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# Product Guide



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## Additional products & services

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## Product Catalogues

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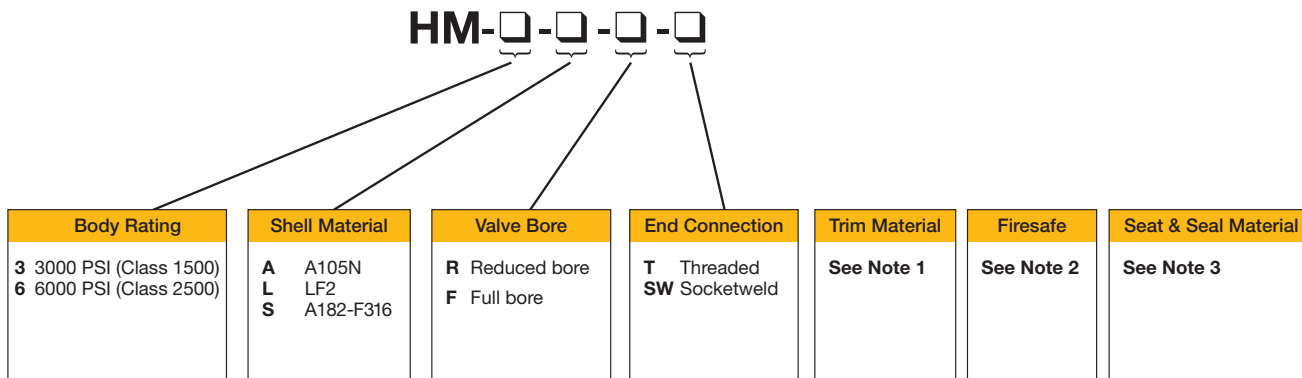
Technical data, dimensions, materials & specifications are subject to change without notice. Please refer to our web site for current product specs.

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

## Order code information

1.1

HM Series 3 piece threaded fire-safe ball valves



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

Note 1: All valves are standard with 316 SS trim and meet NACE MR-01-75-2002 & MR-01-03

Note 2: All valves conform with applicable requirements of the valve fire test per API 607 5th Edition.

Note 3: Refer to individual drawings for seat / seal and pressure / temperature ratings.

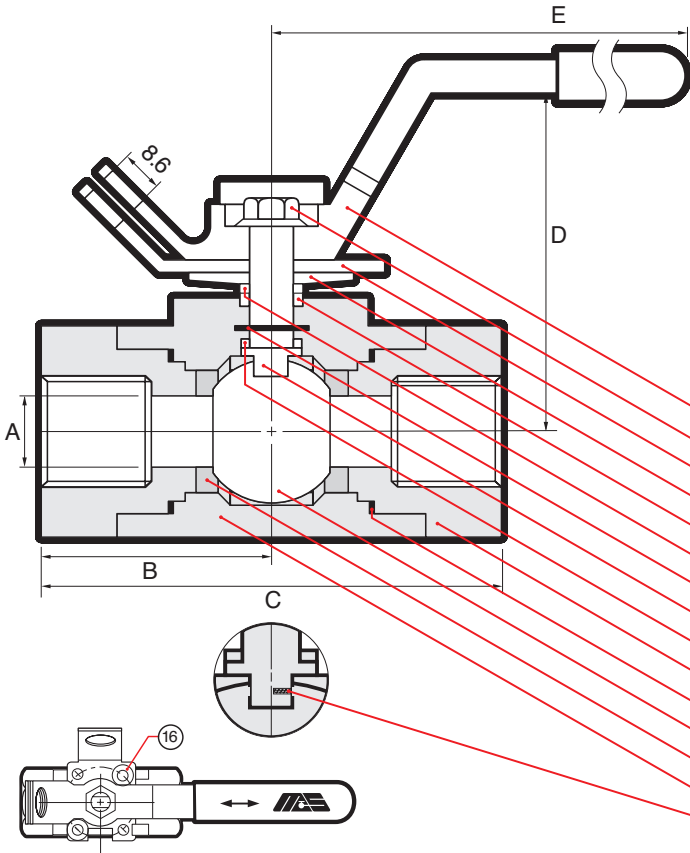
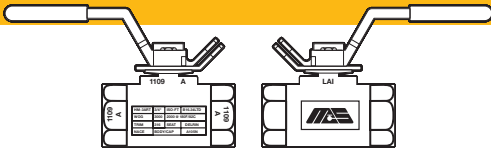
# HM Series Forged Steel 3000 PSI Ball Valves

## HM-3ART/LRT



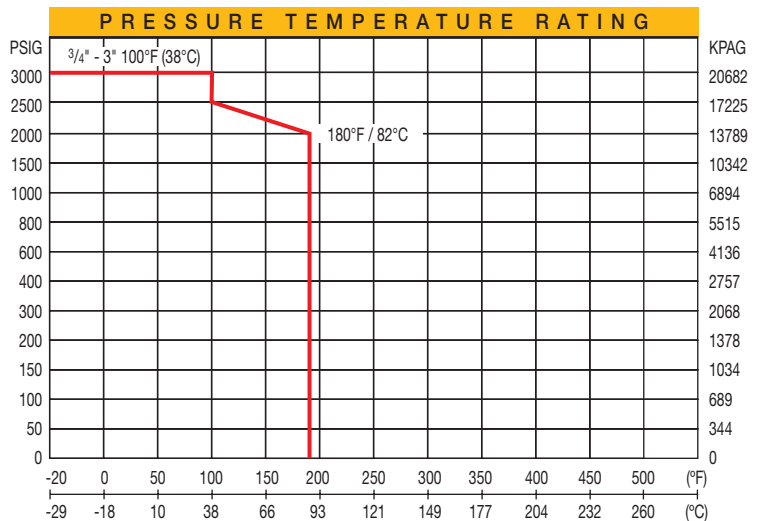
Reduced Port / Floating Ball  
Three Piece Threaded Body  
LF2 & A105N Forged Steel Construction  
NPT Threads to ANSI B1.20.1  
Blowout Proof Stem  
Anti-Static Design  
Positive Lock-Out Device  
**Fire-Safe Certified to  
API-607 5th Edition**  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156  
3000 P.S.I W.O.G.  
(Class 1500 Limited) 3/4"-3"

1.2



NAME / MATERIAL	
ART	LRT
1. Handle / Ductile Iron	
2. Handle Nut / A36 C.S. Plated	
3. Gland Flange / A36 C.S. Plated	
4. Belleville Washer / S.S. 301	
5. Packing / Graphite	
6. Gland / Stainless Steel A276 Type 304	
7. Stem O-ring / HNBR (1 1/2" - 3")	
8. Stem / Stainless Steel A276 Type 316	
9. Thrust Washer / Delrin	
10. Cap / Forged Steel A105N	A350 GR. LF2
11. Body O-ring / HNBR	
12. Ball / Stainless Steel A351 GR. CF8M (316)	
13. Seat / Delrin	
14. Body / Forged Steel A105N	A350 GR. LF2
15. Spring and Pin / Stainless Steel A276 Type 304	
16. Cap Screw / A36 C.S. Plated	

DIMENSIONS						
size	20	25	32	40	50	80
mm/in	3/4	1	1 1/4	1 1/2	2	3
A	12.7	22.2	22.2	32.0	38.1	50.0
mm/in	0.50	0.87	0.87	1.26	1.50	1.96
B	55.5	54.0	76.0	79.5	79.5	127.0
mm/in	2.19	2.13	2.99	3.13	3.13	5.00
C	111.0	108.0	152.0	159.0	159.0	254.0
mm/in	4.37	4.25	5.98	6.26	6.26	10.00
D	83.0	112.0	112.0	138.0	143.0	177.0
mm/in	3.27	4.41	4.41	5.43	5.63	6.97
E	122.0	172.0	172.0	279.0	279.0	302.0
mm/in	4.80	6.77	6.77	10.98	10.98	11.89
CV	15	35	35	100	175	480
Weights	1.22	1.72	2.43	3.70	5.89	15.25
lb/kg	2.69	3.79	5.36	8.16	12.99	33.62

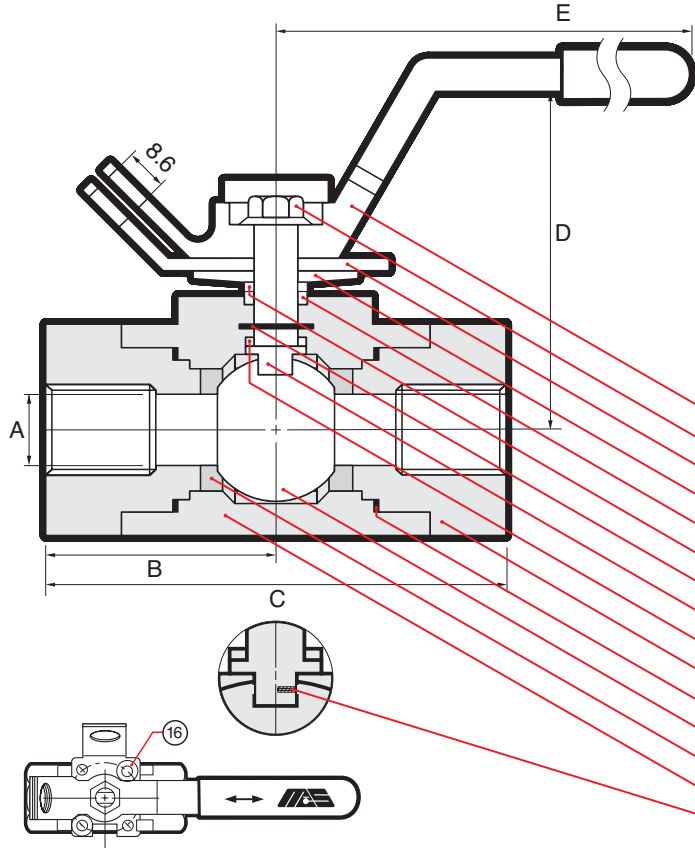
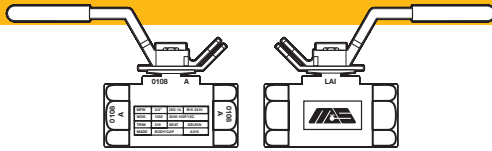


For A105N low temp limit is -20°F (-29°C)

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

# HM Series Forged Steel 3000 PSI Ball Valves

## HM-3AFT/LFT

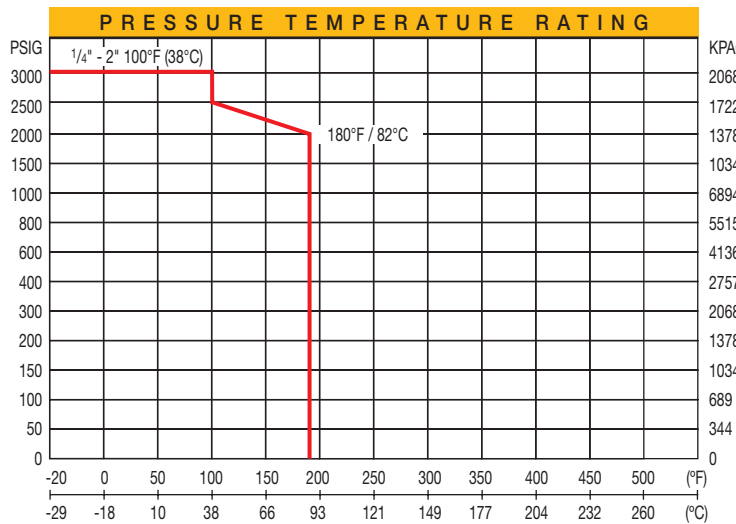


Full Port / Floating Ball  
Three Piece Threaded Body  
LF2 & A105N Forged Steel Construction  
NPT Threads to ANSI B1.20.1  
Blowout Proof Stem  
Anti-Static Design  
Positive Lock-Out Device  
**Fire-Safe Certified to  
API-607 5th Edition**  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156  
3000 P.S.I W.O.G. (1500 Class) 1/4"-2"



1.3

NAME / MATERIAL	
AFT	LFT
1. Handle / Ductile Iron	
2. Handle Nut / A36 C.S. Plated	
3. Gland Flange / A36 C.S. Plated	
4. Belleville Washer / S.S. 301	
5. Packing / Graphite	
6. Gland / Stainless Steel A276 Type 304	
7. Stem O-ring / HNBR (1 1/2" - 2")	
8. Stem / Stainless Steel A276 Type 316	
9. Thrust Washer / Delrin	
10. Cap / Forged Steel A105N	A350 GR. LF2
11. Body O-ring / HNBR	
12. Ball / Stainless Steel A351 GR. CF8M (316)	
13. Seat / Delrin	
14. Body / Forged Steel A105N	0A350 GR. LF2
15. Spring and Pin / Stainless Steel A276 Type 304	
16. Cap Screw / A36 C.S. Plated	



For A105N low temp down to -20°F (-29°C)

For LF2 low temp down to -40°F (-40°C)

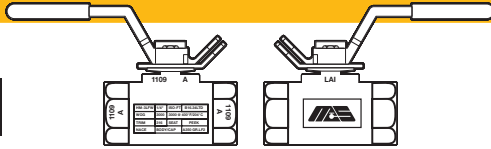
DIMENSIONS							
size	8	15	15	20	25	40	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/2	2
A	12.7	12.7	12.7	22.2	24.0	38.1	50.0
mm/in	0.50	0.50	0.50	0.87	0.94	1.50	1.96
B	49.0	49.0	49.0	54.0	66.5	79.5	79.5
mm/in	1.93	1.93	1.93	2.13	2.62	3.13	3.13
C	98.0	98.0	98.0	108.0	133.0	159.0	159.0
mm/in	3.86	3.86	3.86	4.25	5.24	6.26	6.26
D	83.0	83.0	83.0	112.0	116.0	143.0	177.0
mm/in	3.27	3.27	3.27	4.41	4.57	5.63	6.97
E	122.0	122.0	122.0	172.0	172.0	279.0	302.0
mm/in	4.80	4.80	4.80	6.77	6.77	10.98	11.89
CV	9	9	15	45	65	250	480
Weights	1.32	1.28	1.20	1.84	2.31	6.15	10.30
kg/lb	2.90	2.82	2.65	4.06	5.09	13.56	22.71

# HM Series Forged Steel 3000 PSI Ball Valves

## HM-3AFSW/3LFSW



1.4

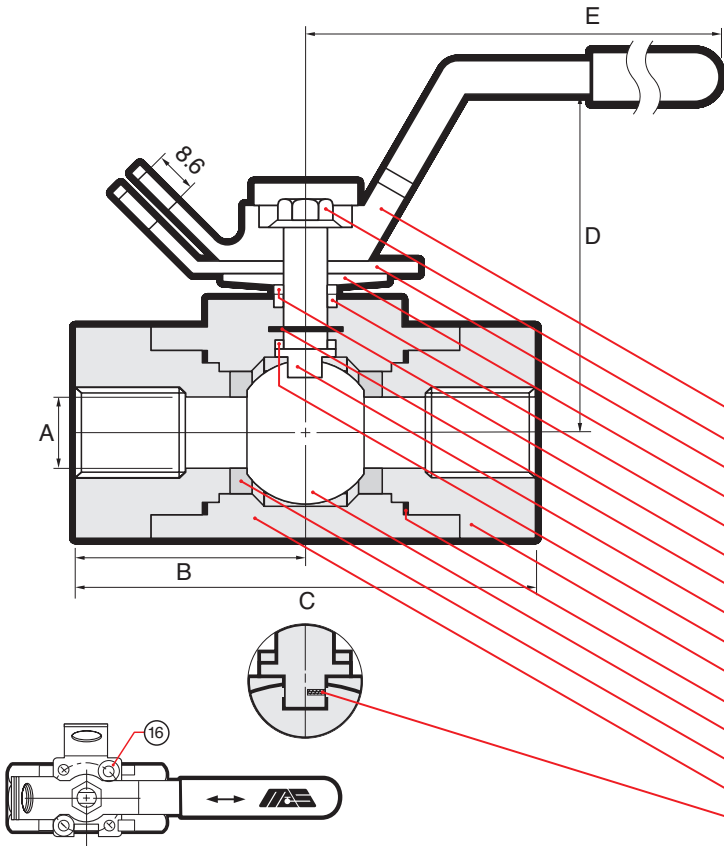


- Full Port / Floating Ball
- Forged Steel Construction
- Three Piece Threaded Body
- LF2 & A105N Forged Steel Construction
- Socket Weld Ends to ANSI B16.11
- Blowout Proof Stem
- Anti-Static Design
- Positive Lock-Out Device

**Fire-Safe Certified to  
API-607 5th Edition**

Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156

3000 P.S.I. W.O.G. (Class 1500 Limited) 1/4"-2"



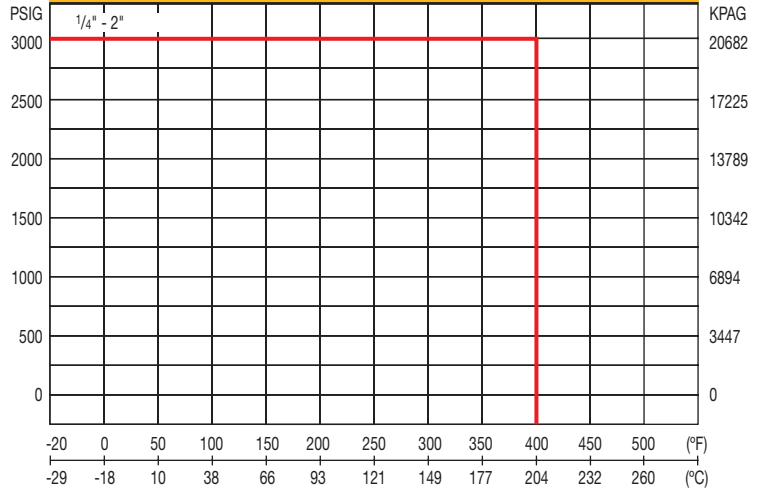
### NAME / MATERIAL

AFT	LFT
1. Handle / Ductile Iron	
2. Handle Nut / A36 C.S. Plated	
3. Gland Flange / A36 C.S. Plated	
4. Belleville Washer / S.S. 301	
5. Packing / Graphite	
6. Gland / Stainless Steel A276 Type 304	
7. Stem O-ring / FKM-GLT (1 1/2" & 2")	
8. Stem / Stainless Steel A276 Type 316	
9. Thrust Washer / Peek	
10. Cap / Forged Steel A105N	A350 GR LF2
11. Body O-ring / FKM	
12. Ball / Stainless Steel A351 GR. CF8M (316)	
13. Seat / Peek	
14. Body / Forged Steel A105N	A350 GR LF2
15. Spring and Pin / Stainless Steel A276 Type 304	
16. Cap Screw / A36 C.S. Plated	

### D I M E N S I O N S

size	8	15	15	20	25	40	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/2	2
A	12.7	12.7	12.7	22.2	24.0	38.1	50.0
mm/in	0.50	0.50	0.50	0.87	0.94	1.50	1.96
B	49.0	49.0	49.0	54.0	66.5	79.5	79.5
mm/in	1.93	1.93	1.93	2.13	2.62	3.13	3.13
C	98.0	98.0	98.0	108.0	133.0	159.0	159.0
mm/in	3.86	3.86	3.86	4.25	5.24	6.26	6.26
D	83.0	83.0	83.0	112.0	116.0	143.0	177.0
mm/in	3.27	3.27	3.27	4.41	4.57	5.63	6.97
E	122.0	122.0	122.0	172.0	172.0	279.0	302.0
mm/in	4.80	4.80	4.80	6.77	6.77	10.98	11.89
CV	9	9	15	45	65	250	480
Weights	1.32	1.28	1.20	1.84	2.31	6.15	10.30
lb/kg	2.90	2.82	2.65	4.06	5.09	13.56	22.71

### P R E S S U R E T E M P E R A T U R E R A T I N G

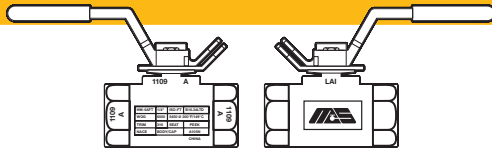


For A105N low temp limit is -20°F (-29°C)

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

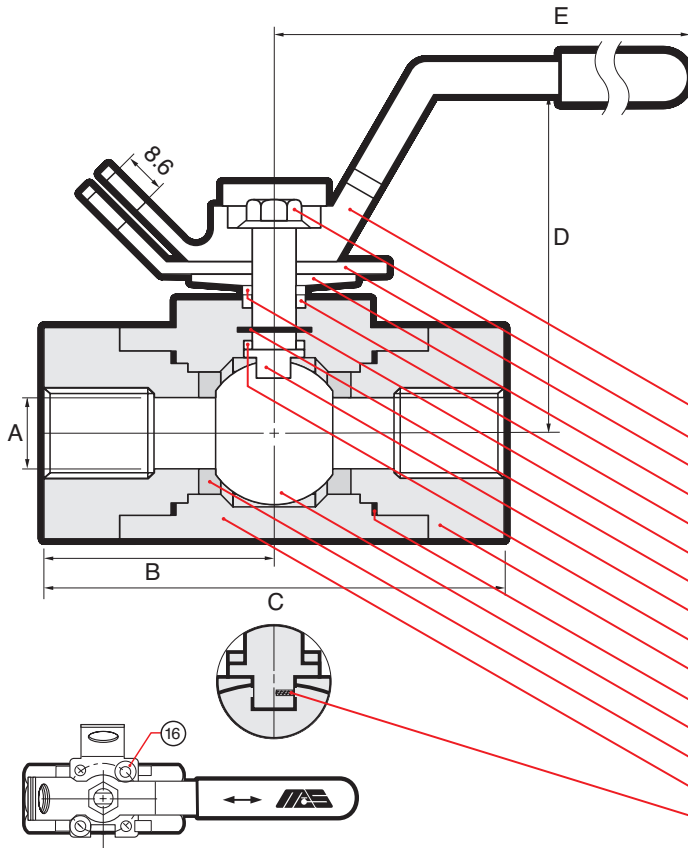
# HM Series Forged Steel 6000 PSI Ball Valves

## HM-6AFT/LFT

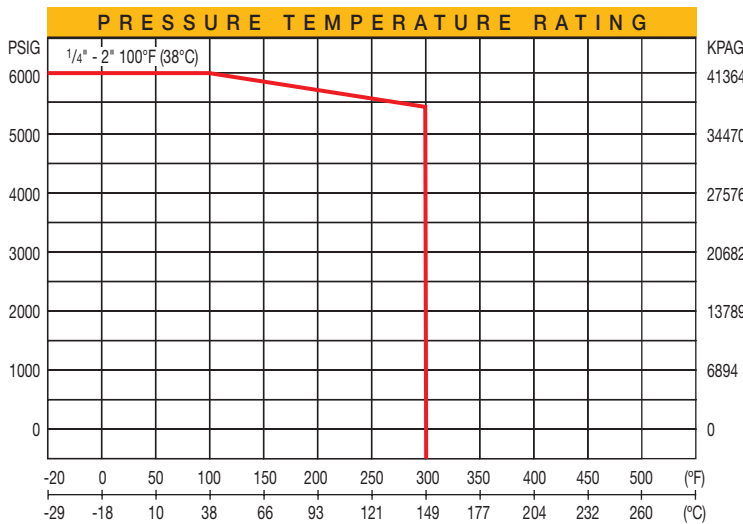


1.5

Full Port  
Floating Ball  
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  
**Fire-Safe Certified to  
API-607 5th Edition**  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156  
6000 P.S.I W.O.G. (Class 2500 Ltd) 1/4"-2"



NAME / MATERIAL	
AFT	LFT
1. Handle / Ductile Iron	
2. Handle Nut / A36 C.S. Plated	
3. Gland Flange / A36 C.S. Plated	
4. Belleville Washer / S.S. 301	
5. Packing / Graphite	
6. Gland / Stainless Steel A276 Type 304	
7. Stem O-ring / HNBR (1 1/2" & 2")	
8. Stem / Stainless Steel A276 Type 316	
9. Thrust Washer / Peek	
10. Cap / Forged Steel A105N	A350 GR LF2
11. Body O-ring / HNBR	
12. Ball / Stainless Steel A351 GR. CF8M (316)	
13. Seat / Peek	
14. Body / Forged Steel A105N	A350 GR LF2
15. Spring and Pin / Stainless Steel A276 Type 304	
16. Cap Screw / A36 C.S. Plated	



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

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

DIMENSIONS							
size	8	15	15	20	25	40	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/2	2
A	12.7	12.7	12.7	22.2	24.0	38.1	50.0
mm/in	0.50	0.50	0.50	0.87	0.94	1.50	1.96
B	49.0	49.0	55.5	54.0	66.5	79.5	79.5
mm/in	1.93	1.93	2.19	2.13	2.62	3.13	3.13
C	98.0	98.0	111.0	108.0	133.0	159.0	159.0
mm/in	3.86	3.86	4.37	4.25	5.24	6.26	6.26
D	83.0	83.0	83.0	112.0	116.0	143.0	177.0
mm/in	3.27	3.27	3.27	4.41	4.57	5.63	6.97
E	122.0	122.0	122.0	172.0	172.0	279.0	302.0
mm/in	4.80	4.80	4.80	6.77	6.77	10.98	11.89
CV	9	9	15	45	65	250	480
Weights	1.42	1.39	1.36	1.94	3.00	8.86	11.22
lb/kg	3.12	3.06	3.00	4.28	6.61	19.53	24.74



# HM Series Forged Steel 6000 PSI Ball Valves

## HM-6ART/LRT

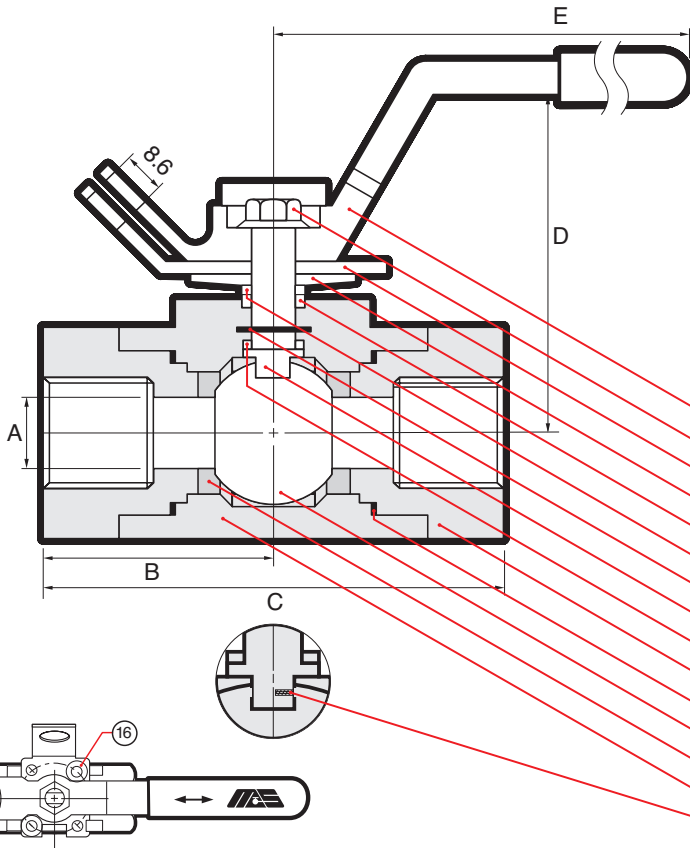
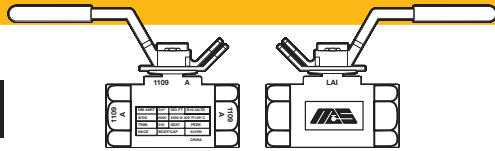


Reduced Port  
Floating Ball  
Three Piece Threaded Body  
LF2 & A105N Forged Steel Construction  
NPT Threads to ANSI B1.20.1  
Blowout Proof Stem  
Anti-Static Design  
Positive Lock-Out Device  
**Fire-Safe Certified to  
API-607 5th Edition**  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156  
6000 P.S.I. W.O.G. (Class 2500 Ltd) 3/4"-2"

### NAME / MATERIAL

ART	LRT
1. Handle / Ductile Iron	
2. Handle Nut / A36 C.S. Plated	
3. Gland Flange / A36 C.S. Plated	
4. Belleville Washer / S.S. 301	
5. Packing / Graphite	
6. Gland / Stainless Steel A276 Type 304	
7. Stem O-ring / HNBR (1 1/2" - 2")	
8. Stem / Stainless Steel A276 Type 316	
9. Thrust Washer / Peek	
10. Cap / Forged Steel A105N	A350 GR LF2
11. Body O-ring / HNBR	
12. Ball / Stainless Steel A351 GR CF8M	
13. Seat / Peek	
14. Body / Forged Steel A105N	A350 GR LF2
15. Spring and Pin / Stainless Steel A276 Type 304	
16. Cap Screw / A36 C.S. Plated	

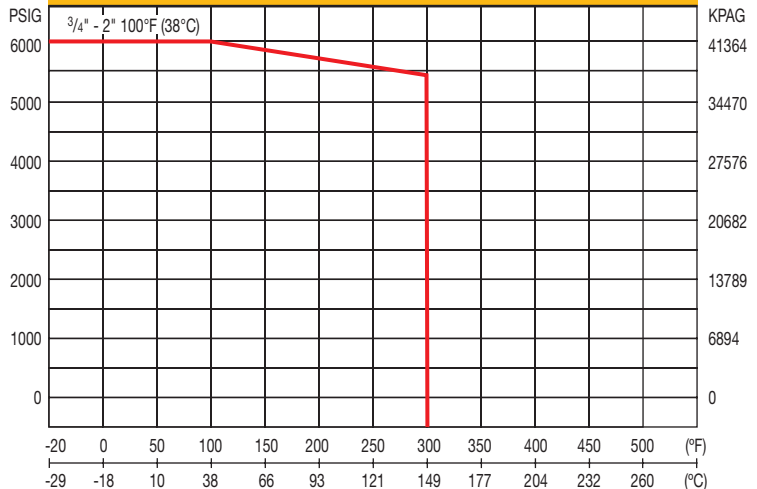
1.6



### DIMENSIONS

	20	25	32	40	50
size	3/4	1	1 1/4	1 1/2	2
mm/in	12.7	22.2	22.2	32.0	38.1
A	0.50	0.87	0.87	1.26	1.50
mm/in	2.19	2.62	2.99	3.13	3.62
B	55.0	66.5	76.0	79.5	92.0
mm/in	111.0	133.0	152.0	159.0	184.0
C	4.37	5.24	5.98	6.26	7.24
mm/in	83.0	112.0	112.0	138.0	143.0
D	3.27	4.41	4.41	5.43	5.63
mm/in	122.0	172.0	172.0	279.0	279.0
E	4.80	6.77	6.77	10.98	10.98
mm/in	15	35	35	100	175
CV	1.19	2.62		6.20	10.20
Weights	2.62	5.78		13.67	22.49
kg/lb					

### PRESSURE TEMPERATURE RATING



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

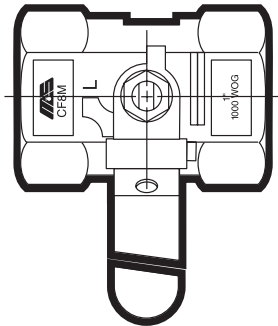
For LF2 low temp limit is -40°F (-40°C)

# G Series Investment Cast Stainless Steel Ball Valves

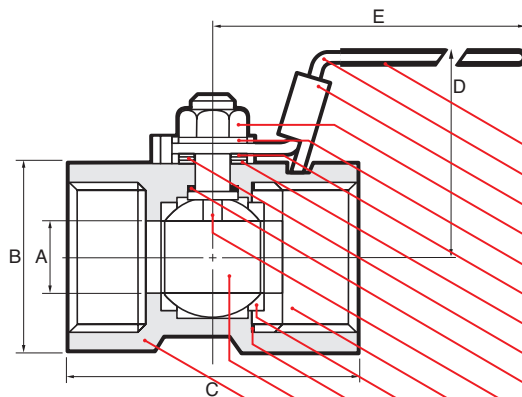
## G1



2.1



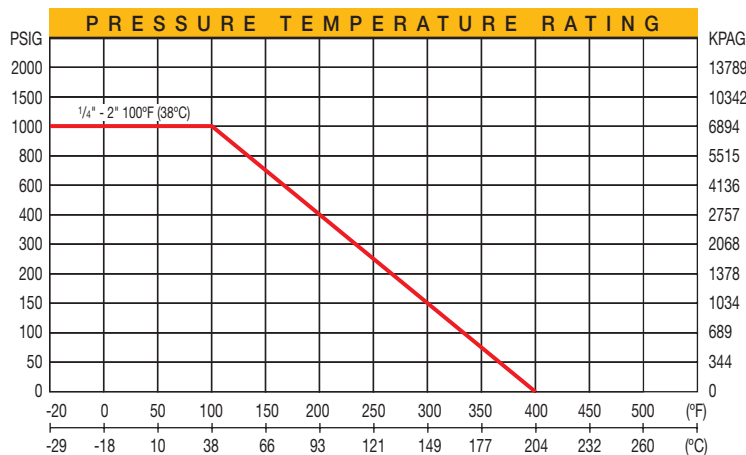
- Reduced port
- NPT ends to ANSI B1.20.1
- One piece body
- Blowout-proof stem
- Locking lever handle  
(Ring lock with 1/4" to 3/8",  
Latch lock with 1/2" to 2")
- Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156
- 1000 PSI, WOG 1/4" to 2"



• Available with Oval handle

### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Locking Device / Stainless Steel A276 Type 304
4. Handle Nut / Stainless Steel A276 Type 304
5. Stem Washer / Stainless Steel A276 Type 304
6. Belleville Washer / Stainless Steel 301
7. Packing / PTFE
8. Spring Washer / Stainless Steel A276 Type 304
9. Thrust Washer / R-PTFE 15% Glass-Filled
10. Stem / Stainless Steel A276 Type 316
11. Seat Retainer / Stainless Steel A351-CF8M (316)
12. Seat / R-PTFE 15% Glass-Filled
13. Gasket / PTFE
14. Ball / Stainless Steel A276 Type 316 (A351-CF8M 1/2" to 2")
15. Body / Stainless Steel A351-CF8M (316)



DIMENSIONS								
size	8	10	15	20	25	32	40	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
A	4.60	6.80	9.20	12.50	16.00	20.00	24.50	32.00
mm/in	0.181	0.268	0.362	0.492	0.630	0.787	0.965	1.260
B	17.00	21.50	26.00	32.00	38.00	49.00	52.50	66.00
mm/in	0.669	0.846	1.024	1.260	1.496	1.929	2.067	2.598
C	40.50	48.00	57.00	59.00	70.54	77.50	82.50	99.30
mm/in	1.594	1.890	2.244	2.323	2.777	3.051	3.248	3.909
D	34.00	35.50	43.00	48.50	60.00	61.50	70.50	83.00
mm/in	1.336	1.398	1.693	1.909	2.362	2.421	2.776	3.268
E	77.00	85.00	98.00	98.00	107.00	107.00	135.00	143.00
mm/in	3.031	3.346	3.858	3.858	4.212	4.212	5.315	5.630
CV	1.5	3.5	5.7	10.0	16.0	25.0	40.0	62.0
weights	0.072	0.112	0.208	0.271	0.428	0.705	0.826	1.380
kg/lb	0.158	0.246	0.458	0.596	0.942	1.551	1.817	3.036

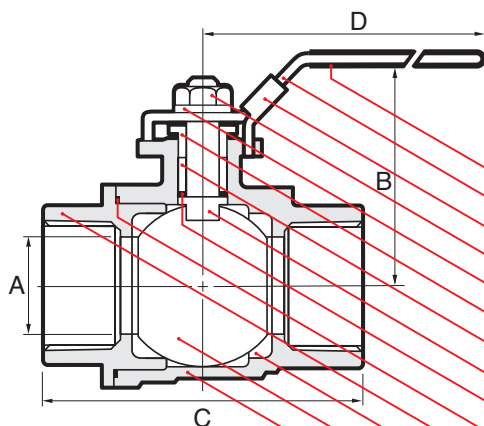
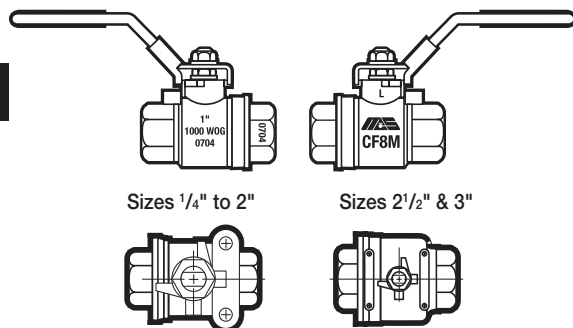
# G Series Investment Cast Stainless Steel 1000 WOG Ball Valves

## G2E

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



2.2



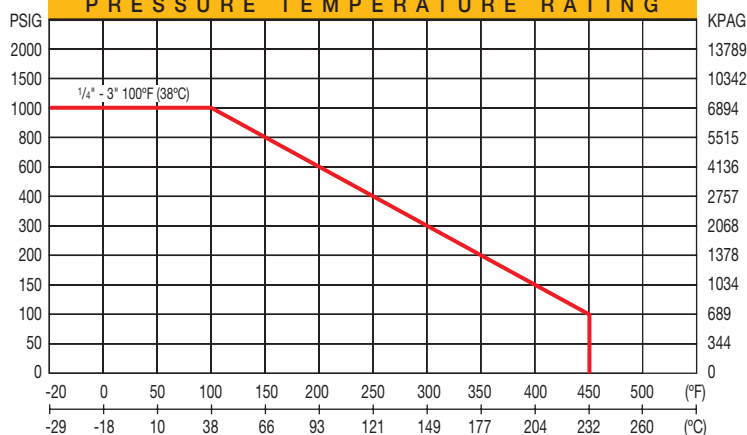
### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Locking Device / Stainless Steel A276 Type 304
4. Handle Nut / Stainless Steel A276 Type 304
5. Stem Washer / Stainless Steel A276 Type 304
6. Gland Nut / Stainless Steel A276 Type 304
7. Packing / R-PTFE 15% Glass-Filled
8. Stem / Stainless Steel A276 Type 316
9. Thrust Washer / R-PTFE 15% Glass-Filled
10. Gasket / R-PTFE 15% Glass-Filled
11. Cap / Stainless Steel A351 - CF8M (316)
12. Seat / R-PTFE 15% Glass-Filled
13. Ball / Stainless Steel A351 - CF8M (316)
14. Body / Stainless Steel A351 - CF8M (316)

### D I M E N S I O N S

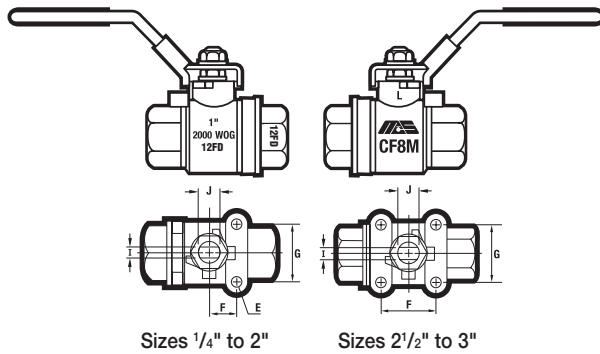
size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	9.6	9.6	12.7	20.0	24.0	31.8	38.1	50.0	65.0	78.0
mm/in	0.378	0.378	0.500	0.787	0.945	1.252	1.50	1.968	2.559	3.071
B	54.0	54.0	54.6	64.8	67.8	79.4	84.4	100.7	135.0	145.00
mm/in	2.126	2.126	2.150	2.551	2.669	3.126	3.323	3.965	5.315	5.709
C	49.4	49.4	56.0	66.0	77.7	90.4	102.4	119.0	151.4	171.4
mm/in	1.945	1.945	2.205	2.598	3.059	3.559	4.031	4.685	5.961	6.748
D	98.0	98.0	98.0	122.0	122.0	152.0	152.0	178.0	247.0	247.0
mm/in	3.858	3.858	3.858	4.803	4.803	5.984	5.984	7.008	9.724	9.724
CV	7.0	7.0	15.0	45.0	65.0	125.0	175.0	380.0	500.0	900.0
weights	0.20	0.21	0.235	0.43	0.63	1.11	1.49	2.60	5.42	8.38
kg/lb	0.440	0.462	0.517	0.946	1.386	2.442	3.278	5.720	11.924	18.436

### P R E S S U R E T E M P E R A T U R E R A T I N G



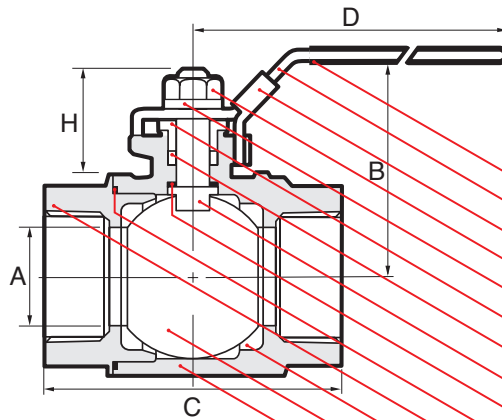
# G Series Investment Cast Stainless Steel 2000 WOG Ball Valves

## G2



Sizes 1/4" to 2"

Sizes 2 1/2" to 3"



- Available with Oval handle for size range: 1/4"-2"
- 1/4" and 3/8" have non-tapped reserve holes cast in
- 1/2" to 2" mounting pads are tapped, 2 1/2" and 3" are dimpled.

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



2.3

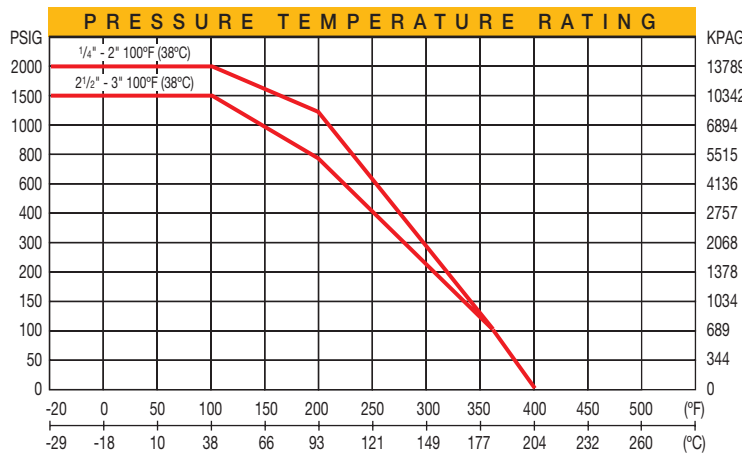
### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Locking Device / Stainless Steel A276 Type 304
4. Handle Nut / Stainless Steel A 276 Type 304
5. Stem Washer / Stainless Steel A276 Type 304
6. Gland Nut / Stainless Steel A276 Type 304
7. Packing / PTFE
8. Stem / Stainless Steel A276 Type 316
9. Thrust Washer / R-PTFE 15% Glass-Filled
10. Gasket / PTFE
11. Cap / Stainless Steel A351 CF8M (316)
12. Seat / R-PTFE 15% Glass-Filled
13. Ball / Stainless Steel A351 CF8M (316)
14. Body / Stainless Steel A351 CF8M (316)

### D I M E N S I O N S

size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	9.60	9.60	12.50	20.00	24.70	32.00	38.10	50.00	63.50	76.00
mm/in	0.378	0.378	0.492	0.787	0.972	1.260	1.500	1.969	2.500	2.992
B	50.28	50.28	52.60	59.25	62.35	79.90	84.80	94.60	122.05	131.55
mm/in	1.980	1.980	2.071	2.333	2.455	3.146	3.339	3.724	4.805	5.179
C	55.80	55.80	60.50	72.50	85.50	93.00	110.50	128.00	153.80	175.50
mm/in	2.197	2.197	2.382	2.854	3.366	3.661	4.350	5.039	6.055	6.909
D	96.00	96.00	96.00	119.00	119.00	149.00	149.00	174.00	244.00	244.00
mm/in	3.780	3.780	3.780	4.685	4.685	5.866	5.866	6.850	9.606	9.606
E	*	*	M5	M6	M6	M8	M8	M8	†	†
F	12.70	12.70	12.70	15.80	15.80	17.68	25.00	23.60	72.10	70.00
mm/in	0.500	0.500	0.500	0.622	0.622	0.696	0.984	0.929	2.839	2.756
G	25.40	25.40	25.40	29.40	29.40	35.35	49.50	50.00	72.10	73.00
mm/in	1.000	1.000	1.000	1.157	1.157	1.392	1.949	1.969	2.839	2.874
H	20.78	20.78	23.10	28.75	27.85	36.20	37.30	36.10	45.35	44.85
mm/in	0.818	0.818	0.909	1.132	1.096	1.425	1.469	1.421	1.785	1.766
I	5.52	5.52	5.55	6.50	6.50	8.07	8.07	10.00	12.00	12.00
mm/in	0.217	0.217	0.219	0.256	0.256	0.317	0.317	0.394	0.472	0.472
J	8.00	8.00	8.00	10.00	10.00	12.00	12.00	14.00	16.00	16.00
mm/in	0.315	0.315	0.315	0.394	0.394	0.480	0.480	0.551	0.630	0.630
CV	7.0	7.0	15.0	45.0	65.0	125.0	175.0	380.0	500.0	900.0
weights	0.230	0.225	0.280	0.520	0.765	1.292	1.864	3.170	5.796	8.285
kg/lb	0.506	0.495	0.616	1.144	1.683	2.842	4.101	6.974	12.751	18.227

\* Untapped  
† dimpled at drilling location



# G Series Investment Cast Stainless Steel Direct Mount Ball Valves

## G2-ED

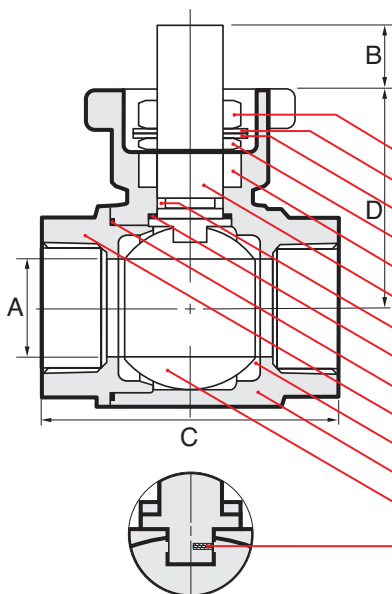
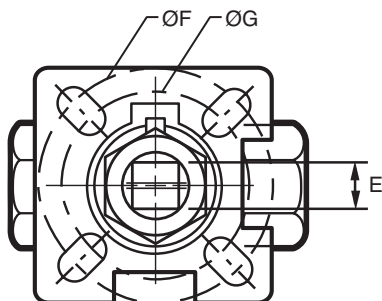


- Full port
- NPT threads to ANSI B1.20.1
- Two piece body
- Blowout-proof stem
- ISO 5211 Direct Mounting Pad
- Adjustable Live-loaded Packing
- Anti-static Device
- Floating Ball
- Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156
- 1000 PSI, WOG 1/2" to 2"

**Compatible with Max-Air/  
MAS Actuators**

### NAME / MATERIAL

1. Packing Nut / Stainless Steel A276 Type 304
2. Lock Washer / Stainless Steel A276 Type 304
3. Belleville Washer / Stainless Steel A276 Type 304
4. Packing Gland / Stainless Steel A276 Type 304
5. Packing / PTFE
6. Stem / Stainless Steel A276 Type 316
7. Stem Seal / VITON O-ring
8. Thrust Washer / R-PTFE
9. Gasket / PTFE
10. Cap / Stainless Steel A351- CF8M (316)
11. Seat / R-PTFE 15% Glass-Filled
12. Body / Stainless Steel A351- CF8M (316)
13. Ball / SS A351- CF8M (316)
14. Spring & Pin Anti-static Device / Stainless Steel A276 Type 304

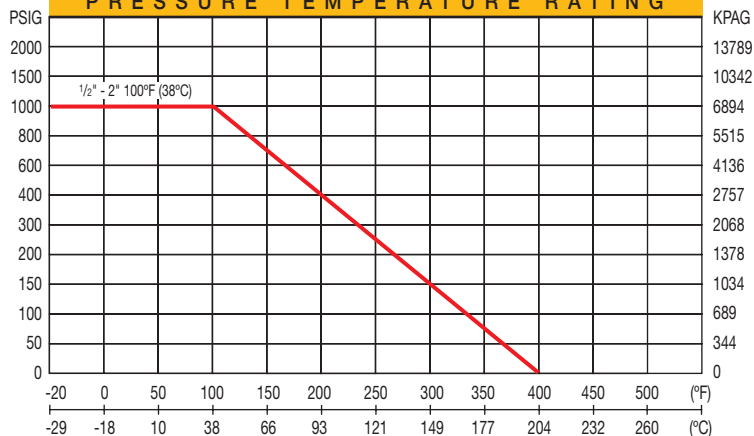


2.4

### D I M E N S I O N S

size	15	20	25	32	40	50
mm/in	1/2	3/4	1	1 1/4	1 1/2	2
A	15.0	20.0	24.0	31.8	38.1	50.0
mm/in	0.590	0.787	0.945	1.252	1.500	1.968
B	10.0	10.0	11.0	11.0	17.0	17.0
mm/in	0.394	0.394	0.433	0.433	0.669	0.669
C	58.2	66.0	77.7	90.4	102.4	119.0
mm/in	2.291	2.598	3.059	3.559	4.031	4.685
D	36.3	39.5	50.5	56.0	70.6	79.0
mm/in	1.429	1.555	1.988	2.205	2.779	3.110
E	9.0	9.0	11.0	11.0	14.0	14.0
mm/in	0.354	0.354	0.433	0.433	0.551	0.551
F	42.0	42.0	50.0	50.0	70.0	70.0
mm/in	1.653	1.653	1.968	1.968	2.756	2.756
G	36.0	36.0	42.0	42.0	50.00	50.00
mm/in	1.417	1.417	1.653	1.653	1.968	1.968
CV	15.0	45.0	65.0	125.0	175.0	380.0
weights	0.208	0.398	0.703	1.040	1.690	2.700
kg/lb	0.458	0.876	1.547	2.288	3.718	5.940

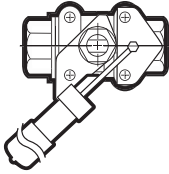
### P R E S S U R E T E M P E R A T U R E R A T I N G



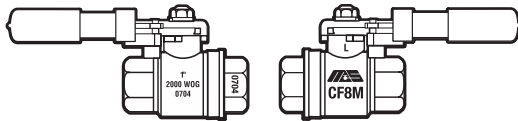
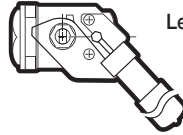
# G Series Investment Cast Stainless Steel, Deadman Spring Handle Ball Valves

## G2-DM

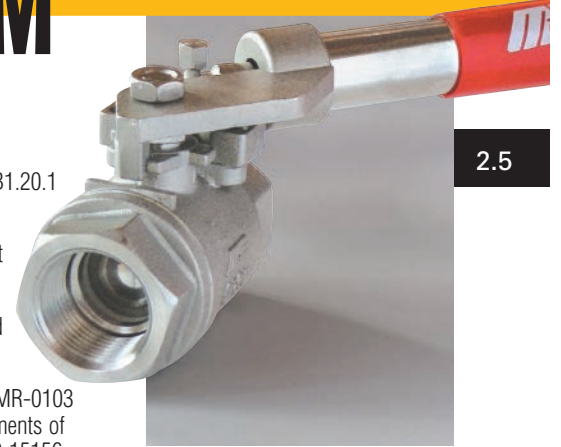
Lever Energized (Open)



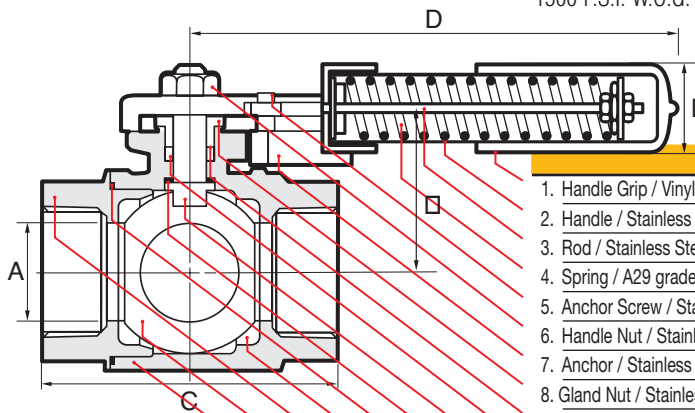
Lever De-Energized (Closed)



- 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 & Supplier Requirements of NACE MR-0175/ISO 15156
- 2000 P.S.I. W.O.G. 1/4" to 2"
- 1500 P.S.I. W.O.G. 2 1/2" & 3"

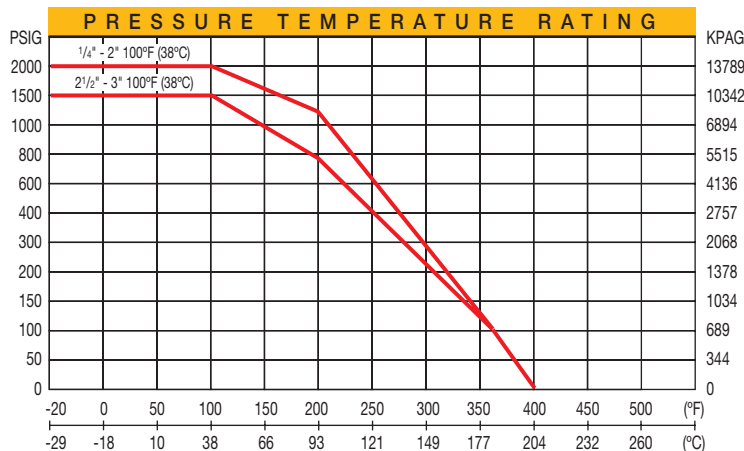


2.5



### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Rod / Stainless Steel A276 Type 304
4. Spring / A29 grade 9260
5. Anchor Screw / Stainless Steel A276 Type 304
6. Handle Nut / Stainless Steel A276 Type 304
7. Anchor / Stainless Steel A351 grade CF8M (316)
8. Gland Nut / Stainless Steel A276 Type 304
- 9a. Packing Washer / PEEK
- 9b. Packing / RPTFE
10. Stem / Stainless Steel A276 Type 316
11. Thrust Washer / RPTFE
12. Gasket / PTFE
13. Seat / RPTFE
14. Cap / Stainless Steel A351 CF8M (316)
15. Ball / Stainless Steel A351 CF8M (316)
16. Body / Stainless Steel A351 CF8M (316)



**D I M E N S I O N S**

size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	9.60	9.60	12.70	20.00	25.00	32.00	38.00	50.80	65.00	78.00
mm/in	0.374	0.374	0.500	0.787	0.984	1.260	1.496	2.000	2.559	3.071
B	26.5	26.5	29.0	36.2	39.3	51.3	57.2	67.6	82.7	92.7
mm/in	1.043	1.043	1.142	1.425	1.547	2.021	2.253	2.662	3.255	3.649
C	55.40	55.40	62.00	73.10	86.00	94.00	116.00	134.00	164.00	180.00
mm/in	2.181	2.181	2.441	2.878	3.386	3.700	4.567	5.276	6.457	7.086
D	180.50	180.50	180.50	232.0	232.0	290.0	290.0	313.0	313.0	313.0
mm/in	7.106	7.106	7.106	9.154	9.154	11.417	11.417	12.323	12.323	12.323
E	22.0	22.0	22.0	22.0	22.0	22.0	22.0	32.0	32.0	32.0
mm/in	0.866	0.866	0.866	0.866	0.866	0.866	0.866	1.260	1.260	1.260
CV	7.0	7.0	15.0	45.0	65.0	125.0	175.0	380.0	500.0	900.0
weights	0.605	0.595	0.658	0.872	1.112	1.556	2.655	3.746	6.552	9.672
kg/lb	1.334	1.312	1.451	1.922	2.451	3.430	5.853	8.258	14.444	21.323

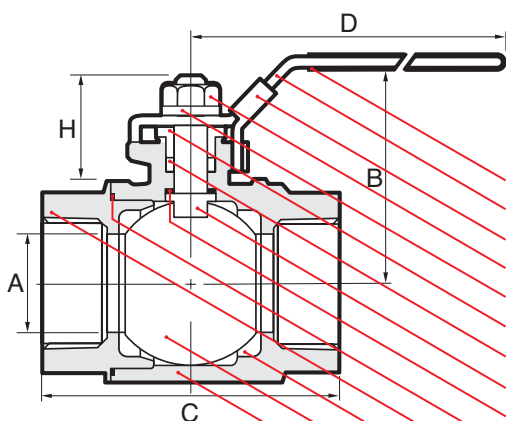
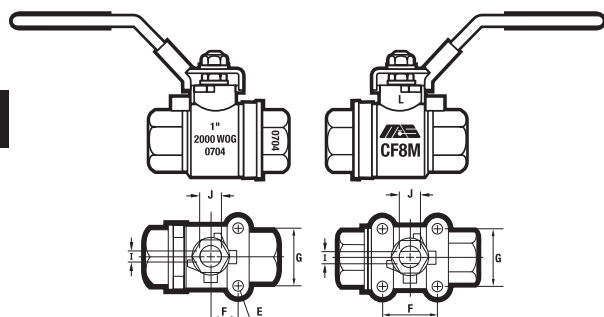
# G Series Investment Cast, 250 Steam Rated Stainless Steel Ball Valves

## G-2-250

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



2.6



- 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

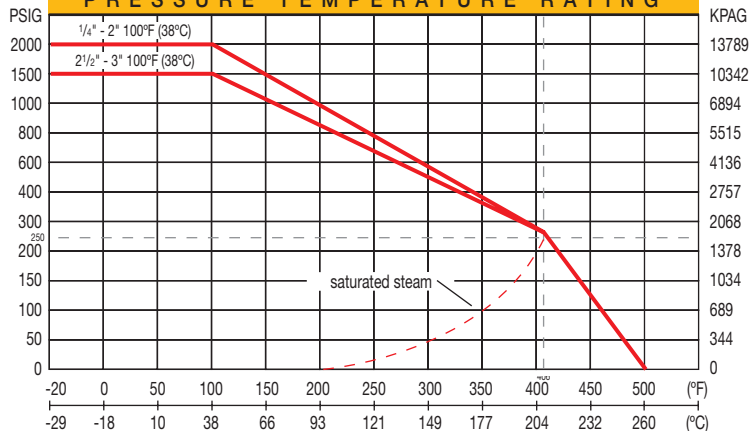
1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Locking Device / Stainless Steel A276 Type 304
4. Handle Nut / Stainless Steel A276 Type 304
5. Stem Washer / Stainless Steel A276 Type 304
6. Gland Nut / Stainless Steel A276 Type 304
7. Packing / R-PTFE (TFM-4215)
8. Stem / Stainless Steel A276 Type 316
9. Thrust Washer / R-PTFE (TFM-4215)
10. Gasket / R-PTFE (TFM-4215)
11. Cap / A 351 CF8M (316)
12. Seat / R-PTFE (TFM-4215)
13. Ball / A 351 CF8M (316)
14. Body / A 351 CF8M (316)

### D I M E N S I O N S

size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	9.60	9.60	12.70	20.00	25.00	32.00	38.00	50.80	65.00	78.00
mm/in	0.374	0.374	0.500	0.787	0.984	1.260	1.496	2.000	2.559	3.071
B	54.00	54.00	57.00	65.50	69.50	82.50	88.00	105.00	138.00	148.00
mm/in	2.130	2.130	2.240	2.580	2.740	3.250	3.460	4.130	5.430	5.830
C	57.60	57.60	62.00	72.50	86.00	94.00	116.00	134.00	164.00	180.00
mm/in	2.264	2.264	2.441	2.854	3.386	3.700	4.567	5.276	6.457	7.086
D	103.50	103.50	103.50	125.00	125.00	158.00	158.00	181.00	252.00	252.00
mm/in	4.075	4.075	4.075	4.921	4.921	6.220	6.220	7.126	9.921	9.921
E	*	*	M6	M6	M6	M8	M8	M8	†	†
F	12.73	12.73	12.73	14.85	14.85	17.68	24.75	24.75	72.10	72.10
mm/in	0.501	0.501	0.501	0.585	0.585	0.696	0.974	0.974	2.839	2.839
G	25.45	25.45	25.45	29.70	29.70	35.35	49.50	49.50	72.10	72.10
mm/in	1.002	1.002	1.002	1.169	1.169	1.392	1.949	1.949	2.839	2.839
H	21.50	21.50	19.00	26.50	26.50	34.00	34.00	39.00	45.00	42.00
mm/in	0.85	0.85	0.75	1.04	1.04	1.34	1.34	1.54	1.77	1.65
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00	12.00	12.00
mm/in	0.217	0.217	0.217	0.256	0.256	0.315	0.315	0.394	0.472	0.472
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.60	18.80	18.80
mm/in	0.303	0.303	0.303	0.367	0.367	0.492	0.492	0.614	0.740	0.740
CV	7.0	7.0	15.0	45.0	65.0	125.0	175.0	380.0	500.0	900.0
weights	0.260	0.250	0.313	0.555	0.795	1.330	2.013	3.550	6.250	9.370
kg/lb	0.572	0.550	0.689	1.221	1.749	2.926	4.429	7.810	13.750	20.614

\* Untapped  
† dimpled at drilling location

### PRESSURE TEMPERATURE RATING

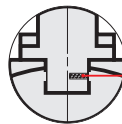
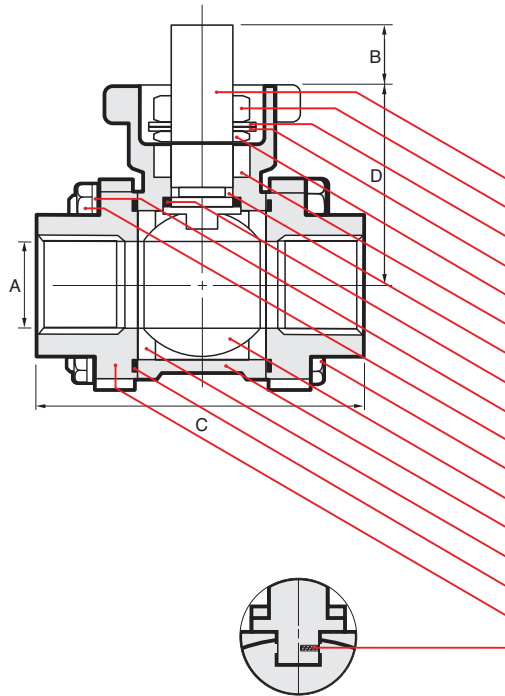
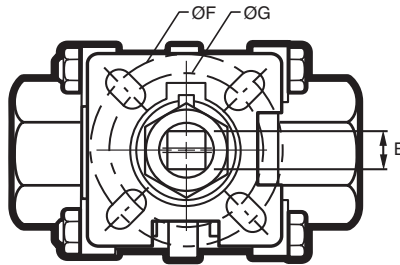


# G Series Investment Cast Stainless Steel Direct Mount Ball Valves

## G3-ED



2.7



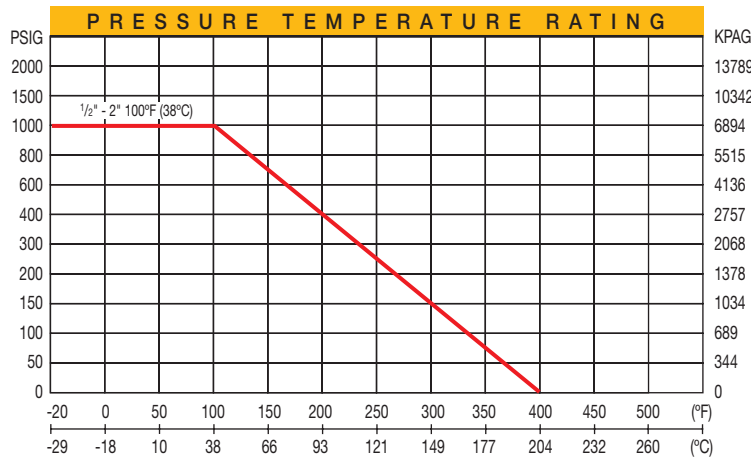
Full port  
NPT Threads to ANSI B1.20.1  
Three piece body  
Blowout-proof stem  
Adjustable live-loaded packing  
Anti-static device  
Floating Ball  
ISO 5211 direct mounting pad  
Complies with NACE MR-0103 & Supplier Requirements of NACE MR-0175/ISO 15156

1000 PSI, WOG 1/2" to 2"

**Compatible with Max-Air/MAS Actuators**

### NAME / MATERIAL

1. Stem / Stainless Steel A276 Type 316
2. Packing Nut / Stainless Steel A276 Type 304
3. Lock Washer / Stainless Steel A276 Type 304
4. Belleville Washer / Stainless Steel A276 Type 304
5. Packing Gland / Stainless Steel A276 Type 304
6. Packing / PTFE
7. Stem Seal / VITON O-Ring
8. Thrust Washer / R-PTFE
9. Bolt Washer / Stainless Steel A276 Type 304
10. Hex Nut / Stainless Steel A194 Grade 8
11. Bolt / Stainless Steel A193 Grade B8
12. Ball / Stainless Steel A351 - CF8M (316)
13. Body / Stainless Steel A351 - CF8M (316)
14. Seat / R-PTFE 15% Glass-Filled
15. Gasket / PTFE
16. Cap / Stainless Steel A351 - CF8M (316)
17. Spring & Pin Anti-static Device / Stainless Steel A276 Type 304



D I M E N S I O N S						
size	15	20	25	32	40	50
mm/in	1/2	3/4	1	1 1/4	1 1/2	2
A	15.0	20.0	24.0	31.8	38.1	50.0
mm/in	0.590	0.787	0.945	1.252	1.500	1.968
B	10.0	10.0	11.0	11.0	17.0	17.0
mm/in	0.394	0.394	0.433	0.433	0.669	0.669
C	67.3	72.6	87.75	104.4	116.35	131.9
mm/in	2.650	2.858	3.455	4.110	4.581	5.193
D	36.3	39.5	50.5	56.0	70.6	79.00
mm/in	1.429	1.555	1.988	2.205	2.779	3.110
E	9.0	9.0	11.0	11.0	14.0	14.0
mm/in	0.354	0.354	0.433	0.433	0.551	0.551
F	42.0	42.0	70.0	50.0	70.0	70.0
mm/in	1.653	1.653	2.756	1.968	2.756	2.756
G	36.0	36.0	50.0	42.0	50.00	50.00
mm/in	1.417	1.417	1.968	1.653	1.968	1.968
CV	26.0	50.0	68.0	120.0	170.0	360.0
weights	0.530	0.680	1.368	1.720	2.490	3.800
kg/lb	1.166	1.496	3.016	3.784	5.478	8.360



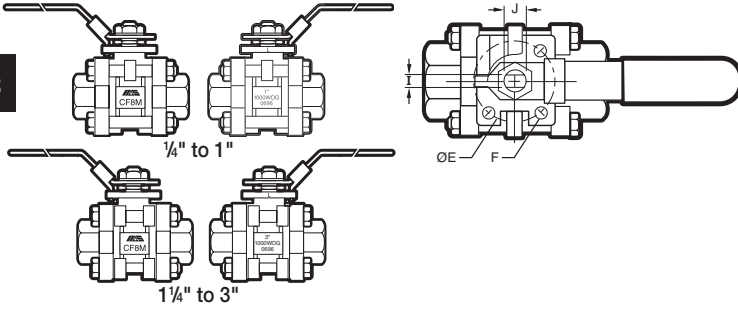
# G Series Investment Cast Stainless Steel 316 & 317 Ball Valves

## G3/G3-7

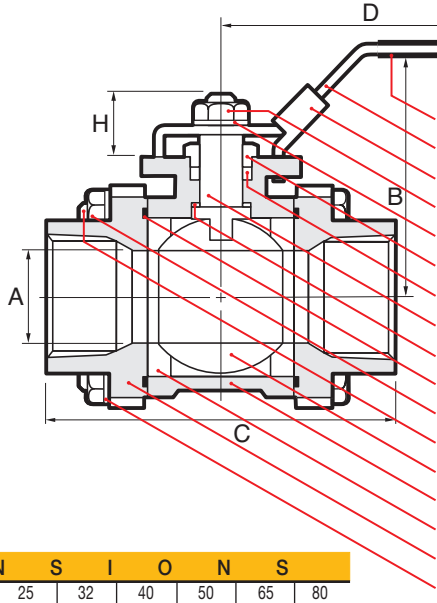


Full port  
NPT ends to ANSI B1.20.1  
Three piece body  
Blowout-proof stem  
Adjustable packing gland  
Locking lever handle  
ISO 5211 mounting pad  
2000 PSI, WOG 1/4" to 1"  
1500 PSI, WOG 1 1/4" to 3"  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156

2.8



• Optional model G3-7 with 317 S/S body/cap & trim



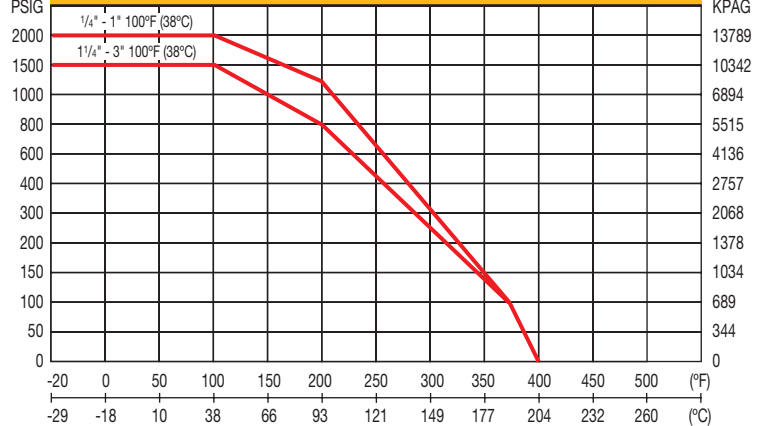
### NAME / MATERIAL

G3	(G3-7)
1. Handle Grip/ Vinyl	
2. Handle / Stainless Steel A276 Type 304	
3. Locking Device / Stainless Steel A276 Type 304	
4. Handle Nut /Stainless Steel A276 Type 304	
5. Stem Washer / Stainless Steel A276 Type 304	
6. Gland Nut / Stainless Steel A276 Type 304	
7. Packing / PTFE	
8. Stem / Stainless Steel A276 Type 316	(A351-CG8M-317)
9. Thrust Washer / R-PTFE 15% Glass-Filled	
10. Gasket / PTFE	
11. Hex Nut / Stainless Steel A194 Grade 8	
12. Bolt / Stainless Steel A193 Grade B8	
13. Ball / Stainless Steel A351 - CF8M (316)	(A351-CG8M-317)
14. Body / Stainless Steel A351 - CF8M (316)	(A351-CG8M-317)
15. Seat / R-PTFE 15% Glass-Filled	
16. Cap / Stainless Steel A351 - CF8M (316)	(A351-CG8M-317)
17. Bolt Washer / Stainless Steel A276 Type 304	

### D I M E N S I O N S

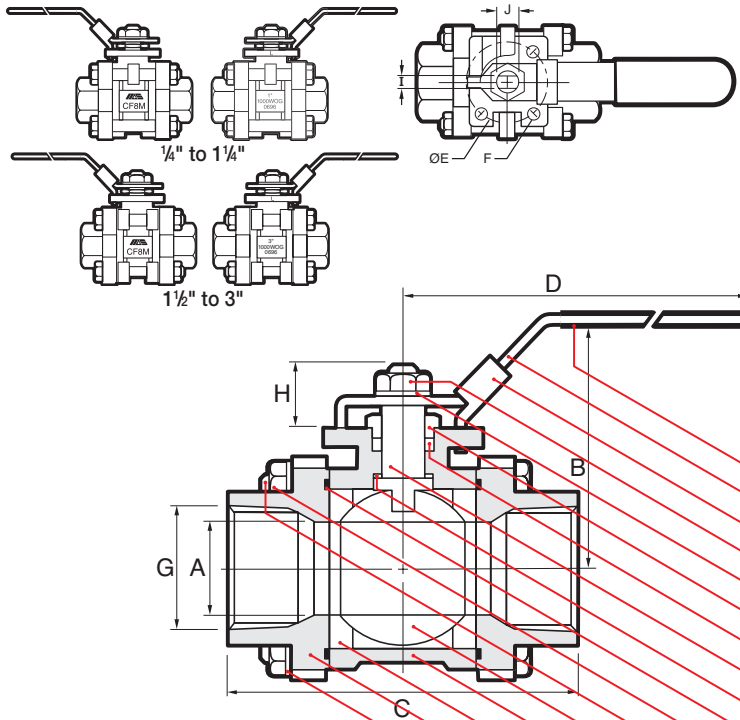
size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	9.50	9.50	15.00	20.00	25.00	32.00	38.00	50.50	65.00	78.00
mm/in	0.374	0.374	0.591	0.787	0.984	1.260	1.496	1.988	2.559	3.071
B	67.00	67.00	68.50	75.00	79.00	88.50	94.50	107.00	129.50	139.50
mm/in	2.638	2.638	2.697	2.953	3.110	3.484	3.720	4.213	5.098	5.492
C	60.00	60.00	70.00	76.00	92.00	105.00	120.00	138.00	170.50	191.00
mm/in	2.362	2.362	2.756	2.992	3.622	4.134	4.724	5.433	6.713	7.520
D	120.00	120.00	120.00	139.00	139.00	193.00	193.00	193.00	244.00	244.00
mm/in	4.724	4.724	4.724	5.472	5.472	7.598	7.598	7.598	9.606	9.606
E	36.00	36.00	36.00	42.00	42.00	50.00	70.00	70.00	102.00	102.00
mm/in	1.417	1.417	1.417	1.653	1.653	1.968	2.756	2.756	4.016	4.016
F	M6	M6	M6	M6	M6	M8	M8	M8	M8	M8
ISO Flg	F03	F03	F03	F04	F04	F05	F07	F07	F10	F10
H	11.50	12.50	14.50	18.00	18.00	23.50	22.50	25.00	32.50	31.00
mm/in	0.45	0.49	0.57	0.71	0.71	0.93	0.886	0.98	1.28	1.22
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00	12.00	12.00
mm/in	0.217	0.217	0.217	0.256	0.256	0.315	0.315	0.394	0.472	0.472
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.60	18.80	18.80
mm/in	0.303	0.303	0.303	0.367	0.367	0.492	0.492	0.614	0.740	0.740
CV	10.0	10.0	26.0	50.0	68.0	120.0	170.0	360.0	510.0	900.0
weights	0.434	0.420	0.620	0.910	1.190	1.930	2.780	4.750	8.630	13.460
kg/lb	0.955	0.924	1.364	2.002	2.618	4.246	6.116	10.450	18.986	29.612

### P R E S S U R E T E M P E R A T U R E R A T I N G



# G Series Investment Cast Stainless Steel Ball Valves

## G3SW



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

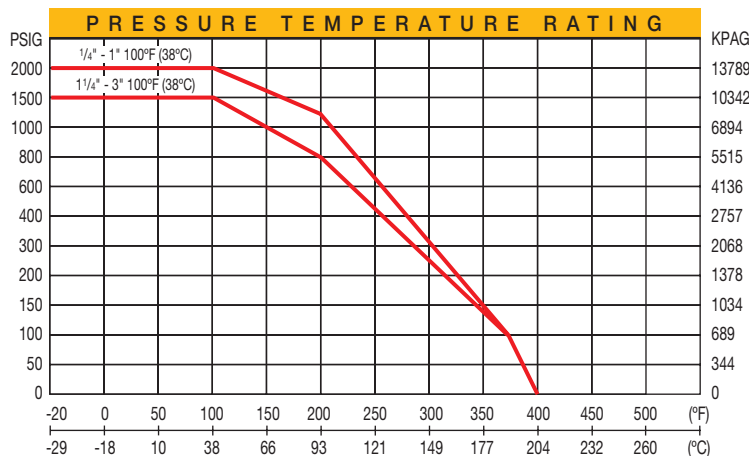
- Full port
- Socket Weld ends to ANSI B16.11
- Three piece body
- Blowout-proof stem
- Adjustable packing gland
- Locking lever handle
- ISO 5211 mounting pad
- 2000 PSI, WOG 1/4" to 1"
- 1500 PSI, WOG 1/4" to 3"
- Complies with NACE MR-0103 & Supplier Requirements of NACE MR-0175/ISO 15156



2.9

### NAME / MATERIAL

1. Handle Grip/ Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Locking Device / Stainless Steel A276 Type 304
4. Handle Nut /Stainless Steel A276 Type 304
5. Stem Washer / Stainless Steel A276 Type 304
6. Gland Nut / Stainless Steel A276 Type 304
7. Packing / PTFE
8. Stem / Stainless Steel A276 Type 316
9. Thrust Washer / R-PTFE 15% Glass-Filled
10. Gasket / PTFE
11. Hex Nut / Stainless Steel A194 Grade 8
12. Bolt / Stainless Steel A193 Grade B8
13. Ball / Stainless Steel A351 - CF8M (316)
14. Body / Stainless Steel A351 - CF8M (316)
15. Seat / R-PTFE 15% Glass-Filled
16. Cap / Stainless Steel A351 - CF3M (316L)
17. Bolt Washer / Stainless Steel A276 Type 304



D I M E N S I O N S										
size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	9.50	9.50	15.00	20.00	25.00	32.00	38.00	50.50	65.00	78.00
mm/in	0.374	0.374	0.591	0.787	0.984	1.260	1.496	1.988	2.559	3.071
B	67.00	67.00	68.50	75.00	79.00	88.50	94.50	107.00	129.50	139.50
mm/in	2.638	2.638	2.697	2.953	3.110	3.484	3.720	4.213	5.098	5.492
C	60.00	60.00	70.00	76.00	92.00	105.00	120.00	138.00	170.50	191.00
mm/in	2.362	2.362	2.756	2.992	3.622	4.134	4.724	5.433	6.713	7.520
D	120.00	120.00	120.00	139.00	139.00	193.00	193.00	193.00	244.00	244.00
mm/in	4.724	4.724	4.724	5.472	5.472	7.598	7.598	7.598	9.606	9.606
E	36.00	36.00	36.00	42.00	42.00	50.00	70.00	70.00	102.00	102.00
mm/in	1.417	1.417	1.417	1.653	1.653	1.968	2.756	2.756	4.016	4.016
F	M6	M6	M6	M6	M6	M8	M8	M8	M8	M8
ISO Flg	F03	F03	F03	F04	F04	F05	F07	F07	F10	F10
G	14.20	17.60	21.70	27.10	33.80	42.60	48.70	61.00	73.80	90.00
mm/in	0.559	0.693	0.854	1.067	1.330	1.677	1.917	2.402	2.906	3.543
H	11.50	12.50	14.50	18.00	18.00	23.50	22.50	25.00	32.50	31.00
mm/in	0.45	0.49	0.57	0.71	0.71	0.93	0.89	0.98	1.28	1.22
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00	12.00	12.00
mm/in	0.217	0.217	0.217	0.256	0.256	0.315	0.315	0.394	0.472	0.472
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.60	18.80	18.80
mm/in	0.303	0.303	0.303	0.367	0.367	0.492	0.492	0.614	0.740	0.740
CV	10.0	10.0	26.0	50.0	68.0	120.0	170.0	360.0	510.0	900.0
wt.	0.415	0.400	0.600	0.880	1.150	1.870	2.670	4.620	8.250	13.000
kg/lb	0.913	0.880	1.320	1.936	2.530	4.114	5.874	10.164	18.150	28.600

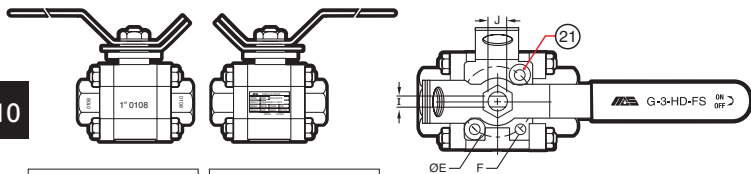
# G Series Investment Cast Stainless Steel API 607 Ball Valves

## G-3-HD-FS



Full port / Floating ball  
NPT threads to ANSI B1.20.1  
3 piece body with blowout-proof stem  
Encapsulated bolt design  
Adjustable packing nut  
**250 PSIG steam rated**  
Fire-safe certified to API 607  
Anti-static design  
Positive Lock-out device  
ISO 5211 mounting pad  
3000 PSI, WOG from 1/4" to 1"  
2000 PSI, WOG from 1 1/4" to 2"  
1000 PSI, WOG from 2 1/2" to 3"  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156

2.10



G-3-HD-FS			G-3-HD-FS		
WOG	3000	B16.34LTD	WOG	2000	B16.34LTD
ISO-FT	250 @ 406 F / 207 C		ISO-FT	250 @ 406 F / 207 C	
BODY	CF8M	TRIM   316	BODY	CF8M	TRIM   316
SEALS	GRF	SEAT   R-PTFE	SEALS	GRF	SEAT   R-PTFE

NACE

SIZE 1/4" - 1"

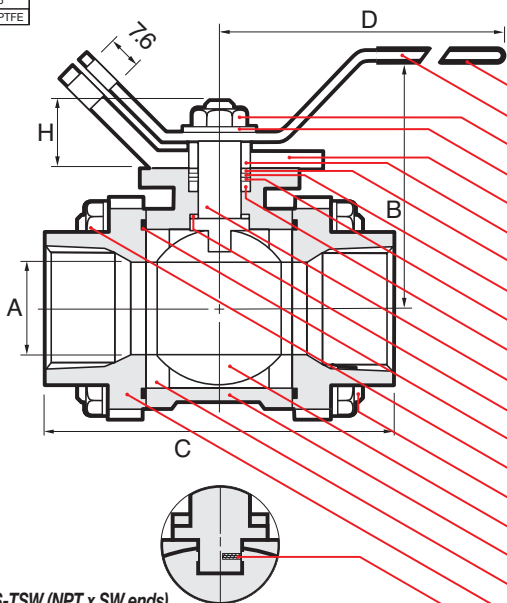
NACE

SIZE 1-1/4" - 2"

G-3-HD-FS		
WOG	1000	B16.34LTD
ISO-FT	250 @ 406 F / 207 C	
BODY	CF8M	TRIM   316
SEALS	GRF	SEAT   R-PTFE

NACE

SIZE 2-1/2" - 3"



Also available;

- Model G-3-HD-FS-TSW (NPT x SW ends)
- Model G-3-H-FS-SW (SW ends)

### D I M E N S I O N S

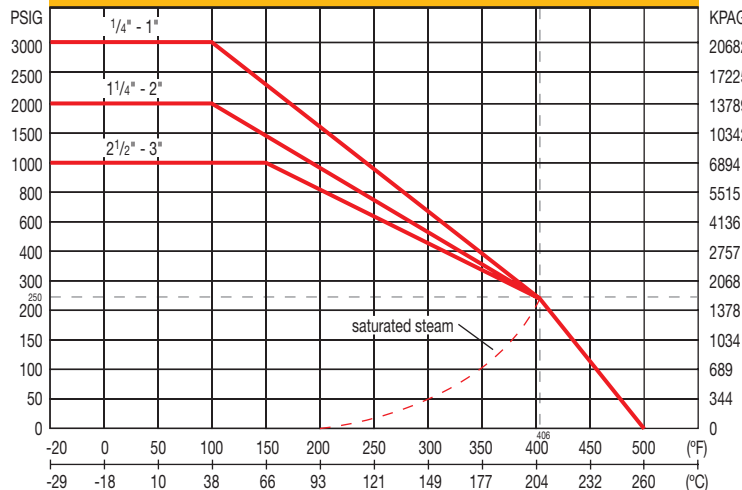
size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	10.00	10.00	15.00	20.00	25.00	32.00	38.00	50.00	65.00	78.00
mm/in	0.37	0.37	0.500	0.750	0.984	1.260	1.496	2.00	2.50	3.071
B	65.80	65.80	68.50	75.00	79.00	88.50	94.50	107.00	129.50	139.50
mm/in	2.59	2.59	2.697	2.953	3.110	3.484	3.720	4.213	5.098	5.492
C	64.5	64.5	68.5	80.5	91.5	100.5	117.0	133.5	157.8	178.0
mm/in	2.54	2.54	2.697	3.169	3.602	3.957	4.606	5.256	6.213	7.008
D	120.00	120.00	120.00	139.00	139.00	193.00	193.00	193.00	244.00	244.00
mm/in	4.72	4.72	4.724	5.472	5.472	7.598	7.598	7.598	9.606	9.606
E	36.00	36.00	36.00	42.00	42.00	50.00	70.00	70.00	102.00	102.00
mm/in	1.417	1.417	1.417	1.653	1.653	1.968	2.756	2.756	4.016	4.016
F	M6	M6	M6	M6	M6	M8	M8	M8	M8	M8
ISO Fig	F03	F03	F03	F04	F04	F05	F07	F07	F10	F10
H	15.50	15.50	15.50	18.50	18.50	23.50	23.50	27.00	30.00	30.00
mm/in	0.61	0.61	0.610	0.728	0.728	0.925	0.925	1.063	1.181	1.181
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00	12.00	12.00
mm/in	0.22	0.22	0.217	0.256	0.256	0.315	0.315	0.394	0.472	0.472
J	8.10	8.10	8.10	9.60	9.60	12.80	12.80	16.10	19.25	19.25
mm/in	0.32	0.32	0.32	0.38	0.38	0.50	0.50	0.63	0.76	0.76
CV	11	11	26	50	68	120	170	360	510	900
Weights	0.68	0.68	0.82	1.35	1.82	2.81	4.64	7.64	10.77	15.70
kg/lb	1.499	1.499	1.808	2.976	4.012	6.195	10.229	16.843	23.744	34.612

Valves comply to B16.34 Class 600, 900 & 1500 wall thickness.

### NAME / MATERIAL

- Handle Grip / Vinyl
- Handle / Stainless Steel A276 Type 304
- Handle Nut / Stainless Steel A276 Type 304
- Handle Washer / Stainless Steel A276 Type 304
- Lock-Out Plate / Stainless Steel A276 Type 304
- Gland Nut / Stainless Steel A276 Type 304
- Lock Washer / Stainless Steel A276 Type 304
- Belleville Washer / Stainless Steel 301
- Gland / Stainless Steel A276 Type 304
- Packing / Graphite
- Stem / Stainless Steel A276 Type 316
- Thrust Washer / R-PTFE (TFM4215)
- Gasket / Graphite + Stainless Steel 304
- Hex Nut / A194 grade 8MA
- Stud Bolt / A193 grade B8MA
- Ball / Stainless Steel A351 CF8M (316)
- Body / Stainless Steel A351 CF8M (316)
- Seat / R-PTFE (TFM4215)
- Cap / Stainless Steel A351 CF8M (316)
- Spring & Pin / Stainless Steel A276 Type 304
- Stopper / Stainless Steel A276 Type 304

### PRESSURE TEMPERATURE RATING

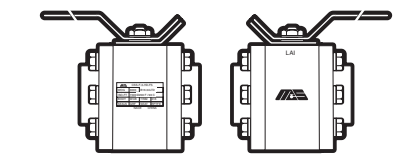


# G Series Forged Stainless Steel 6000 WOG Ball Valves

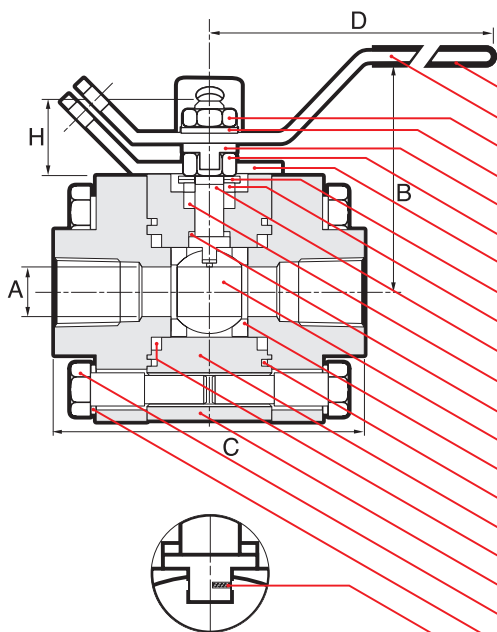
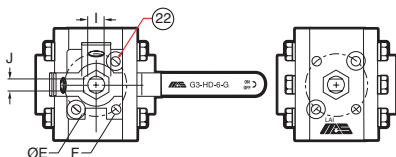
## G3-HD-6-G



2.11



G-3-HD-6-G		
WOG	6000	ASME B16.34
	4400 @ 380° F / 193° C	
BODY	CF8M	TRIM 316
SEALS	GRF	SEAT R-PTFE

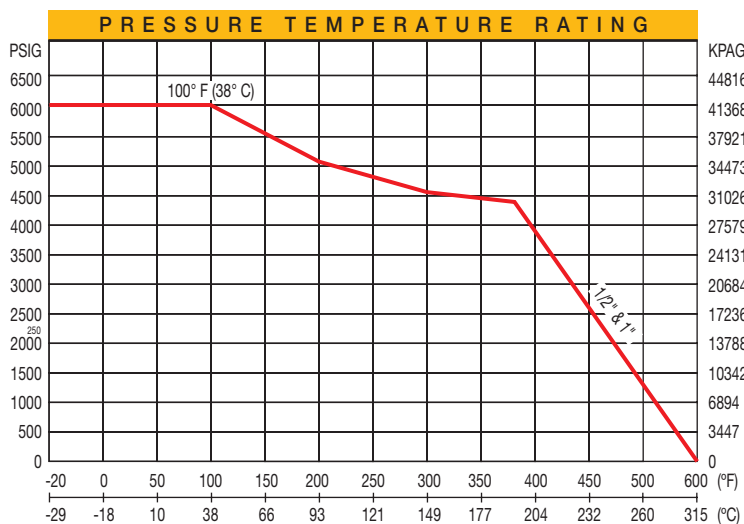


ASME B16.34 class 2500 Design  
3 piece forged body  
Full port  
NPT threads to ANSI B1.20.1  
Blowout proof stem  
Adjustable live loaded packing nut  
Anti-static design  
Positive lock-out device  
ISO 5211 mounting pad  
6000 WOG (class 2500)  
Complies with NACE MR-0103  
& Supplier Requirements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

**Also Available:**  
**Fire-safe certified to API-607**  
**Model G3-HD-6-FS**

### 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 Washer / A276 Type 304
6. Gland Nut / A276 Type 304
7. Lock-Out Plate / A276 Type 304
8. Belleville Washer / Stainless Steel Type 301
9. Gland / A276 Type 304
10. Stem / A276 Type 316
11. Packing / Graphite
12. Thrust Washer / PEEK
13. Ball / A351 CF8M (316)
14. Seat / PEEK
15. Gasket / PTFE
16. Body / ANSI316
17. Gasket / Graphite + Stainless Steel 304
18. Cap / AISI 316
19. Bolt / A193 grade B8MA
20. Washer / Stainless Steel A276 Type 304
21. Spring & Pin / Stainless Steel A276 Type 304
22. Stopper / A276 Type 304



### D I M E N S I O N S

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 F	ISO5211 Flange	CV Factor	Weights KG/LB	
15	1/2"	15	68	95	153	36	16	10	6	M5	Type F03	42	3.6/7.9
		0.590	2.677	3.740	6.023	1.417	0.787	0.394	0.236				
25	1"	25	94	111	183	42	26.5	14	9	M5	Type F04	110	5.4/11.9
		1.00	3.700	4.370	7.204	1.654	1.043	0.551	0.354				

\*Other sizes available on request

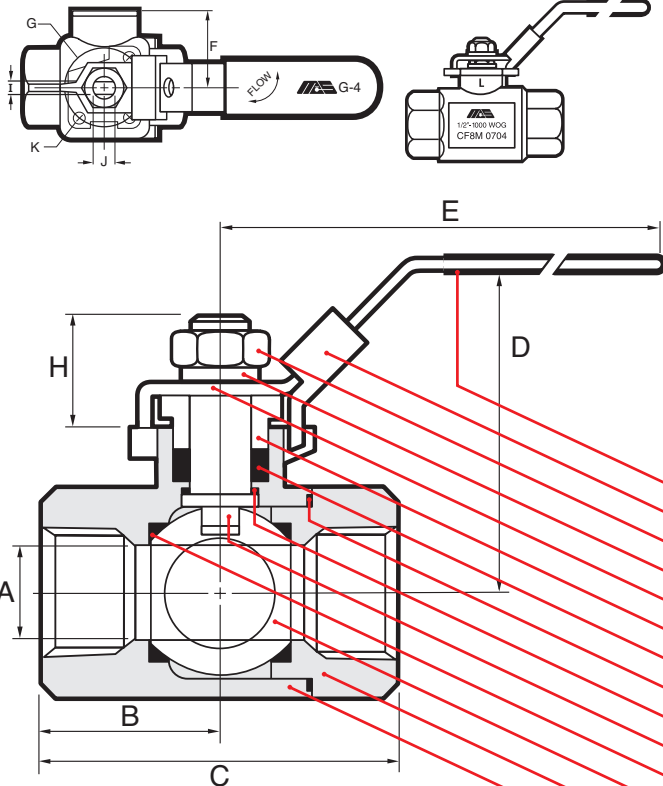
# G Series Investment Cast Stainless Steel 3 Port-Diverter Ball Valves

## G4



- 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 & Supplier Requirements of NACE MR-0175/ISO 15156
- 1000 PSI, WOG 1/4" to 2"

2.12

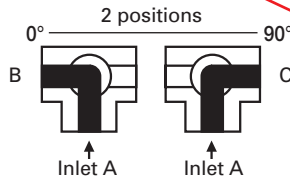


### NAME / MATERIAL

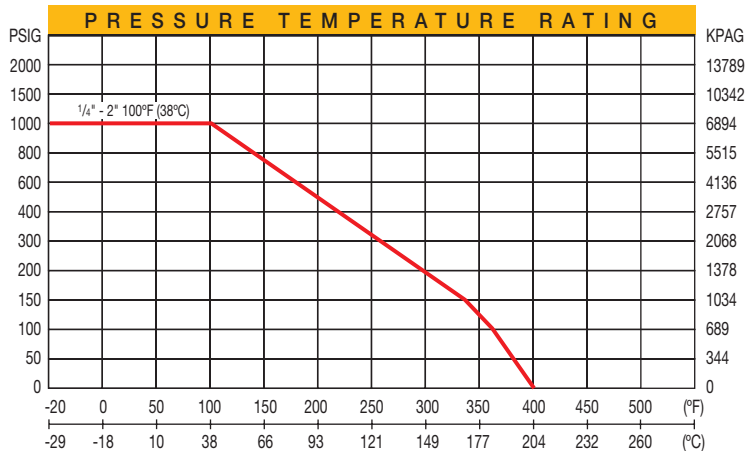
- | NAME / MATERIAL                                   |
|---|
| 1. Handle Grip / Vinyl                            |
| 2. Locking Device / Stainless Steel A276 Type 304 |
| 3. Handle Nut / Stainless Steel A276 Type 304     |
| 4. Stem Washer / Stainless Steel A276 Type 304    |
| 5. Handle / Stainless Steel A276 Type 304         |
| 6. Gland Nut / Stainless Steel A276 Type 304      |
| 7. Stem Packing / PTFE                            |
| 8. Gasket / PTFE                                  |
| 9. Thrust Washer / R-PTFE 15% Glass-Filled        |
| 10. Stem / Stainless Steel A276 Type 316          |
| 11. Seat / R-PTFE 15% Glass-Filled                |
| 12. Ball / Stainless Steel A351 - CF8M (316)      |
| 13. Cap / Stainless Steel A351 - CF8M (316)       |
| 14. Body / Stainless Steel A351 - CF8M (316)      |

### NOTES:

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



	D	I	M	E	N	S	I	O	N	S
size	8	10	15	20	25	32	40	50		
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2		
A	11.10	12.70	12.70	17.30	20.60	25.40	31.80	38.10		
mm/in	0.44	0.50	0.50	0.68	0.81	1.00	1.25	1.50		
B	29.35	29.35	29.35	38.10	40.75	51.00	55.50	68.50		
mm/in	1.16	1.16	1.16	1.50	1.60	2.01	2.19	2.70		
C	58.70	58.70	58.70	76.20	82.00	102.00	111.00	137.00		
mm/in	2.31	2.31	2.31	3.00	3.23	4.02	4.37	5.39		
D	50.80	50.80	50.80	58.50	62.35	74.10	78.85	94.20		
mm/in	2.00	2.00	2.00	2.29	2.46	2.92	3.10	3.71		
E	100.00	100.00	100.00	130.00	130.00	155.00	155.00	175.00		
mm/in	3.94	3.94	3.94	5.12	5.12	6.10	6.10	6.89		
F	30.00	30.00	30.00	38.10	42.67	51.00	61.00	71.37		
mm/in	1.18	1.18	1.18	1.50	1.68	2.01	2.40	2.81		
G	36.00	36.00	36.00	36.00	42.00	50.00	50.00	50.00		
mm/in	1.42	1.42	1.42	1.42	1.65	1.97	1.97	1.97		
H	15.30	15.30	15.30	17.00	18.40	23.00	23.00	25.40		
mm/in	0.60	0.60	0.60	0.67	0.72	0.91	0.91	1.00		
I	5.45	5.45	5.45	6.45	6.45	8.00	8.00	10.00		
mm/in	0.22	0.22	0.22	0.25	0.25	0.32	0.32	0.39		
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.50		
mm/in	0.30	0.30	0.30	0.37	0.37	0.49	0.49	0.61		
K	M6 x 1.0	M6 x 1.0	M6 x 1.0	M6 x 1.0	M6 x 1.0	M8 x 1.25	M8 x 1.25	M8 x 1.25		
CV	4	5.4	5.4	12	15	21	34	47		
weights	0.390	0.360	0.330	0.660	0.850	1.490	2.040	3.160		
kg/lb	0.858	0.792	0.726	1.452	1.870	3.278	4.488	6.952		





# F Series Flanged Carbon Steel Ball Valves

## F-150-CS-R-SS-N

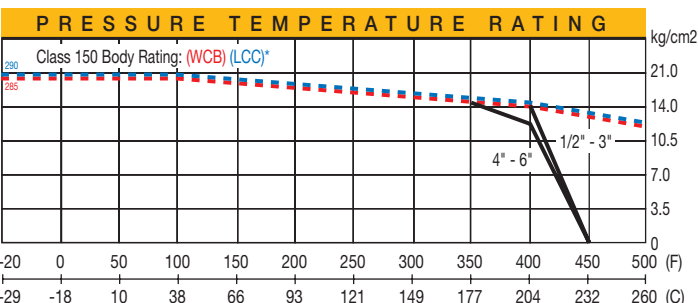
Reduced port, One piece body  
ANSI B16.34 Class 150  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



Model F-150-LC-R-SS-N (LCC body) is available

NAME / MATERIAL		
Model Code; CS	LC	*FS
1. Lock Plate / Stainless Steel A276 Type 304		
2. Retaining Ring / Carbon Steel		
3. Handle / Ductile Iron		
4. Stopper Plate / Stainless Steel A276 Type 304		
5. Lock Washer / Stainless Steel A276 Type 304		
6. Gland Nut / Carbon Steel		
7. Stopper Pin / Stainless Steel A276 Type 304		
8. Lock Washer / Stainless Steel A276 Type 304		
9. Belleville Washer / Stainless Steel 301		
10. Gland / Stainless Steel A276 Type 304		
11. Packing / PTFE		(Graphite)
12. Thrust Washer / R-PTFE 15% Glass-Filled		
13. Stem / Stainless Steel A276 Type 316		
14. Anti-Static Device / Stainless Steel A276 Type 304		
15. Identification Plate / Stainless Steel A276 Type 304		
16. Ball / Stainless Steel A351 - CF8M (316)		
17. N/A		(Body Seal / Graphite)
18. Body Seal / PTFE		
19. Body Insert / Cast Steel A216-WCB	(A352 LCC)	
20. Body / Cast Steel A216-WCB	(A352 LCC)	
21. Seat / PTFE (TFM-1600)		

\*Fire Safe Certified to API-607



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

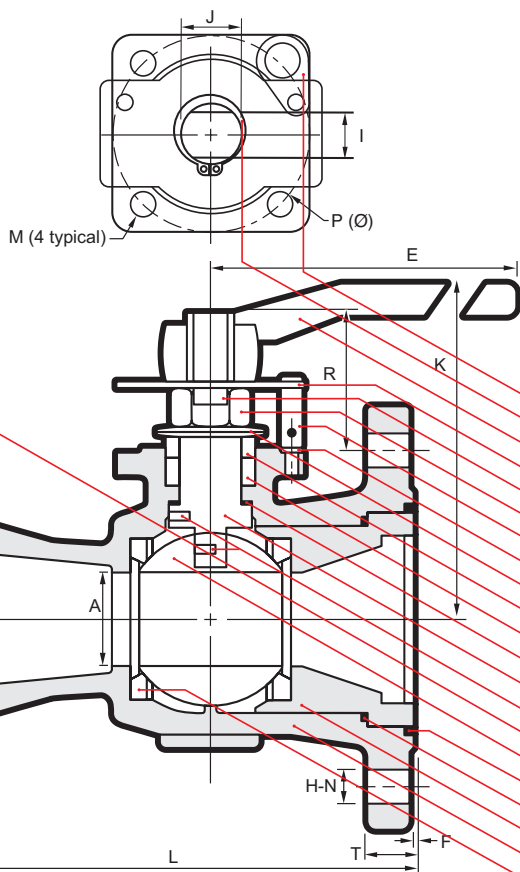
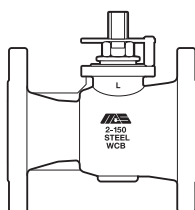


FIG.	F-150-CS-R-SS-FS-N	CLASS	150	SIZE	2	B16.34
SEAT	PTFE	BODY	WCB	TRIM	316	NACE
RATING	285 PSIG AT 100°F/200 PSIG AT 400°F MAX					

CS - IDENTIFICATION PLATE

FIG.	F-150-LC-R-SS-N	CLASS	150	SIZE	2	B16.34
SEAT	PTFE	BODY	LCC	TRIM	316	NACE
RATING	290 PSIG AT 100°F/200 PSIG AT 400°F MAX					

LC - IDENTIFICATION PLATE



size	D		I		M		E		N		S		I		O		N		ISO 5211 flange type	Weight (kg/lb)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R			
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 Carbon Steel Ball Valves

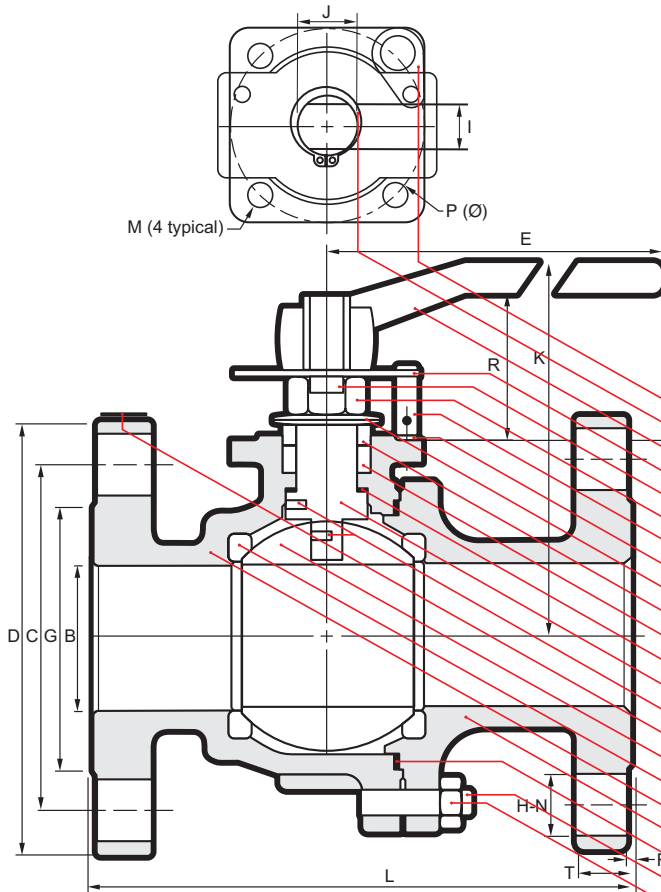
## F-150-CS-F-SS-N

Full port, Two piece body  
ANSI B16.34 Class 150  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.3

Model F-150-LC-F-SS-N (LCC body) is available

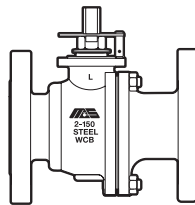


NAME / MATERIAL		
Model Code; CS	LC	*FS
1. Lock Plate / Stainless Steel A276 Type 304		
2. Retaining Ring / Carbon Steel		
3. Handle / Ductile Iron		
4. Stopper Plate / Stainless Steel A276 Type 304		
5. Lock Washer / Stainless Steel A276 Type 304		
6. Gland Nut / Carbon Steel		
7. Stopper Pin / Stainless Steel A276 Type 304		
8. Lock Washer / Stainless Steel A276 Type 304		
9. Belleville Washer / Stainless Steel 301		
10. Gland / Stainless Steel A276 Type 304		
11. Packing / PTFE		(Graphite)
12. Thrust Washer / R-PTFE 15% Glass-Filled		
13. Stem / Stainless Steel A276 Type 316		
14. Anti-Static Device / Stainless Steel A276 Type 304		
15. Identification Plate / Stainless Steel A276 Type 304		
16. Ball / Stainless Steel A351 - CF8M		
17. Seat / PTFE (TFM-1600)		
18. Body / Cast Steel A216-WCB	(LC: A352 LCC)	
19. Cap / Cast Steel A216-WCB	(LC: A352 LCC)	
20. Body Seal / PTFE		(Graphite)
21. Bolt Nut / A194 Grade 2HM	(LC: A194 7M)	
22. Stud Bolt / A193 Grade B7M	(LC FS: A320 Grade L7M)	

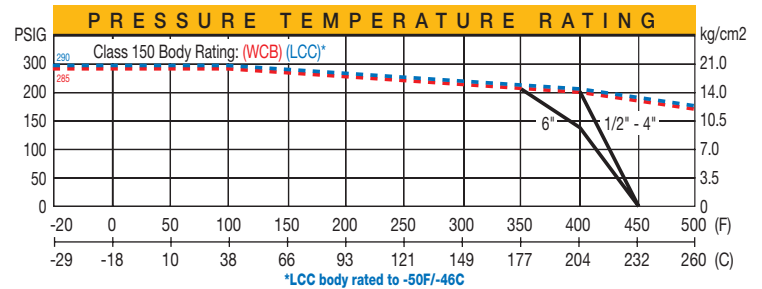
\*Fire Safe Certified to API-607

FIG.	F-150-CS-F-SS-N	CLASS	150	SIZE	2	B16.34
SEAT	PTFE-S	BODY	WCB	TRIM	316	NACE
RATING	285 PSIG AT 100°F/200 PSIG AT 400°F MAX					
CS - IDENTIFICATION PLATE						

FIG.	F-150-LC-F-SS-N	CLASS	150	SIZE	2	B16.34
SEAT	PTFE-S	BODY	LCC	TRIM	316	NACE
RATING	290 PSIG AT 100°F/200 PSIG AT 400°F MAX					
LC - IDENTIFICATION PLATE						



Body Marking



	D		I		M		E		N		S		I		O		N		S	
size (mm/in)	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R	ISO 5211 flange	kg/lb		
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		3.60		
3/4	19	70.0	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		4.40		
1"	24	79.0	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		6.93		
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	1.93		13.77		
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		20.46		
2 1/2	65	139.7	178	400	1.6	104.6	19	17	25	170.5	190.5	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		37.00		
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		48.40		
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		81.40		
6"	150	241.5	279	1000	1.6	216	22	27	40	289.5	394	5/8" UNC	8	140	25.4	90	F14	85.3		
	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		187.66		



# F Series Flanged Carbon Steel Ball Valves

## F-300-CS-R-SS-N

Reduced port, One piece body  
ANSI B16.34 Class 300  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



Model F-300-LC-R-SS-N (LCC body) is available

NAME / MATERIAL		
Model Code; CS	LC	*FS
1. Lock Plate / Stainless Steel A276 Type 304		
2. Retaining Ring / Carbon Steel		
3. Handle / Ductile Iron		
4. Stopper Plate / Stainless Steel A276 Type 304		
5. Lock Washer / Stainless Steel A276 Type 304		
6. Gland Nut / Carbon Steel		
7. Stopper Pin / Stainless Steel A276 Type 304		
8. Lock Washer / Stainless Steel A276 Type 304		
9. Belleville Washer / Stainless Steel 301		
10. Gland / Stainless Steel A276 Type 304		
11. Packing / PTFE		(Graphite)
12. Thrust Washer / R-PTFE 15% Glass-Filled		
13. Stem / Stainless Steel A276 Type 316		
14. Anti-Static Device / Stainless Steel A276 Type 304		
15. Identification Plate / Stainless Steel A276 Type 304		
16. Ball / Stainless Steel A351 - CF8M (316)		
17. N/A		(Body Seal / Graphite)
18. Body Seal / PTFE		
19. Body Insert / Cast Steel A216-WCB	(A352 LCC)	
20. Body / Cast Steel A216-WCB	(A352 LCC)	
21. Seat / PTFE (TFM-1600)		

\*Fire Safe Certified to API-607

3.4

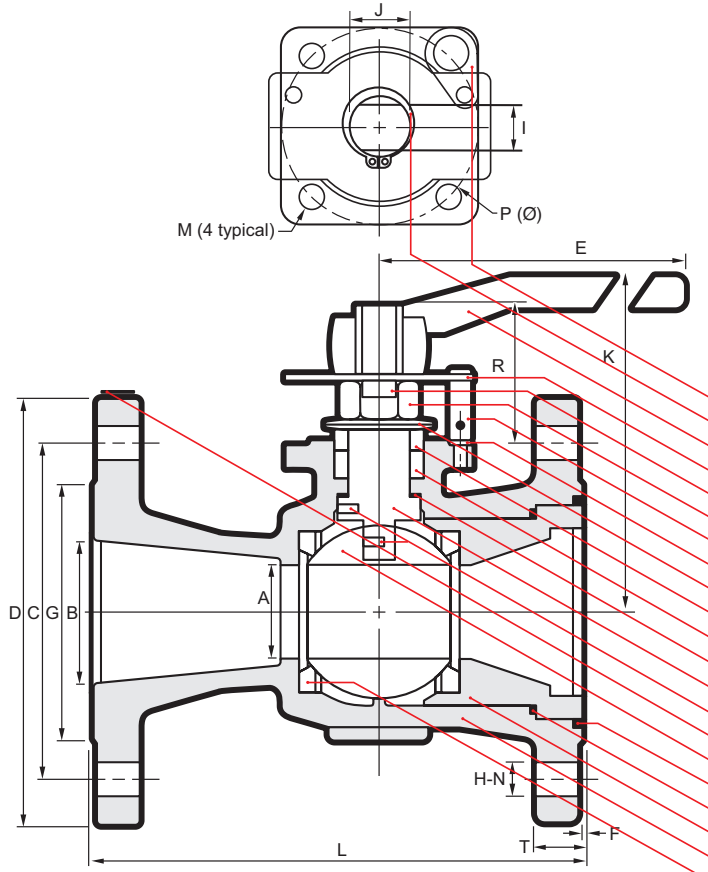
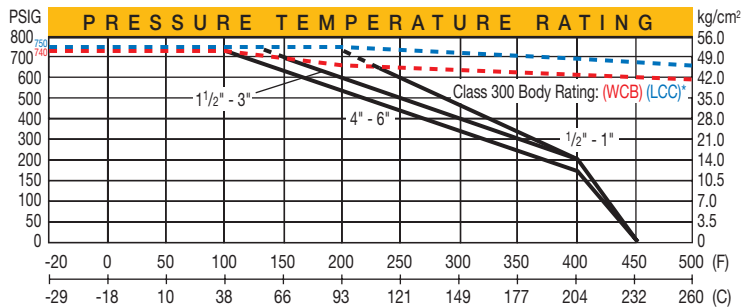
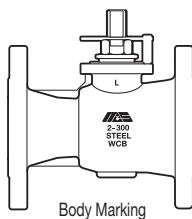


FIG.	F-300-CS-R-SS-N	CLASS	300	SIZE	2	B16.34
SEAT	PTFE	BODY	WCB	TRIM	316	NACE
RATING	740 PSIG AT 100°F/200 PSIG AT 400°F MAX					
CS - IDENTIFICATION PLATE						

FIG.	F-300-LC-R-SS-N	CLASS	300	SIZE	2	B16.34
SEAT	PTFE	BODY	LCC	TRIM	316	NACE
RATING	750 PSIG AT 100°F/200 PSIG AT 400°F MAX					
LC - IDENTIFICATION PLATE						



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

size	D		I		M		E		N		S		I		O		N		ISO 5211 flange type	Weight (kg/lb)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R			
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	283	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	11.14			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 Carbon Steel Ball Valves

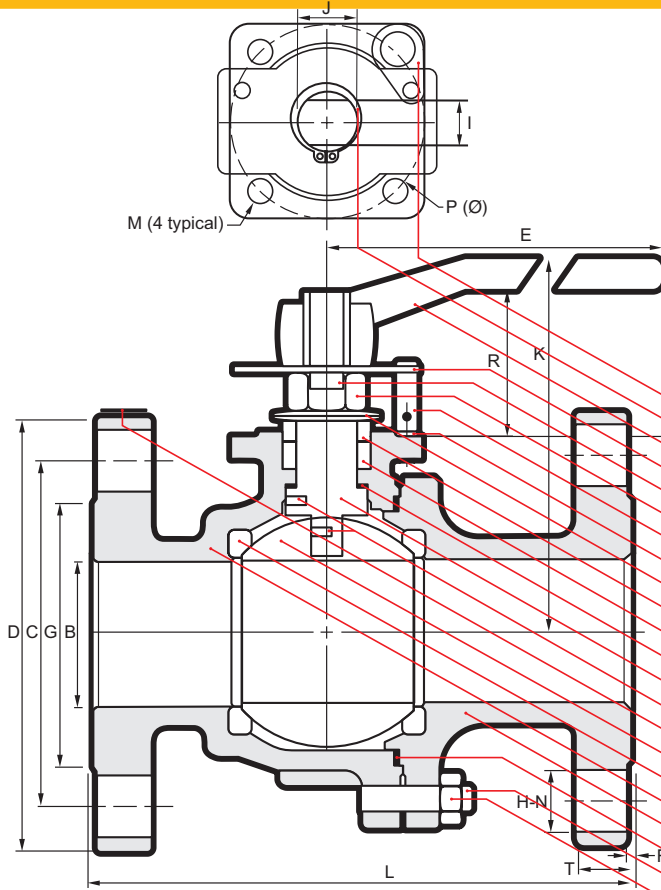
## F-300-CS-F-SS-N

Full port, Two piece body  
ANSI B16.34 Class 300  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.5

Model F-300-LC-F-SS-N (LCC body) is available



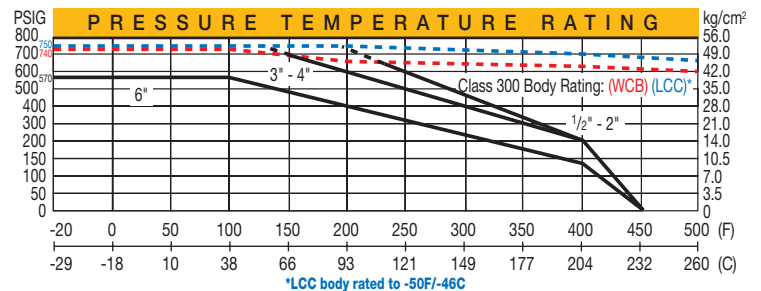
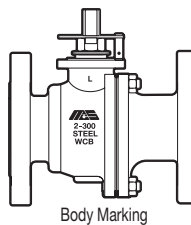
### NAME / MATERIAL

Model Code; CS	LC	*FS
1. Lock Plate / Stainless Steel A276 Type 304		
2. Retaining Ring / Carbon Steel		
3. Handle / Ductile Iron		
4. Stopper Plate / Stainless Steel A276 Type 304		
5. Lock Washer / Stainless Steel A276 Type 304		
6. Gland Nut / Carbon Steel		
7. Stopper Pin / Stainless Steel A276 Type 304		
8. Lock Washer / Stainless Steel A276 Type 304		
9. Belleville Washer / Stainless Steel 301		
10. Gland / Stainless Steel A276 Type 304		
11. Packing / PTFE		(Graphite)
12. Thrust Washer / R-PTFE 15% Glass-Filled		
13. Stem / Stainless Steel A276 Type 316		
14. Anti-Static Device / Stainless Steel A276 Type 304		
15. Identification Plate / Stainless Steel A276 Type 304		
16. Ball / Stainless Steel A351 - CF8M (316)		
17. Seat / PTFE (TFM-1600)		
18. Body / Cast Steel A216-WCB	(LC: A352 LCC)	
19. Cap / Cast Steel A216-WCB	(LC: A352 LCC)	
20. Body Seal / PTFE		(Graphite)
21. Bolt Nut / A194 Grade 2HM	(LC: A194 Grade 7M)	
22. Stud Bolt / A193 Grade B7M	(LC: A320 Grade L7M)	

\*Fire Safe Certified to API-607

FIG.	F-300-CS-F-SS-N	CLASS	300	SIZE	2	B16.34
SEAT	PTFE	BODY	WCB	TRIM	316	NACE
RATING	740 PSIG AT 100°F/200 PSIG AT 400°F MAX					
CS - IDENTIFICATION PLATE						

FIG.	F-300-LC-F-SS-N	CLASS	300	SIZE	2	B16.34
SEAT	PTFE	BODY	LCC	TRIM	316	NACE
RATING	740 PSIG AT 100°F/200 PSIG AT 400°F MAX					
LC - IDENTIFICATION PLATE						



size (mm/in)	D	I	M	E	N	S	I	O	N	S	ISO 5211 flange	kg/lb					
1/2	15 0.59	66.5 2.62	95 3.75	130 5.12	1.6 0.06	35 1.38	16 0.62	8 0.31	11 0.43	83 3.27	140 5.50	1/4" UNC 4	36 1.42	14.2 0.56	27 1.06	F03	2.20 4.84
3/4	19 0.75	82.5 3.25	117 4.62	130 5.12	1.6 0.06	43 1.69	19 0.75	8 0.31	11 0.43	86 3.39	152.5 6.00	1/4" UNC 4	36 1.42	15.8 0.62	27 1.06	F03	3.29 7.23
1"	24 0.95	89.0 3.50	124 4.88	160 6.30	1.6 0.06	51 2.00	19 0.75	10 0.39	14 0.55	104 4.09	165 6.50	1/4" UNC 4	50 1.97	17.5 0.69	35.5 1.40	F05	4.76 10.47
1 1/2	38 1.50	114.5 4.50	156 6.14	230 9.06	1.6 0.06	73 2.88	22 0.88	14 0.55	20 0.79	125 4.92	190.5 7.50	5/16" UNC 4	70 2.76	20.6 0.81	49 1.93	F07	9.14 20.10
2"	50 1.97	127.0 5.00	165 6.50	230 9.06	1.6 0.06	92 3.62	19 0.75	14 0.55	20 0.79	134.5 5.30	216 8.50	5/16" UNC 8	70 2.76	22.3 0.88	49 1.93	F07	12.80 28.16
2 1/2	65 2.56	149.4 5.88	190.5 7.50	400 15.75	1.6 0.06	104.6 4.12	22 0.88	17 0.67	25 0.98	170.5 6.71	241.3 9.50	3/8" UNC 8	102 4.02	25.4 1.00	61 2.40	F10	22.73 50.00
3"	76 3.00	168 6.62	210 8.27	400 15.75	1.6 0.06	127 5.00	22 0.88	17 0.67	25 0.98	181.5 7.15	283 11.14	3/8" UNC 8	102 4.02	28.5 1.12	61 2.40	F10	29.60 65.12
4"	100 3.94	200 7.87	254 10.00	750 29.53	1.6 0.06	157 6.18	22 0.88	23 0.91	34 1.34	205.5 8.09	305 12.00	1/2" UNC 8	125 4.92	31.8 1.25	73 2.87	F12	50.40 110.88
6"	150 5.91	270 10.63	318 12.52	1000 39.37	1.6 0.06	216 8.50	22 0.88	27 1.06	40 1.57	289.5 11.40	403 15.87	5/8" UNC 12	140 5.51	36.6 1.44	90 3.54	F14	107.3 236.06

# F Series Flanged Carbon Steel Ball Valves

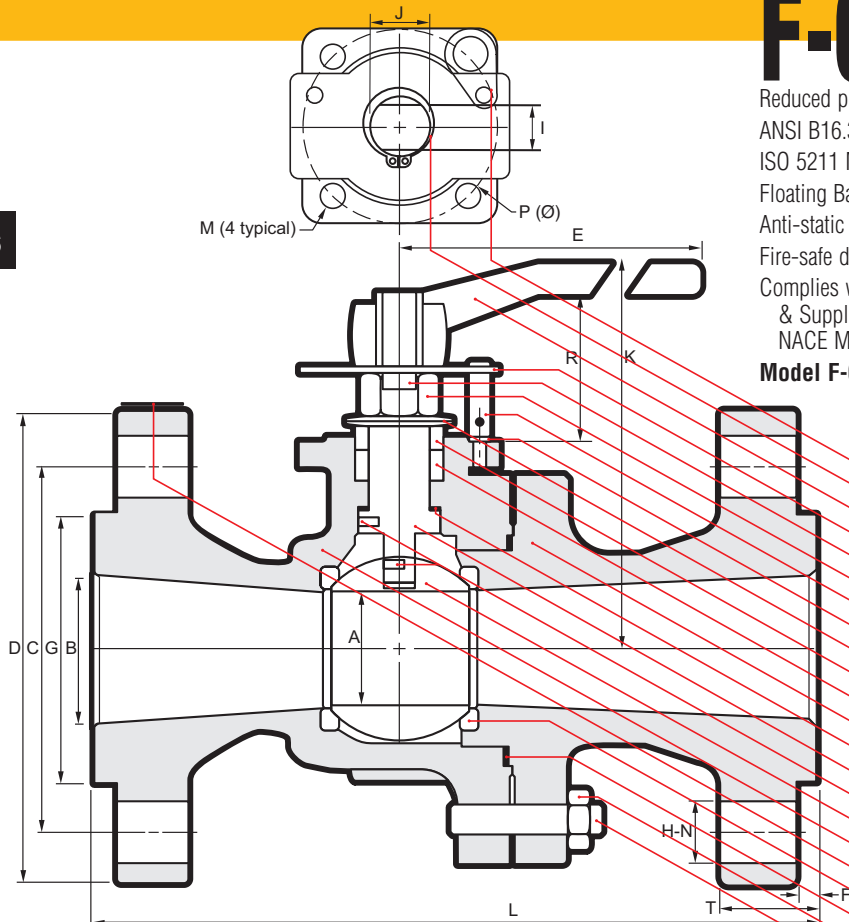
## F-600-CS-R-SS-N

Reduced port, Two piece body  
ANSI B16.34 Class 600  
ISO 5211 Mounting pad  
Floating Ball  
Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



Model F-600-LC-R-SS-N (LCC body) is available

3.6



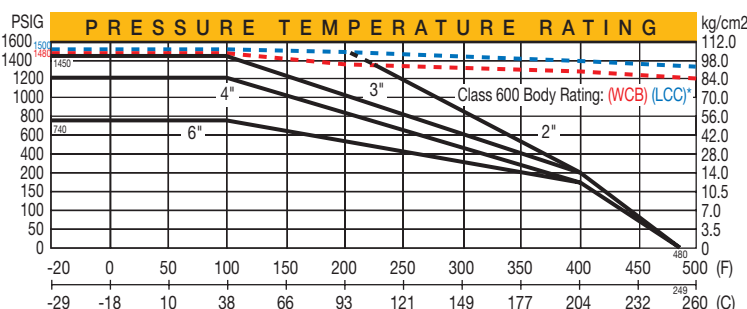
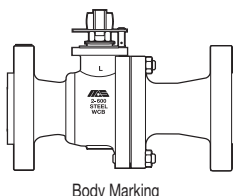
### NAME / MATERIAL

Model Code;	CS	LC	*FS
1. Lock Plate /	Stainless Steel A276 Type 304		
2. Retaining Ring /	Carbon Steel		
3. Handle /	Ductile Iron		
4. Stopper Plate /	Stainless Steel A276 Type 304		
5. Lock Washer /	Stainless Steel A276 Type 304		
6. Gland Nut /	Carbon Steel		
7. Stopper Pin /	Stainless Steel A276 Type 304		
8. Lock Washer /	Stainless Steel A276 Type 304		
9. Belleville Washer /	Stainless Steel 301		
10. Gland /	Stainless Steel A276 Type 304		
11. Packing /	PTFE		(Graphite)
12. Cap /	Cast Steel A216 WCB	(LC: A352 LCC)	
13. Thrust Washer /	R-PTFE 15% Glass-Filled		
14. Stem /	Stainless Steel A276 Type 316		
15. Anti-Static Device /	A276 Type 304		
16. Ball /	Stainless Steel A351 - CF8M (316)		
17. Body /	Cast Steel A216 WCB	(LC: A352 LCC)	
18. Identification Plate /	A276 Type 304		
19. Seat /	R-PTFE 25% Carbon-Filled		
20. Body Seal /	304 + Graphite		
21. Bolt Nut /	A194 Grade 2HM	(LC: A194 Grade 7M)	
22. Stud Bolt /	A193 Grade B7M	(LC: A320 Grade L7M)	

\*Fire Safe Certified to API-607

FIG.	F-600-CS-R-SS-N	CLASS	600	SIZE	2	B16.34
SEAT	C-PTFE	BODY	WCB	TRIM	316	NACE
RATING	1480 PSIG AT 100°F/200 PSIG AT 400°F MAX					
CS - IDENTIFICATION PLATE						

FIG.	F-600-LC-R-SS-N	CLASS	600	SIZE	2	B16.34
SEAT	C-PTFE	BODY	LCC	TRIM	316	NACE
RATING	1500 PSIG AT 100°F/200 PSIG AT 400°F MAX					
LC - IDENTIFICATION PLATE						



size	D		I		M		E		N		S		I		O		N		S		Weight (kg/lb)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R	ISO 5211 flange type			
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	1.5	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 Ball Valves

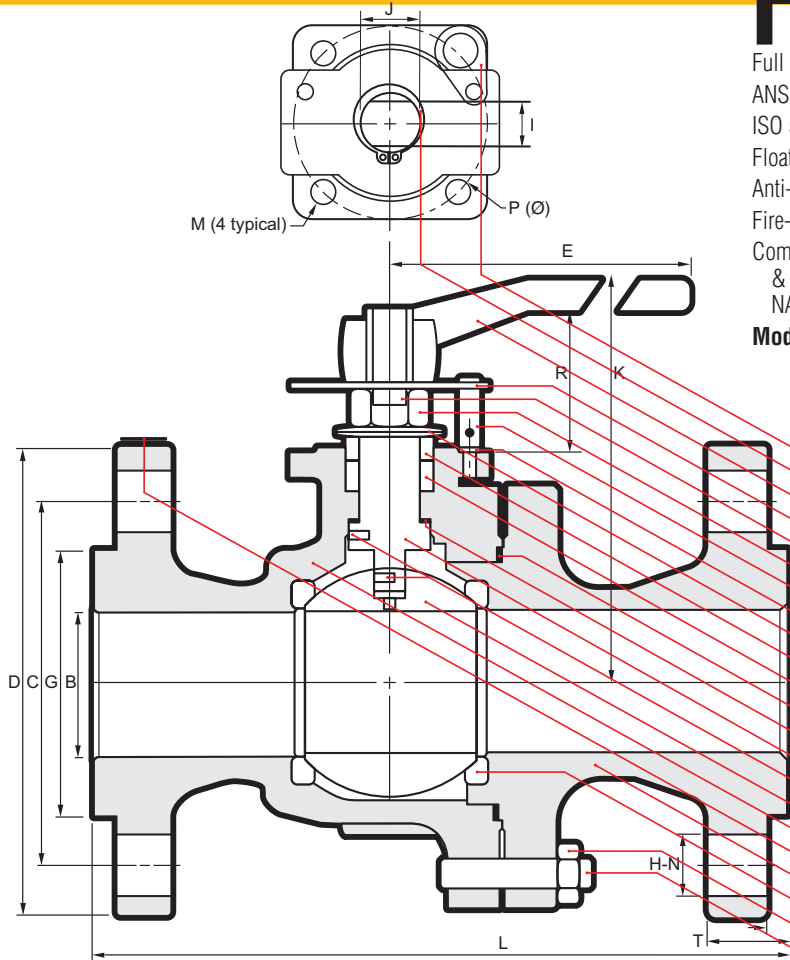
## F-600-CS-F-SS-N

Full port, Two piece body  
ANSI B16.34 Class 600  
ISO 5211 Mounting pad  
Floating Ball  
Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.7

Model F-600-LC-F-SS-N (LCC body) is available



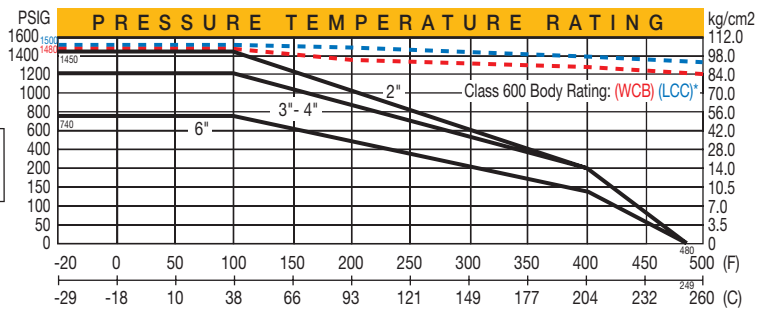
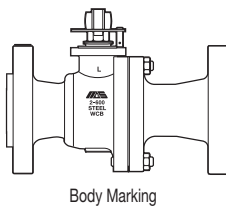
NAME / MATERIAL			
Model Code:	CS	LC	*FS
1.	Lock Plate / Stainless Steel A276 Type 304		
2.	Retaining Ring / Carbon Steel		
3.	Handle / Ductile Iron		
4.	Stopper Plate / Stainless Steel A276 Type 304		
5.	Lock Washer / Stainless Steel A276 Type 304		
6.	Gland Nut / Carbon Steel		
7.	Stopper Pin / Stainless Steel A276 Type 304		
8.	Lock Washer / Stainless Steel A276 Type 304		
9.	Belleville Washer / Stainless Steel 301		
10.	Gland / Stainless Steel A276 Type 304		
11.	Packing / PTFE		(Graphite)
12.	Body Seal / 304 + Graphite		
13.	Thrust Washer / R-PTFE 15% Glass-Filled		
14.	Stem / Stainless Steel A276 Type 316		
15.	Anti-Static Device / Stainless Steel A276 Type 304		
16.	Ball / Stainless Steel A351 - CF8M (316)		
17.	Body / Cast Steel A216 WCB	(LC: A352 LCC)	
18.	Identification Plate / Stainless Steel A276 Type 304		
19.	Cap / Cast Steel A216 WCB	(LC: A352 LCC)	
20.	Seat / R-PTFE 25% Carbon-Filled		
21.	Bolt Nut / A194 Grade 2HM	(LC: A194 Grade 7M)	
22.	Stud Bolt / A193 Grade B7M	(LC: A320 Grade L7M)	

\*Fire Safe Certified to API-607

FIG.	F-600-CS-F-SS-N	CLASS	600	SIZE	2	B16.34
SEAT	C-PTFE-S	BODY	WCB	TRIM	316	NACE
RATING	1450 PSIG AT 100°F/200 PSIG AT 400Y MAX					
	CS - IDENTIFICATION PLATE					

FIG.	F-600-LC-F-SS-N	CLASS	600	SIZE	2	B16.34
SEAT	C-PTFE-S	BODY	LCC	TRIM	316	NACE
RATING	1450 PSIG AT 100°F/200 PSIG AT 400Y MAX					
	LC - IDENTIFICATION PLATE					



size	DIMENSIONS																ISO 5211 flange type	Weight (kg/lb)
	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R		
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		37.97
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		86.35
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		157.83
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		355.56

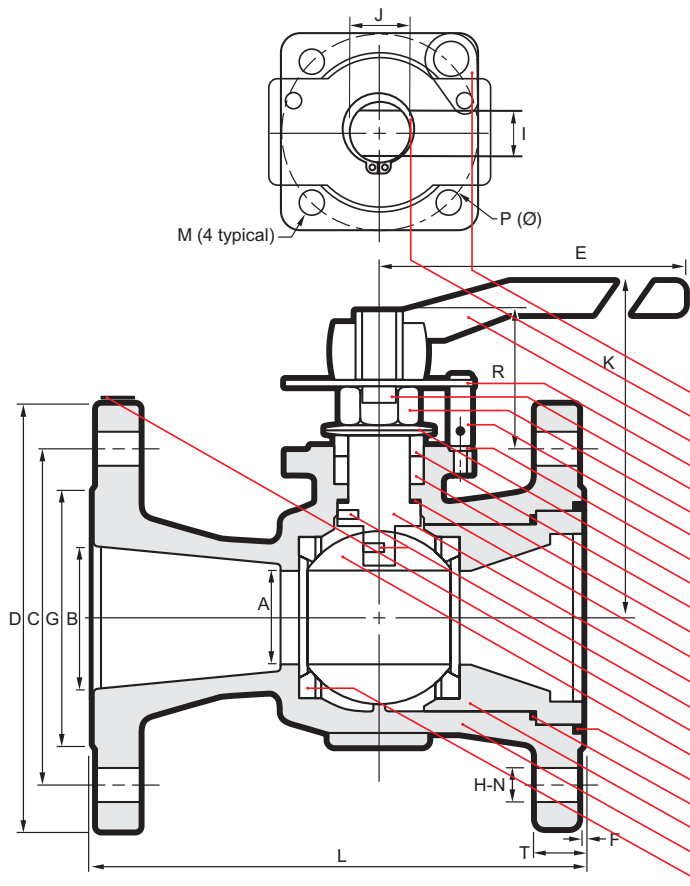
# F Series Flanged Stainless Steel Ball Valves

## F-150-SS-R-N

Reduced port, One piece body  
ANSI B16.34 Class 150  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.8



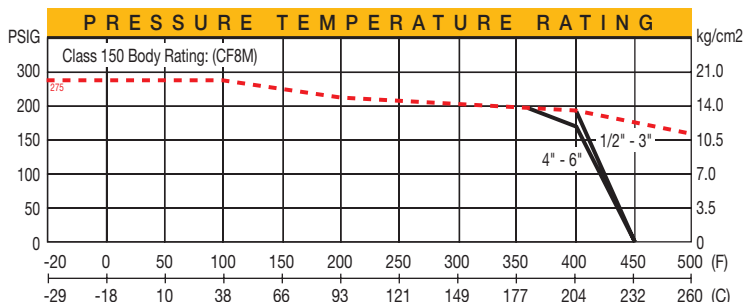
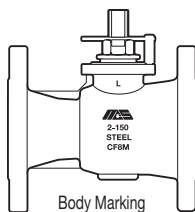
### NAME / MATERIAL

Model Code;	*FS
1. Lock Plate / Stainless Steel A276 Type 304	
2. Retaining Ring / Carbon Steel	
3. Handle / Ductile Iron	
4. Stopper Plate / Stainless Steel A276 Type 304	
5. Lock Washer / Stainless Steel A276 Type 304	
6. Gland Nut / Stainless Steel A276 Type 304	
7. Stopper Pin / Stainless Steel A276 Type 304	
8. Lock Washer / Stainless Steel A276 Type 304	
9. Belleville Washer / Stainless Steel 301	
10. Gland / Stainless Steel A276 Type 304	
11. Packing / PTFE	(Graphite)
12. Thrust Washer / R-PTFE 15% Glass-Filled	
13. Stem / Stainless Steel A276 Type 316	
14. Anti-Static Device / Stainless Steel A276 Type 304	
15. Identification Plate / Stainless Steel A276 Type 304	
16. Ball / Stainless Steel A351 - CF8M (316)	
17. N/A	(Body Seal / Graphite)
18. Body Seal / PTFE	
19. Body Insert / Stainless Steel A351 - CF8M (316)	
20. Body / Stainless Steel A351 - CF8M (316)	
21. Seat / PTFE (TFM-1600)	

\*Fire Safe Certified to API-607

FIG.	F-150-SS-R-N	CLASS	150	SIZE	2	B16.34
SEAT	PTFE	BODY	CF8M	TRIM	316	NACE
RATING	275 PSIG AT 100°F/195 PSIG AT 400°F MAX					
SS - IDENTIFICATION PLATE						

FIG.	F-150-SS-R-FS-N	CLASS	150	SIZE	2	B16.34
SEAT	PTFE	BODY	CF8M	TRIM	316	NACE
RATING	275 PSIG AT 100°F/195 PSIG AT 400°F MAX					
SS-FS - IDENTIFICATION PLATE						

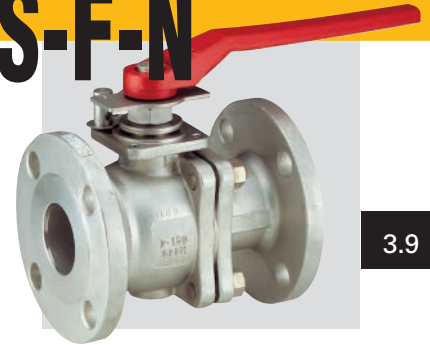


size	D		I		M		E		N		S		I		O		N		S		Weight (kg/lb)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R	ISO 5211 flange type			
2"	38	50	120.5	152	230	1.6	92	19	14	20	125	178	5/16 UNC	4	70	15.9	49	F07	8.00		
	1.50	1.97	4.75	5.98	9.06	0.06	3.62	0.75	0.55	0.79	4.92	7.00			2.76	0.63	1.93		17.60		
3"	58	76	152.5	190	400	1.6	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		

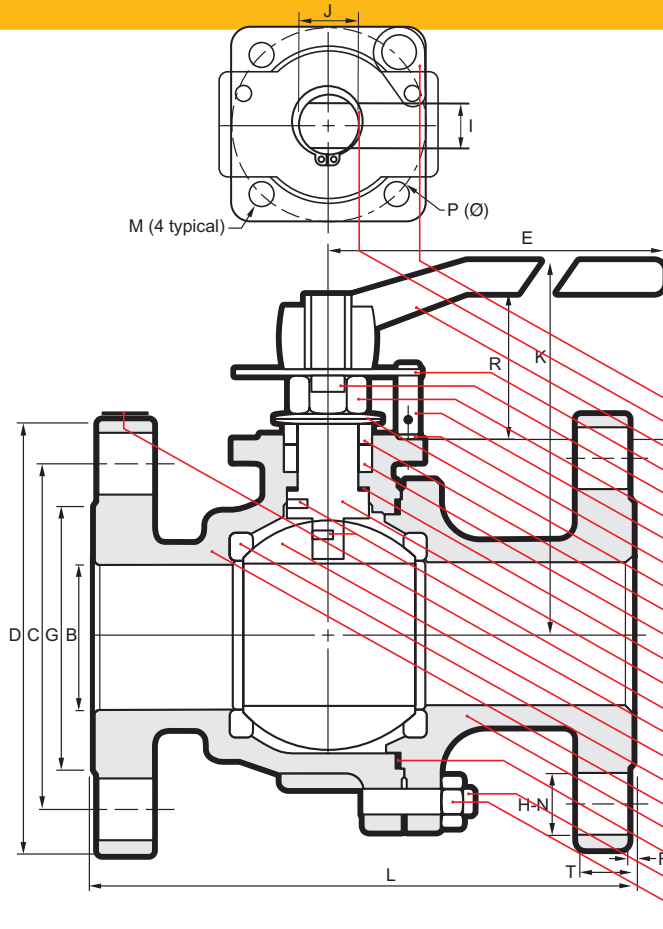
# F Series Flanged Stainless Steel Ball Valves

## F-150-SS-F-N

Full port, Two piece body  
ANSI B16.34 Class 150  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.9

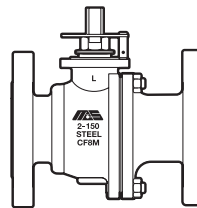


### NAME / MATERIAL

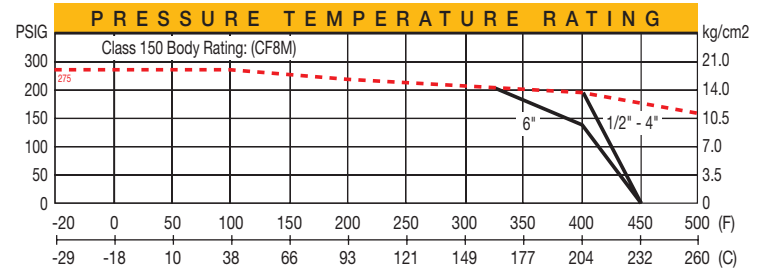
Model Code;	SS	*FS
1. Lock Plate /	Stainless Steel A276 Type 304	
2. Retaining Ring /	Carbon Steel	
3. Handle /	Ductile Iron	
4. Stopper Plate /	Stainless Steel A276 Type 304	
5. Lock Washer /	Stainless Steel A276 Type 304	
6. Gland Nut /	Stainless Steel A276 Type 304	
7. Stopper Pin /	Stainless Steel A276 Type 304	
8. Lock Washer /	Stainless Steel A276 Type 304	
9. Belleville Washer /	Stainless Steel 301	
10. Gland /	Stainless Steel A276 Type 304	
11. Packing /	PTFE	(Graphite)
12. Thrust Washer /	R-PTFE 15% Glass-Filled	
13. Stem /	Stainless Steel A276 Type 316	
14. Anti-Static Device /	Stainless Steel A276 Type 304	
15. Identification Plate /	Stainless Steel A276 Type 304	
16. Ball /	Stainless Steel A351 - CF8M (316)	
17. Seat /	PTFE (TFM-1600)	
18. Body /	Stainless Steel A351 - CF8M (316)	
19. Cap /	Stainless Steel A351 - CF8M (316)	
20. Body Seal /	PTFE	(Graphite)
21. Bolt Nut /	A194 Grade 8MA	
22. Stud Bolt /	A193 Grade B8M	

\*Fire Safe Certified to API-607

FIG.	F-150-SS-F-N	CLASS	150	SIZE	2	B16.34
SEAT	PTFE	BODY	CF8M	TRIM	316	NACE
RATING	275 PSIG AT 100°F/195 PSIG AT 400YMAX					
SS - IDENTIFICATION PLATE						



Body Marking



	D	I	M	E	N	S	I	O	N	S								
size (mm/in)	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R	ISO 5211 flange	kg/lb
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		3.60
3/4	19	70.0	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		4.40
1"	24	79.0	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		6.93
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	1.93		13.77
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		20.46
2 1/2	65	139.7	178	400	1.6	104.6	19	17	25	170.5	190.5	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		37.00
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		48.40
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		81.40
6"	150	241.5	279	1000	1.6	216	22	27	40	289.5	394	5/8" UNC	8	140	25.4	90	F14	85.3
	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		187.66

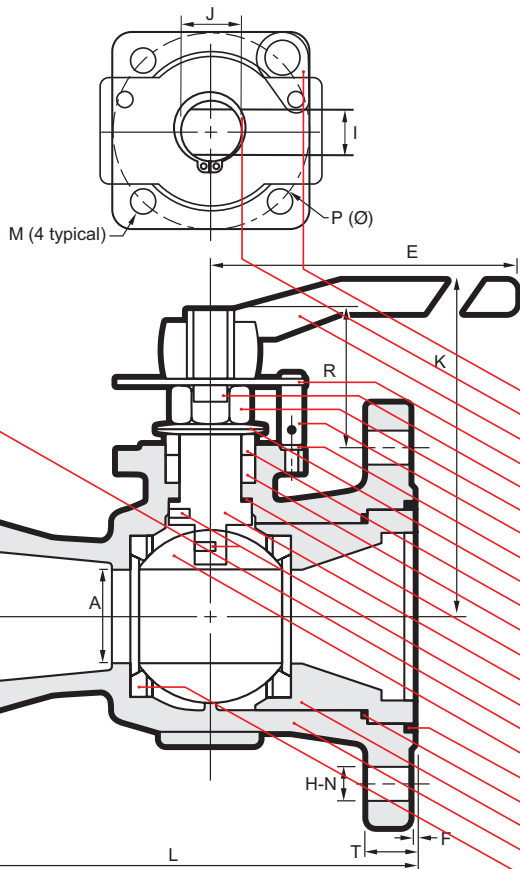
# F Series Flanged Stainless Steel Ball Valves

## F-300-SS-R-N

Reduced port, One piece body  
ANSI B16.34 Class 300  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.10



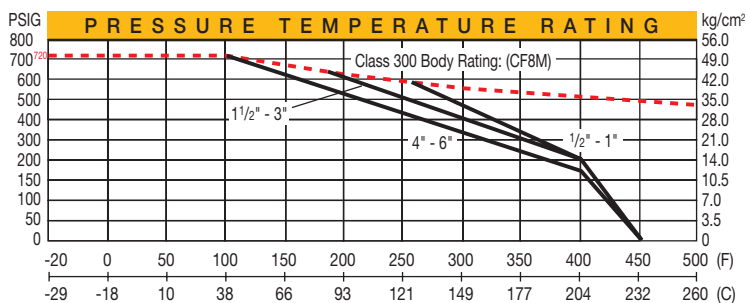
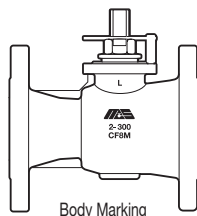
### NAME / MATERIAL

Model Code;	*FS
1. Lock Plate / Stainless Steel A276 Type 304	
2. Retaining Ring / Carbon Steel	
3. Handle / Ductile Iron	
4. Stopper Plate / Stainless Steel A276 Type 304	
5. Lock Washer / Stainless Steel A276 Type 304	
6. Gland Nut / Stainless Steel A276 Type 304	
7. Stopper Pin / Stainless Steel A276 Type 304	
8. Lock Washer / Stainless Steel A276 Type 304	
9. Belleville Washer / Stainless Steel 301	
10. Gland / Stainless Steel A276 Type 304	
11. Packing / PTFE	(Graphite)
12. Thrust Washer / R-PTFE 15% Glass-Filled	
13. Stem / Stainless Steel A276 Type 316	
14. Anti-Static Device / Stainless Steel A276 Type 304	
15. Identification Plate / Stainless Steel A276 Type 304	
16. Ball / Stainless Steel A351 - CF8M (316)	
17. N/A	(Body Seal / Graphite)
18. Body Seal / PTFE	
19. Body Insert / Stainless Steel A351 - CF8M (316)	
20. Body / Stainless Steel A351 - CF8M (316)	
21. Seat / PTFE (TFM-1600)	

\*Fire Safe Certified to API-607

FIG.	F-300-SS-R-N	CLASS	300	SIZE	2	B16.34
SEAT	PTFE	BODY	CF8M	TRIM	316	NACE
RATING	720 PSIG AT 100°F/195 PSIG AT 400°F MAX					
SS - IDENTIFICATION PLATE						

FIG.	F-300-SS-R-FS-N	CLASS	300	SIZE	2	B16.34
SEAT	PTFE	BODY	CF8M	TRIM	316	NACE
RATING	720 PSIG AT 100°F/195 PSIG AT 400°F MAX					
SS-FS - IDENTIFICATION PLATE						

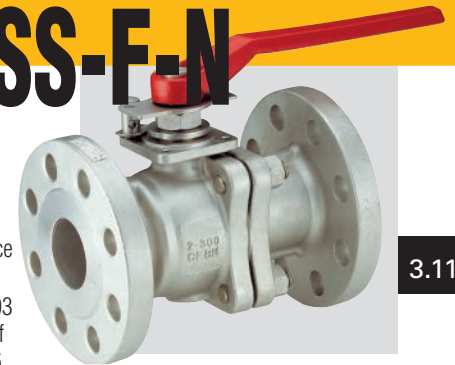


size	D		I		M		E		N		S		I		O		N		ISO 5211 flange type	Weight (kg/lb)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R			
2"	38	50	127	165	230	1.6	92	19	14	20	125	216	5/16 UNC	8	70	22.3	49	F07	11.19	
	1.50	1.97	5.00	6.50	9.06	0.06	3.62	0.75	0.55	0.79	4.92	8.50			2.76	0.88	1.93			24.62
3"	58	76	168	210	400	1.6	127	22	17	25	168	283	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	11.14			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

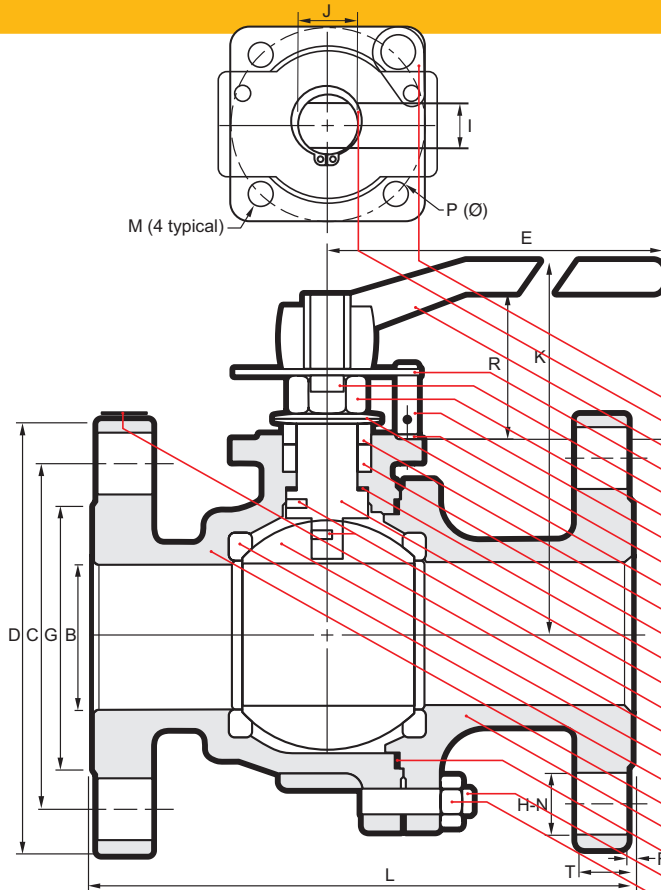
# F Series Flanged Stainless Steel Ball Valves

## F-300-SS-F-N

Full port, Two piece body  
ANSI B16.34 Class 300  
Blowout-proof stem  
ISO 5211 Mounting pad  
Floating Ball, Anti-static device  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.11

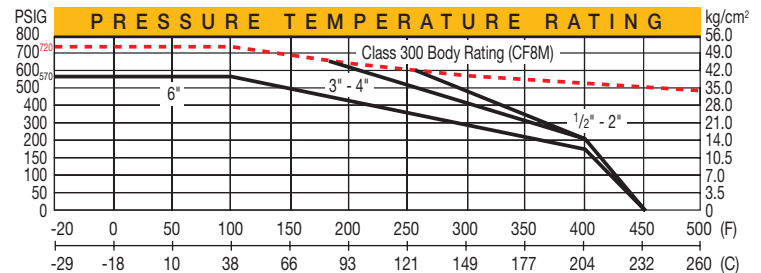
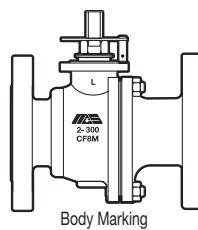


### NAME / MATERIAL

Model Code:	SS	*FS
1.	Lock Plate / Stainless Steel A276 Type 304	
2.	Retaining Ring / Carbon Steel	
3.	Handle / Ductile Iron	
4.	Stopper Plate / Stainless Steel A276 Type 304	
5.	Lock Washer / Stainless Steel A276 Type 304	
6.	Gland Nut / Stainless Steel A276 Type 304	
7.	Stopper Pin / Stainless Steel A276 Type 304	
8.	Lock Washer / Stainless Steel A276 Type 304	
9.	Belleville Washer / Stainless Steel 301	
10.	Gland / Stainless Steel A276 Type 304	
11.	Packing / PTFE	(Graphite)
12.	Thrust Washer / R-PTFE 15% Glass-Filled	
13.	Stem / Stainless Steel A276 Type 316	
14.	Anti-Static Device / Stainless Steel A276 Type 304	
15.	Identification Plate / Stainless Steel A276 Type 304	
16.	Ball / Stainless Steel A351 - CF8M (316)	
17.	Seat / PTFE (TFM-1600)	
18.	Body / Stainless Steel A351 - CF8M (316)	
19.	Cap / Stainless Steel A351 - CF8M (316)	
20.	Body Seal / PTFE	(Graphite)
21.	Bolt Nut / A194 Grade 8MA	
22.	Stud Bolt / A193 Grade B8M	

\*Fire Safe Certified to API-607

FIG.	F-300-SS-F-N	CLASS	300	SIZE	2	B16.34
SEAT	PTFE	BODY	CF8M	TRIM	316	NACE
RATING	720 PSIG AT 100°F/195 PSIG AT 400°F MAX					
	SS - IDENTIFICATION PLATE					



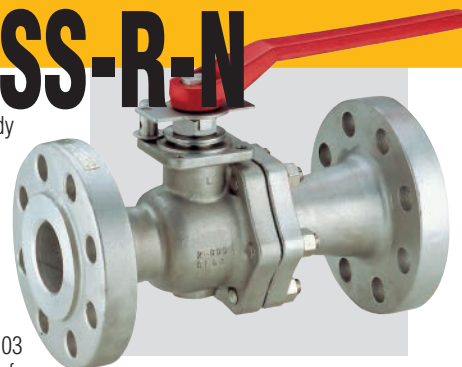
size (mm/in)	D	B	C	I	D	E	M	F	G	H	I	N	J	S	L	M	N	P	R	T	ISO 5211 flange	kg/lb
1/2	15	66.5	95	130	1.6	35	16	8	11	83	140	1/4" UNC	4	36	14.2	27	F03	2.20				
	0.59	2.62	3.75	5.12	0.06	1.38	0.62	0.31	0.43	3.27	5.50	1.42	0.56	1.06	F03	4.84						
3/4	19	82.5	117	130	1.6	43	19	8	11	86	152.5	1/4" UNC	4	36	15.8	27	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	1.42	0.62	1.06	F03	7.23						
1"	24	89.0	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	1.97	0.69	1.40	F05	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	2.76	0.81	1.93	F07	20.10						
2"	50	127.0	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	2.76	0.88	1.93	F07	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	4.02	1.00	2.40	F10	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	4.02	1.12	2.40	F10	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	4.92	1.25	2.87	F12	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	5.51	1.44	3.54	F14	236.06						



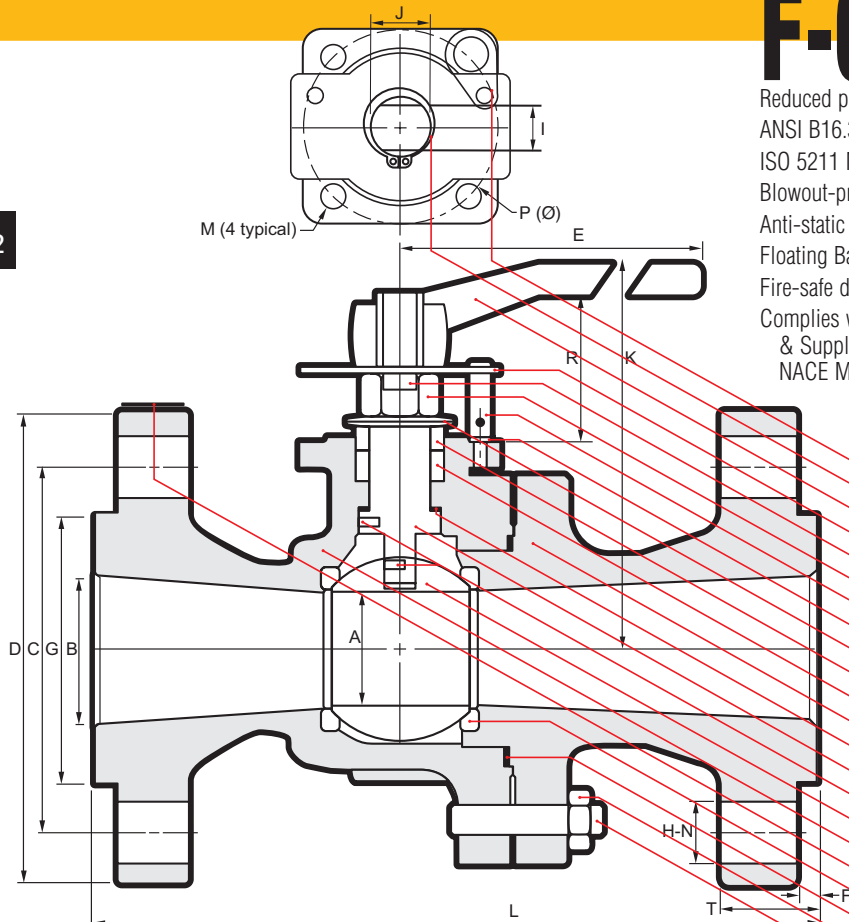
# F Series Flanged Stainless Steel Ball Valves

## F-600-SS-R-N

Reduced port, Two piece body  
ANSI B16.34 Class 600  
ISO 5211 Mounting pad  
Blowout-proof stem  
Anti-static device  
Floating Ball  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



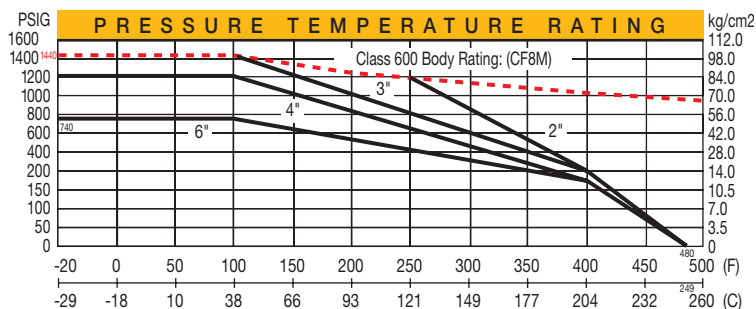
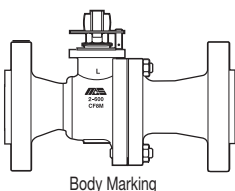
3.12



### NAME / MATERIAL

Model Code:	SS	*FS
1. Lock Plate /	Stainless Steel A276 Type 304	
2. Retaining Ring /	Carbon Steel	
3. Handle /	Ductile Iron	
4. Stopper Plate /	Stainless Steel A276 Type 304	
5. Lock Washer /	Stainless Steel A276 Type 304	
6. Gland Nut /	Stainless Steel A276 Type 304	
7. Stopper Pin /	Stainless Steel A276 Type 304	
8. Lock Washer /	Stainless Steel A276 Type 304	
9. Belleville Washer /	Stainless Steel 301	
10. Gland /	Stainless Steel A276 Type 304	
11. Packing /	PTFE (Graphite)	
12. Cap /	Stainless Steel A351 - CF8M (316)	
13. Thrust Washer /	R-PTFE 15% Glass-Filled	
14. Stem /	Stainless Steel A276 Type 316	
15. Anti-Static Device /	Stainless Steel A276 Type 304	
16. Ball /	Stainless Steel A351 - CF8M (316)	
17. Body /	Stainless Steel A351 - CF8M (316)	
18. Identification Plate /	Stainless Steel A276 Type 304	
19. Seat /	R-PTFE 25% Carbon-Filled	
20. Body Seal /	304 + Graphite	
21. Bolt Nut /	A194 Grade 8MA	
22. Stud Bolt /	A193 Grade B8M	

FIG.	F-600-SS-R-N	CLASS	600	SIZE	2	B16.34
SEAT	C-PTFE	BODY	CF8M	TRIM	316	NACE
RATING	1440 PSIG AT 100°F/195 PSIG AT 400°F MAX					
	SS - IDENTIFICATION PLATE					



size	D		I		M		E		N		S		I		O		N		ISO 5211 flange type	Weight (kg/lb)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R			
2"	38	50	127	165	230	6.35	92	0.75	0.55	0.79	5.69	11.50	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	5/16 UNC	8	2.76	1.25	1.93	F07	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	3/8 UNC	8	2.76	1.5	2.32	F07	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	3/8 UNC	8	2.76	1.75	2.32	F07	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	1/2 UNC	12	4.92	2.13	2.87	F12	290.03	

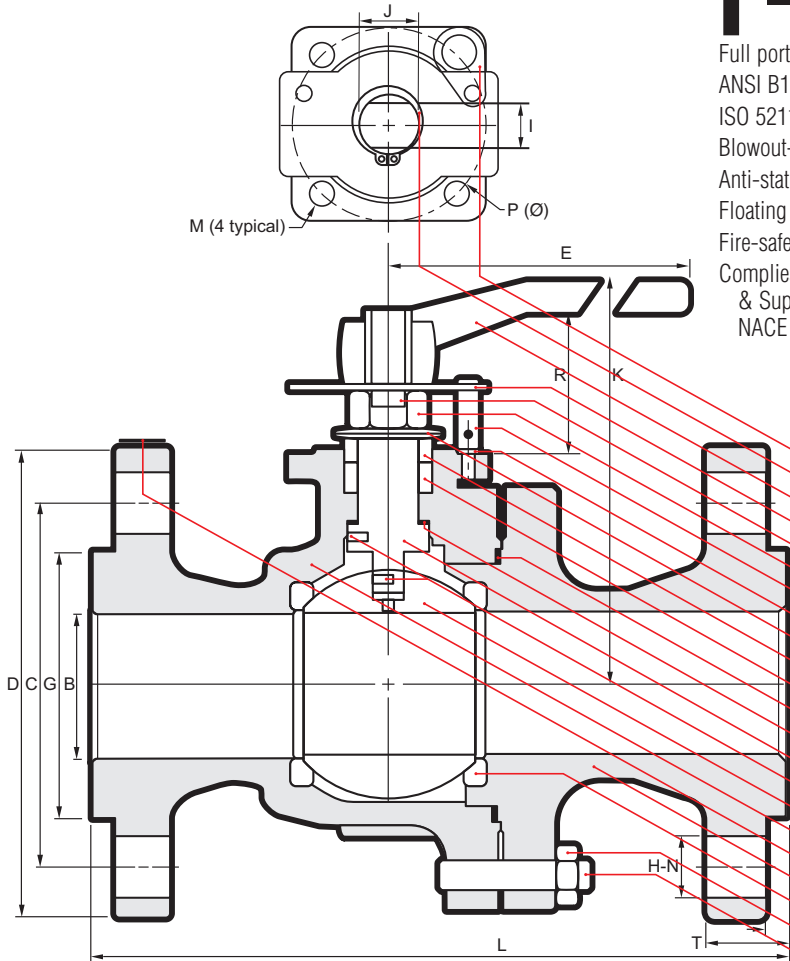
# F Series Flanged Stainless Steel Ball Valves

## F-600-SS-F-N

Full port, Two piece body  
ANSI B16.34 Class 600  
ISO 5211 Mounting pad  
Blowout-proof stem  
Anti-static device  
Floating Ball  
Fire-safe design  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156



3.13

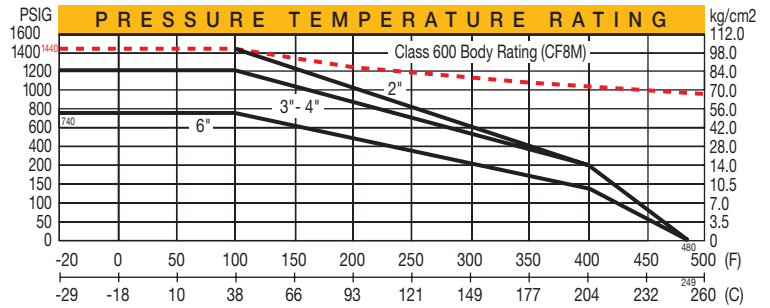
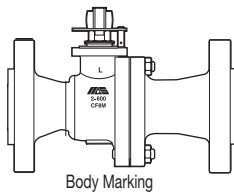


### NAME / MATERIAL

Model Code;	SS	*FS
1. Lock Plate /	Stainless Steel A276 Type 304	
2. Retaining Ring /	Carbon Steel	
3. Handle /	Ductile Iron	
4. Stopper Plate /	Stainless Steel A276 Type 304	
5. Lock Washer /	Stainless Steel A276 Type 304	
6. Gland Nut /	Stainless Steel A276 Type 304	
7. Stopper Pin /	Stainless Steel A276 Type 304	
8. Lock Washer /	Stainless Steel A276 Type 304	
9. Belleville Washer /	Stainless Steel 301	
10. Gland /	Stainless Steel A276 Type 304	
11. Packing /	PTFE	(Graphite)
12. Body Seal /	304 + Graphite	
13. Thrust Washer /	R-PTFE 15% Glass-Filled	
14. Stem /	Stainless Steel 316 - A276 Type 316	
15. Anti-Static Device /	Stainless Steel A276 Type 304	
16. Ball /	Stainless Steel A351 - CF8M (316)	
17. Body /	Stainless Steel A351 - CF8M (316)	
18. Identification Plate /	Stainless Steel A276 Type 304	
19. Cap /	Stainless Steel A351 - CF8M (316)	
20. Seat /	R-PTFE 25% Carbon-Filled	
21. Bolt Nut /	A194 Grade B8M	
22. Stud Bolt /	A193 Grade B8M	

\*Fire Safe Certified to API-607

FIG.	F-600-SS-F-N	CLASS	600	SIZE	2	B16.34
SEAT	C-PTFE-S	BODY	CF8M	TRIM	316	NACE
RATING	1440 PSIG AT 100°F/195 PSIG AT 400° MAX					
SS-FS - IDENTIFICATION PLATE						

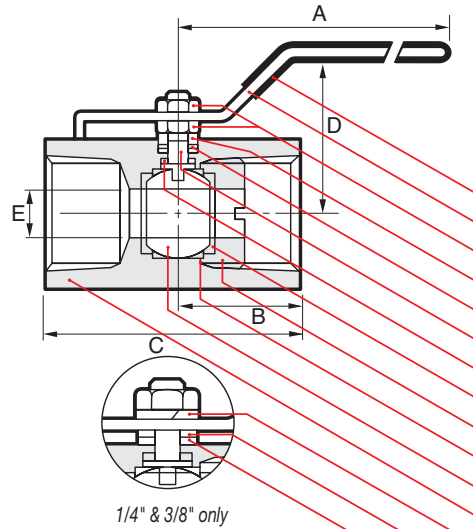
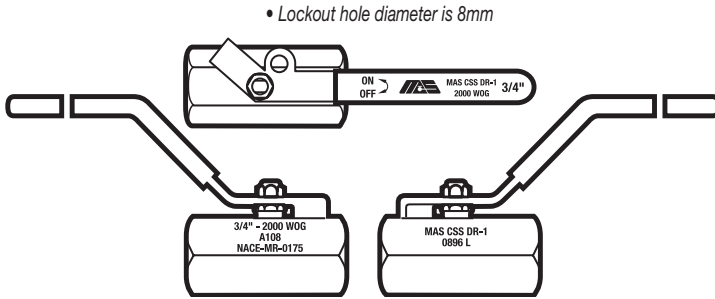


size	D		I		M		E		N		S		I		O		N		ISO 5211 flange type	Weight (kg/lb)
	B	C	D	E	F	G	H	I	J	K	L	M	N	P	T	R				
2"	50	127	165	230	6.35	92	19	14	20	158	292	5/16 UNC	8	70	31.8	49	F07	17.26		
	1.97	5.00	6.50	9.06	0.25	3.62	0.75	0.55	0.79	6.22	11.50			2.76	1.25	1.93		37.97		
3"	76	168	210	400	6.35	127	22.3	17	25	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		86.35		
4"	100	216	273	460	6.35	157	25.4	34	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		157.83		
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		355.56		



# C Series Carbon Steel Bar Stock Ball Valves

## CSSDR-1



• Oval handles optionally available

Reduced port  
NPT ends to ANSI B1.20.1  
One piece body  
Blowout-proof stem  
2000 p.s.i., W.O.G.  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156

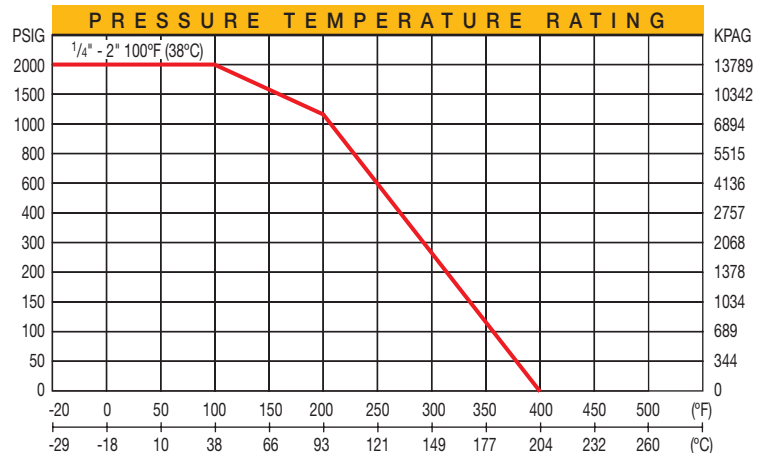


4.1

### NAME / MATERIAL

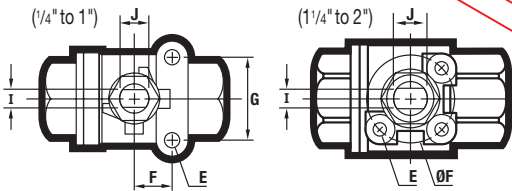
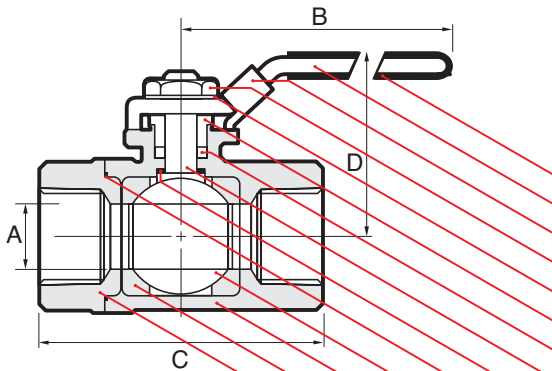
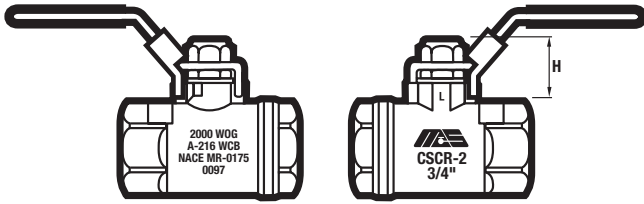
1. Handle Grip / Vinyl
2. Handle / Carbon Steel Plated
3. Handle Nut / Carbon Steel Plated
4. Packing Bushing / Stainless Steel A276 Type 304
5. Packing / PTFE
6. Stem / Stainless Steel A276 Type 316
7. Thrust Washer / R-PTFE 15% Glass-Filled
8. Seat / R-PTFE 15% Glass-Filled
9. Seat Retainer / Carbon Steel A108 GR 1020
10. Gasket / PTFE
11. Ball / Stainless Steel A351 CF8M (316)
12. Body / Carbon Steel A108 GR.1020 (A105 on 2")
13. Stem Washer / Stainless Steel A276 Type 304
14. Belleville Washer / Stainless Steel 301
15. Spring Washer / Stainless Steel A276 Type 304

D I M E N S I O N S								
size	8	10	15	20	25	32	40	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
A	71.0	85.5	109.47	112.5	112.5	147.50	147.50	154.00
mm/in	2.8	3.37	4.31	4.43	4.43	5.81	5.81	6.06
B	23.90	26.05	32.95	37.25	44.50	48.60	52.55	57.70
mm/in	0.94	1.03	1.30	1.47	1.75	1.91	2.07	2.27
C	43.10	47.35	61.72	69.85	85.73	93.67	101.60	114.30
mm/in	1.70	1.86	2.43	2.75	3.38	3.69	4.00	4.50
D	30.00	33.35	54.41	55.00	61.50	73.50	75.00	85.50
mm/in	1.80	1.31	2.14	2.17	2.62	2.89	2.95	3.37
E	4.60	6.80	9.20	12.50	16.00	20.00	24.70	32.00
mm/in	0.18	0.27	0.36	0.49	0.63	0.79	0.97	1.26
CV	1.5	3.5	5.7	10	16	25	40	62
weights	0.100	0.153	0.315	0.460	0.690	1.439	1.455	2.700
kg/lb	0.220	0.337	0.693	1.012	1.518	3.166	3.201	5.940



# C Series Carbon Steel Ball Valves

4.2



## CSCR-2

- Large port
- 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 with NACE MR-0103 & Supplier Requirements of NACE MR-0175/ISO 15156
- \*Optional; Model LSSR-2 (LCC body/cap) for -50°F/-46°C service is available**

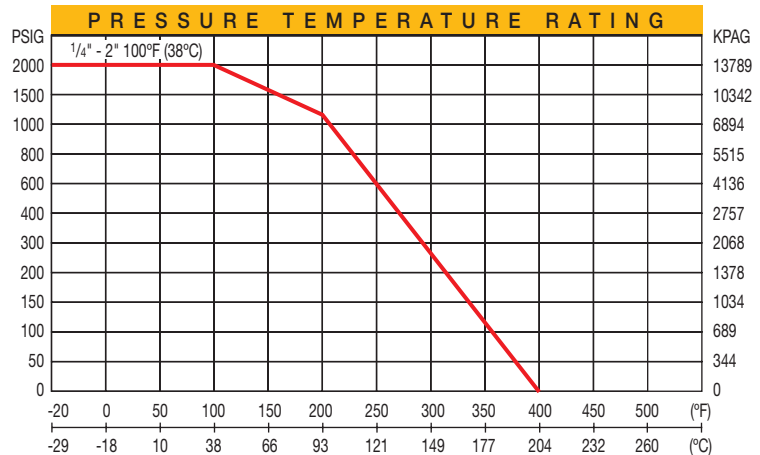


### NAME / MATERIAL

CSCR-2	*LSSR-2
1. Handle Grip / Vinyl	
2. Handle / Stainless Steel A276 Type 304	
3. Locking Device / Stainless Steel A276 Type 304	
4. Handle Nut / Stainless Steel A276 Type 304	
5. Stem Washer / Stainless Steel A276 Type 304	
6. Gland Nut / Carbon Steel A108	
7. Packing / PTFE	
8. Stem / Stainless Steel A276 Type 316	
9. Thrust Washer / R-PTFE 15% Glass-Filled	
10. Gasket / PTFE	
11. Ball / Stainless Steel A351-CF8M (316)	
12. Body / Cast Steel A216 WCB	*(A352 LCC)
13. Seat / R-PTFE 15% Glass-Filled	
14. Cap / Cast Steel A216 WCB	*(A352 LCC)

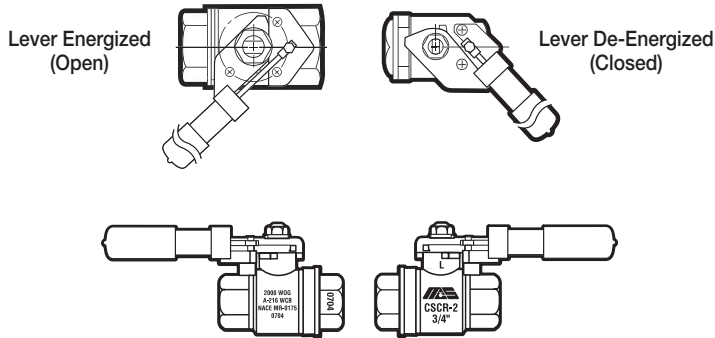
DIMENSIONS								
size	8	10	15	20	25	32	40	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
A	11.0	12.5	12.5	17.5	20.6	25.0	31.8	38.0
mm/in	0.433	0.492	0.492	0.689	0.866	0.964	1.252	1.496
B	103.5	103.5	103.5	125.0	125.0	193.0	193.0	193.0
mm/in	4.075	4.075	4.075	4.921	4.921	7.598	7.598	7.598
C	58.5	58.5	61.5	79.5	88.5	102	111	137
mm/in	2.303	2.303	2.421	3.130	3.484	4.016	4.370	5.394
D	54.0	54.0	57.0	65.5	69.5	88.5	94.5	107.0
mm/in	2.130	2.130	2.240	2.580	2.740	3.484	3.720	4.213
E	M6	M6	M6	M6	M6	M8	M8	M8
mm/in	M6	M6	M6	M6	M6	M8	M8	M8
F	12.7	12.7	12.7	22.1	22.1	50.0	50.0	50.0
mm/in	0.5	0.5	0.5	0.87	0.87	1.968	1.968	1.968
ISO Flange						F05	F05	F05
G	28.45	28.45	28.45	34.8	34.8			
mm/in	1.12	1.12	1.12	1.37	1.37			
H	24.5	24.5	22.50	27.50	27.50	24.50	24.50	26.00
mm/in	0.965	0.965	0.886	1.083	1.083	0.965	0.965	1.024
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00
mm/in	0.217	0.217	0.217	0.256	0.256	0.315	0.315	0.394
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.60
mm/in	0.303	0.303	0.303	0.367	0.367	0.462	0.492	0.614
CV	8	10	15	30	40	48	80	108
weights	0.347	0.331	0.314	0.602	0.781	1.477	1.987	2.633
kg/lb	0.763	0.728	0.691	1.324	1.718	3.249	4.371	5.793

• 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.



# C Series Carbon Steel, Deadman Spring Handle Ball Valves

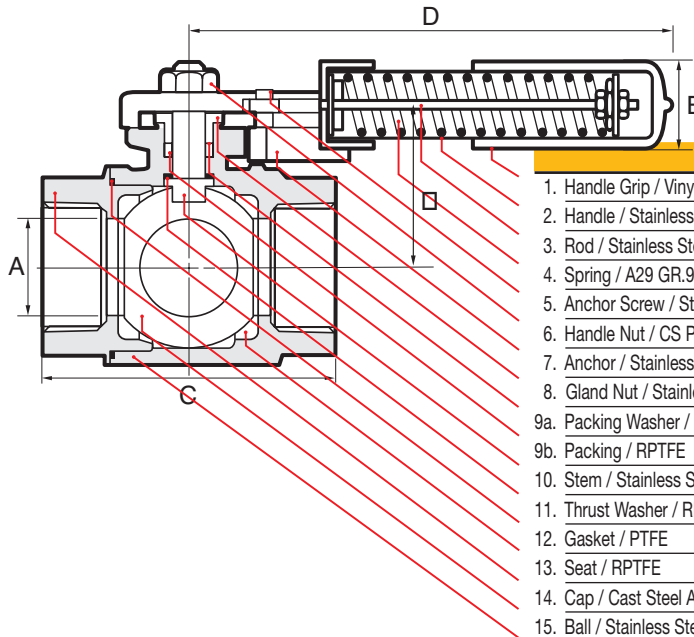
## CSCR-2-DM



Large port  
NPT ends to ANSI B1.20.1  
Two piece body  
Blowout-proof stem  
Adjustable packing gland  
Deadman handle  
Actuator mounting pad  
Complies with NACE  
MR-0103 & Supplier  
Requirements of NACE  
MR-0175/ISO 15156  
2000 P.S.I. W.O.G.



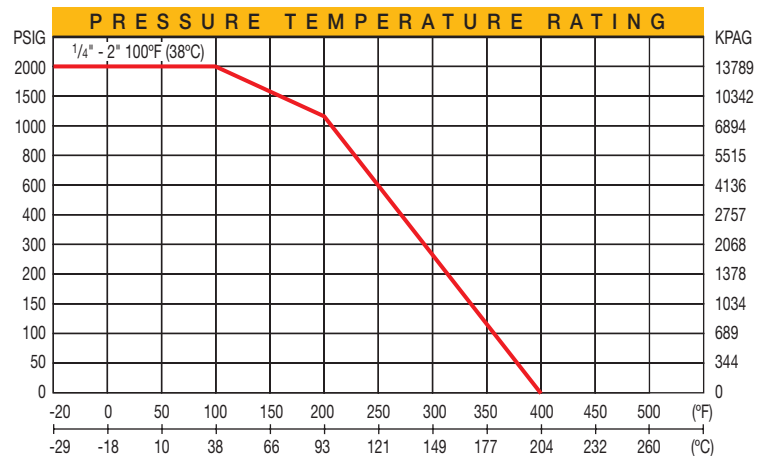
4.3



### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Rod / Stainless Steel A276 Type 304
4. Spring / A29 GR.9260
5. Anchor Screw / Stainless Steel A276 Type 304
6. Handle Nut / CS Plated
7. Anchor / Stainless Steel A351 CF8M (316)
8. Gland Nut / Stainless Steel A276 Type 304
- 9a. Packing Washer / PEEK
- 9b. Packing / RPTFE
10. Stem / Stainless Steel A276 Type 316
11. Thrust Washer / RPTFE
12. Gasket / PTFE
13. Seat / RPTFE
14. Cap / Cast Steel A216 WCB
15. Ball / Stainless Steel A351 CF8M (316)
16. Body / Cast Steel A216 WCB

D I M E N S I O N S									
size	8	10	15	20	25	32	40	50	
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
A	11.0	12.5	12.5	17.5	20.6	25.0	31.8	38.0	
mm/in	0.433	0.492	0.492	0.689	0.866	0.964	1.252	1.496	
B	29.3	29.3	29.3	35.9	38.4	48.6	51.4	59.5	
mm/in	1.154	1.154	1.154	1.415	1.514	1.913	2.023	2.341	
C	58.5	58.5	61.5	79.5	87.5	102	111	136	
mm/in	2.303	2.303	2.421	3.130	3.484	4.016	4.370	5.394	
D	180.5	180.5	180.5	232.5	232.5	290.0	290.0	313.0	
mm/in	7.106	7.106	7.106	9.154	9.154	11.417	11.417	12.323	
E	22.0	22.0	22.0	22.0	22.0	22.0	22.0	32.0	
mm/in	0.866	0.866	0.866	0.866	0.866	0.866	0.866	1.280	
CV	8	10	15	30	40	48	80	108	
weights	0.690	0.672	0.671	0.920	1.094	1.705	2.354	2.974	
kg/lb	1.521	1.481	1.479	2.028	2.411	3.759	5.190	6.556	



# C Series Carbon Steel, 250 Steam Rated Ball Valves

## CSCR-2-250

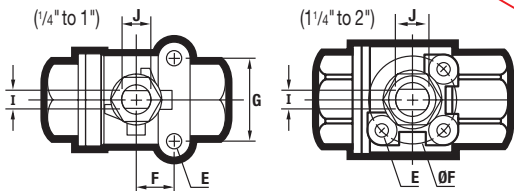
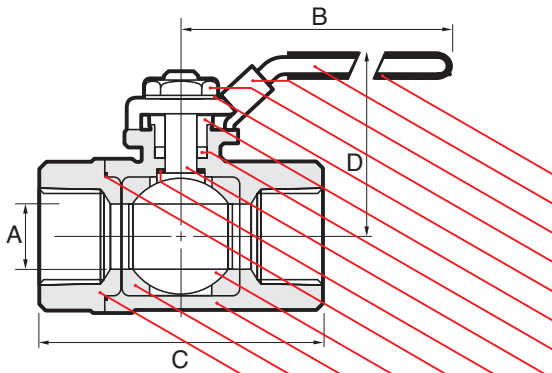
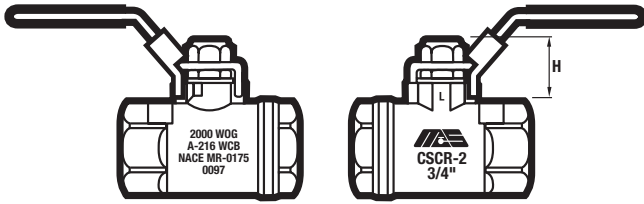


Large port  
NPT threads to ANSI B1.20.1  
Two piece body  
**250 PSIG Steam Trim**  
Blowout-proof stem  
Adjustable packing gland  
Locking lever handle  
Actuator mounting pad  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156  
2000 p.s.i., W.O.G.

### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Locking Device / Stainless Steel A276 Type 304
4. Handle Nut / Stainless Steel A276 Type 304
5. Stem Washer / Stainless Steel A276 Type 304
6. Gland Nut / Carbon Steel A108
7. Packing / R-PTFE (TFM-4215)
8. Stem / Stainless Steel A276 Type 316
9. Thrust Washer / R-PTFE (TFM-4215)
10. Gasket / R-PTFE (TFM-4215)
11. Ball / Stainless Steel A351 CF8M (316)
12. Body / Cast Steel A216 WCB
13. Seat / R-PTFE (TFM-4215)
14. Cap / Cast Steel A216 WCB

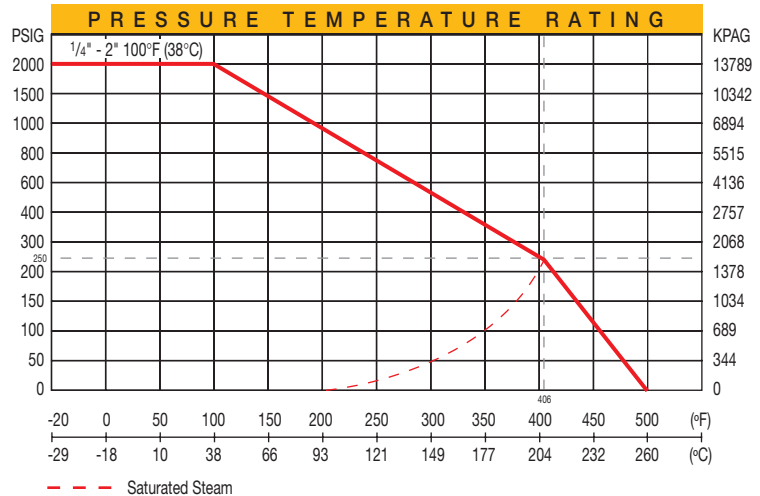
4.4



### D I M E N S I O N S

size	8	10	15	20	25	32	40	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
A	11.0	12.5	12.5	17.5	20.6	25.0	31.8	38.0
mm/in	0.433	0.492	0.492	0.689	0.866	0.964	1.252	1.496
B	103.5	103.5	103.5	125.0	125.0	193.0	193.0	193.0
mm/in	4.075	4.075	4.075	4.921	4.921	7.598	7.598	7.598
C	58.5	58.5	61.5	79.5	88.5	102	111	137
mm/in	2.303	2.303	2.421	3.130	3.484	4.016	4.370	5.394
D	54.0	54.0	57.0	65.5	69.5	88.5	94.5	107.0
mm/in	2.130	2.130	2.240	2.580	2.740	3.484	3.720	4.213
E	M6	M6	M6	M6	M6	M8	M8	M8
mm/in	M6	M6	M6	M6	M6	M8	M8	M8
F	12.7	12.7	12.7	22.1	22.1	50.0	50.0	50.0
mm/in	0.5	0.5	0.5	0.87	0.87	1.968	1.968	1.968
ISO Flange						F05	F05	F05
G	28.45	28.45	28.45	34.8	34.8			
mm/in	1.12	1.12	1.12	1.37	1.37			
H	24.50	24.50	22.50	27.50	27.50	24.50	24.50	26.00
mm/in	0.965	0.965	0.886	1.083	1.083	0.965	0.965	1.024
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00
mm/in	0.217	0.217	0.217	0.256	0.256	0.315	0.315	0.394
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.60
mm/in	0.303	0.303	0.303	0.367	0.367	0.462	0.492	0.614
CV	8	10	15	30	40	48	80	108
weights	0.347	0.331	0.314	0.602	0.781	1.477	1.987	2.633
kg/lb	0.763	0.728	0.691	1.324	1.718	3.249	4.371	5.793

• 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.



# C Series Carbon Steel Sealwelded Ball Valves

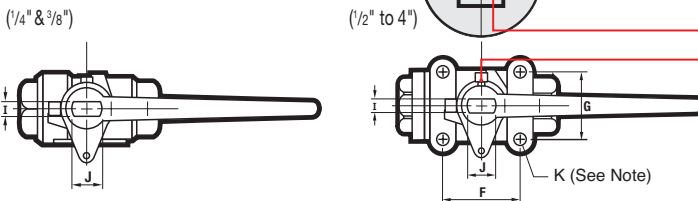
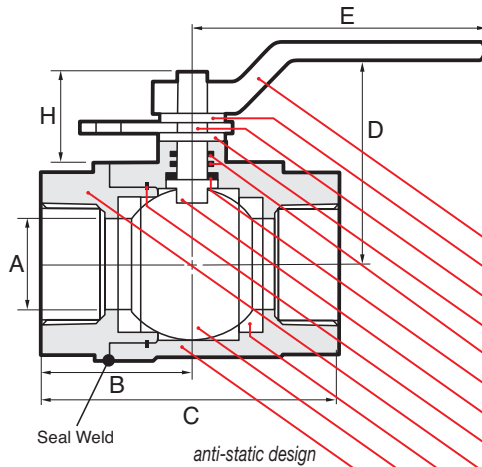
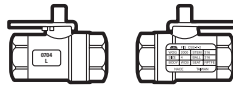
## CSS-F-2/CSS-R-2

FIG CSS-F-2				FIG CSS-F-2			
WOG	3000	STEM	316	WOG	2000	STEM	316
SIZE	1	BALL	316	SIZE	4	BALL	316
BODY	WCB	SEAT	RPTFE	BODY	WCB	SEAT	RPTFE

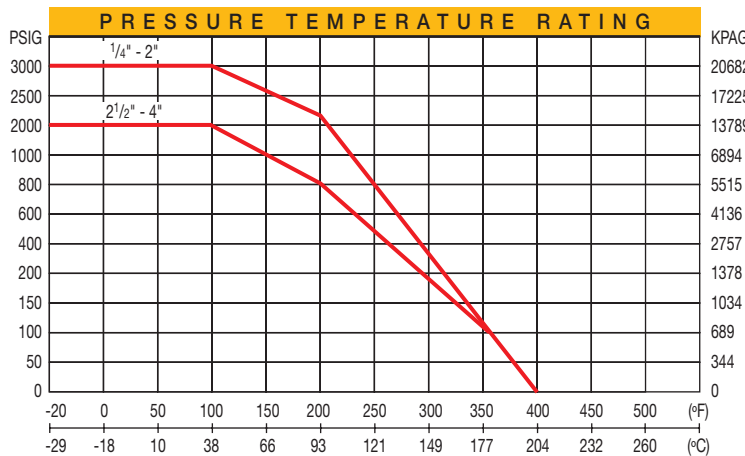
NACE  
SIZE 1/4" - 2"

FIG CSS-F-2				FIG CSS-F-2			
WOG	2000	STEM	316	WOG	2000	STEM	316
SIZE	4	BALL	316	SIZE	4	BALL	316
BODY	WCB	SEAT	RPTFE	BODY	WCB	SEAT	RPTFE

NACE  
SIZE 2-1/2" - 4"



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



- 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 with NACE MR-0103 & Supplier Requirements of NACE MR-0175/ISO 15156

\* Optional 2" CSS-R-2 large port



4.5

### NAME / MATERIAL

- Handle / Ductile Iron A536 Grade 65-45-12
- Retainer Spring / Carbon Steel
- Lockable Stop Plate / Carbon Steel Plated
- Stem Bearing / Nylon
- Packing / Viton O-Rings (2) (3 for 3" & 4" sizes)
- Thrust Washer / R-PTFE 15% Glass-Filled
- Stem / Stainless Steel A276 Type 316
- Gasket / Viton O-Ring (1)
- Cap / Cast Steel A216 WCB
- Seat / R-PTFE 15% Glass-Filled
- Ball / Stainless Steel A351-CF8M (316)
- Body / Cast Steel A216 WCB
- Spring & Pin / Stainless Steel A276 Type 304
- Screw / Carbon Steel A307

### D I M E N S I O N S

size	CSSF-2										*CSSR-2	
	8	10	15	20	25	32	40	50	65	80	100	50
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	2
A	9.50	9.50	12.70	20.00	24.00	31.80	38.10	50.00	65.00	76.00	100.0	38.10
mm/in	0.374	0.374	0.500	0.787	0.945	1.252	1.500	1.969	2.559	2.992	3.937	1.500
B	30.30	30.30	35.00	45.00	48.00	54.10	58.00	64.50	81.90	87.00	106.0	57.00
mm/in	1.193	1.193	1.378	1.772	1.890	2.130	2.283	2.539	3.224	3.425	4.173	2.244
C	62.00	62.00	69.00	85.00	93.00	105.0	116.0	128.0	164.0	175.5	211.0	116.0
mm/in	2.441	2.441	2.717	3.346	3.661	4.134	4.567	5.039	6.457	6.909	8.307	4.567
D	51.50	51.50	54.50	64.30	67.40	75.00	81.00	93.04	114.80	128.15	140.7	86.50
mm/in	2.028	2.028	2.146	2.531	2.654	2.953	3.189	3.677	4.520	5.045	5.539	3.406
E	130.0	130.0	130.0	160.0	160.0	230.0	230.0	231.0	400.0	400.0	460.0	230
mm/in	5.120	5.120	5.120	6.300	6.300	9.060	9.060	9.094	15.750	15.750	18.11	9.060
F			25.40	44.20	44.20	47.20	47.20	47.50	70.00	70.00	88.40	47.10
mm/in			1.000	1.740	1.740	1.858	1.858	1.870	2.750	2.750	3.480	1.854
G			35.00	41.00	44.00	54.00	60.00	74.00	81.00	92.00	125.0	60.00
mm/in			1.378	1.614	1.732	2.126	2.362	2.913	3.189	3.622	4.921	2.362
H			19.00	25.00	23.50	33.50	33.50	34.40	38.50	42.75	56.75	36.30
mm/in			0.748	0.984	0.925	1.319	1.319	1.354	1.516	1.683	2.234	1.429
I	5.90	5.90	5.90	8.00	8.00	12.00	12.00	12.00	14.00	14.00	17.00	12.00
mm/in	0.232	0.232	0.232	0.315	0.315	0.472	0.472	0.472	0.551	0.551	0.669	0.472
J	9.70	9.70	9.70	11.70	11.70	16.90	16.90	16.90	20.90	20.90	28.90	16.90
mm/in	0.382	0.382	0.382	0.461	0.461	0.665	0.665	0.665	0.823	0.823	1.138	0.665
**K			M6	M6	M6	M8	M8	M8	M8	M8	M8	M8
CV	11	11	15	45	65	125	175	380	500	900	1250	108
Weights	0.354	0.346	0.530	0.940	1.350	2.390	2.980	4.380	8.960	10.95	19.80	2.980
kg/lb	0.779	0.761	1.166	2.068	2.970	5.258	6.556	9.656	19.712	24.14	43.65	6.556



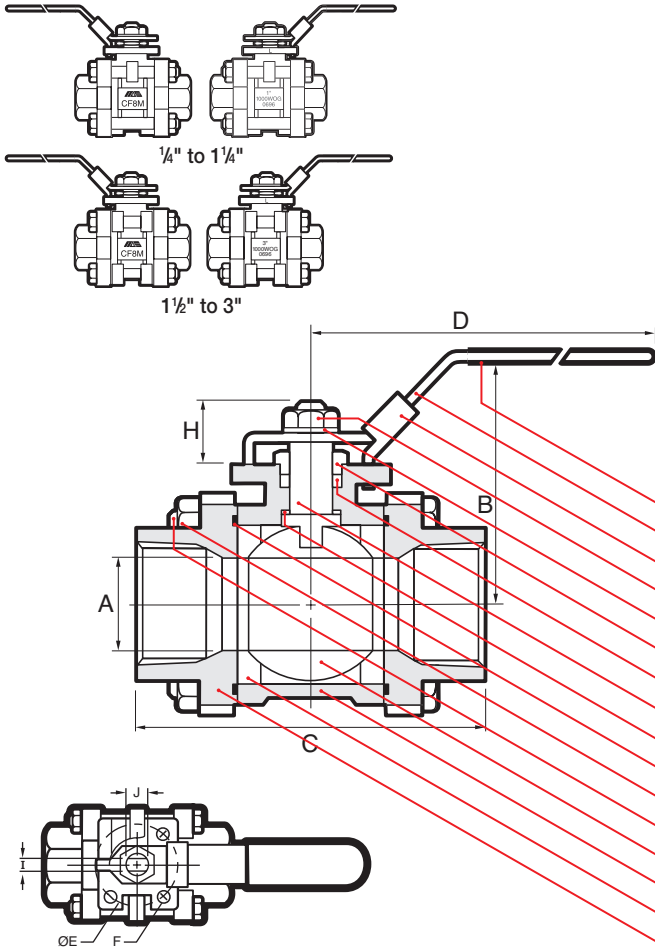
# C Series Carbon Steel 3 Piece Ball Valves

## CSS-F-3N



Full port  
NPT threads to ANSI B1.20.1  
Three piece body  
Blowout-proof stem  
Adjustable packing nut  
Locking lever handle  
ISO 5211 mounting pad  
Floating ball  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156  
2000 PSI, W.O.G. 1/4" to 1"  
1500 PSI, W.O.G. 1 1/4" to 3"

4.6



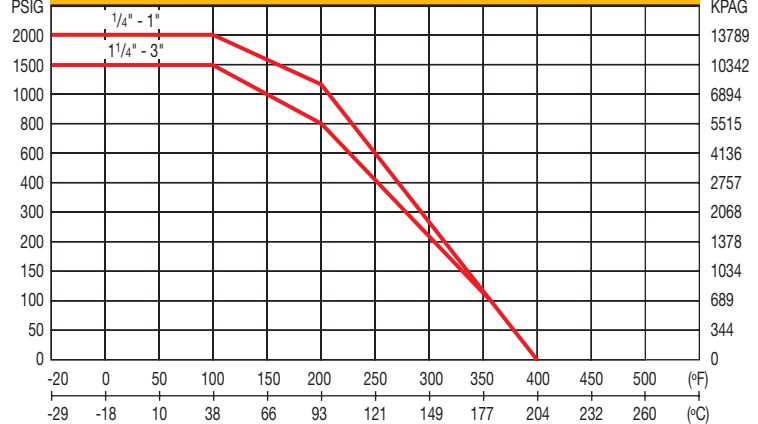
### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Locking Device / Stainless Steel A276 Type 304
4. Handle Nut / Stainless Steel A276 Type 304
5. Stem Washer / Stainless Steel A276 Type 304
6. Gland Nut / Carbon Steel A108
7. Packing / PTFE
8. Stem / Stainless Steel A276 Type 316
9. Thrust Washer / R-PTFE 15% Glass-Filled
10. Gasket / PTFE
11. Hex Nut / Carbon Steel A194 Grade 2HM
12. Bolt / Carbon Steel A193 Grade B7M
13. Ball / Stainless Steel A351-CF8M (316)
14. Body / Cast Steel A216 - WCB
15. Seat / R-PTFE 15% Glass-Filled
16. Cap / Cast Steel A216 - WCB

### D I M E N S I O N S

size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	9.50	9.50	15.00	20.00	25.00	32.00	38.00	50.50	65.00	78.00
mm/in	0.374	0.374	0.591	0.787	0.984	1.260	1.496	1.988	2.559	3.071
B	67.00	67.00	68.50	75.00	79.00	88.50	94.50	107.00	129.50	139.50
mm/in	2.638	2.638	2.697	2.953	3.110	3.484	3.720	4.213	5.098	5.492
C	60.00	60.00	70.00	76.00	92.00	105.00	120.00	138.00	170.50	191.00
mm/in	2.362	2.362	2.756	2.922	3.622	4.134	4.724	5.433	6.713	7.520
D	120.00	120.00	120.00	139.00	139.00	193.00	193.00	193.00	244.00	244.00
mm/in	4.724	4.724	4.724	5.472	5.472	7.598	7.598	7.598	9.606	9.606
E	36.00	36.00	36.00	42.00	42.00	50.00	70.00	70.00	102.00	102.00
mm/in	1.417	1.417	1.417	1.653	1.653	1.968	2.756	2.756	4.016	4.016
F	M6	M6	M6	M6	M6	M8	M8	M8	M8	M8
ISO Flg	F03	F03	F03	F04	F04	F05	F07	F07	F10	F10
H	11.50	12.50	14.50	18.00	18.00	23.50	22.50	25.00	32.50	31.00
mm/in	0.453	0.492	0.571	0.709	0.709	0.925	0.886	0.984	1.280	1.220
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00	12.00	12.00
mm/in	0.217	0.217	0.217	0.256	0.256	0.315	0.315	0.394	0.472	0.472
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.60	18.80	18.80
mm/in	0.303	0.303	0.303	0.367	0.367	0.492	0.492	0.614	0.740	0.740
CV	10	10	26	50	68	120	170	360	510	900
Weights	0.434	0.420	0.620	0.910	1.190	1.930	2.780	4.750	8.630	13.460
kg/lb	0.955	0.924	1.364	2.002	2.618	4.246	6.116	10.450	18.986	29.612

### PRESSURE TEMPERATURE RATING

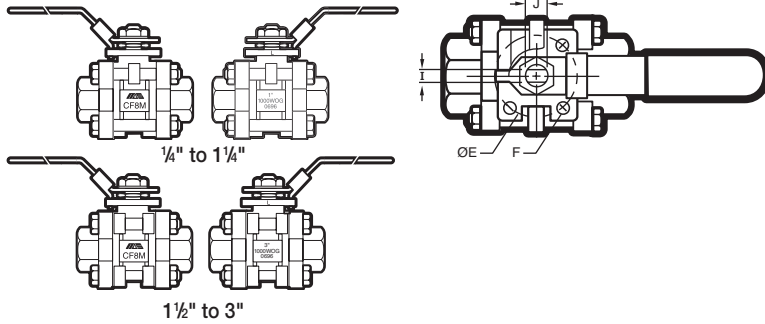


# C Series Carbon Steel 3 Piece Ball Valves

## CSS-F-3N-SW



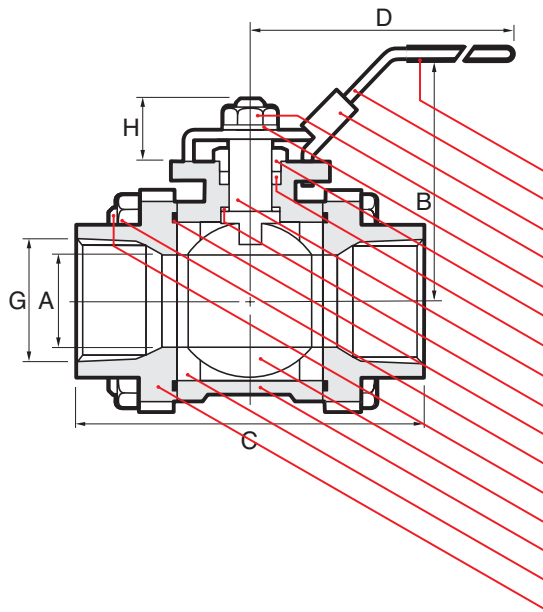
4.7



- Full port
- Socket Weld ends to ANSI B16.11
- Three Piece body
- Blowout-proof stem
- Adjustable packing nut
- Locking lever handle
- ISO 5211 mounting pad
- Complies with NACE MR-0103 & Supplier Requirements of NACE MR-0175/ISO 15156

- Floating ball
- 2000 PSI, W.O.G. 1/4" to 1"
- 1500 PSI, W.O.G. 1 1/4" to 3"

**CSS-F-3N-BW (butt-weld) available on request**

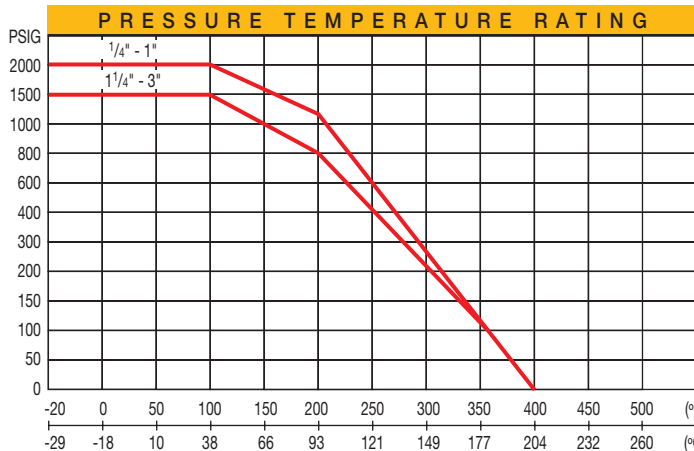


### NAME / MATERIAL

- Handle Grip/ Vinyl
- Handle / Stainless Steel A276 Type 304
- Locking Device / Stainless Steel A276 Type 304
- Handle Nut /Stainless Steel A276 Type 304
- Stem Washer / Stainless Steel A276 Type 304
- Gland Nut / Carbon Steel A108
- Packing / PTFE
- Stem / Stainless Steel A276 Type 316
- Thrust Washer / R-PTFE 15% Glass-Filled
- Gasket / PTFE
- Hex Nut / Carbon Steel A194 Grade 2HM
- Bolt / Carbon Steel A193 Grade B7M
- Ball / Stainless Steel A351 - CF8M (316)
- Body / Cast Steel A216 - WCB
- Seat / R-PTFE 15% Glass-Filled
- Cap / Cast Steel A216 - WCB

### D I M E N S I O N S

size	8	10	15	20	25	32	40	50	65	80
A	9.50	9.50	15.00	20.00	25.00	32.00	38.00	50.50	65.00	78.00
B	67.00	67.00	68.50	75.00	79.00	88.50	94.50	107.00	129.50	139.50
C	60.00	60.00	70.00	76.00	92.00	105.00	120.00	138.00	170.50	191.00
D	120.00	120.00	120.00	139.00	139.00	193.00	193.00	193.00	244.00	244.00
E	36.00	36.00	36.00	42.00	42.00	50.00	70.00	70.00	102.00	102.00
F	M6	M6	M6	M6	M6	M8	M8	M8	M8	M8
ISO Flg	F03	F03	F03	F04	F04	F05	F07	F07	F10	F10
G	14.20	17.60	21.70	27.10	33.80	42.60	48.70	61.00	73.80	90.00
H	11.50	12.50	14.50	18.00	18.00	23.50	22.50	25.00	32.50	31.00
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	8.86	10.00	12.00
J	7.70	7.70	7.70	9.30	9.30	12.50	12.50	15.60	18.80	18.80
Weights	0.415	0.400	0.600	0.880	1.150	1.870	2.670	4.620	8.250	13.000
kg/lb	0.913	0.880	1.320	1.936	2.530	4.114	5.874	10.164	18.150	28.600
CV	10	10	26	50	68	120	170	360	510	900



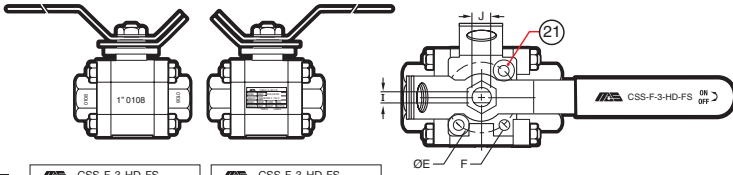
# C Series Carbon Steel 3 Piece API 607 Ball Valves

## CSS-F-3-HD-FS



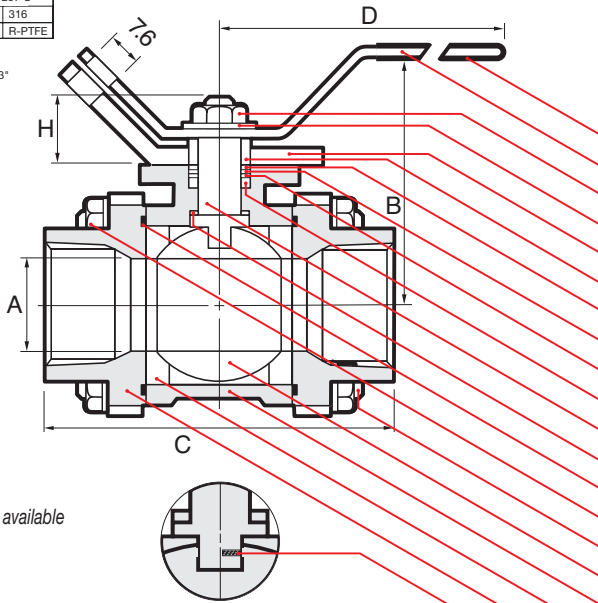
Three piece body / Full port  
NPT threads to ANSI B1.20.1  
Anti-static design  
Blowout proof stem  
Adjustable live loading packing nut  
Positive lock-out device  
ISO 5211 mounting pad  
Complies with NACE MR-0103  
& Supplier Requirements of  
NACE MR-0175/ISO 15156  
Fire-safe certified to API-607 5<sup>th</sup> edition  
**250 PSIG steam rated**  
3000 P.S.I. W.O.G. (1500 class) 1/4" to 1"  
2000 P.S.I. W.O.G. (900 class) 1-1/4" to 2"  
1000 P.S.I. W.O.G. (600 class) 2-1/2" to 3"

4.8



CSS-F-3-HD-FS		CSS-F-3-HD-FS					
WOG	3000	B16.34LTD	WOG	2000	B16.34LTD		
ISO-FT	250 @ 406 F / 207 C		ISO-FT	250 @ 406 F / 207 C			
BODY	WCB	TRIM	316	BODY	WCB	TRIM	316
SEALS	GRF	SEAT	R-PTFE	SEALS	GRF	SEAT	R-PTFE
NACE				NACE			
SIZE 1/4" - 1"				SIZE 1-1/4" - 2"			

CSS-F-3-HD-FS			
WOG	1000	B16.34LTD	
ISO-FT	250 @ 406 F / 207 C		
BODY	WCB	TRIM	316
SEALS	GRF	SEAT	R-PTFE
NACE			
SIZE 2-1/2" - 3"			



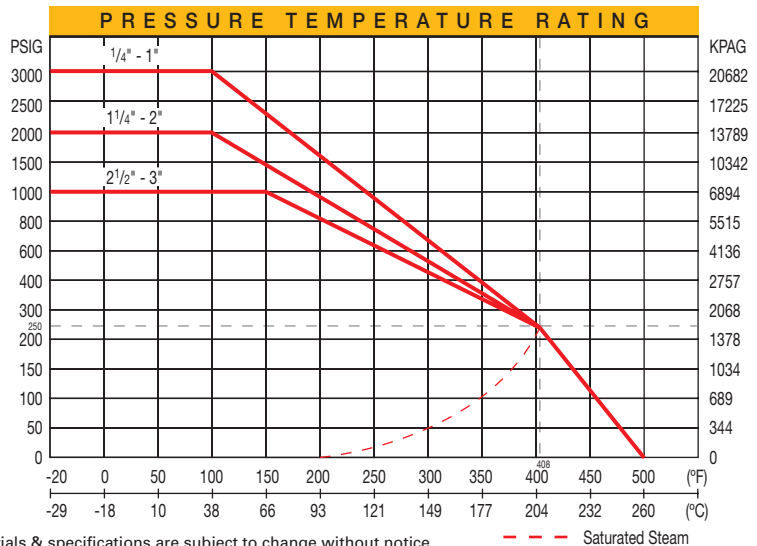
• Socketweld ends available

### NAME / MATERIAL

1. Handle Grip / Vinyl
2. Handle / Stainless Steel A276 Type 304
3. Handle Nut / Stainless Steel A276 Type 304
4. Handle Washer / Stainless Steel A276 Type 304
5. Lock-Out Plate / Stainless Steel A276 Type 304
6. Gland Nut / Stainless Steel A276 Type 304
7. Lock Washer / Stainless Steel A276 Type 304
8. Belleville Washer / Stainless Steel 301
9. Gland / Stainless Steel A276 Type 304
10. Packing / Graphite
11. Stem / Stainless Steel A276 Type 316
12. Thrust Washer / R-PTFE (TFM4215)
13. Gasket / Graphite + Stainless Steel 304
14. Hex Nut / A194 grade 2HM
15. Stud Bolt / A193 grade B7M
16. Ball / Stainless Steel A351 CF8M (316)
17. Body / Cast Steel A216 WCB
18. Seat / R-PTFE (TFM4215)
19. Cap / Stainless Steel A216 WCB
20. Spring & Pin / A276 Type 304
21. Stopper / C.S. Plated

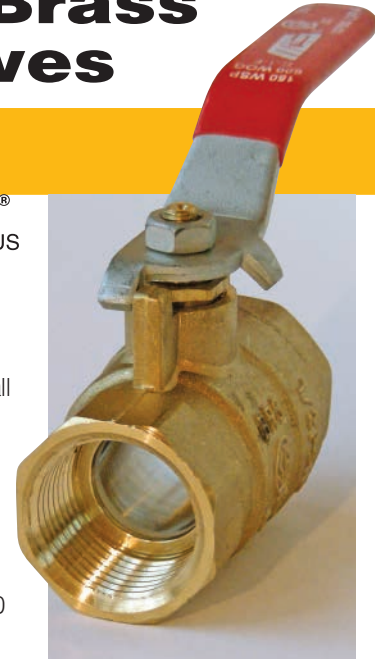
D I M E N S I O N S										
size	8	10	15	20	25	32	40	50	65	80
mm/in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	10.00	10.00	15.00	20.00	25.00	32.00	38.00	50.00	65.00	78.00
mm/in	0.37	0.37	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
B	65.80	65.80	68.50	75.00	79.00	88.50	94.50	107.00	129.50	139.50
mm/in	2.59	2.59	2.70	2.95	3.11	3.48	3.72	4.21	5.10	5.49
C	64.5	64.5	68.5	80.5	91.5	100.5	117.0	133.5	157.8	178.0
mm/in	2.54	2.54	2.70	3.17	3.60	3.96	4.61	5.26	6.21	7.01
D	120.00	120.00	120.00	139.00	139.00	193.00	193.00	193.00	244.00	244.00
mm/in	4.72	4.72	4.72	5.47	5.47	7.60	7.60	7.60	9.61	9.61
E	36.00	36.00	36.00	42.00	42.00	50.00	70.00	70.00	102.00	102.00
mm/in	1.417	1.417	1.417	1.654	1.654	1.969	2.756	2.756	4.016	4.016
F	M6	M6	M6	M6	M6	M8	M8	M8	M8	M8
ISO Flg	F03	F03	F03	F04	F04	F05	F07	F07	F10	F10
H	15.50	15.50	15.50	18.50	18.50	23.50	23.50	27.00	30.00	30.00
mm/in	0.61	0.61	0.610	0.73	0.73	0.93	0.93	1.06	1.18	1.18
I	5.50	5.50	5.50	6.50	6.50	8.00	8.00	10.00	12.00	12.00
mm/in	0.22	0.22	0.22	0.26	0.26	0.32	0.32	0.39	0.47	0.47
J	8.10	8.10	8.1	9.6	9.6	12.8	12.8	16.1	19.25	19.25
mm/in	0.32	0.32	0.32	0.38	0.38	0.50	0.50	0.63	0.76	0.76
CV	11	11	26	50	68	120	170	360	510	900
Weights	0.68	0.68	0.82	1.35	1.82	2.81	4.64	7.64	10.77	15.70
kg/lb	1.499	1.499	1.808	2.976	4.012	6.195	10.229	16.843	23.744	34.612

Valves comply to B16.34 Class 600, 900 & 1500 wall thickness.



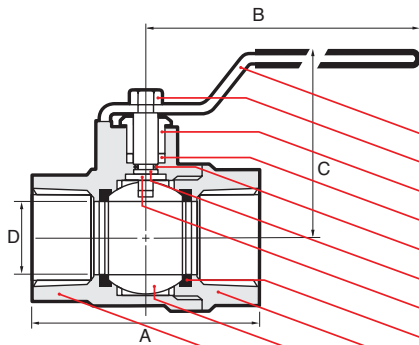
# B Series Forged Brass Ball Valves

## B-1F



\*\* 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.

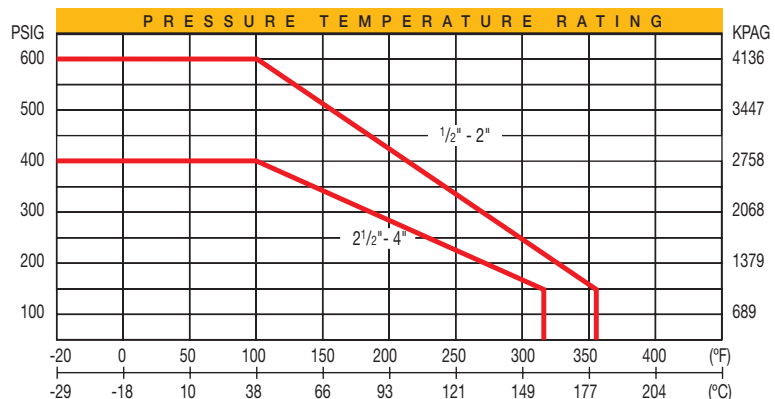
Forged 2 piece construction  
Full port (1/2" to 2")  
ASME B1.20.1 NPT ends  
Blowout-proof stem, Chrome plated ball  
Adjustable packing gland  
Secondary o-ring stem seal  
Class 150 WSP  
1/2" to 2": 600 WOG (**B-1F**)  
2 1/2" to 4": 400 WOG (**B-1**)  
Reduced port & NPT end to MFR STD  
Certified to:  
ANSI Z21.15/CSA 9.1 (1/2 PSIG)



P A R T / M A T E R I A L	
B1F	B1
1. Lever / Steel ASTM A36 Zinc Plated	
2. Lever Nut, Screw / Steel ASTM A36 Zinc Plated	
3. Packing Nut / Brass ASTM B124-C37710	B124-C37700
4. Packing / PTFE	
5. Stem O-ring / FKM ( <b>B-1F only</b> )	
6. Thrust Washer / PTFE ( <b>B-1F only</b> )	
7. Stem / Brass ASTM B124-C37710	B124-C37700
8. Seats / PTFE	
9. Body / Brass ASTM B124-C37710	B283-C37700
10. Ball / Brass ASTM B124-C37710 Chrome Plated	B30-C85700 Chrome plated
11. Cap / Brass ASTM B124-C37710	B283-C37700

D I M E N S I O N S									
size (in.)	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	55	61	74	84	90	104	117.7	141	163
mm/in	2.16	2.40	2.91	3.30	3.54	4.09	4.64	5.55	6.41
B	91	91	126	126	141	141	142	201	281
mm/in	3.58	3.58	4.96	4.96	5.55	5.55	5.63	7.87	11.06
C	49	52.5	59.6	65.6	73.2	82.5	90.5	117	132
mm/in	1.92	2.06	2.34	2.58	2.88	3.24	3.54	4.65	5.20
D	12.7	18.5	24	31	37	49.5	50	65	80
mm/in	0.50	0.72	0.94	1.22	1.45	1.94	1.96	2.55	3.14
CV	15	30	60	110	130	360			
Weight	0.40	0.55	1.0	1.4	2.1	3.2	4.8	7.8	11.8
lb/kg	0.19	0.25	0.45	0.64	0.96	1.5	2.2	3.6	5.4

\*\* 1/2" to 2" sizes only (identified with the CSA trademark)



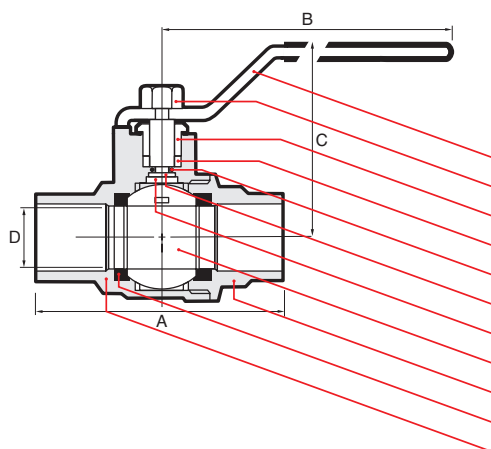
# B Series Forged Brass Ball Valves

## B-2F

Forged 2 piece construction  
Full port  
ANSI B16.22 solder ends (CXC)  
Blowout-proof stem  
Chrome plated ball  
Adjustable packing gland  
Secondary stem seals  
Class 150, 400 WOG



5.2



### P A R T / M A T E R I A L

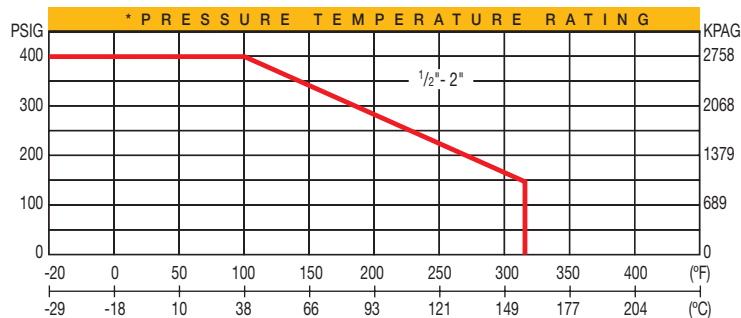
1. Lever / Steel ASTM A36 Zinc Plated
2. Lever Nut / Steel ASTM A36 Zinc Plated
3. Packing Nut / Brass ASTM B124-C37710
4. Packing / PTFE
5. Stem O-ring / FKM
6. Thrust Washer / PTFE
7. Stem / Brass ASTM B124-C37710
8. Ball / Brass ASTM B124-C37710 Chrome Plated
9. Cap / Brass ASTM B124-C37710
10. Seats / PTFE
11. Body / Brass ASTM B124-C37710

### D I M E N S I O N S

size (in.)	1/2	3/4	1	1 1/4	1 1/2	2
A	56	72.6	87.4	97.4	108.2	135.4
mm/in	2.20	2.85	3.44	3.83	4.25	5.33
B	91	126	126	126	141	141
mm/in	3.58	3.58	4.96	4.96	5.55	5.55
C	49	60	66	73	82.5	82.5
mm/in	1.92	2.06	2.36	2.36	2.87	3.24
D	12.7	24	31	37	49.5	49.5
mm/in	0.50	0.72	0.94	1.22	1.45	1.94
CV	15	30	60	110	130	360
Weight	0.4	0.55	0.95	1.35	2.1	3.2
lb/kg	0.20	0.25	0.44	0.62	0.96	1.5

#### \*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 Series Forged Brass Ball Valves

## B-3



\*\* 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.

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

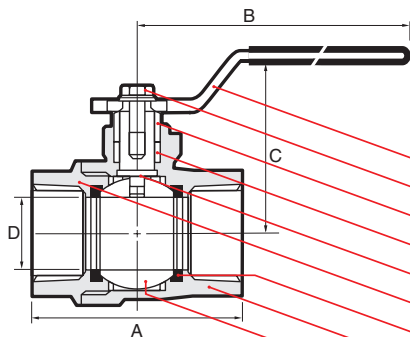
Certified to:  
ANSI Z21.15/CSA 9.1 (1/2 PSIG)  
ASME B16.44/CGA-CR91-002 (2 & 5 PSIG)  
ASME B16.33/CGA-3.16 (125 PSIG)  
-40° to 120°F



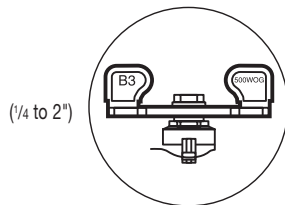
5.3

**B3SS-LL (SS Trim) is available for 1/4" to 2"**

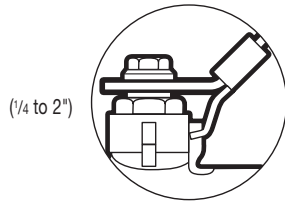
PART / MATERIAL	
B-3	B-3SS-LL
1. Lever / Steel ASTM A36	(AISI 430SS)
2. Lever Screw / Steel ASTM A36	(AISI 430SS)
3. Packing Nut / Brass ASTM B124-C37700	
4. Packing / PTFE	
5. Stem / Brass ASTM B124-C37700	(ASTM A276 Type 316SS)
6. Cap / Brass ASTM B283-C37700	
7. Seats / PTFE	
8. Body / Brass ASTM B283-C37700	
9. Ball / Brass ASTM B124-C37700 Chrome Plated	(ASTM A276 Type 316SS)
10. Wing and Latch lock handles / Steel A36 Zinc Plated	



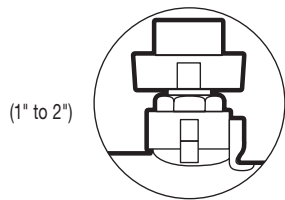
### Options



**B3W**  
(wing handle)



**B3LL**  
(Latch lock handle)

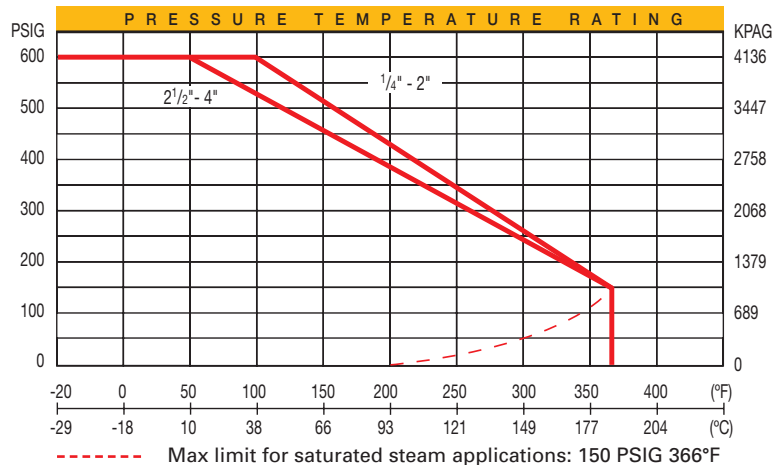


**B3SH**  
(Square head operator)

### \*NOTES:

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

DIMENSIONS											
size (in.)	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



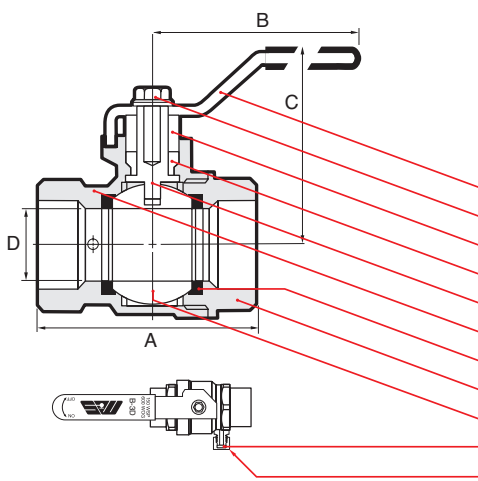
# B Series Forged Brass Ball Valve with Drain

## B-3D

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



5.4



### PART / MATERIAL

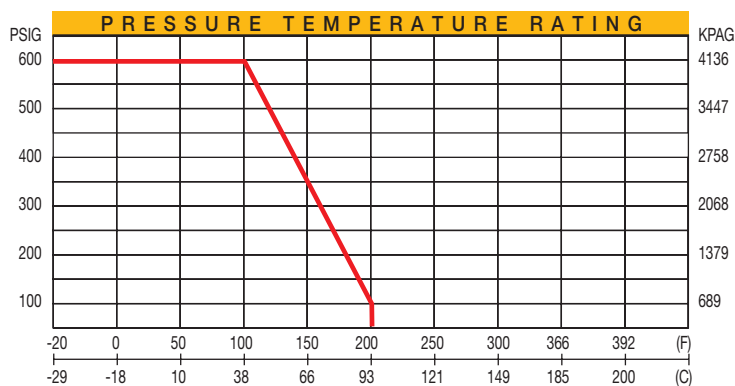
1. Lever / Steel ASTM A36
2. Lever Screw / Steel ASTM A36
3. Packing Nut / Brass ASTM B124-C37700
4. Packing / PTFE
5. Stem / Brass ASTM B124-C37700
6. Cap / Brass B-283-C37700
7. Seat / PTFE
8. Body / Brass B-283-C37700
9. Ball / Brass B124/B283-C37700 Chrome plated
10. Drain Cap Washer / NBR
11. Drain Cap / Brass B124-C37700

### DIMENSIONS

size (in.)	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

#### NOTE:

- 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 Series Lead Free Forged Brass Ball Valves

## B-3-LF



Trim & Drain



Meeting the Industry's  
Lowest Lead-free  
Requirements

\*\* 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.

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

NSF/ANSI 61 drinking water  
system components

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

### PART / MATERIAL

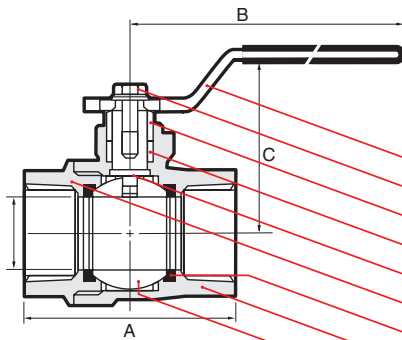
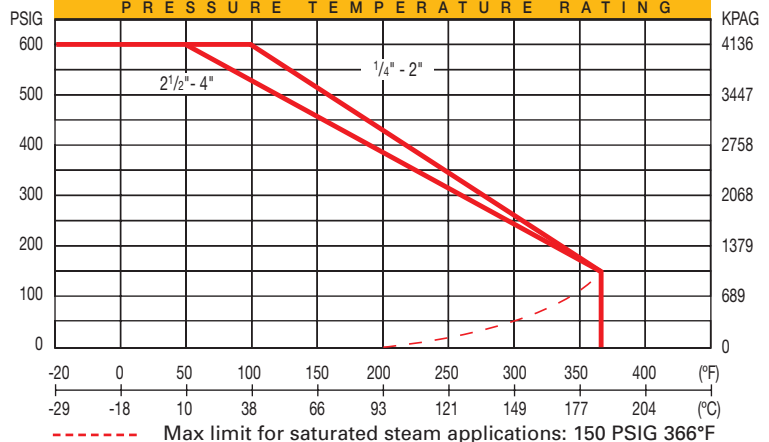
#### B-3

- Lever / Steel ASTM A36 Zinc Plated
- Lever Screw / Steel ASTM A36 Zinc Plated
- Packing Nut / Brass ASTM B124-C37700
- Packing / PTFE
- Stem / Brass ASTM DS-561 C28500 (AB)
- Cap / Brass ASTM DS-561 C28500 (AB)
- Seats / PTFE
- Body / Brass ASTM DS-561 C28500 (AB)
- Ball / Brass ASTM DS-561 C28500 (AB) Chrome Plated
- Wing and Latch lock handles / Steel A36 Zinc Plated

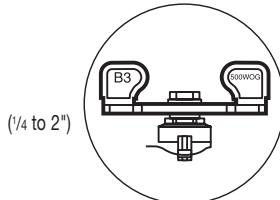
### DIMENSIONS

size (in.)	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

### PRESSURE TEMPERATURE RATING

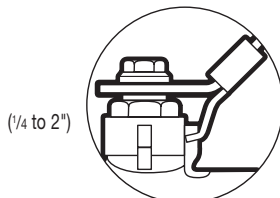


#### Options



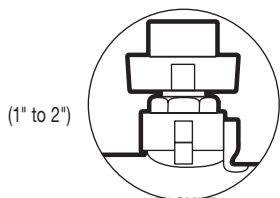
#### B3WLF

(wing handle)



#### B3LLLF

(Latch lock handle)



#### B3SHLF

(Square head operator)

#### \*\*NOTES:

- 2 1/2" and 3" sizes are certified for 1/2 to 5 PSIG gas services only
- Gas certifications listed are not applicable to 4" size.
- UL & FM listings are not applicable to 1/4", 3/8", 2 1/2" - 4"



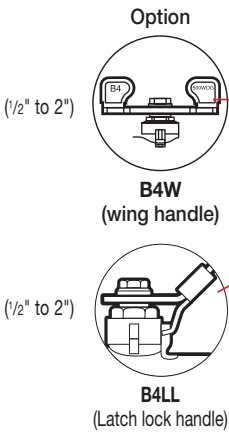
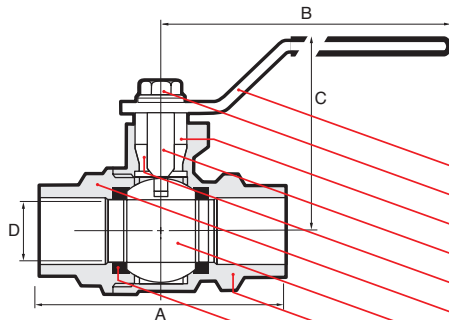
# B Series Forged Brass Ball Valves

## B-4

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  
**B4-SS-LL (SS Trim) is available for 1/2 to 2"**



5.6



### PART / MATERIAL

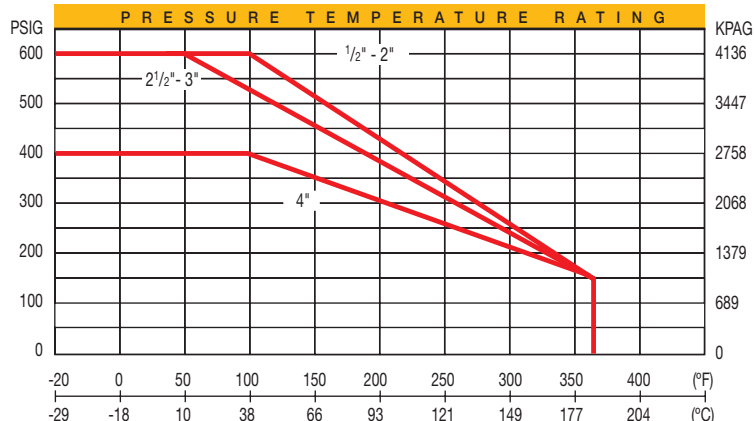
B-4	B-4-SS-LL
1. Lever / Steel ASTM A36	<b>AISI 430SS</b>
2. Lever Screw / Steel ASTM A36	<b>AISI 430SS</b>
3. Packing Nut / Brass ASTM B124-C37700	
4. Stem / Brass ASTM B124-C37700	<b>ASTM A276 Type 316SS</b>
5. Packing / PTFE	
6. Cap / Brass ASTM B283-C37700	
7. Ball / Brass ASTM B124-C37700 Chrome Plated	<b>ASTM A276 Type 316SS</b>
8. Body / Brass ASTM B283-C37700	
9. Seats / PTFE	
10. Wing and Latch lock handles / Steel ASTM A36 Zinc Plated	

### DIMENSIONS

size (in.)	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
<b>A</b>	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>B</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
<b>C</b>	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
<b>D</b>	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
<b>CV</b>	15	30	60	110	130	360	450	620	1200
<b>Weight</b>	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

#### NOTES:

- 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.
- Exercise caution during installation by applying heat away from the valve body. Excessive direct flame may damage body seats and seals.



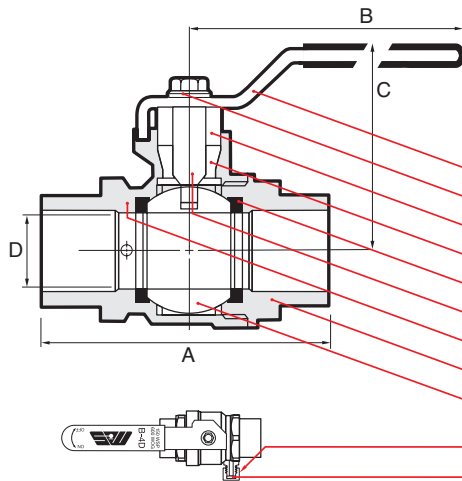
# B Series Forged Brass Ball Valve with Drain

## B-4D

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



5.7



### PART / 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

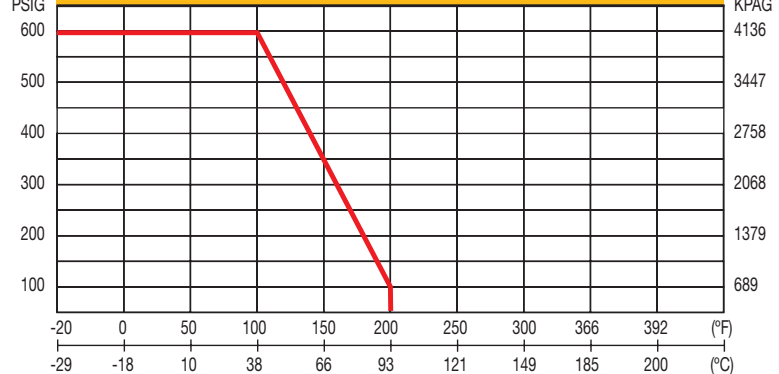
### D I M E N S I O N S

size (in.)	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

#### \*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.

### \* P R E S S U R E T E M P E R A T U R E R A T I N G



# B Series Lead Free Forged Brass Ball Valve

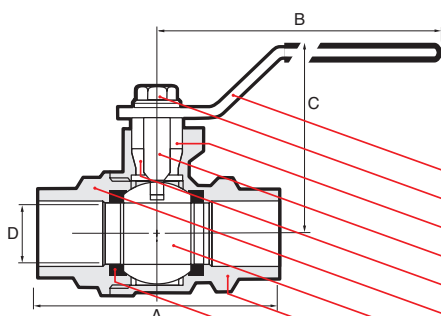
## B-4-LF



Meeting the Industry's  
Lowest Lead-free  
Requirements

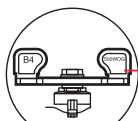
- Forged 2 piece construction
- Full port
- ANSI B16.22 solder ends (CXC)
- Blowout-proof stem
- Chrome plated ball
- Adjustable packing gland
- Class 150, 600 WOG
- NSF/ANSI 61 drinking water system components**
- NSF/ANSI 372 lead free (0.25% max lead content)**

5.8



Option

(1/2" to 2")



**B4WLF**  
(wing handle)

(1/2" to 2")



**B4LLF**  
(Latch lock handle)

### PART / MATERIAL

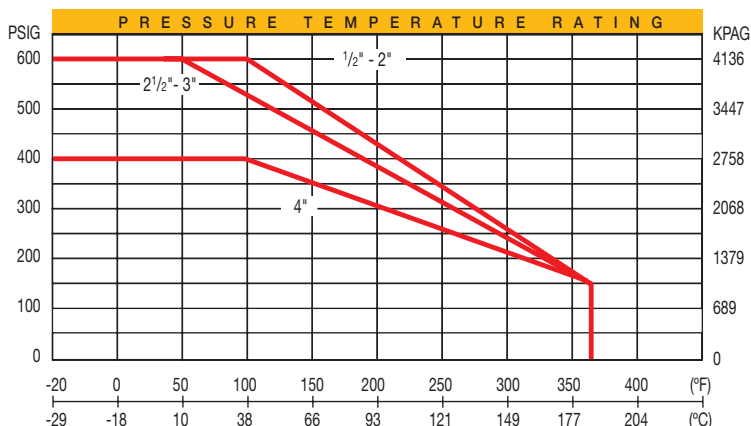
B-4	
1.	Lever / Steel ASTM A36 Zinc Plated
2.	Lever Screw / Steel ASTM A36 Zinc Plated
3.	Packing Nut / Brass ASTM B124-C37700
4.	Stem / Brass DS-561 C28500 (AB)
5.	Packing / PTFE
6.	Cap / Brass ASTM DS-561 C28500 (AB)
7.	Ball / Brass ASTM DS-561 C28500 (AB) Chrome Plated
8.	Body / Brass ASTM DS-561 C28500 (AB)
9.	Seats / PTFE
10.	Wing and Latch lock handles Steel A36 Zinc Plated

### DIMENSIONS

size (in.)	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

#### 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 Ball Valves

## B-5C

Forged 2 piece construction

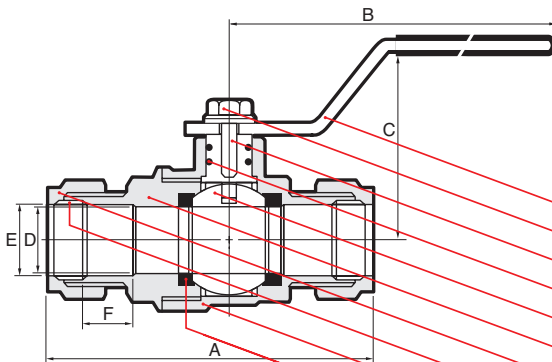
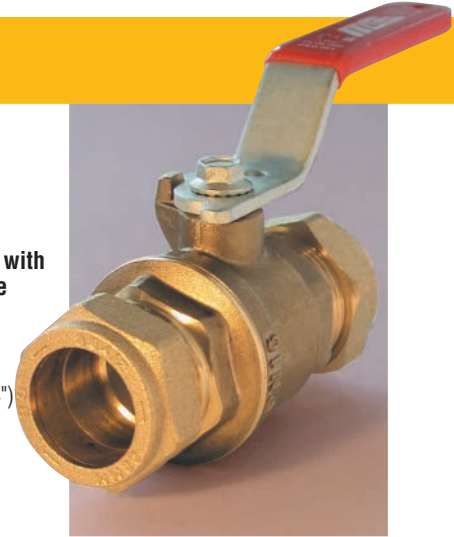
Full port

**Compression ends for use with  
type K L & M copper tube**

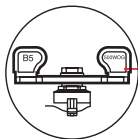
Blowout-proof stem

Chrome plated ball

Class 150, 600 WOG (1/2" & 3/4")  
500 WOG (1")



Option

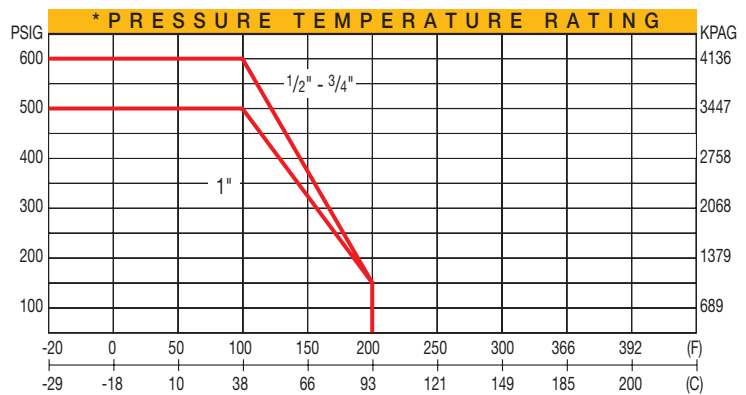


**B5-CW**  
(wing handle)

P A R T / M A T E R I A L	
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

D I M E N S I O N S	
mm/inches	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

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



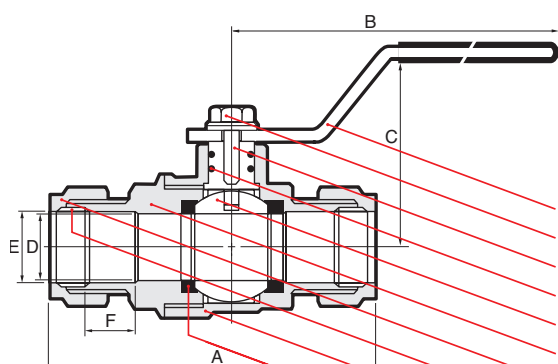
# B Series Lead Free Compression End Forged Brass Ball Valves

## B-5C-LF

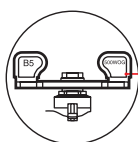


Meeting the Industry's  
Lowest Lead-free  
Requirements

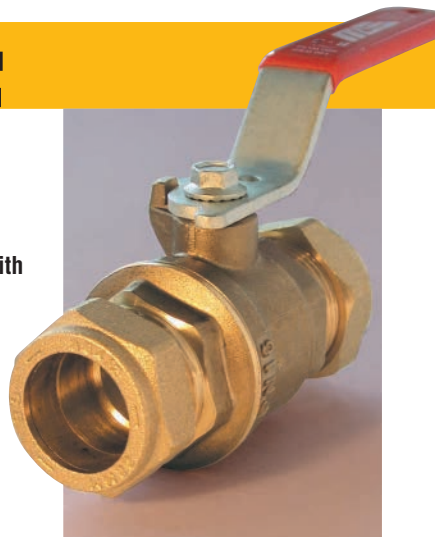
5.10



Option



**B5-CW**  
(wing handle)



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)**

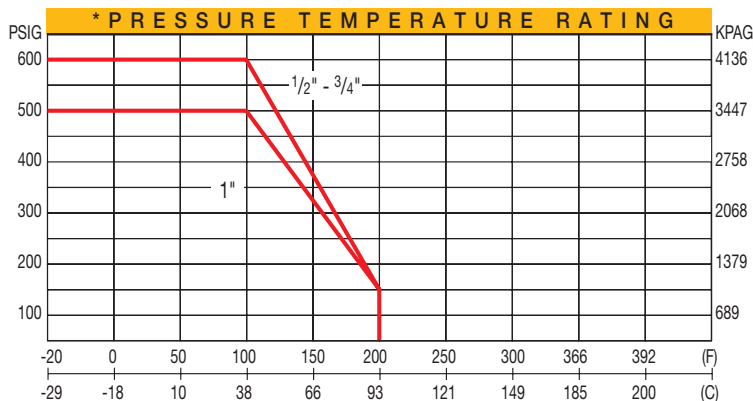
### P A R T / M A T E R I A L

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

### D I M E N S I O N S

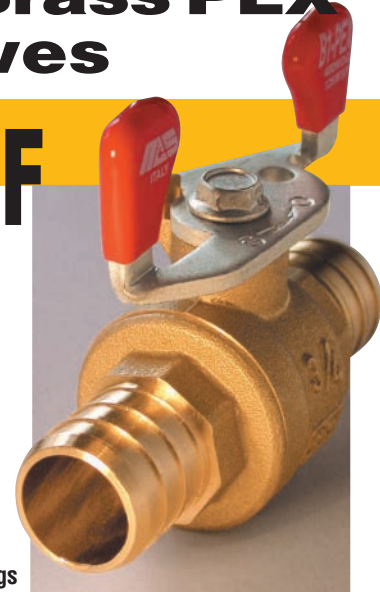
mm/inches	A	B	C	D	E	F	CV	Weight lb/kg
1/2	73.7	91.5	45.2	14.9	15.93	12.7	15	0.6
	2.90	3.60	1.78	0.59	0.627	0.50		0.28
3/4	87.1	91.5	48.5	20	22.35	13.9	30	0.85
	3.43	3.60	1.91	0.79	0.880	0.55		0.39
1	100.3	126.5	52.5	25	28.65	16	60	1.30
	3.95	4.98	2.07	0.98	1.128	0.63		0.59

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



# B Series Lead Free Forged Brass PEX Ball Valves

## B-1PEX-LF / B-1DPEX-LF



5.11

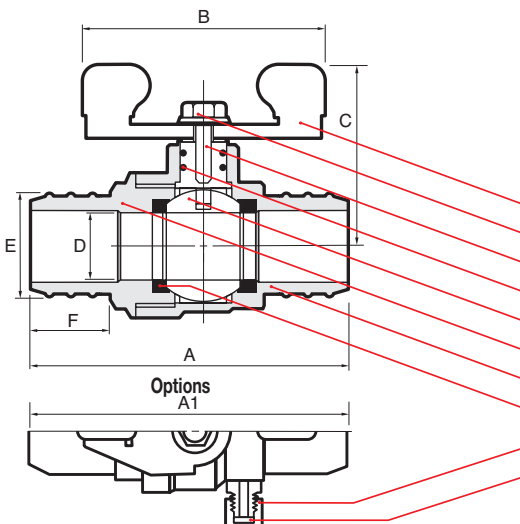


Meeting the Industry's  
Lowest Lead-free  
Requirements

- Forged 2-piece construction
- Reduced port
- ASTM F1807-08 PEX ends
- Blowout-proof stem
- Chrome plated ball
- O-ring stem seals
- \*400 WOG

**\*\*Drain available on model  
B-1D PEX LF**

- CSA B125.3-12 Plumbing Fittings**
- NSF/ANSI 61 Drinking Water System Components**
- NSF/ANSI 372 Lead Free (0.25% max lead content)**



**\*\*B-1D PEX LF  
(Drain Cap)**

P A R T / M A T E R I A L	
1.	Handle / Steel ASTM A36
2.	Handle Screw / Steel ASTM A36
3.	Stem / Brass ASTM
4.	O-Rings (2) / NBR
5.	Ball / Brass ASTM DS-561-C28500 (AB) Chrome Plated
6.	Cap / Brass UNS C27453 (DZR AB)
7.	Body / Brass UNS C27453 (DZR AB)
8.	Seat / PTFE
9.	Drain Cap / Brass ASTM B124-C37700
10.	Drain Cap Washer / NBR

D I M E N S I O N S										
size (in.)	A mm/in	A1 mm/in	B mm/in	C mm/in	D mm/in	E mm/in	F mm/in	CV	Weight lb/kg	
1/2	60.0	68.0	52.0	40.0	10.0	12.0	16.0	7	0.55	
	2.36	2.68	2.05	1.57	0.39	0.47	0.63		0.250	
3/4	64.0	71.0	52.0	41.8	12.7	16.9	16.0	13	0.79	
	2.52	2.80	2.05	1.65	0.50	0.67	0.63		0.360	
1	80.0	87.0	62.0	47.0	18.0	21.7	21.0	27	1.28	
	3.15	3.44	2.44	1.85	0.71	0.85	0.83		0.580	

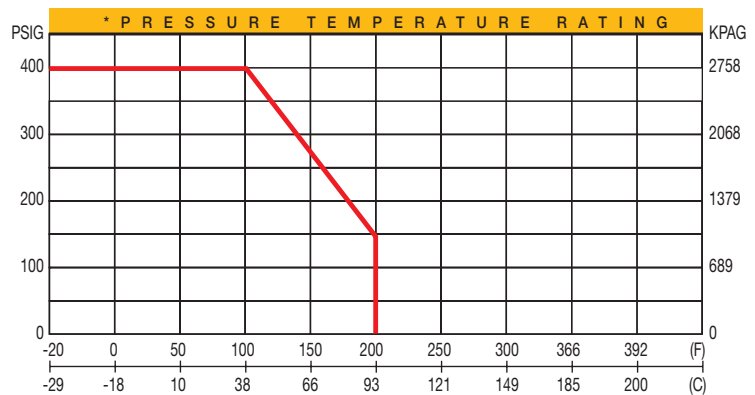
**\*NOTE:**

- 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 below for these limits.

**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)

- 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.



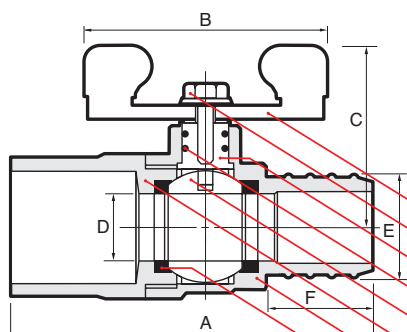
# B Series Forged Brass PEX X Solder Ball Valve

## 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



5.12



### P A R T / M A T E R I A L

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

**\*NOTE:**

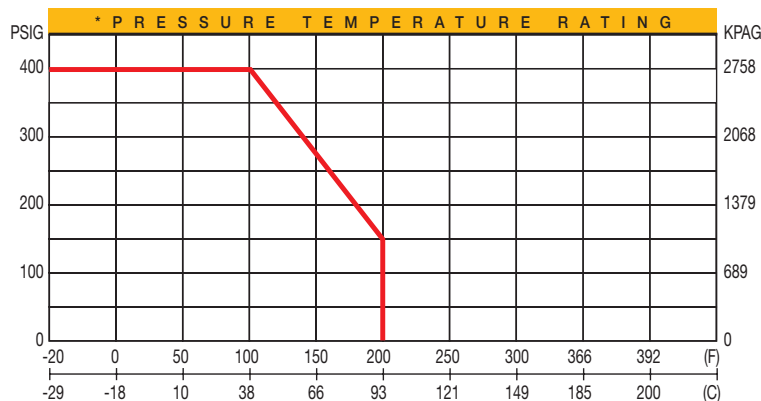
- 1) The safe working pressure-temperature rating for a solder joint piping system is dependent not only on valve seat rating but also on the limitation of the solder used for the joints. Refer to ANSI B16-22, Table I.1 for the Maximum recommended pressure-temperature ratings for solder joints.
- 2) 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.

### D I M E N S I O N S

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



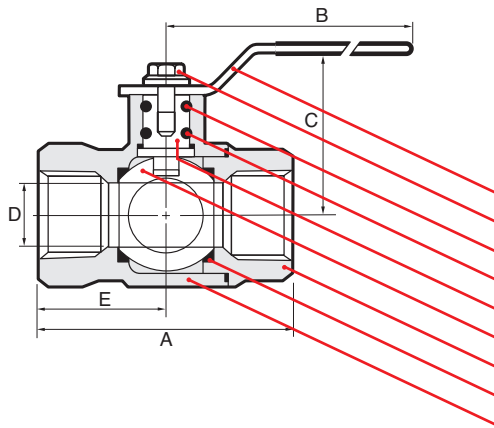
# B Series Forged Brass, 3-Port Diverter Ball Valves

## B3-L

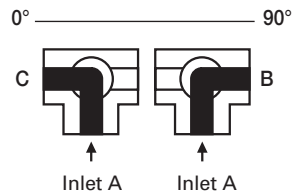
- 2 piece forged construction
- Reduced L-Port
- 2 seat design
- ANSI B1.20.1 NPT ends
- Blowout-Proof Stem
- Chrome Plated Ball
- O-ring stem seals
- Panel Mounting Holes
- Class 150, 400 WOG



5.13



2 positions



### PART / MATERIAL

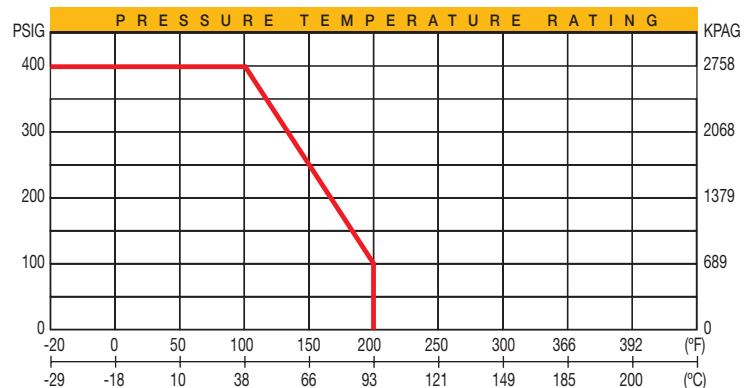
1. Lever / Steel ASTM A36
2. Lever Screw / Steel ASTM A36
3. Stem O Ring / NBR
4. Stem O Ring / Viton
5. Stem / Brass ASTM B124-C37700
6. Ball / Brass ASTM B124-C37700 Chrome Plated
7. Cap / Brass ASTM B283-C37700
8. Seat / PTFE
9. Body / Brass ASTM B283-C37700

### DIMENSIONS

size	10	15	20	25	32	40	50	65	80
mm/in	<sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	1	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	2	2 <sup>1</sup> / <sub>2</sub>	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.





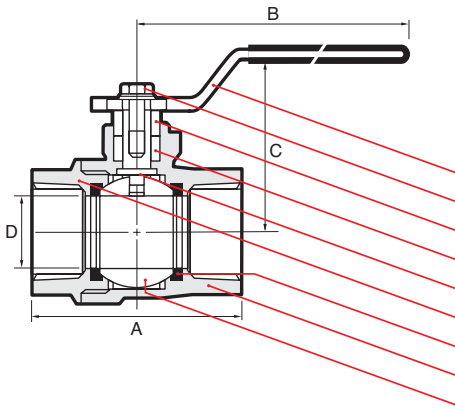
# BZ Series Cast Bronze Ball Valves

## BZ-3

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



5.14



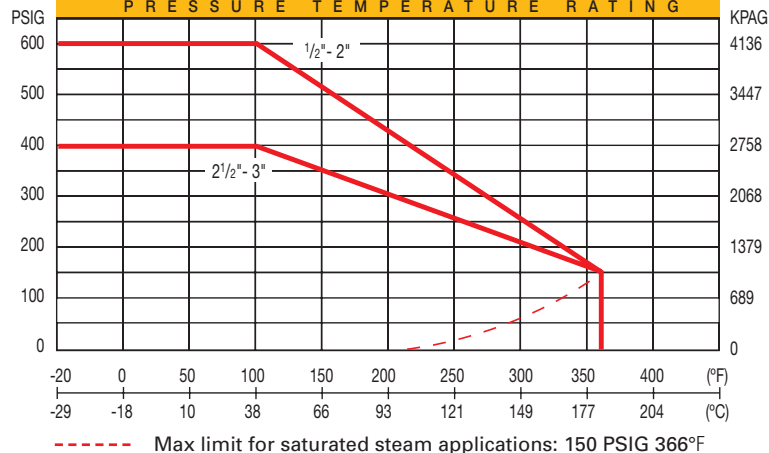
### PART / MATERIAL

1. Lever / Steel ASTM A36
2. Lever Screw / Steel ASTM A36
3. Packing Nut / Brass ASTM B124-C37700
4. Stem Packing / PTFE
5. Stem / Brass ASTM B124-C37700
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

### DIMENSIONS

size	15	20	25	32	40	50	65	80
mm/in	1/2 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	57.0	67.0	77.0	91.0	103.0	122.0	153.0	179.2
mm/in	2.25	2.64	3.04	3.59	4.06	4.81	6.03	7.06
B	91.5	91.5	126.5	126.5	141.5	141.5	281.3	281
mm/in	3.60	3.60	4.98	4.98	5.57	5.57	11.07	11.07
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	3.27	3.58	4.69	5.15
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	2.55	3.14
Weight	0.60	0.80	1.0	2.10	3.7	5.85		
lb/kg	0.28	0.37	0.46	0.96	1.68	2.66		

### PRESSURE TEMPERATURE RATING



# BZ Series Cast Bronze 250 Steam Rated Ball Valves

## BZ-3SS-250

Cast 2 piece construction

Full Port

ANSI B1.20.1 NPT ends

Blowout-Proof Stem

**316SS Ball & Stem**

Adjustable Packing Gland

Locking Handle

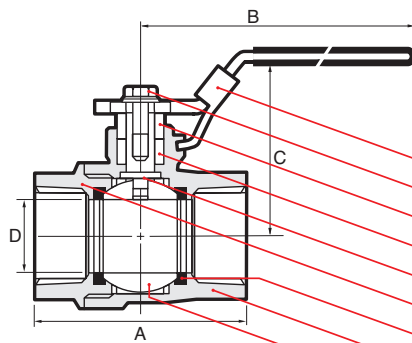
**Steam Rated Seats and Seals**

**250 WSP** 600 WOG (1/2 to 2")

**200 WSP** 400 WOG (2 1/2 to 3")

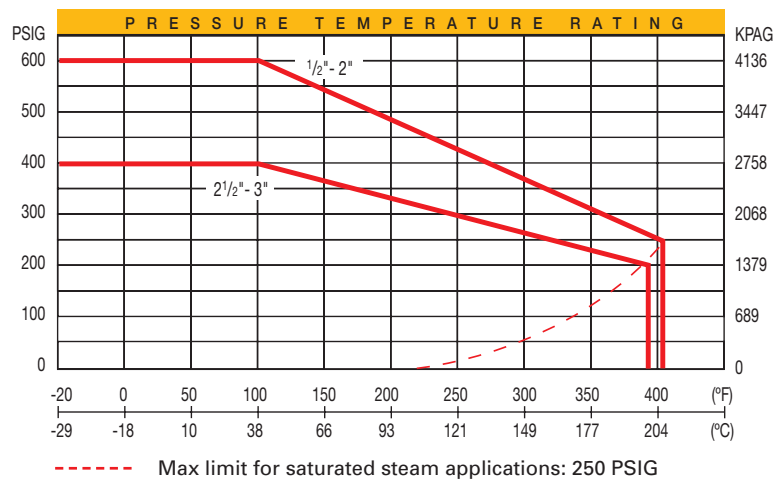


5.15



P A R T / M A T E R I A L	
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

D I M E N S I O N S								
size	15	20	25	32	40	50	65	80
mm/in	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	2.25	2.64	3.04	3.58	4.06	4.81	6.03	7.06
B	91.5	91.5	126.5	126.5	141.5	141.5	281.0	281.0
mm/in	3.60	3.60	4.98	4.98	5.57	5.57	11.07	11.07
C	54.0	57.5	65	71.0	83.0	91.0	119.0	131.0
mm/in	2.13	2.26	2.57	2.80	3.27	3.58	4.69	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



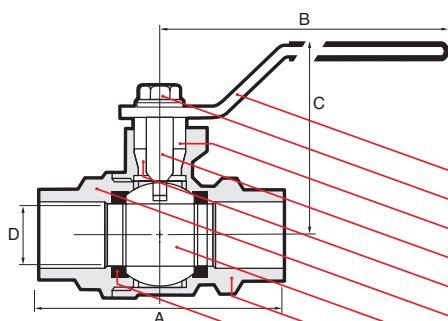
# BZ Series Cast Bronze Ball Valves

## BZ-4

- 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")



5.16



### PART / MATERIAL

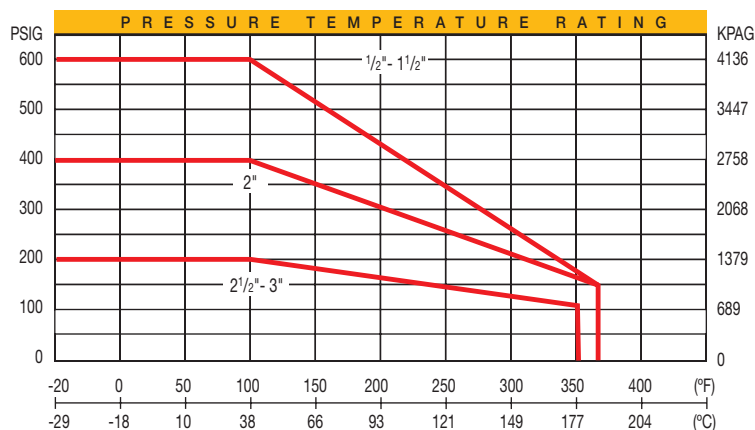
1. Lever / Steel ASTM A36
2. Lever Screw / Steel ASTM A36
3. Packing Nut / Brass ASTM B124-C37700
4. Stem / Brass ASTM B124-C37700
5. Stem Packing / PTFE
6. Cap / Bronze ASTM B62 / B30-C83600
7. Ball / Brass ASTM B124 / B283-C37700 or B30-C85700 chrome plated
8. Body / Bronze ASTM B62 / B30-C83600
9. Seats / PTFE

### DIMENSIONS

size	15	20	25	32	40	50	65	80
mm/in	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	3.63	4.10	4.77	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	11.07	11.07
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	5.15
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	2.55	3.07

#### 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.



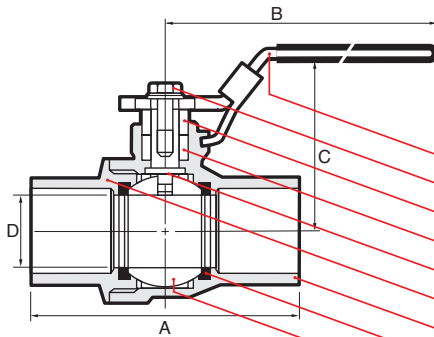
# BZ Series Cast Bronze, SS Trim, Locking Lever Ball Valves

## BZ-4SS

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")



5.17



### PART / MATERIAL

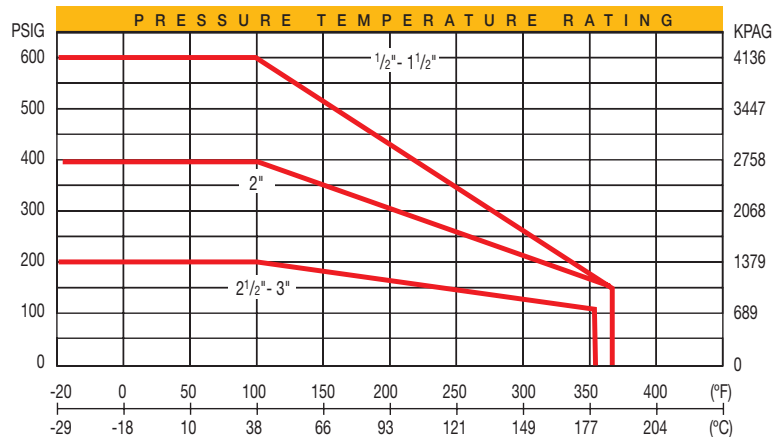
1. Lever / SS AISI type 430
2. Lever Screw / SS AISI type 430
3. Packing Nut / Brass ASTM B124-C37700
4. Stem Packing / PTFE
5. Stem / SS ASTM A276 type 316
6. Cap / Bronze ASTM B62 / B30-C83600
7. Body / Bronze ASTM B62 / B30-C83600
8. Seat / PTFE
9. Ball / SS ASTM A276 type 316

### DIMENSIONS

size	15	20	25	32	40	50	65	80
mm/in	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	3.77	3.77	5.19	5.19	5.62	5.62	11.22	11.22
C	52	56	69	75	89	97	124	135
mm/in	2.04	2.20	2.71	2.95	3.50	3.81	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

### 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.



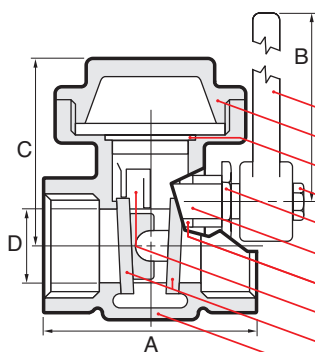
# Cast Bronze Lever Operated Quick Opening Gate Valves

## B-GL

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

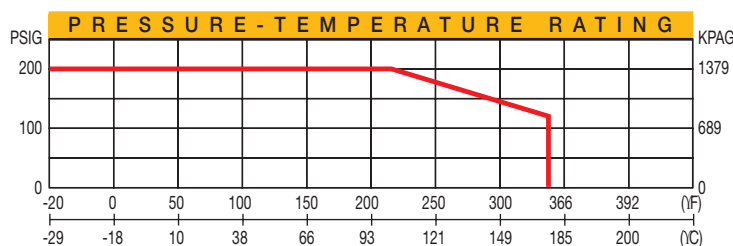


5.18



P A R T / M A T E R I A L	
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

D I M E N S I O N S										
size	10	15	20	25	32	40	50	65	80	100
mm/in	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



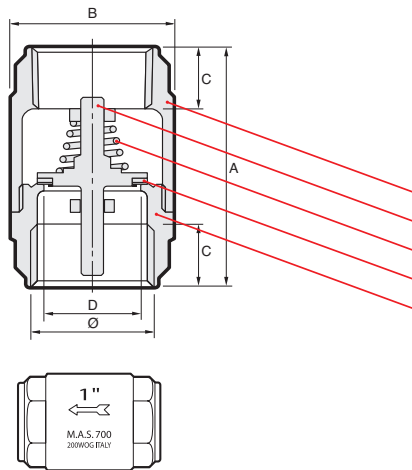
# Forged Brass In-Line Spring Loaded Check Valves

## 700

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



5.19



### PART / MATERIAL

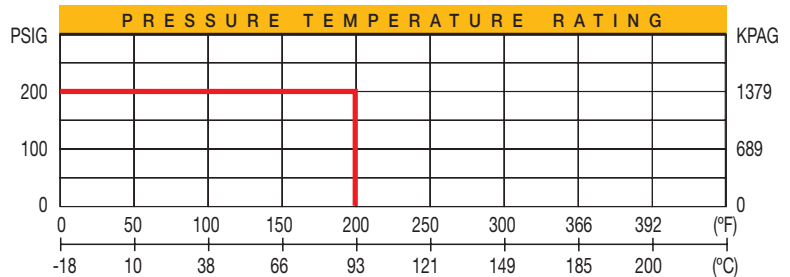
1. Body / Forged Brass ASTM B283-C37700
2. Piston / Thermoplastic Hostaform (POM)
3. Spring / 316 Stainless Steel
4. Disc / Rubber - NBR 70SH
5. Cap / Forged Brass ASTM B283-C37700

### DIMENSIONS

size (in)	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.





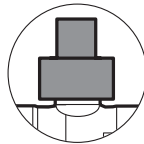
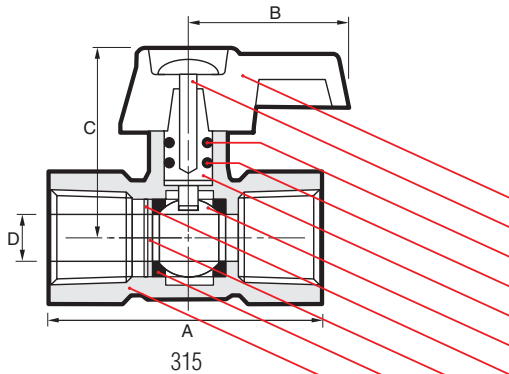
# A Series Forged Brass CSA Gas Ball Valves

## 315



\*\* 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.

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



315 SH

Optional; 14.5mm Square Operating Nut

### NAME / MATERIAL

1. Handle / Aluminum ASTM B85-A03840
2. Screw / Steel ASTM 36 Zinc Plated
3. Stem-O-Ring / NBR 70SH
4. Stem-O-Ring / FKM
5. Stem / Brass ASTM B124-C37700
6. Ball / Chromium Plated Brass ASTM B124-C37700
7. Retainer Clip / Steel DIN17222
8. Seat Washer / Brass ASTM B124-C37700
9. Seat O-Ring / NBR 70SH
10. Body / Brass ASTM B283-C37700
11. Square Nut / Al. ASTM B85-A03840

### D I M E N S I O N S

size (in.)	1/2	3/4	1/2 SH	3/4 SH
A	54.0	57.5	54.0	57.5
mm/in	2.13	2.26	2.13	2.26
B	38.0	37.8	-	-
mm/in	1.50	1.50	-	-
C	32.0	34.5	36.0	38.5
mm/in	1.26	1.36	1.40	1.50
D	10.0	14.0	10.0	14.0
mm/in	0.39	0.55	0.39	0.55
Weight	0.14	0.18	0.14	0.18
kg/lbs	0.304	0.395	0.304	0.395



# A Series Forged Brass CSA Gas Ball Valves

## 326

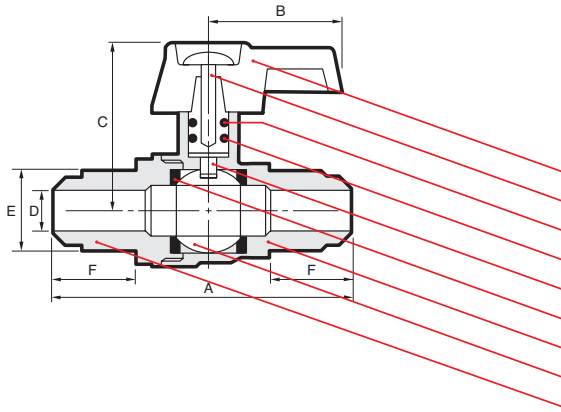


\*\* Suitable for use with natural gas, manufactured gas and liquefied petroleum gases (distributed as vapour with or without the admixture of air), or mixtures thereof.  
Not for use on Sour Gas.

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 (2 & 5 PSIG)  
-40° to 125°F



6.2



### NAME / MATERIAL

1. Handle / Aluminum ASTM B85-A03840
2. Screw / Steel ASTM 36 Zinc Plated
3. Stem-O-Ring / NBR 70SH
4. Stem-O-Ring / FKM
5. Stem / Brass ASTM B124-C37700
6. Seats / PTFE
7. Body / Brass ASTM B283-C37700
8. Ball / Chromium Plated Brass ASTM B124-37700
9. Body-Cap / Brass ASTM B283-C37700

### D I M E N S I O N S

	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
A	59.9	66.5	79.4
mm/in	2.36	2.62	3.13
B	37.8	37.8	37.8
mm/in	1.49	1.49	1.49
C	32.3	32.3	36.8
mm/in	1.27	1.27	1.45
D	7.14	10.3	12.7
mm/in	0.28	0.41	0.50
E	$\frac{5}{8}$ - 18 UNF	$\frac{3}{4}$ - 16 UNF	$\frac{7}{8}$ - 14 UNF
F	15.7	19.0	22.4
mm/in	0.62	0.75	0.88
Weight	0.11	0.14	0.23
kg/lbs	0.247	0.309	2.0

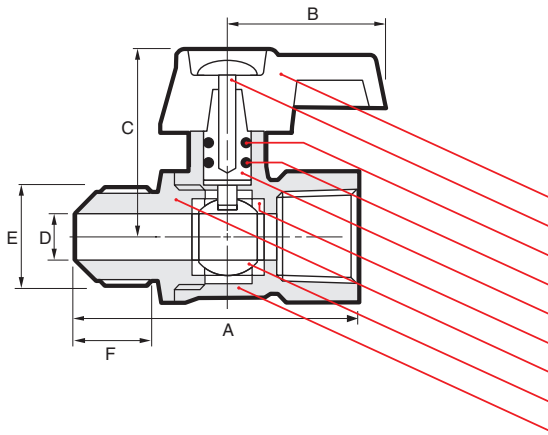
# A Series Forged Brass CSA Gas Ball Valves

## 327



\*\* 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.

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 (2 & 5 PSIG)  
-40° to 125°F



### N A M E / M A T E R I A L

1. Handle / Aluminum ASTM B85-A03840
2. Screw / Steel ASTM 36 Zinc Plated
3. Stem-O-Ring / NBR 70SH
4. Stem-O-Ring / FKM
5. Stem / Brass ASTM B124-C37700
6. Seats / PTFE
7. Body-Cap / Brass ASTM B283-C37700
8. Ball / Chromium Plated Brass ASTM B124-37700
9. Body / Brass ASTM B283-C37700

### D I M E N S I O N S

size (in.)	1/2	1/2	3/4
A	57.7	61.0	70.8
mm/in	2.27	2.40	2.79
B	37.8	37.8	37.8
mm/in	1.49	1.49	1.49
C	32.3	32.3	36.9
mm/in	1.27	1.27	1.45
D	7.14	10.3	12.7
mm/in	0.28	0.41	0.50
E size	5/8 - 18 UNF	3/4 - 16 UNF	15/16 - 16 UNF
F	15.7	19.0	22.4
mm/in	0.62	0.75	0.88
Weight	0.14	0.15	0.24
kg/lbs	0.306	0.322	0.520

# Manufacturer's Warranty

## 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”).

**Extent of Remedy.** Where MAS is advised in writing of Defects within the Warranty Period, Manufacturer will be deemed to have received notice of the defect and Manufacturer will, at its option, replace or recondition the Product without charge. Where a replacement or reconditioned Product is provided during the Warranty Period, that Product shall be subject to the same warranty for the unexpired portion of the original Warranty Period. This remedy shall constitute the exclusive remedy available to Customers for defective Products.

**Limitations.** Neither MAS nor Manufacturer shall be liable for any incidental, consequential or other damages, costs or economic losses, including, without limitation, any resulting from labour charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemicals, acts of God, or circumstances that are not controllable or reasonably foreseeable by either Manufacturer or MAS.

**Invalidation of Warranty.** This warranty shall be invalidated in all circumstances where Manufacturer or MAS, acting reasonably, determines that the Product was subject to any abuse, misuse, or neglect, or any improper application, installation, alteration or modification not authorized in writing by either Manufacturer or MAS. All claims received by MAS beyond the Warranty Period are invalid and shall not be accepted.

**Disclaimer.** Except for the express written warranty contained herein, neither Manufacturer nor MAS makes any other warranty, condition, guarantee or indemnity, express or implied, statutory or otherwise, regarding the Products **INCLUDING WITHOUT LIMITATION, TO THE EXTENT PERMITTED BY LAW, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** All other warranties, conditions guarantees and indemnities regarding any Products are hereby disclaimed, excluded and overridden.

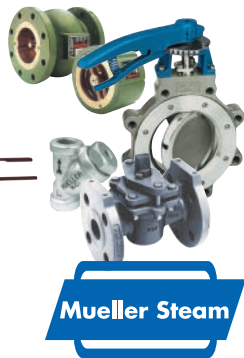
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**BERIC**

**Carbon & Forged Steel Gate, Globe & Check Valves.**



**B**

**BONNEY FORGE**

**Forged Steel:** Gate, Globe, Check & Trunnion Valves.  
**Carbon & Stainless Steel:** Gate, Globe & Check Valves.



**W-K-M**

**WKM High Performance Butterfly Valves and 'E' Series Rubber Seated Butterfly Valves** Rugged, economical multipurpose design.



**DEMCO BUTTERFLY VALVES**

**Cast Iron, Ductile Iron & Carbon Steel:** Wafer, tapped lug and flanged bodies; Marine Design; 2 year factory warranty.



**RED-WHITE**

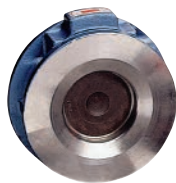
**TOYO**

**Bronze & Brass:** Gate, Globe, Check, Radiator, Y Strainers & Ball valves.  
**Cast Iron:** Gate, Globe, Check & Y Strainers.



**AMERICAN VALVE**

**American Valve:** Cast Iron, Ductile Iron, Stainless Steel Flanged ball valves



**MOYGRO CHECK VALVE**

**Cast Iron, Cast Steel & Stainless Steel:** Wafer Check Valves.



**Max-Air/MAS TECHNOLOGY**

**Max-Air/MAS brand** pneumatic double acting & spring return 1/4 turn actuators. A great fit with our MAS "direct mount" G-series ball valves.



**PROMATION ENGINEERING**

**ProMation Engineering Inc.** The product line includes CSA approved quarter turn spring and nonspring return as well as linear designs. Complete array of options and accessories are offered to meet special application needs.



**AUTOMATION**

Pneumatic industrial and commercial designs. Electric operators for quarter, multiturn & linear applications.



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150lb and 300lb Malleable Pipe Fittings.



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