80.0
mm/in	0.59	0.79	0.98	1.26	1.57	1.97	2.56	3.15
Weight lb	0.57	0.80	1.30	2.07	3.15	4.76	9.89	13.50
Weight kg	0.25	0.36	0.58	0.93	1.42	2.15	4.48	6.12

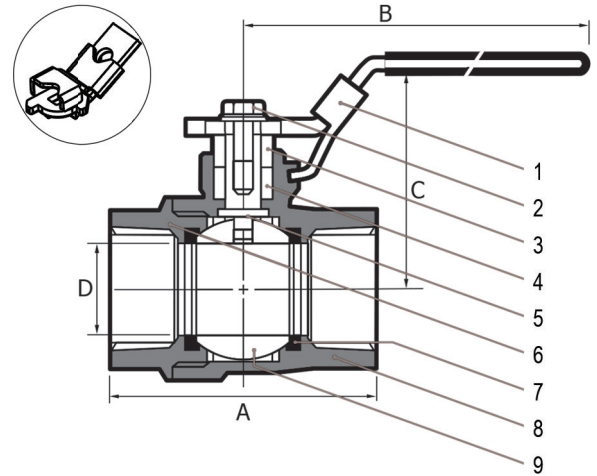
BZ Series Cast Bronze 250 Steam Rated 600 WOG Ball Valves

BZ-3SS-250

5.19



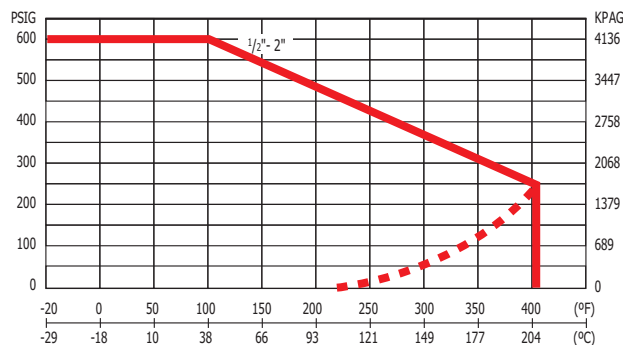
- Cast 2 piece construction
- Full Port
- ANSI B1.20.1 NPT ends
- Blowout-Proof Stem
- **316SS Ball & Stem**
- Adjustable Packing Gland
- Locking Handle
- Steam Rated Seats and Seals
- **250 WSP 600 WOG (1/2 to 2")**



BZ-3SS-250 PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	SS AISI type 430
2	Lever Screw	SS AISI type 430
3	Packing Nut	Brass ASTM B124-C37700
4	Stem Packing	Graphoil
5	Stem	SS ASTM A276 type 316
6	Cap	Bronze ASTM B62 / B30-C83600
7	Seat	R-PTFE Graphite-Filled
8	Body	Bronze ASTM B62 / B30-C83600
9	Ball	SS ASTM A276 type 316

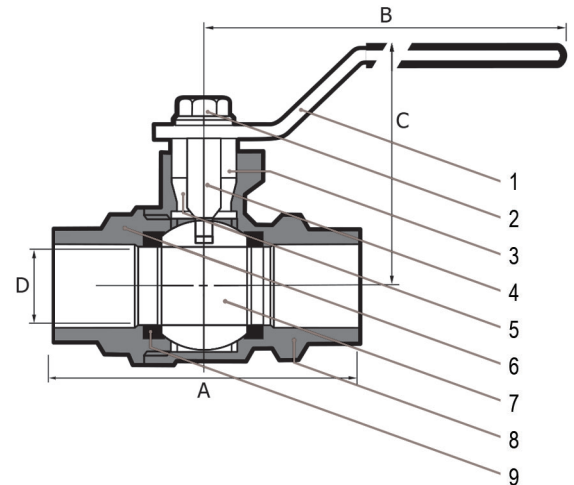
BZ-3SS-250 DIMENSIONS						
Size	1/2	3/4	1	1 1/4	1 1/2	2
A	57.0	67.0	77.0	91.0	103.0	122.0
mm/in	2.24	2.64	3.03	3.58	4.06	4.80
B	91.5	91.5	126.5	126.5	141.5	141.5
mm/in	3.60	3.60	4.98	4.98	5.57	5.57
C	54.0	57.5	65	71.0	83.0	91.0
mm/in	2.06	2.20	2.73	2.95	3.52	3.82
D	15.0	20.0	25.0	32.0	40.0	50.0
mm/in	0.59	0.79	0.98	1.26	1.57	1.97
Weight lb	0.59	0.82	1.32	2.06	3.55	5.60
Weight kg	0.26	0.37	0.59	0.93	1.61	2.54

PRESSURE TEMPERATURE RATING



BZ-4

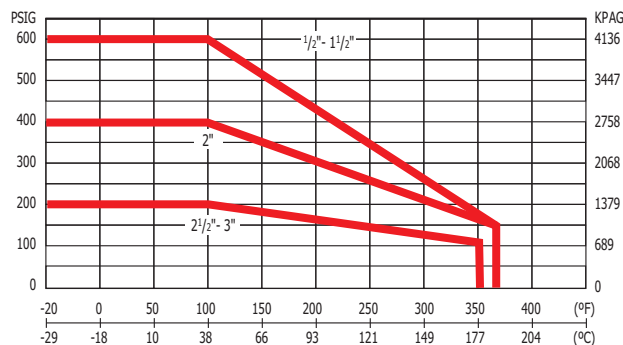
5.20



- Cast 2 piece construction
- Full port
- ANSI B16.22 solder ends (CXC)
- Blowout-proof stem
- Chrome plated ball
- Adjustable packing gland
- Class 150, 600 WOG (1/2 to 1 1/2")
- Class 150, 400 WOG (2")
- Class 125, 200 WOG (2 1/2" to 3")

BZ-4 PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Steel ASTM A36
2	Lever Screw	Steel ASTM A36
3	Packing Nut	Brass ASTM B124-C37700
4	Stem	Brass ASTM B124-C37700
5	Stem Packing	PTFE
6	Cap	Bronze ASTM B62 / B30-C83600
7	Ball	Brass ASTM B124 / B283-C37700 or B30-C85700 chrome plated
8	Body	Bronze ASTM B62 / B30-C83600
9	Seats	PTFE

PRESSURE TEMPERATURE RATING



BZ-4 DIMENSIONS								
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	63.0	80.0	92.0	104.0	121.0	146.0	217	237
mm/in	2.48	3.15	3.62	4.09	4.76	5.75	8.54	9.33
B	91.5	91.5	126.5	126.5	141.5	141.5	281	281
mm/in	3.60	3.60	4.98	4.98	5.57	5.57	11.02	11.02
C	54.0	57.5	65.3	70.8	83.3	91.0	119.3	131.0
mm/in	2.13	2.26	2.57	2.79	3.28	3.58	4.69	5.16
D	15.0	20.0	25.0	32.0	40.0	50.0	65	78
mm/in	0.59	0.79	0.98	1.26	1.57	1.97	2.56	3.07
Weight lb	0.51	0.75	1.18	1.85	2.99	4.41	8.42	16.53
Weight kg	0.23	0.34	0.53	0.83	1.35	2	3.81	7.49

*NOTES:

- 1) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitations of the solder used for joints. Refer to ANSI B16.18 - Table A1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 2) Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.

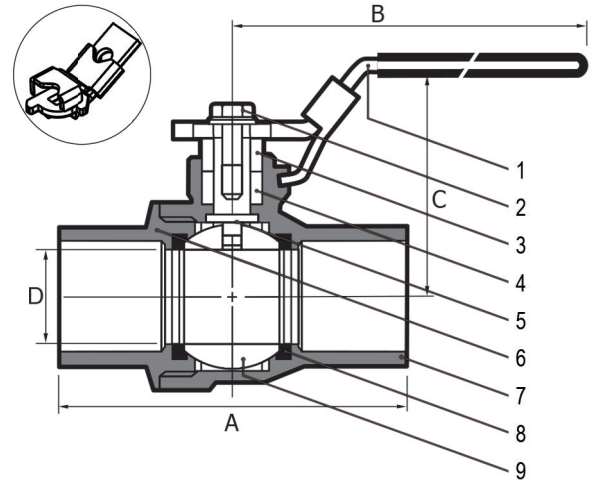
BZ Series Cast Bronze SS Trim Locking Lever 600 WOG Ball Valves

BZ-4SS

5.21



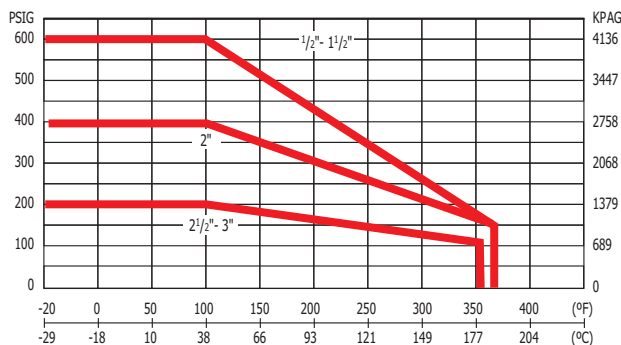
- Cast 2 piece construction
- Full Port
- ANSI B16.18 solder ends (CXC)
- Blowout-Proof Stem
- **316SS Ball & Stem**
- Adjustable Packing Gland
- Locking Handle
- Class 150, 600 WOG (1/2" to 1 1/2")
- Class 150, 400 WOG (2")
- Class 125, 200 WOG (2 1/2" to 3")



BZ-4SS PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	SS AISI type 430
2	Lever Screw	SS AISI type 430
3	Packing Nut	Brass ASTM B124-C37700
4	Stem Packing	PTFE
5	Stem	SS ASTM A276 type 316
6	Cap	Bronze ASTM B62 / B30-C83600
7	Body	Bronze ASTM B62 / B30-C83600
8	Seat	PTFE
9	Ball	SS ASTM A276 type 316

BZ-4SS DIMENSIONS								
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	63	80	92	104	121	146	217	237
mm/in	2.48	3.15	3.62	4.09	4.76	5.75	8.54	9.33
B	96	96	132	132	143	143	285	285
mm/in	3.78	3.78	5.39	5.39	5.63	5.63	11.22	11.22
C	52	56	69	75	89	97	124	135
mm/in	2.05	2.20	2.72	2.95	3.50	3.82	4.88	5.31
D	15.0	20.0	25.0	32.0	40.0	50.0	65	78
mm/in	0.59	0.79	0.98	1.26	1.57	1.97	2.56	3.07
Weight lb	0.54	0.79	1.30	1.94	3.53	5.47	14.17	20.58
Weight kg	0.24	0.35	0.58	0.87	1.60	2.48	6.42	9.33

PRESSURE TEMPERATURE RATING



*NOTES:

- 1) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitations of the solder used for the joints. Refer to ANSI B16.18 Table A1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 2) Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.

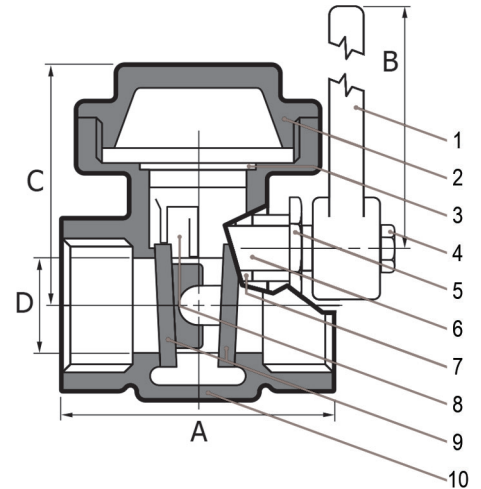
B Series Cast Bronze Lever Operated Quick Opening 200 WOG Gate Valves

B-GL

5.22



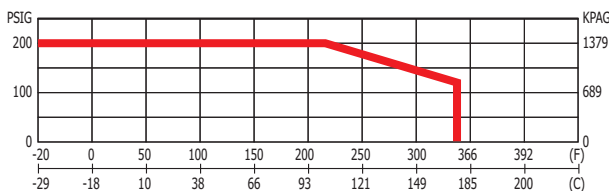
- Cast 2 piece construction
- Large port
- ASME B1.20.1 NPT ends
- Adjustable packing gland
- Class 125 WSP, 200 WOG



B-GL PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Lever	Cast Aluminum ASTM B85
2	Cap	Brass ASTM B283-C37700
3	Cap Gasket	Bronze filled PTFE
4	Screw	Steel ASTM A36
5	Packing Nut	Brass ASTM B124-C37700
6	Stem	Brass ASTM B283-C37700
7	Packing	Carbon-NBR-PTFE composite
8	Disc Arm	Brass ASTM B283-C37700
9	Disc	Brass ASTM B283-C37700
10	Body	Bronze ASTM B62-C83600

B-GL DIMENSIONS										
Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	44	46	51	57	61	67	77	93	101	115
mm/in	1.73	1.81	2.01	2.24	2.40	2.64	3.03	3.66	3.98	4.53
B	80	80	100	100	120	136	165	205	205	255
mm/in	3.15	3.15	3.94	3.94	4.72	5.35	6.50	8.07	8.07	10.04
C	40	40	48	55	62	68	81	108	121	148
mm/in	1.57	1.57	1.89	2.17	2.44	2.68	3.19	4.25	4.76	5.83
D	15	15	20	25	32	37	47	58	72	91
mm/in	0.59	0.59	0.79	0.98	1.26	1.46	1.85	2.28	2.80	3.62
CV	5.5	10.6	17	28	69	118	185	330	485	770
Weights	0.82	0.82	1.23	1.70	2.20	3.13	4.19	8.2	10.8	17.64
lb/kg	0.37	0.37	0.56	0.77	1.00	1.42	1.90	3.7	4.9	8.0

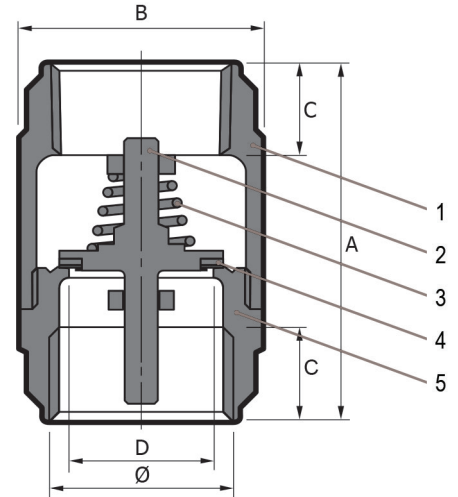
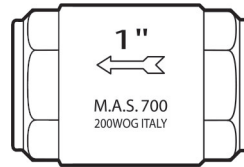
PRESSURE TEMPERATURE RATING



B Series Forged Brass In-Line Spring Loaded 200 WOG Check Valves

700

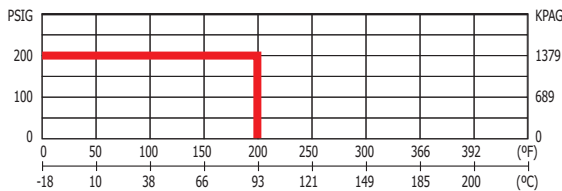
5.23



- Forged 2 piece construction
- ANSI B1.20.1 NPT ends
- Center guided piston
- Rubber seated
- 200 WOG

700 PART/MATERIAL		
NO.	PART NAME	MATERIAL
1	Body	Forged Brass ASTM B283-C37700
2	Piston	Thermoplastic Hostaform (POM)
3	Spring	316 Stainless Steel
4	Disc	Rubber – NBR 70SH
5	Cap	Forged Brass ASTM B283-C37700

PRESSURE TEMPERATURE RATING



700 DIMENSIONS										
Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	45	48	53	59	67	70	80	93	102	119
mm/in	1.77	1.89	2.09	2.32	2.64	2.76	3.15	3.66	4.02	4.69
B	27	30	37	45	56	63	79	103	120	155
mm/in	1.06	1.18	1.46	1.77	2.20	2.48	3.11	4.06	4.72	6.10
C	10	11	12	13	14	15	16	18	20	22
mm/in	0.39	0.43	0.47	0.51	0.55	0.59	0.63	0.71	0.79	0.87
D	10	15	20	25	32	40	50	65	80	100
mm/in	0.39	0.59	0.79	0.98	1.26	1.57	1.97	2.56	3.15	3.94
Cv	3.2	4.5	8	12	21	28	47	70	105	185
Weight	0.20	0.25	0.35	0.55	0.80	1.0	1.7	3.5	4.0	7.0
lb/kg	0.09	0.12	0.16	0.25	0.37	0.46	0.78	1.59	1.82	3.2

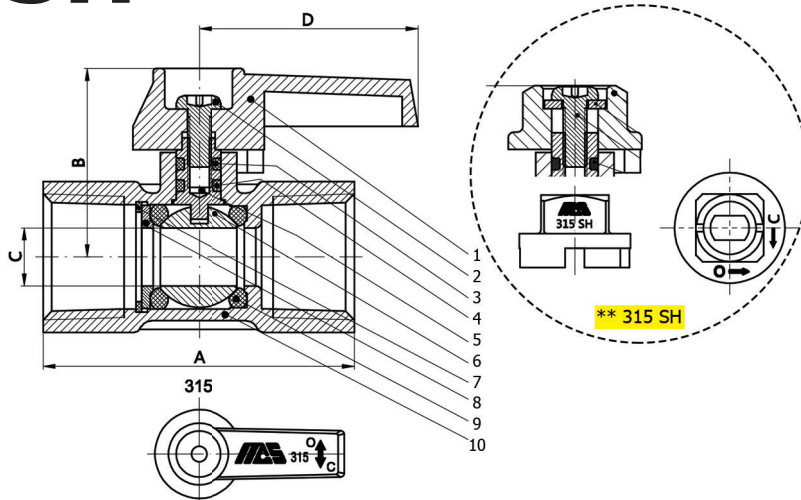
*NOTES:

- 1) Suitable for domestic applications and horizontal or vertical upward flow installations.
- 2) Not recommended for reciprocating pump applications.
- 3) Contains thermo plastic and rubber components. Confirm suitability with manufacturer on special fluid applications.

A Series Forged Brass CSA One Piece Lever or Square Operating Nut NPT Gas Ball Valves

315 / 315 SH

6.1

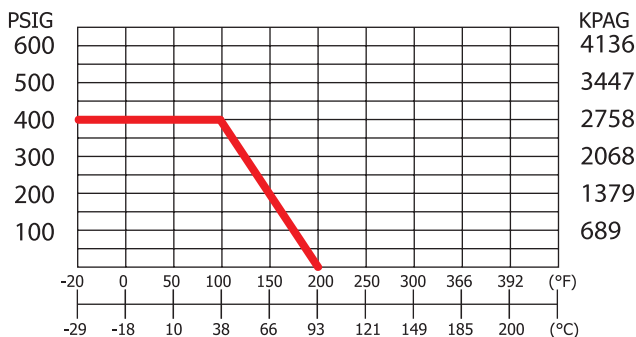


- Forged 1 piece construction
- ASME B1.20.1 NPT Ends
- Smooth, quarter turn operation
- May be used with water 400 PSI
- Seals at high and low pressure
- ideal for testing installations
- Certified to: ANSI Z21.15 / CSA 9.1 (1/2 PSIG)
ASME B16.44, CGA-CR91-002 (2 & 5 PSIG)
- -40° to 125°F
- Suitable for use with natural gas, manufactured gas and liquefied petroleum gases (distributed as vapour with or without the admixture of air), or mixtures thereof. Not for use on "Sour Gas".

315 / 315 SH NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle	Aluminum ASTM B85.A03840
2	Screw	Steel ASTM A36 Zinc Plated
3	Stem-O-Ring	HNBR 70SH
4	Stem-O-Ring	FKM
5	Stem	Brass ASTM B124-C37700
6	Ball	Chromium Plated Brass ASTM B124-C37700
7	Retainer Clip	Steel
8	Seat Washer	Brass ASTM B124-C37700
9	Seat O-Ring	HNBR 70SH
10	Body	Brass ASTM B283-C37700
**	Washer	Brass ASTM B124-C37700

315 315 SH DIMENSIONS							
Size	A mm/in	B mm/in	** B mm/in	C mm/in	D mm/in	Weight Kg/LBS	** Weight Kg/LBS
1/2	54	33	30	10	38	0.14	0.147
	2.13	1.299	1.18	0.39	1.5	0.304	0.324
3/4	58.5	35.2	32.2	14	38	0.18	0.187
	2.303	1.386	1.268	0.55	1.5	0.395	0.411

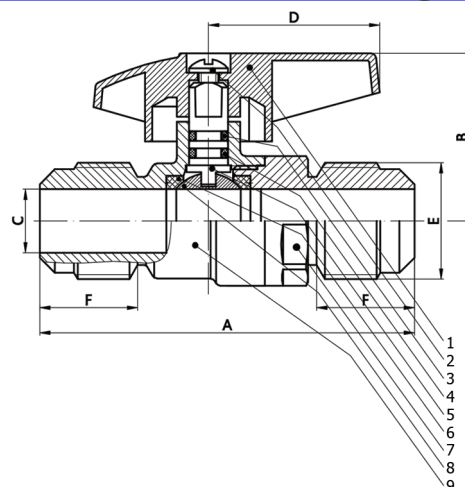
PRESSURE TEMPERATURE RATING



A Series Forged Brass CSA Two Piece Flare X Flare Gas Ball Valves

326

6^{.2}



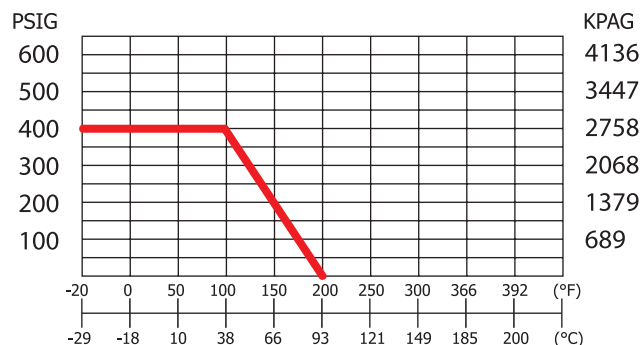
- Forged 2 piece construction
- Flare x Flare
- Smooth, quarter turn operation
- May be used with water 400 PSI
- Seals at high and low pressure
- ideal for testing installations
- Certified to: ANSI Z21.15, CSA 9.1 (1/2 PSIG)
ASME B16.44, CGA CR91-002 (5 PSIG)
- -40° to 125°F

- Suitable for use with natural gas, manufactured gas and liquefied petroleum gases (distributed as vapour with or without the admixture of air), or mixtures thereof. Not for use on "Sour Gas".

326 NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle	Aluminum ASTM B85-A03840
2	Screw	Steel ASTM A36 Zinc Plated
3	Stem-O-Ring	HNBR 70SH
4	Stem-O-Ring	FKM
5	Stem	Brass ASTM B124-C37700
6	Seats	PTFE
7	Cap	Brass ASTM B283-C37700
8	Ball	Chromium Plated Brass ASTM B124-C37700
9	Body	Brass ASTM B283-C37700

326 DIMENSIONS							
Size	A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	F mm/in	Weight Kg/LBS
3/8	62	31.8	7.1	35	5/8-18	14	0.111
	2.44	1.25	0.28	1.38	UNF	0.55	0.244
1/2	69.3	34	10	35	3/4-16	17	0.150
	2.73	1.34	0.4	1.38	UNF	0.67	0.33
5/8	76.5	36.5	12.7	35	7/8-14	16.5	0.217
	3.01	1.44	0.50	1.38	UNF	0.65	0.48

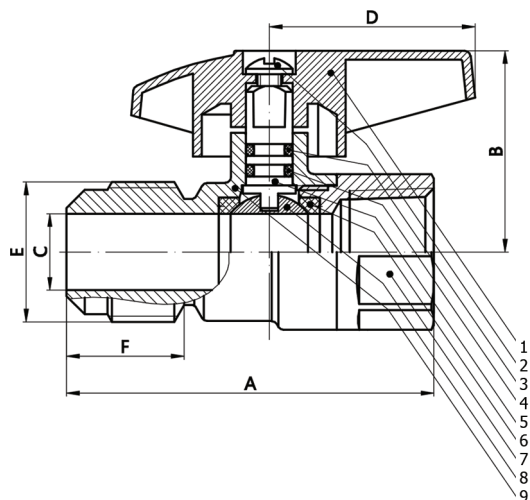
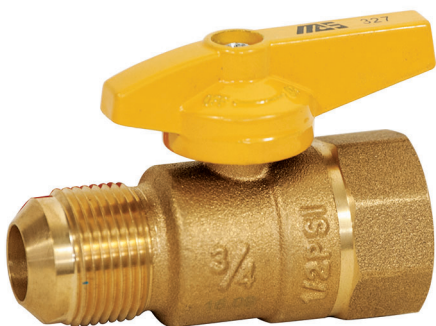
PRESSURE TEMPERATURE RATING



A Series Forged Brass CSA Two Piece Flare X NPT Gas Ball Valves

327

6.3



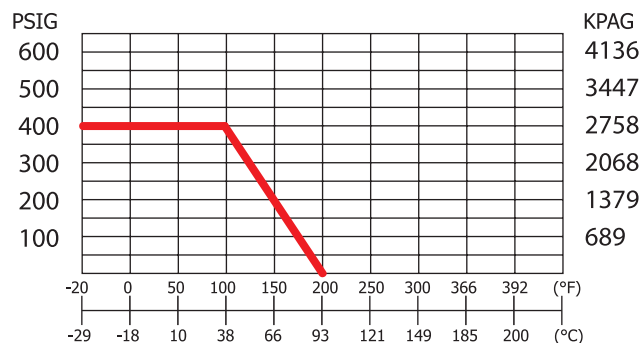
- Forged 2 piece construction
- ASME B1.20.1 NPT end x Flare
- Smooth, quarter turn operation
- May be used with water 400 PSI
- Seals at high and low pressure
- ideal for testing installations
- Certified to: ANSI Z21.15, CSA 9.1 (1/2 PSIG)
ASME-B16.44, CGA CR91-002 (5 PSIG)
- -40° to 125°F

- Suitable for use with natural gas, manufactured gas and liquefied petroleum gases (distributed as vapour with or without the admixture of air), or mixtures thereof. Not for use on "Sour Gas".

327 NAME / MATERIAL		
NO.	PART NAME	MATERIAL
1	Handle	Aluminum ASTM B85-A03840
2	Screw	Steel ASTM A36 Zinc Plated
3	Stem-O-Ring	HNBR 70SH
4	Stem-O-Ring	FKM
5	Stem	Brass ASTM B124-C37700
6	Seats	PTFE
7	Cap	Brass ASTM B283-C37700
8	Ball	Chromium Plated Brass ASTM B124-C37700
9	Body	Brass ASTM B283-C37700

327 DIMENSIONS							
Size	A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	F mm/in	Weight Kg/LBS
1/2 x 3/8	56	33.5	7.1	35	5/8-18 UNF	14	0.125
	2.2	1.32	0.28	1.38		0.55	0.28
1/2	59.5	34	10	35	3/4-16 UNF	17	0.135
	2.34	1.34	0.39	1.38		0.67	0.3
3/4	69.5	36.5	13	35	1 1/2-16UN Gas Appliance	20	0.218
	2.74	1.44	0.51	1.38		0.79	0.48

PRESSURE TEMPERATURE RATING

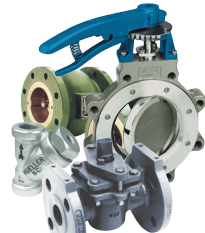


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BERIC

Carbon & Forged Steel Gate, Globe & Check Valves.



B

BONNEY FORGE

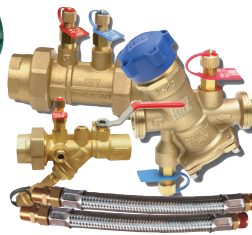
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BUTTERFLY VALVES

WKM DynaCentric High Performance & Resilient Seated Butterfly Valves

Demco Resilient Seated Butterfly Valves



RWV

Bronze & Brass Valves RWV Balancing Valves, Hydronic Controls. **See MAS – RWV, Balancing Valve / Hydronic Controls Catalog for complete details.**



RED-WHITE

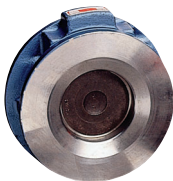
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