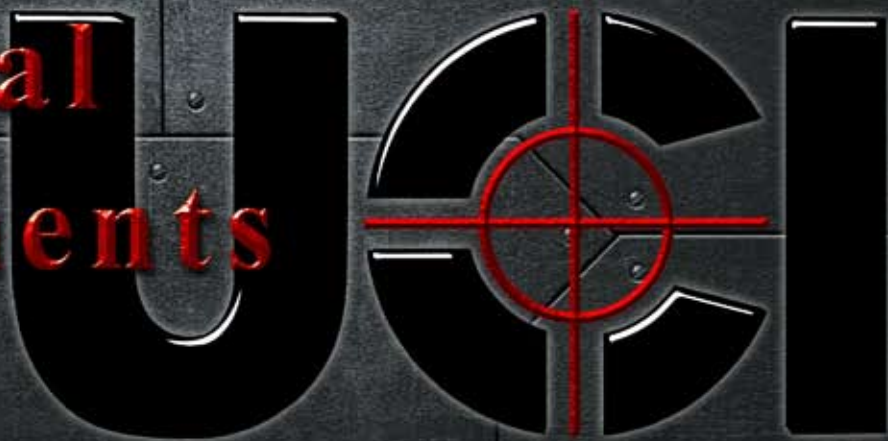


Universal
Components
Inc.



Ball Valves



BGF SERIES BALL VALVE

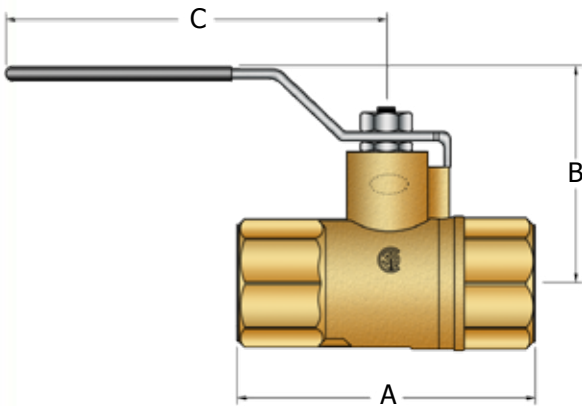


MSS SP-110 Compliant

Features:

- Brass Full Port Ball Valve
- 29" Hg-600psi WOG, Cold Non-Shock
- Blow Out Proof Stem & Adjustable Stem Packing
- Temperature -0°F to 366°F
- NPT Standard Available Solder C/F
- Optional Nickel Plated Available, BGF-NP Series

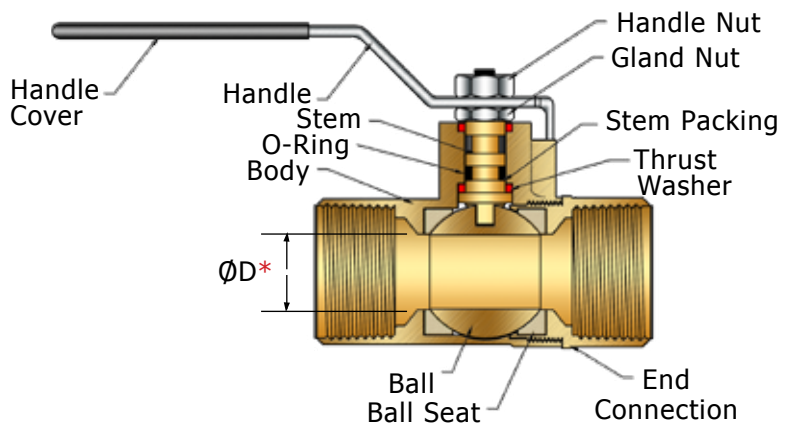
Dimensions



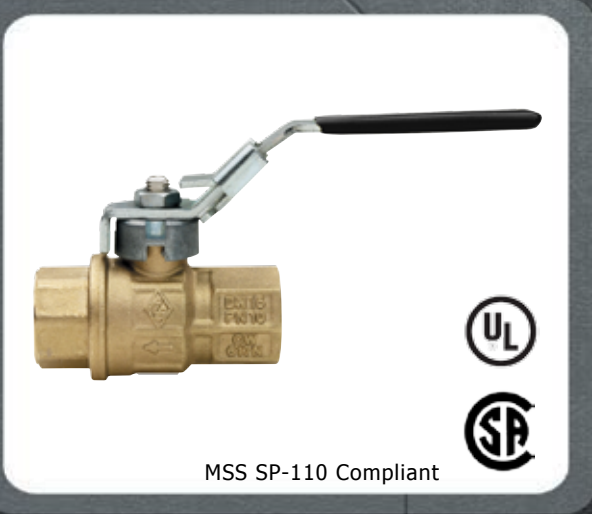
PART #	NPT	A	B	C	ØD*	Cv	Wt. Lbs.
BGF-2	1/4"	1.75	1.84	3.54	0.40	6	0.33
BGF-3	3/8"	1.76	1.84	3.54	0.41	7	0.30
BGF-4	1/2"	2.05	1.92	3.54	0.58	19	0.44
BGF-6	3/4"	2.36	2.09	3.78	0.75	34	0.66
BGF-8	1"	2.76	2.56	4.53	0.95	50	1.10
BGF-10	1-1/4"	3.31	2.95	4.53	1.26	104	1.57
BGF-12	1-1/2"	3.66	3.35	5.51	1.58	268	2.40
BGF-16	2"	4.18	3.68	5.51	1.97	309	3.37
BGF-20	2-1/2"	5.38	4.76	8.66	2.52	629	7.60
BGF-24	3"	6.04	5.08	8.66	2.95	1018	9.36
BGF-32	4"	7.39	5.87	9.61	3.90	1622	16.85

Bill of Materials

PART	Material
Body	Forged Brass
End Connection	Forged Brass
Ball	Brass, Chrome Plated
Stem	Brass, Chrome Plated
Ball Seats	PTFE
Stem Packing	PTFE
Gland Nut	Brass
Thrust Washer	PTFE
Handle	Steel
Handle Cover	PVC
Handle Nut	Steel
O-Ring	NBR (2-1/2" to 4" only)



BGFLL SERIES BALL VALVE

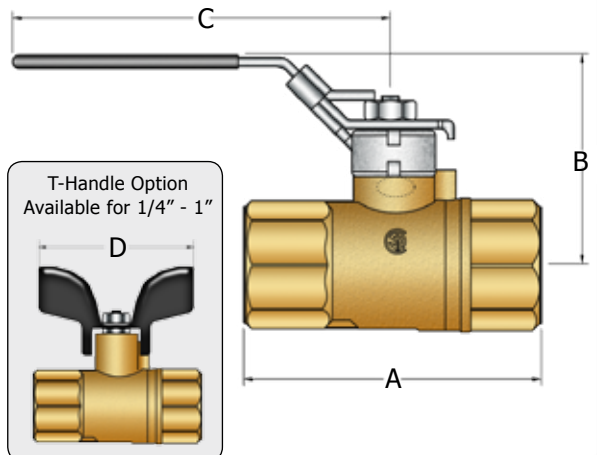


MSS SP-110 Compliant

- ### Features:
- Brass Full Port Ball Valve With Latch Lock Handle
 - 29" Hg-600psi WOG, 150 WSP
 - Blow Out Proof Stem
 - Temperature to 366°F

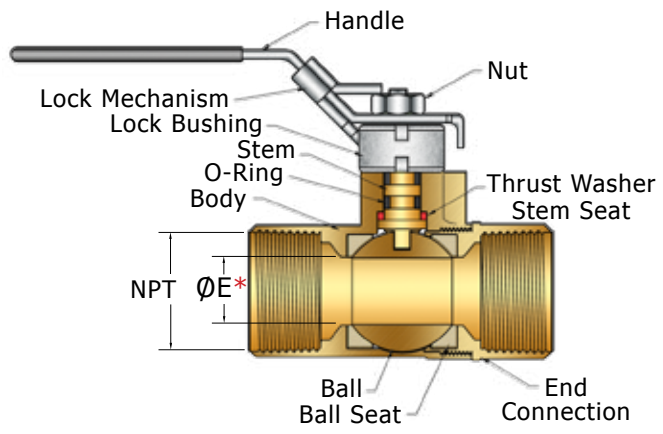
Dimensions

PART #	NPT	A	B	C	D	ØE*	Cv	Wt. Lbs.
BGF-2LL	1/4"	2.02	1.83	3.78	1.97	0.39	6	0.33
BGF-3 LL	3/8"	2.02	1.83	3.78	1.97	0.39	7	0.30
BGF-4LL	1/2"	2.44	1.99	3.78	1.97	0.59	19	0.48
BGF-6LL	3/4"	2.71	2.48	4.84	2.54	0.79	34	0.79
BGF-8LL	1"	3.07	2.64	4.84	2.54	0.98	50	1.22
BGF-10LL	1-1/4"	3.42	3.15	5.94	N/A	1.26	104	2.14
BGF-12LL	1-1/2"	3.89	3.38	5.94		1.57	268	3.20
BGF-16LL	2"	4.33	3.74	6.30		1.95	309	4.08
BGF-20LL	2-1/2"	5.59	5.02	8.11		2.56	629	8.28
BGF-24LL	3"	6.45	5.45	8.11		3.15	1018	13.00
BGF-32LL	4"	7.60	6.56	10.28		3.94	1622	22.07



Bill of Materials

PART	Material
Body	Brass CW 617N
End Connection	
Ball	
Stem	Brass CW 614N
O-Ring	NBR
Ball Seat	PTFE
Thrust Washer/ Stem Seat	
Nut	Steel
Handle & Lock	Steel
Lock Bushing	Die Cast Zinc Alloy
Tee Handle	Cast Aluminum





BGFM SERIES BALL VALVE

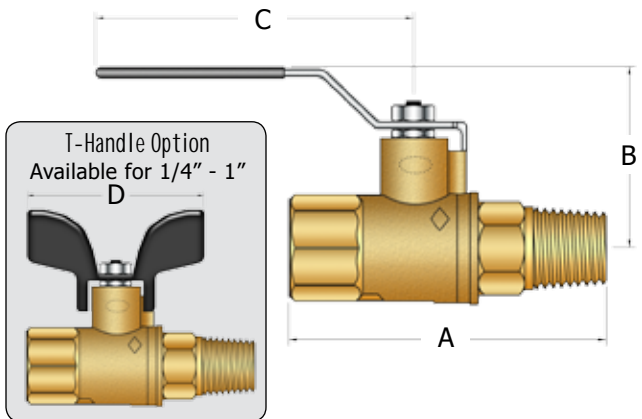
Features:

- Brass Full Port Ball Valve
- 29" Hg-600psi WOG, 150 WSP
- Blow Out Proof Stem
- 0°F to 366°F Temperature Range
- NPT Standard
- Optional Nickel Plated Available, C/F
- Latch Lock Handle Available C/F



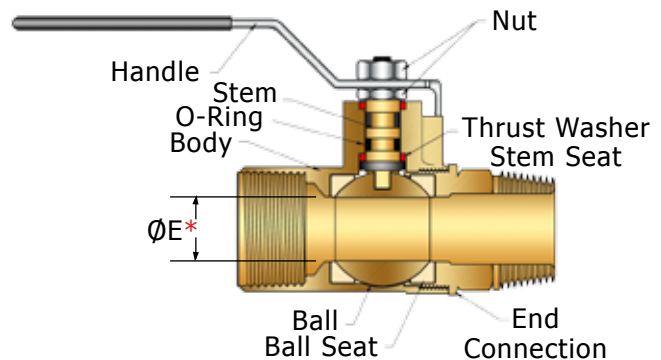
Dimensions

PART #	NPT	A	B	C	D	ØE*	Cv	Wt. Lbs.
BGFM-2	1/4"	2.30	1.65	3.86	1.97	0.39	6.3	0.31
BGFM-3	3/8"	2.32	1.65	3.86	1.97	0.39	7.0	0.31
BGFM-4	1/2"	2.81	1.81	3.86	1.97	0.59	19.0	0.51
BGFM-6	3/4"	3.13	2.28	4.80	2.54	0.79	34.4	0.79
BGFM-8	1"	3.58	2.44	4.80	2.54	0.98	50.1	1.26



Bill of Materials

PART	Material
Body	Brass CW 617N
End Connection	
Ball	
Stem	Brass CW 614N
O-Ring	NBR
Ball Seat	PTFE
Thrust Washer/ Stem Seat	
Nut	Steel
Handle	Steel
T-Handle	Cast Aluminum



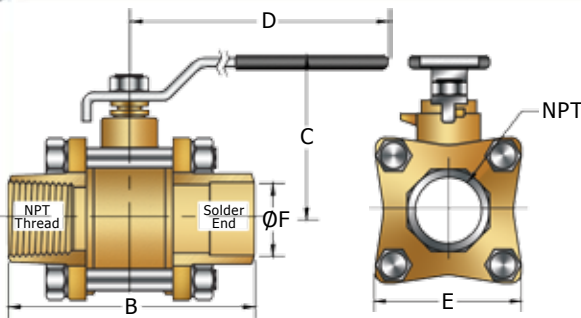
B3F SERIES BALL VALVE



MSS SP-110 Compliant

Features:

- Bronze Full Port 3-Piece Ball Valve
- 29" Hg-600psi WOG
- 150psi Saturated Steam
- Blow Out Proof Stem w/Adjustable Stem Packing
- Available in Stainless Steel Ball and Stem C/F
- RPTFE Seats
- -20°F to 400°F Temperature Range



Dimensions

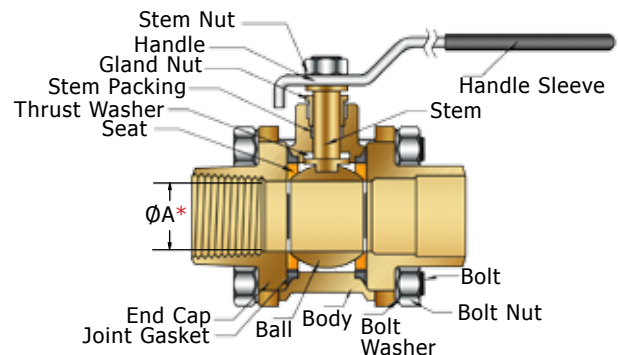
Part #	NPT	ØA*	B	C	D	E	ØF	Cv	Wt
B3F-2	1/4"	0.43	2.56	1.81	3.87	1.60	N/A	8.1	1.02
B3F-3	3/8"	0.50	2.56	1.81	3.87	1.60	0.50	14	1.04
B3F-4	1/2"	0.62	2.81	1.93	4.87	1.78	0.63	26	1.55
B3F-6	3/4"	0.81	3.43	2.18	4.87	1.98	0.88	51	2.27
B3F-8	1"	1.00	3.87	2.62	5.50	2.22	1.13	68	3.28
B3F-10	1-1/4"	1.25	4.75	2.87	5.50	2.70	1.38	120	5.62
B3F-12	1-1/2"	1.50	5.25	3.37	8.00	3.03	1.63	170	8.07
B3F-16	2"	2.00	6.03	3.68	8.00	3.87	2.13	376	14.42
B3F-20	2-1/2"	2.50	7.25	5.14	9.75	5.05	2.63	510	26.61
B3F-24	3"	3.00	8.37	8.10	19.13	5.82	3.13	996	43.00
B3F-32	4"	4.00	10.86	8.88	19.13	7.77	4.13	1893	106.00

Suffix Options:

- LL = Latch Lock Handle
- S = Solder End
- BSPP = BSPP threads, parallel, 1/4" to 2"
- BSPT = BSPT threads, tapered, 1/4" to 2"
- OX = Oxygen Cleaned

Bill of Materials

PART	Material
Body	ASTM B584-C84400 (Bronze)
End Cap	B16 (1/4"-3/8"), B584-C84400 (1/2"-4")
Ball	ASTM B16, Chrome Plated (1/4"-2-1/2") 316 SS (3"-4")
Stem	ASTM B16 (Brass), 316 SS (3"-4")
Stem Nut	Steel, Zinc Plated
Handle	Steel, Zinc Plated
Seat	RPTFE
Gland Nut	B16 Brass
Stem Packing	MPTFE (Chevron Style PTFE 3"-4")
Thrust Washer	PTFE
Bolt Washer	304 Stainless Steel
Joint Gasket	PTFE
Bolt	Steel, Zinc Plated
Handle Sleeve	Vinyl
Bolt Nut	Steel, Zinc Plated

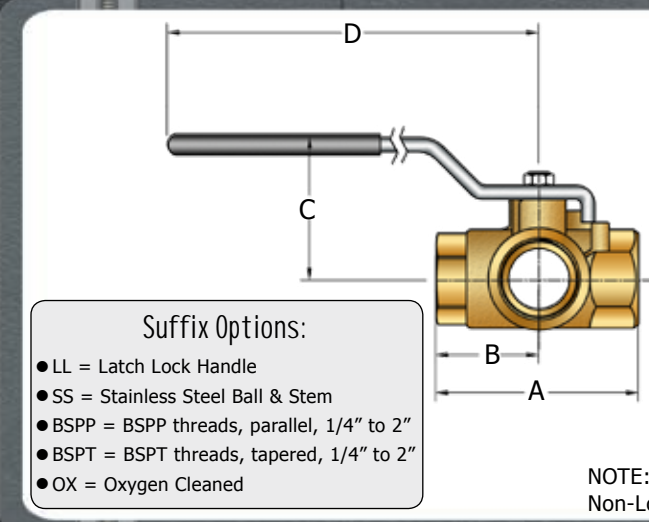




BHMT SERIES BALL VALVE



- ### Features:
- 400 psig WOG, Cold Non-Shock
 - Blowout-Proof Stem, With Adjustable Packing
 - Diverter/Mixing Valve
 - -35°F to 400°F Temperature Range

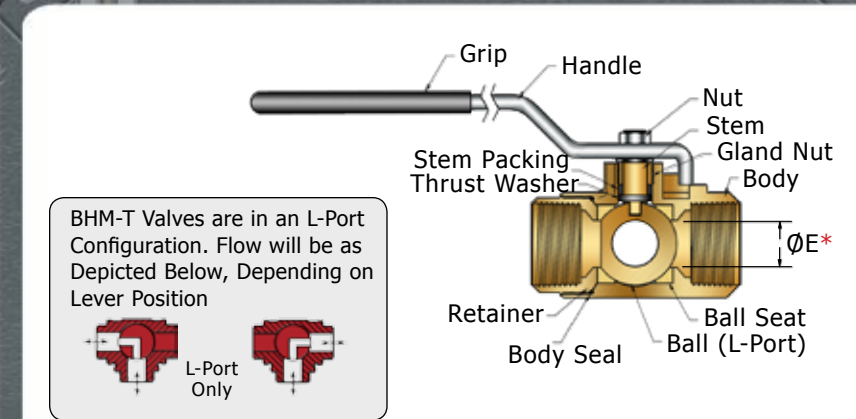


Dimensions

PART #	NPT	A	B	C	D	ØE*	Cv	Lbs
BHM-2T	1/4"	2.25	1.09	1.80	3.88	0.50	2.3	0.86
BHM-3T	3/8"	2.27	1.12	1.80	3.88	0.50	4.5	0.84
BHM-4T	1/2"	2.75	1.10	1.75	3.88	0.50	5.4	0.99
BHM-6T	3/4"	3.00	1.50	2.12	4.87	0.68	12	1.91
BHM-8T	1"	3.20	1.59	2.20	4.87	0.87	14	2.42
BHM-10T	1-1/4"	3.98	1.99	2.69	5.50	1.00	21	4.27
BHM-12T	1-1/2"	4.40	2.21	2.87	5.50	1.25	34	5.82
BHM-16T	2"	4.69	2.34	3.00	5.50	1.50	47	8.55

- ### Suffix Options:
- LL = Latch Lock Handle
 - SS = Stainless Steel Ball & Stem
 - BSPP = BSPP threads, parallel, 1/4" to 2"
 - BSPT = BSPT threads, tapered, 1/4" to 2"
 - OX = Oxygen Cleaned

* = See Below, on Material Drawing
 NOTE: Locking Handle Option Available. Locking Handle Orientation is 180° from Non-Locking Handle. Locking Handle Part Number Denotion, BHM-**LL



BHM-T Valves are in an L-Port Configuration. Flow will be as Depicted Below, Depending on Lever Position

Bill of Materials

PART	Material
Handle	Zinc Plated Steel
Grip	Vinyl
Stem Packing	MPTFE
Thrust Washer	RPTFE
Ball	Chrome Plated B16 Brass
Ball Seat	RPTFE
Retainer	B16 (1/4" to 1") B584-C84400 (1-1/4" to 2")
Gland Nut	B16
Stem	B16
Handle Nut	Zinc Plated Steel
Body Seal	PTFE (1-1/2" to 2")
Body	B584-C84400

BHM SERIES BALL VALVE



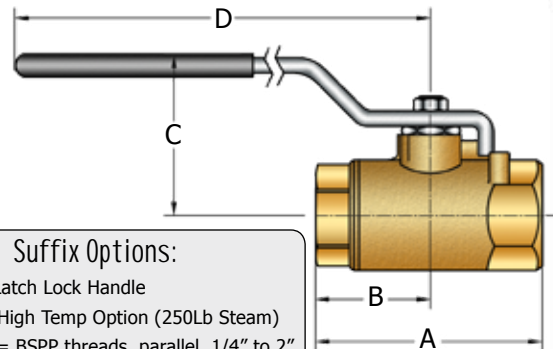
MSS SP-110 Compliant

Features:

- 29" Hg-600psi WOG, Cold Non-Shock
- 150 psig Saturated Steam
- RPTFE Seats
- PTFE Seals (TFM on 4")
- -35°F to 400°F Temperature Range

Dimensions

PART #	NPT	A	B	C	D	ØE*	Cv	Wt
BHM-2	1/4"	2.06	1.03	1.75	3.87	0.37	8	0.60
BHM-3	3/8"	2.06	1.03	1.75	3.87	0.37	7	0.56
BHM-4	1/2"	2.25	1.12	1.75	3.87	0.50	15	0.63
BHM-6	3/4"	3.00	1.50	2.12	4.87	0.68	30	1.39
BHM-8	1"	3.37	1.68	2.25	4.87	0.87	43	1.72
BHM-10	1-1/4"	4.00	2.00	2.62	5.50	1.00	48	3.26
BHM-12	1-1/2"	4.37	2.18	3.06	8.00	1.25	84	4.61
BHM-16	2"	4.68	2.34	3.25	8.00	1.50	108	6.06
BHM-20	2-1/2"	6.25	3.12	3.72	8.00	2.00	190	17.25
BHM-24	3"	6.75	3.37	4.12	8.00	2.50	370	18.60
BHM-32	4"	7.37	3.69	5.25	9.94	3.12	670	25.50

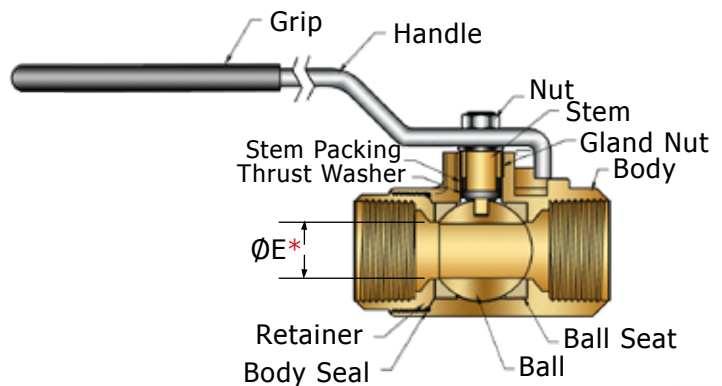


Suffix Options:

- LL = Latch Lock Handle
- HT = High Temp Option (250Lb Steam)
- BSPP = BSPP threads, parallel, 1/4" to 2"
- BSPT = BSPT threads, tapered, 1/4" to 2"
- OX = Oxygen Cleaned
- DMC = Spring Return Closed (see pg.49)
- DMO = Spring Return Open (see pg.49)

Bill of Materials

PART	Material
Handle	Zinc Plated Steel
Grip	Vinyl
Stem Packing	MPTFE
Thrust Washer	RPTFE
Ball	B16, Chrome Plated
Seat (2)	RPTFE (1/4"to3"), TFM (4")
Retainer	B16 (1/4"to1") B584-C84400 (1.25"to4")
Gland Nut	B16
Stem	
Handle Nut	Zinc Plated Steel
Body Seal	PTFE (1/4"to4")
Body	B584-C84400



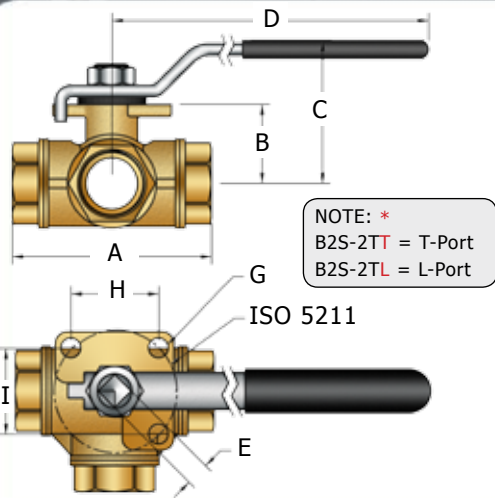


B2S-TT & TL SERIES BALL VALVE



MSS SP-110 Compliant

- ### Features:
- 29"-Hg 400psig WOG Cold Non-Shock
 - ISO 5211 Mounting Pad
 - 4 Seat Design for Sealing Between Pressurized Ports
 - RTFE Seats with O-Ring backed Seat for Low Operating Torque
 - 100psig Saturated Steam
 - -20°F to 344°F Temperature Range

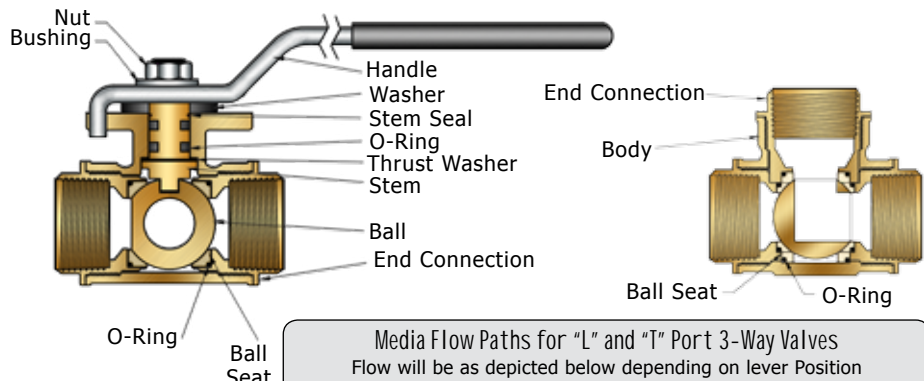


Dimensions

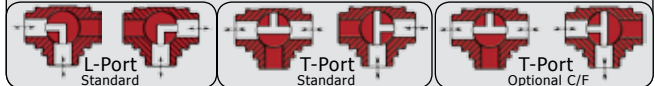
PART #	NPT	A	B	C	D	E in/mm	ISO 5211	G	H&I	Break Torque in/Lbs	Cv TT/TL	WT Lbs.
B2S-2T*	1/4"	2.64	1.20	2.44	4.72	.35/9	F03	0.23	1.00	54	3.26 TT 3.50 TL	1.22
B2S-3T*	3/8"	2.64	1.20	2.44	4.72	.35/9	F03	0.23	1.00	54	3.50 TT 4.08 TL	1.16
B2S-4T*	1/2"	2.87	1.20	2.44	4.72	.35/9	F03	0.23	1.00	54	4.20 TT 5.02 TL	1.21
B2S-6T*	3/4"	3.19	1.29	2.52	4.72	.35/9	F03	0.23	1.00	54	7.00 TT 7.70 TL	1.44
B2S-8T*	1"	3.74	1.63	2.95	6.69	.43/11	F05	0.27	1.39	54	12.83 TT 14.24 TL	2.64
B2S-10T*	1-1/4"	4.39	1.85	3.17	6.69	.43/11	F05	0.27	1.39	54	18.67 TT 19.72 TL	4.15
B2S-12T*	1-1/2"	4.86	2.34	3.66	6.69	.43/11	F05	0.27	1.39	151	29.75 TT 30.69 TL	6.02
B2S-16T*	2"	5.73	2.90	4.43	9.05	.43/11	F07	0.35	1.95	151	43.76 TT 48.58 TL	9.08
B2S-20T*	2 1/2"	6.93	3.35	4.86	9.05	.43/11	F07	0.35	1.95	275	70.00 TT 72.35 TL	16.33
B2S-24T*	3"	7.08	3.35	4.86	9.05	.43/11	F07	0.35	1.95	275	70.00 TT 72.35 TL	19.55

Bill of Materials

PART	Material
Body	Brass
End Connection	
Ball	CW 617 12165
Ball Seat	PTFE
Thrust Washer	
Stem Seal	Brass
Bushing	
Stem	CW 614 12164
O-Rings	FKM (Viton®)
Screw	Steel 6/S
Stem	Brass
Bushing	
Washer	CW 614 12164
Handle	Nylon
	Plated Steel



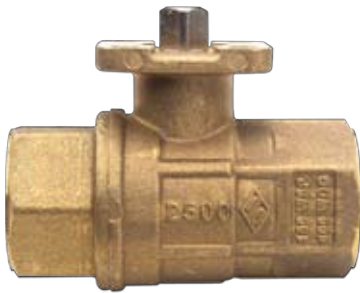
Media Flow Paths for "L" and "T" Port 3-Way Valves
Flow will be as depicted below depending on lever Position



B2F SERIES BALL VALVE



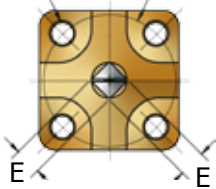
MSS SP-110 Compliant



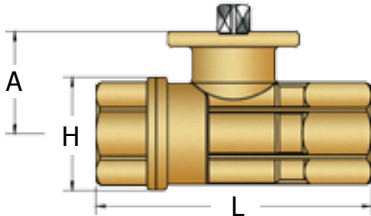
Features:

- Brass Full Port Ball Valve, ISO 5211 Mounting Pad
- 600 psi WOG - 150 WSP
- Blowout-Proof Stem, w/Chrome Plated Ball
- PTFE Seats w/Viton® O-Ring Backed Seat for Low Torque
- Available w/Stainless Steel Ball + Stem, or Lead Free Option C/F
- 0°F to 366°F Temperature Range

B ISO 5211



NOTE: **
Use Suffix "SS" for Stainless Steel Ball & Stem
example: B2F-2SS (1/4" to 2" only)



Dimensions

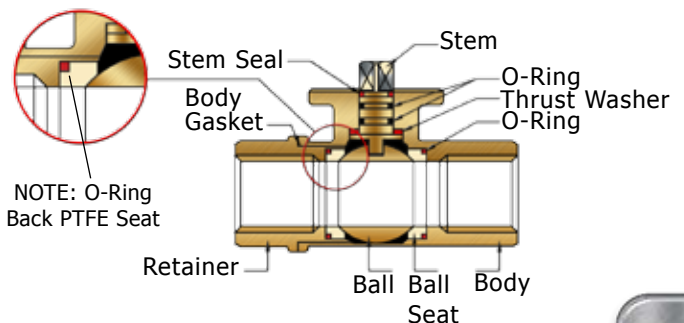
PART #	NPT	A	H	L	B	E in/mm	ISO 5211	Break Torque in/Lbs.	Cv	Wt Lbs.
B2F-2**	1/4"	1.28	1.32	2.64	0.24	.35/9	F03	54	6	0.82
B2F-3**	3/8"	1.28	1.32	2.64	0.24	.35/9	F03	54	6	0.79
B2F-4**	1/2"	1.28	1.32	2.64	0.24	.35/9	F03	54	19	0.66
B2F-6**	3/4"	1.36	1.57	3.00	0.24	.35/9	F03	54	34	0.91
B2F-8**	1"	1.79	1.93	3.35	0.24	.35/9	F03	54	50	1.55
B2F-10**	1-1/4"	1.93	2.30	3.66	0.24	.35/9	F03	54	103	2.14
B2F-12**	1-1/2"	2.52	2.87	4.13	0.27	.43/11	F05	151	268	3.71
B2F-16**	2"	2.88	3.60	4.80	0.27	.43/11	F05	151	309	5.52
B2F-20	2-1/2"	3.48	4.51	6.10	0.35	.55/14	F07	275	629	8.83
B2F-24	3"	3.85	5.35	6.89	0.35	.55/14	F07	275	1018	13.29
B2F-32	4"	4.59	6.53	8.03	0.35	.67/17	F07	647	1622	21.54

Bill of Materials

PART	Material
Body	Brass CW 617N 12165
Retainer	Brass CW 617N 12165
Ball	Brass CW 617N 12165
Ball Seat	PTFE
Stem Seal	PTFE
Thrust Washer	PTFE
Stem	Brass CW 614N 12164
O-Ring's	FKM (Viton®)
Body Gasket	PTFE

Lead Free Option

Available in Sizes 1/2" to 2" only





NB-NBSS SERIES BALL VALVE



NB-Series

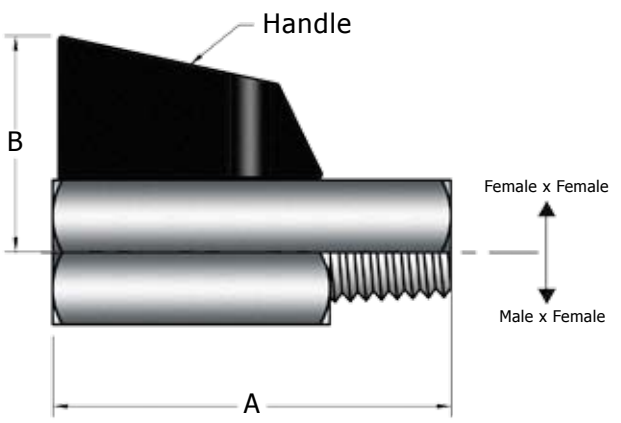
MSS SP-110 Compliant

NBSS-Series

- Features:**
- NB-Series:**
- Nickel Plated Brass
 - Pressure Rating 450psi WOG
 - Temperature to 330°F
 - Blowout Proof Stem, Chrome Plated Ball
 - PTFE Seats and Viton® O-Rings
- NBSS-Series:**
- 316 Stainless Steel
 - Pressure Rating 800Psi WOG
 - Temperature to 350°F
 - Blowout Proof Stem
 - PTFE Seats and Viton® O-Rings

Dimensions

Nickel Plated Brass



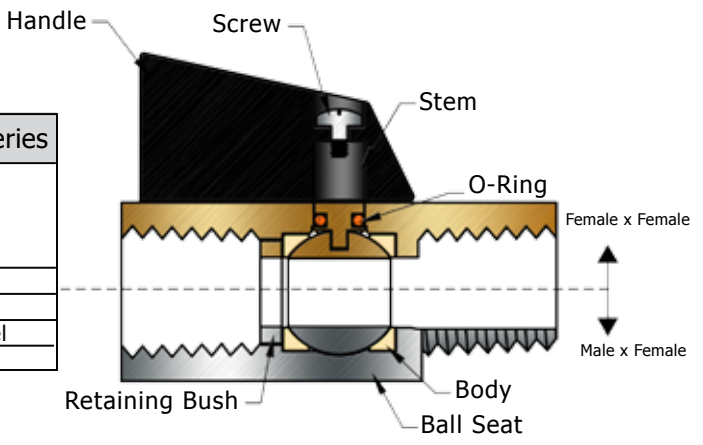
PART #		NPT	A	B	Cv	Wt. Lbs.
Female x female	Male x female					
NB-1	NB-M1	1/8"	1.61	1.16	5.00	0.25
NB-2	NB-M2	1/4"	1.69	1.16	5.00	0.20
NB-3	NB-M3	3/8"	1.69	1.16	3.13	0.17
NB-4	NB-M4	1/2"	2.16	1.24	6.26	0.28
NB-6	NB-M6	3/4"	2.36	2.36	8.46	0.49

Stainless Steel

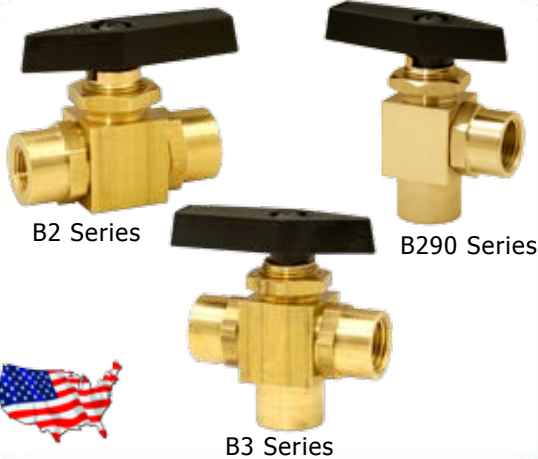
PART #		NPT	A	B	Cv	Wt. Lbs.
Female x female	Male x female					
SSNB-2	SSNB-M2	1/4"	1.69	1.16	5.00	0.36
SSNB-3	SSNB-M3	3/8"	1.69	1.16	3.13	0.35
SSNB-4	SSNB-M4	1/2"	2.16	1.24	6.26	0.35

Bill of Materials

PART	NB &NB-M Series	SSNB & SSNB-M Series
Body	Nickel Plated Brass CW 617N 12165	Stainless Steel AISI 316
Retainer		
Ball		
Stem		
Ball Seat	PTFE	PTFE
O-Ring	Viton®	Viton®
Screw	Steel 6/S	304 Stainless Steel
Handle	Glass Reinforced Nylon	ABS Plastic

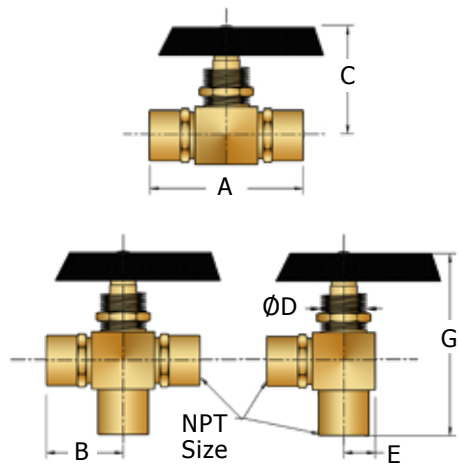


B2-B3-B290 SERIES BALL VALVE



Features:

- 29" Hg-1500psi WOG, Cold Non-Shock
- Blowout Proof Stem
- Teflon® Seats
- Temperature -40°F to 300°F
- Nickel Plated Brass Ball
- Panel Mount



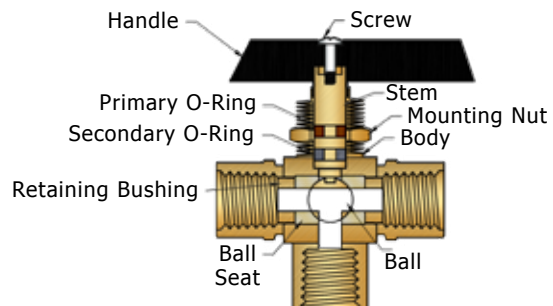
Dimensions

PART #	NPT	A	B	C	ØD	E	G*	Cv	Wt. Lbs.
B2-F1									0.27
B290-F1	1/8"	1.84	0.92	1.25	0.25	0.38	2.12	1.39	C/F
B3-F1									0.31
B2-F1									0.25
B290-F1	1/4"	1.84	0.92	1.25	0.25	0.38	2.12	1.59	0.24
B3-F1									0.27
B2-F1									0.56
B290-F1	3/8"	2.20	1.10	1.42	0.33	0.75	2.59	2.74	C/F
B3-F1									0.59
B2-F1									0.52
B290-F1	1/2"	2.38	1.19	1.42	0.33	0.75	2.59	2.74	C/F
B3-F1									0.57

*= G dimension applies to B3 and B290 only

Bill of Materials

B2, B3, and B290 Series	
Body	Brass
Stem	
Retaining Bushing	
End Fittings	
Mounting Nut	
Ball Seat	Teflon
Ball	Nickel Plated Brass
Primary O-Ring	Viton®
Secondary O-Ring	AFLAS
Handle	Cast Aluminum
Screw	Steel



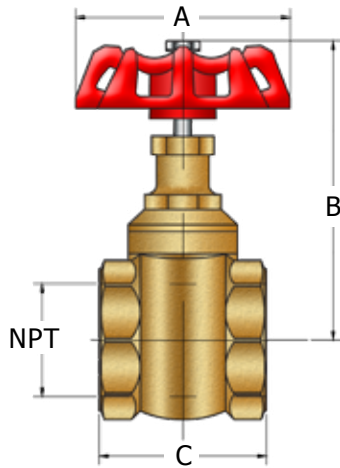


BGV SERIES GATE VALVE



Features:

- 200 psi Non-Shock CWP
- Non Rising Stem
- PTFE Stem Seal
- NPT Female by Female Std.
- Solder End Available C/F
- Cast Aluminum Hand Wheel
- Temperature 40°F to 200°F

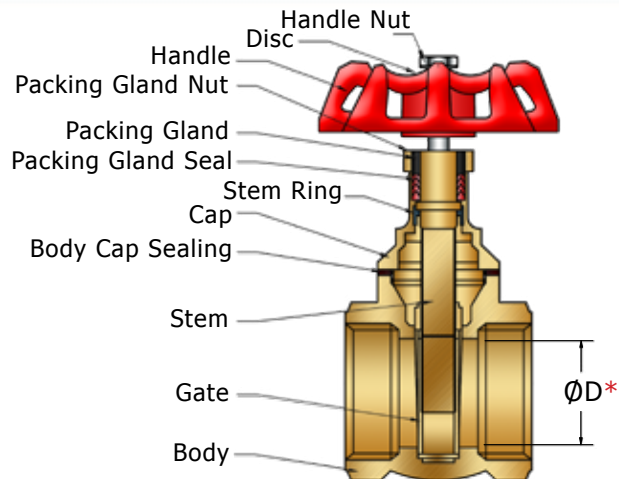


Dimensions

PART #	NPT	A	B	C	ØD*	Psi	Wt. Lbs.
BGV-4	1/2"	2.13	2.80	1.69	0.50	200	0.50
BGV-6	3/4"	2.13	2.99	1.77	0.67	200	0.65
BGV-8	1"	2.44	3.45	2.05	0.83	200	0.95
BGV-10	1-1/4"	2.68	3.96	2.32	1.06	200	1.40
BGV-12	1-1/2"	2.68	4.37	2.48	1.34	200	1.90
BGV-16	2"	3.07	5.16	2.72	1.77	200	2.75
BGV-20	2-1/2"	3.94	6.34	3.47	2.21	200	5.65
BGV-24	3"	4.33	7.42	3.74	2.67	200	7.25
BGV-32	4"	5.12	9.13	4.49	3.54	200	C/F

Bill of Materials

PART	Material
Body	Brass CW 617N
Gate	
Stem	
Body Cap Sealing	PTFE
Cap	Brass CW 617N
Stem Ring	
Packing Gland Seal	PTFE
Packing Gland	Brass CW 617N
Packing Gland Nut	
Red Round Handle	Steel
Disc	Aluminum
Handle Nut	Brass CW 617N

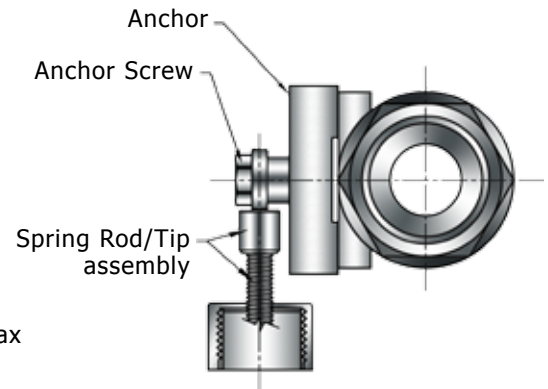
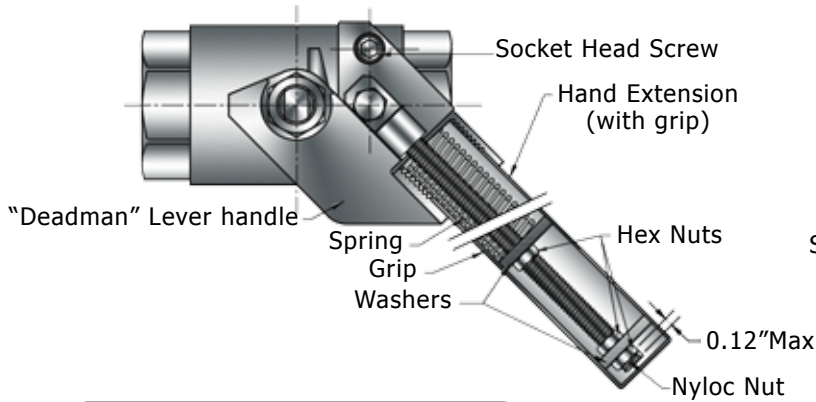


BHMDM/SHMDM SERIES BALL VALVE



Features:

- Spring Return Close use Suffix DMC
- Spring Return Open use Suffix DMO
- All Components of Lever are S.S.
- Stainless Valve Specs See Page MBV62
- Bronze Valve Specs See Page MBV43



DMO = Dead Man Open
 DMC = Dead Man Closed

Note: Dimensions for threading hex nut onto spring rod are approximate, adjust tension to give best on/off service

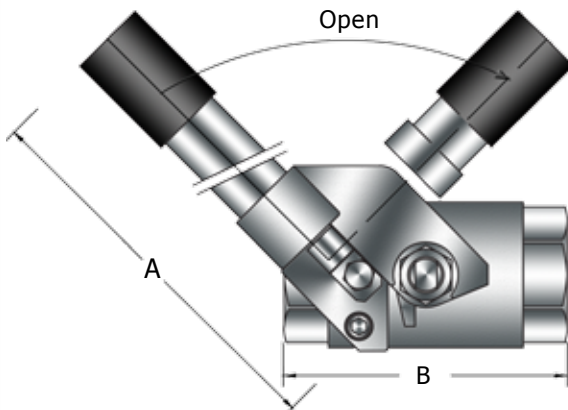
Dimensions

SIZE	A	B
1/4"	7.00	2.25
3/8"	7.00	2.25
1/2"	7.00	2.25
3/4"	7.00	3.00
1"	7.00	3.37
1-1/4"	9.00	4.00
1-1/2"	9.00	4.37
2"	9.00	4.68

Kit Contents

Qty	Description
1	Nyloc Nut
2	Hex Nuts
1	Anchor
1	Anchor Screw
2	Socket Head Screws
2	Washers
1	Grip*
1	Lever Handle
1	Handle Extension
1	Spring
1	Spring Rod/Tip Assembly

* Preassembled to Handle Extension
 All Components are made of
 Stainless Steel

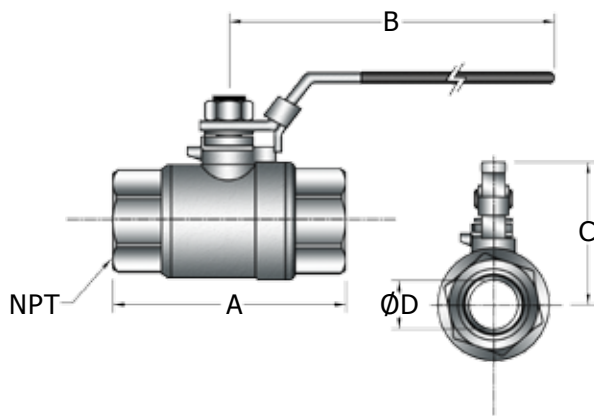




SGF SERIES BALL VALVE

Features:

- 316 Stainless Steel (CF8M)
- Full Port 2-Piece Ball Valve
- 29" Hg-1000psi WOG
- Blow Out Proof Stem
- Latch Lock Handle Standard
- RPTFE Seats and PTFE Seals
- Temperature -20°F to 400°F

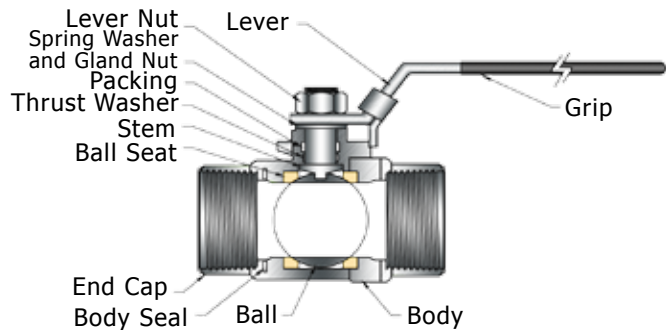


Dimensions

PART #	NPT	A	B	C	ØD	Cv	Wt. Lbs.
SGF-2	1/4"	2.00	3.94	2.30	0.46	6	0.50
SGF-3	3/8"	2.00	3.94	2.30	0.49	6	0.50
SGF-4	1/2"	2.28	3.94	2.30	0.59	18	0.70
SGF-6	3/4"	2.58	4.92	2.50	0.79	34	1.00
SGF-8	1"	3.10	5.87	3.07	0.98	49	1.70
SGF-10	1-1/4"	3.54	5.87	3.27	1.26	103	2.50
SGF-12	1-1/2"	4.13	7.48	4.02	1.50	266	3.90
SGF-16	2"	4.88	7.48	4.25	1.97	307	5.90
SGF-20	2-1/2"	5.75	9.84	5.43	2.48	C/F	12.40
SGF-24	3"	6.46	9.84	5.75	2.99	C/F	16.50
SGF-32	4"	9.45	11.81	6.89	3.94	C/F	30.00

Bill of Materials

PART	Material
Body	ASTM A351-CF8M
End Cap	
Ball	
Stem	
Gland Nut	
Spring Washer	AISI 304
Lever	
Lever Nut	
Body Seal	PTFE
Packing	
Thrust Washer	
Ball Seat	RPTFE
Grip	PVC

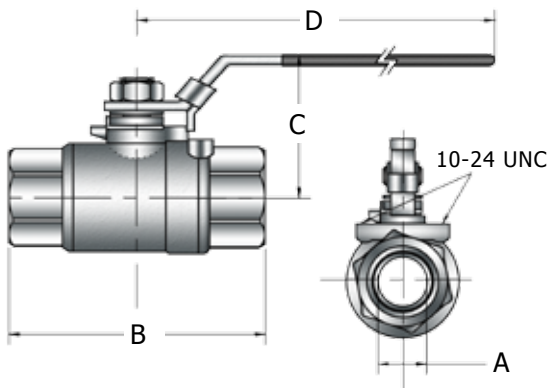


S2S SERIES BALL VALVE



Features:

- 316 Stainless Steel (CF8M)
- Standard Port 2-Piece Ball Valve
- 29" Hg-2000psi WOG
- Blow Out Proof Stem
- Latch Lock Handle Standard
- RTFE Seats and PTFE Seals
- Temperature -20°F to 400°F

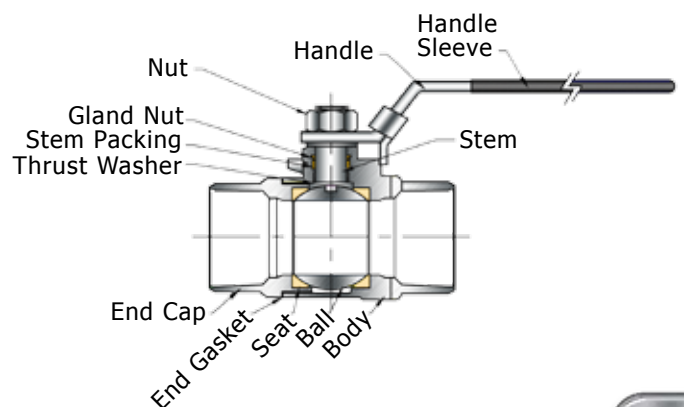


Dimensions

PART #	NPT	A	B	C	D	Cv	Wt	torque in/Lbs
S2S-2	1/4"	0.38	2.00	1.97	3.78	6	0.51	30
S2S-3	3/8"	0.46	2.00	1.97	3.78	7	0.51	30
S2S-4	1/2"	0.50	2.40	1.97	3.78	10	0.62	40
S2S-6	3/4"	0.59	2.67	2.09	3.78	16	0.99	60
S2S-8	1"	0.79	3.26	2.52	4.92	24	1.47	115
S2S-10	1-1/4"	1.00	3.54	2.60	4.92	47	1.98	160
S2S-12	1-1/2"	1.26	4.09	3.10	6.70	90	3.15	220
S2S-16	2"	1.50	4.60	3.27	6.70	125	5.17	300

Bill of Materials

Part	Material
Body	CF8M
Ball	AISI 316
Seat	RTFE
End Gasket	PTFE
End Cap	CF8M
Stem	AISI 316
Thrust Washer	RTFE
Stem Packing	PTFE
Gland Nut	AISI 316
Handle	
Handle Sleeve	Vinyl
Nut	AISI 316





S2F SERIES BALL VALVE

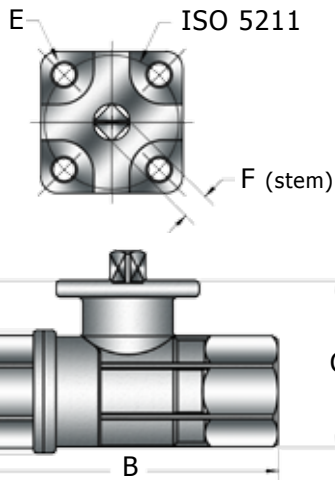
MSS SP-110 Compliant



Complies with NACE MR0175,
ISO 15156 & NACE MR 0103

Features:

- 316 Stainless Steel Full Port Ball Valve
- ISO 5211 Mounting Pad
- 1000 psi WOG - 150 WSP
- Blow Out Proof Stem
- PTFE with Viton® O-Ring Backed Seats for Low Torque
- Temperature 0°F to 366°F

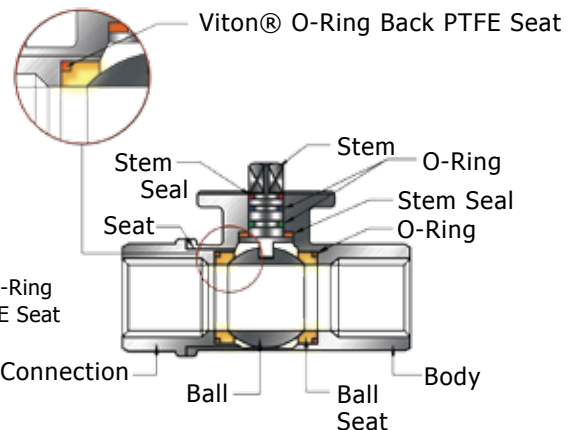


Dimensions

PART #	NPT	A	B	C	D	E	F in/mm	ISO 5211	Break Torque in/Lbs	Cv	Wt
S2F-2	1/4"	1.52	2.56	2.24	1.44	0.24	.35/9	F03 F04	27	7	0.95
S2F-3	3/8"	1.52	2.56	2.24	1.44	0.24	.35/9	F03 F04	27	10	0.89
S2F-4	1/2"	1.28	2.63	1.96	1.35	0.24	.35/9	F03	54	18	0.68
S2F-6	3/4"	1.36	3.07	2.19	1.65	0.24	.35/9	F03	54	34	0.91
S2F-8	1"	1.75	3.54	2.76	2.02	0.24	.35/9	F03	54	49	1.35
S2F-10	1-1/4"	1.89	3.93	3.16	2.53	0.24	.35/9	F03	54	103	2.22
S2F-12	1-1/2"	2.48	4.40	4.00	3.03	0.27	.43/11	F05	151	267	3.69
S2F-16	2"	2.84	5.31	4.75	3.81	0.27	.43/11	F05	151	307	6.49
S2F-20	2 1/2"	4.28	6.32	6.60	4.64	0.39 0.47	.67/17	F07 F10	484	322	16.38
S2F-24	3"	4.63	7.01	7.37	5.48	0.39 0.47	.67/17	F07 F10	772	584	22.82

Bill of Materials

PART	Material
Body	CF8M
End Connection	CF8M
Ball	AISI 316-CF8M
Ball Seat	PTFE
Seat	PTFE
Stem Seal	PTFE
O-Rings	FKM (Viton®)
Stem	AISI 316
Stem Seal	PTFE



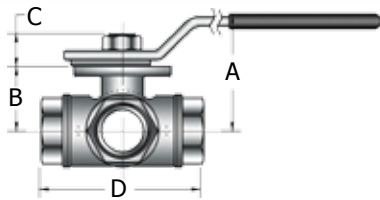
NOTE: O-Ring
Back PTFE Seat

S2S/S2F-TT & TL SERIES BALL VALVE

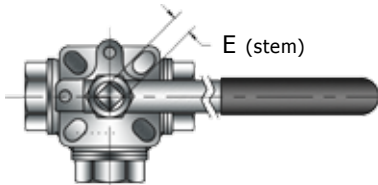


Features:

- Stainless Steel 3-Way Ball Valve
- 29" Hg-1000psi WOG (1/4" to 1"), 800psi (1-1/4" to 2")
- ISO 5211 Mounting Pad
- 4 RTFE Seat Design for Sealing Between Pressurized Ports
- Temperature -20°F to 450°F



NOTE: *
S2S-3TT = T-Port
S2S-3TL = L-Port

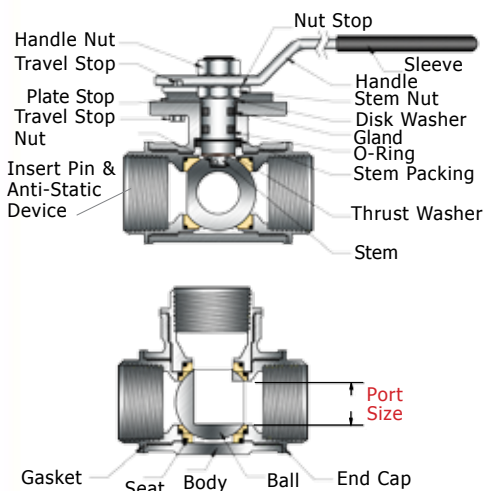


Dimensions

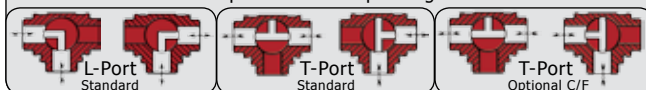
PART # Full Port	PART # Std Port	Port Size	A	B	C	D	E in/mm	ISO 5211	Break Torque in/Lbs	Wt. Lbs.
S2F-2T*	N/A	0.43	2.44	1.45	0.40	2.83	.35/9	F03/04	105	1.45
S2F-3T*	S2S-4T*	0.47	2.44	1.45	0.40	2.83	.35/9	F03/04	105	1.41
S2F-4T*	S2S-6T*	0.59	2.51	1.65	0.45	3.26	.35/9	F03/04	138	1.87
S2F-6T*	S2S-8T*	0.78	3.22	1.90	0.59	3.89	.43/11	F04/05	184	3.21
S2F-8T*	S2S-10T*	0.98	3.50	2.18	0.55	4.40	.43/11	F04/05	323	4.80
S2F-10T*	S2S-12T*	1.25	3.85	2.48	0.64	4.92	.55/14	F05/07	461	7.23
S2F-12T*	S2S-16T*	1.49	4.25	2.88	0.62	5.86	.55/14	F05/07	633	11.5
S2F-16T*	N/A	1.96	5.51	3.63	0.88	6.85	.66/17	F07/10	1037	20.9

Bill of Materials

PART	Material	PART	Material
End Cap	A351 CF8M	Stem Nut	304 Stainless Steel
Gasket	PTFE	Nut Stop	
Body	A351 CF8M	Space Washer	
Ball	316 Stainless Steel	Plate Stop	
Seats	RTFE	Handle Nut	
Stem	316 Stainless Steel	Handle	
Stem Seal	RPTFE	Handle Sleeve	Vinyl
O-Ring	Viton®	Travel Stop	304 Stainless Steel
Stem Packing	PTFE	Travel Stop Nut	
Gland	304 Stainless Steel	Insert Pin	316 Stainless Steel
Disk Washer	301 Stainless Steel	Antistatic Device	



Media Flow Paths for "L" and "T" Port 3-Way Valves
Flow will be as depicted below depending on lever position





S3F SERIES BALL VALVE

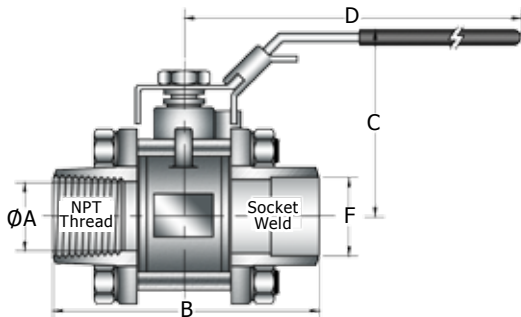


Features:

- Stainless Steel 3-Piece Full Port Ball Valve
- Latch Lock Handle Standard
- 29" Hg-1000psig WOG, Cold Non-Shock (1/4" to 2"), (800psi 2-1/2" to 4")
- Blow Out Proof Stem, with/Adjustable Stem Packing
- RTFE Seats with PTFE Stem Packing
- Temperature -20°F to 450°F

Connection Options:

- NPT End = Standard (no suffix)
- Socket Weld = use Suffix "W"

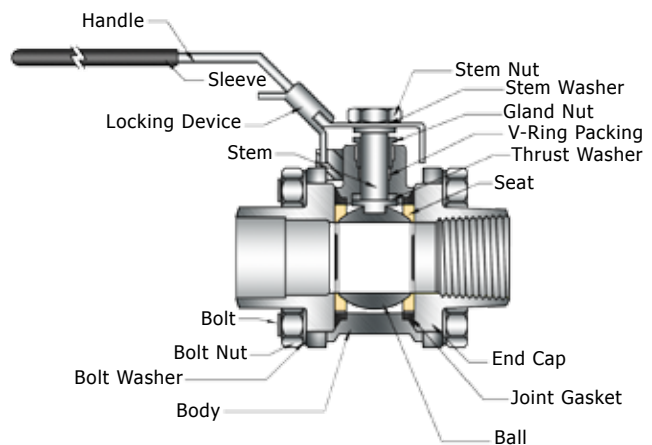


Dimensions

Part #	NPT	ØA	B	C	D	F	Break Torque in/Lbs	Cv	Wt
S3F-2	1/4"	0.46	2.26	2.00	4.00	0.56	40	8	0.78
S3F-3	3/8"	0.51	2.26	2.00	4.00	0.70	40	10	0.74
S3F-4	1/2"	0.60	2.62	2.40	5.20	0.87	60	14	1.25
S3F-6	3/4"	0.80	3.05	2.56	5.20	1.09	80	24	1.67
S3F-8	1"	1.00	3.44	2.84	6.60	1.36	120	45	2.31
S3F-10	1-1/4"	1.28	4.11	3.12	6.60	1.71	240	82	3.88
S3F-12	1-1/2"	1.52	4.76	3.44	7.60	1.95	420	125	5.37
S3F-16	2"	2.00	5.26	3.80	7.60	2.44	560	200	8.16
S3F-20	2-1/2"	2.60	6.56	5.20	10.00	2.94	1100	290	15.83
S3F-24	3"	3.20	7.28	5.92	10.00	3.60	1600	470	23.42
S3F-32	4"	3.99	9.28	7.28	11.02	4.61	3200	800	46.29

Bill of Materials

PART	Material
Body	CF8M
End Cap	
Ball	316 Stainless Steel
Stem	316 Stainless Steel
Stem Nut	304 Stainless Steel
Stem Washer	304 Stainless Steel
Handle	
Seat	RTFE
Gland Nut	304 Stainless Steel
V-Ring Packing	PTFE
Thrust Washer	
Bolt Washer	304 Stainless Steel
Joint Gasket	PTFE
Bolt	304 Stainless Steel
Locking Device	304 Stainless Steel
Handle Sleeve	Vinyl
Bolt Nut	304 Stainless Steel

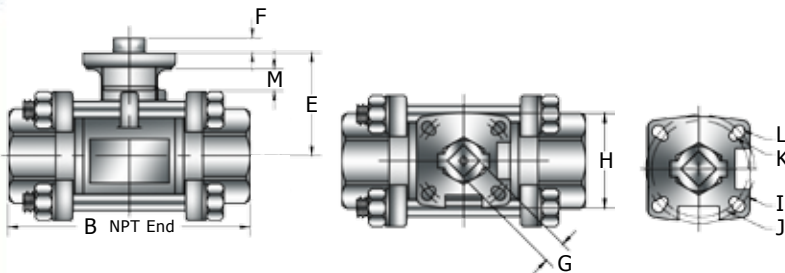


S3FDM SERIES BALL VALVE

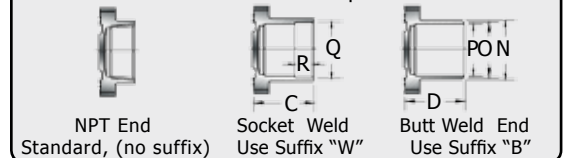


Features:

- Stainless Steel 3-Piece Full Port Ball Valve
- ISO 5211 Mounting Pad
- 1000psi WOG, 1/2" to 2"
- Blow Out Proof Stem, Multi-Layer V-Ring
- Adjustable Stem Packing
- PTFE Seats and Viton® O-Ring
- Available in Carbon Steel C/F
- Latch Lock Handle Standard
- Temperature -20°F to 450°F



Connection Options:

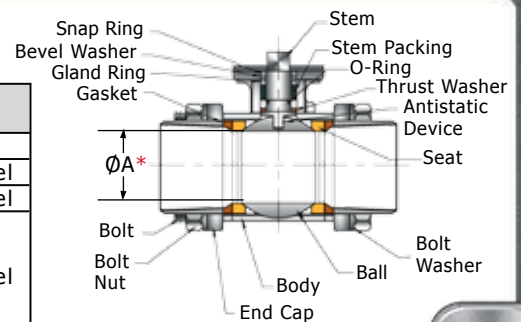


Dimensions

Part #	NPT	ØA*	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	Wt Lbs
S3FDM-4	1/2"	0.59	2.58	2.58	2.54	1.69	0.35	0.35	1.65	1.42	1.65	0.12	0.12	0.63	0.91	0.75	0.62	0.87	0.43	1.50
S3FDM-6	3/4"	0.79	3.11	3.11	2.99	1.83	0.35	0.35	1.65	1.42	1.65	0.12	0.12	0.63	1.10	0.94	0.83	1.08	0.53	1.85
S3FDM-8	1"	0.98	3.39	3.39	3.35	1.98	0.43	0.43	1.97	1.65	1.97	0.12	0.14	0.67	1.38	1.24	1.05	1.36	0.53	2.75
S3FDM-10	1-1/4"	1.26	4.13	4.13	4.06	2.17	0.43	0.43	1.97	1.65	1.97	0.12	0.14	0.67	1.69	1.54	1.38	1.70	0.55	3.95
S3FDM-12	1-1/2"	1.50	4.69	4.69	4.69	2.66	0.55	0.55	2.76	1.97	2.76	0.14	0.18	0.83	1.97	1.77	1.59	1.94	0.59	5.85
S3FDM-16	2"	1.97	5.24	5.24	5.24	2.97	0.55	0.55	2.76	1.97	2.76	0.14	0.18	0.83	2.40	2.20	2.07	2.41	0.69	8.50

Bill of Materials

PART	Material	PART	Material
Body	CF8M	Stem Packing	PTFE
Cap		Gland Ring	304 Stainless Steel
Ball		Bevel Washer	301 Stainless Steel
Stem	316 Stainless Steel	Snap Ring	304 Stainless Steel
Seat		Bolts	
Gasket	PTFE	Bolt Nuts	
Thrust Washer	Polyfill Teflon	Bolt Washer	
O-Ring	Viton®	Static Device	

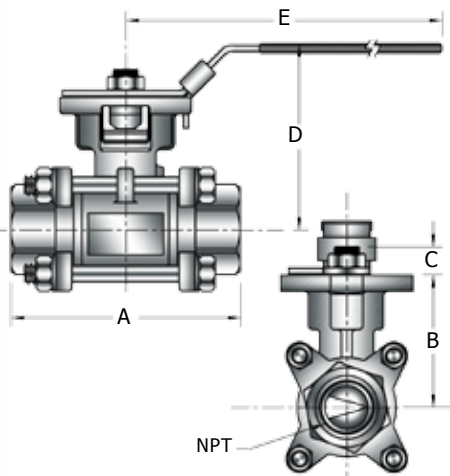




S3FV SERIES BALL VALVE

Features:

- Stainless Steel 3-Piece, V-Cut Ball Valve
- ISO 5211 Mounting Pad
- Available in Latch Lock Handle
- 50% Stainless Steel/50% PTFE Seats
- Class VI Shut-Off
- Blow Out Proof Stem, Anti-Static Design
- Available in NPT and Socket Weld
- Temperature -18°F to 428°F



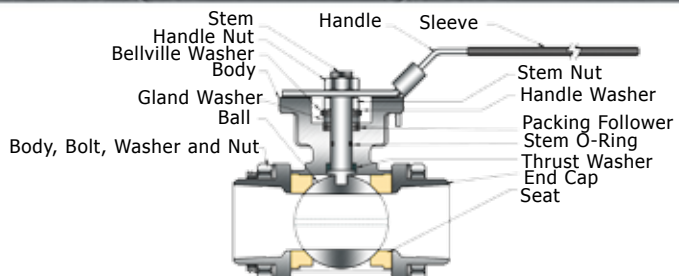
Dimensions

Part #	NPT	A	B	C	D	F	ISO 5211	Drive	Break Torque in/Lbs	Wt. Lbs.
S3FV-4**	1/2"	2.50	1.46	0.33	2.87	4.41	F03/F05	9mm	62	1.30
S3FV-6**	3/4"	2.85	1.77	0.33	3.18	4.41	F03/F05	9mm	71	1.75
S3FV-8**	1"	3.19	2.11	0.45	3.56	5.35	F03/F05	9mm	124	2.40
S3FV-10**	1-1/4"	3.72	2.32	0.45	3.89	7.28	F03/F05	9mm	195	C/F
S3FV-12**	1-1/2"	4.25	2.94	0.55	4.54	7.79	F05/F07	14mm	275	5.65
S3FV-16**	2"	4.78	3.29	0.54	4.88	7.79	F05/F07	14mm	284	5.90
S3FV-20**	2-1/2"	6.20	4.28	0.71	6.10	10.40	F07/F10	17mm	682	C/F
S3FV-24**	3"	7.48	4.66	0.71	8.21	10.40	F07/F10	17mm	744	26.25
S3FV-32**	4"	8.86	6.06	0.91	8.53	12.80	F07/F10	17mm	1355	C/F

Note: ** = Degree of V-Port Opening (30,60,90 Degree)

Bill of Materials

PART	Material
Body	304 Stainless Steel
Ball	
End Cap	
Gland Bushing	
Handle	
Stem Nut	
Handle Washer	
Handle Nut	
Body Bolt	
Body Nut	
Washer	Viton®
Stem O-Ring	
Seat	50% SS + 50% PTFE
Packing Follower	PTFE + 25% GF
Grip	Vinyl



Available V-port Configurations:

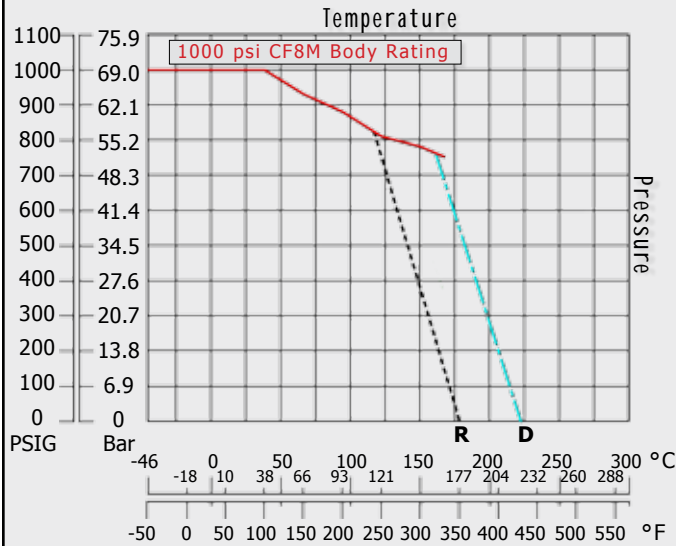


S3FV SERIES BALL VALVE

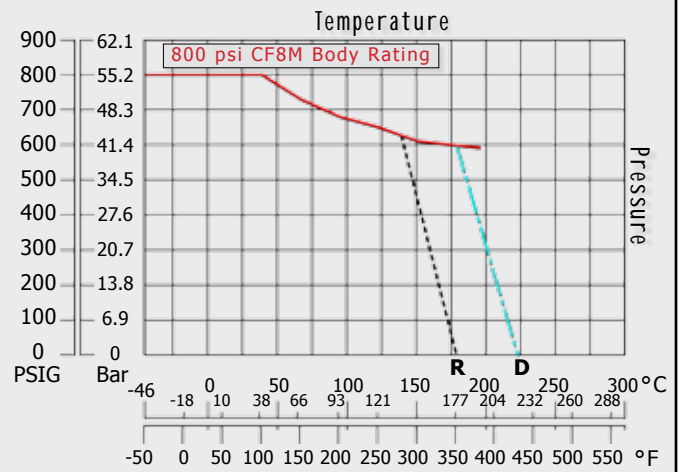


Pressure - Temperature Chart

1,000 PSI (1/2" to 2") Pressure-Temperature Chart



800 PSI (1/2" to 2") Pressure-Temperature Chart



Seat Material

D = 50% SS Filled PTFE, Standard

R = 15% Glass Filled, Special Order C/F

Cv Versus Valve Opening Percentage

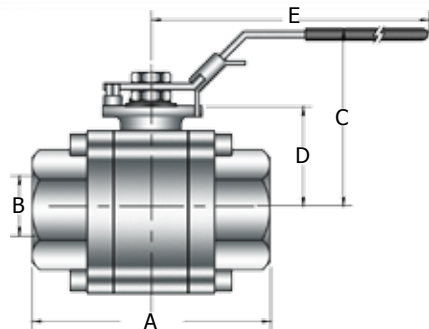
Size	V-Ball Angle	Class VI S/O	Low %	Control Zone									Full Open
				0%	10%	20%	30%	40%	50%	60%	70%	80%	
1/2"	30	0.00	0.04	0.24	0.47	0.77	1.19	1.84	2.46	3.42	4.63	5.57	
	60	0.00	0.04	0.29	0.74	1.11	1.83	2.91	4.31	7.01	9.45	12.79	
	90	0.00	0.06	0.47	0.85	1.27	2.11	3.22	4.77	8.31	11.59	14.72	
3/4"	30	0.00	0.07	0.29	0.63	1.02	1.56	2.44	3.26	4.52	6.12	7.31	
	60	0.00	0.07	0.36	0.94	1.48	2.42	3.86	5.26	9.24	12.43	16.27	
	90	0.00	0.08	0.61	1.10	1.71	2.69	4.27	6.25	10.85	15.30	19.39	
1"	30	0.00	0.09	0.45	1.25	2.07	3.56	5.32	7.69	10.51	12.85	15.49	
	60	0.00	0.10	0.70	1.75	2.77	5.14	8.01	11.89	18.71	23.23	32.81	
	90	0.00	0.11	1.00	2.77	5.10	7.74	12.2	17.32	24.47	26.81	43.88	
1-1/4"	30	0.00	0.05	0.47	1.35	2.49	4.13	6.11	8.81	11.75	14.86	17.36	
	60	0.00	0.07	0.66	2.04	3.42	6.45	10.79	15.41	22.34	33.39	43.43	
	90	0.00	0.08	0.80	2.91	5.52	10.23	17.27	19.51	34.93	51.75	65.82	
1-1/2"	30	0.00	0.07	0.66	1.87	3.40	5.66	8.36	12.14	16.17	20.45	23.88	
	60	0.00	0.09	0.93	2.82	4.70	8.89	14.84	21.16	30.73	45.87	59.75	
	90	0.00	0.10	1.07	4.00	7.45	14.08	23.78	26.77	48.05	71.17	90.50	
2"	30	0.00	0.09	1.19	3.80	7.53	12.27	17.85	26.45	36.46	48.10	55.84	
	60	0.00	0.11	1.53	5.79	10.41	20.58	34.10	48.74	69.05	104.23	135.77	
	90	0.00	0.17	1.90	7.28	13.59	25.37	42.30	55.55	87.04	129.77	167.36	
2-1/2"	30	0.00	0.09	1.16	4.44	7.91	13.40	20.05	30.44	41.92	69.78	76.95	
	60	0.00	0.13	1.46	5.91	11.88	23.24	37.94	59.30	83.30	113.64	162.55	
	90	0.00	0.18	1.86	7.28	16.45	31.15	53.54	77.87	118.29	177.33	239.42	
3"	30	0.00	0.13	1.21	4.16	9.49	15.97	26.78	38.92	53.30	69.78	85.92	
	60	0.00	0.15	2.91	6.73	15.81	29.38	46.34	73.58	106.72	149.89	193.22	
	90	0.00	0.20	4.13	8.66	21.10	41.09	69.31	105.90	161.04	237.24	359.22	
4"	30	0.00	0.16	1.75	7.84	18.61	35.21	58.61	87.88	127.45	158.53	196.34	
	60	0.00	0.26	2.22	12.46	33.68	63.00	106.27	160.48	233.98	329.51	437.40	
	90	0.00	0.35	4.36	19.70	50.31	91.82	157.45	240.50	365.15	546.65	830.90	



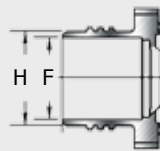
S3F22/C3F22 SERIES BALL VALVE

Features:

- 3-Piece Stainless or Carbon Steel Ball Valve
- 29Hg-2250psi WOG Cold Non-Shock, 250psi WSP
- Live Loaded Stem 17-4PH Stainless Steel
- Seats, TFM Standard, *See Chart*
- Fire Safe to AP1607-4, Weld in Place Design
- Temperature Determined by Seat Material, *See Chart*
- ASME/ANSI B16-34 Class 600, Meets NACE MR0175
- Federal Spec. WW-V 35C Type
- All Valves Tested to API-598

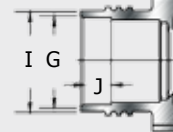


Connection Options:



Butt Weld End
Use Suffix "B"

Note:
weld in place
design



Socket Weld
Use Suffix "W"

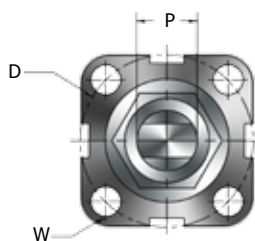


NPT End
Standard, (no Suffix)

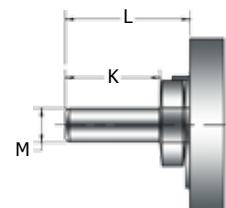
Dimensions

Part # Stainless	Part # Carbon	NPT	A NPT	A B&W	B	C	D	E	F	G	H	I	J	Cv	Torque in/Lbs.	Wt. Lbs.
S3F22-2	C3F22-2	1/4"	2.72	4.81	0.46	2.69	1.54	6.30	0.30	0.56	0.71	1.02	0.39	18	75	3
S3F22-3	C3F22-3	3/8"	2.72	4.81	0.50	2.69	1.54	6.30	0.42	0.69	0.71	1.02	0.39	18	75	3
S3F22-4	C3F22-4	1/2"	2.91	4.89	0.59	2.69	1.54	6.30	0.55	0.85	0.85	1.24	0.39	18	85	3
S3F22-6	C3F22-6	3/4"	3.38	5.17	0.79	2.85	1.70	6.30	0.74	1.07	1.07	1.52	0.51	42	140	4
S3F22-8	C3F22-8	1"	3.70	5.24	0.98	3.44	2.06	6.89	0.96	1.33	1.34	1.69	0.51	72	190	5
S3F22-10	C3F22-10	1-1/4"	4.09	5.72	1.26	3.57	2.19	6.89	1.28	1.67	0.68	2.17	0.51	124	320	9
S3F22-12	C3F22-12	1-1/2"	4.61	6.19	1.58	4.24	2.65	8.66	1.50	1.91	1.91	2.44	0.51	210	430	12
S3F22-16	C3F22-16	2"	5.20	6.62	1.97	4.49	2.90	8.66	1.94	2.41	2.38	2.95	0.63	350	560	16
S3F22-20	C3F22-20	2-1/2"	7.28	8.78	2.50	6.22	3.39	15.4	2.32	2.91	2.88	3.62	0.98	650	950	32
S3F22-24	C3F22-24	3"	8.70	10.04	3.00	6.54	4.47	15.4	2.90	3.54	3.50	4.18	0.98	950	1200	45

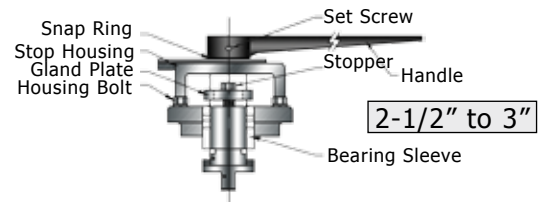
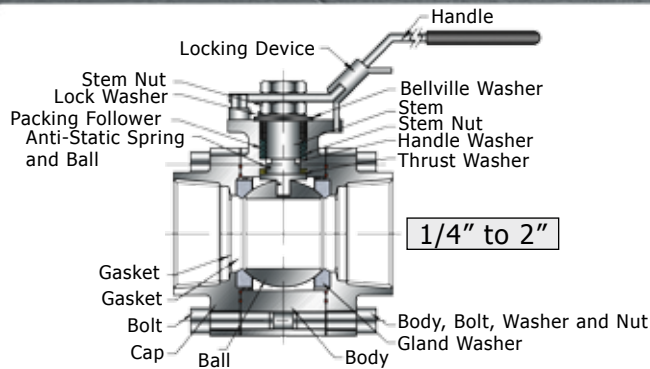
Mounting Dimensions



NPT	D	K	L	M	P	W (UNC)	ISO 5211
1/4"	1.65	0.28	0.53	0.25	0.47	10-24	F04
3/8"	1.65	0.28	0.53	0.25	0.47	10-24	F04
1/2"	1.65	0.28	0.53	0.25	0.47	10-24	F04
3/4"	1.65	0.28	0.53	0.25	0.47	10-24	F04
1"	1.97	0.44	0.74	0.32	0.55	1/4"-20	F05
1-1/4"	1.97	0.44	0.74	0.32	0.55	1/4"-20	F05
1-1/2"	2.76	0.53	0.88	0.37	0.63	5/16"-18	F07
2"	2.76	0.53	0.88	0.37	0.63	5/16"-18	F07
2-1/2"	4.02	1.75	3.07	0.67	1.10	1/2"-13	F10
3"	4.02	1.75	3.07	0.67	1.10	1/2"-13	F10



S3F22/C3F22 SERIES BALL VALVE

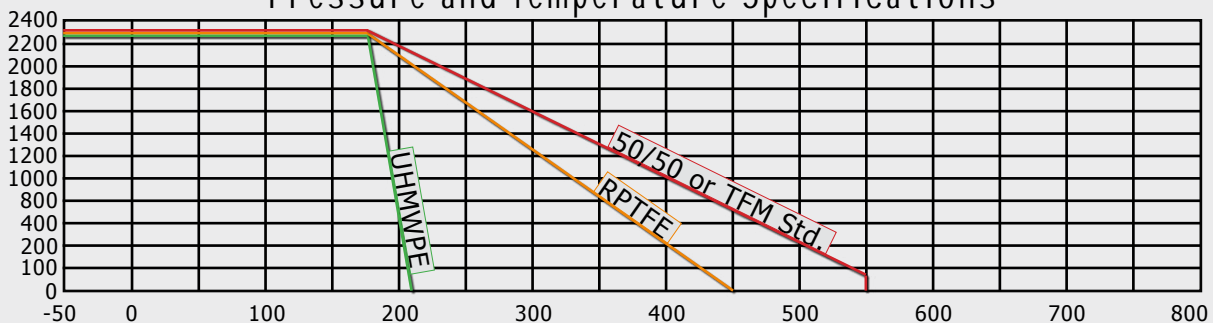


Bill of Materials

PART	Stainless Steel 1/4" to 2"	Carbon Steel 1/4" to 2"	Stainless Steel 2-1/2" to 3"	Carbon Steel 2-1/2" to 3"
Body	A351 CF8M 316	A216 WCB	A351 CF8M 316	A216 WCB
Cap	A351 CF8M 316 *	A216 WCB	A351 CF8M 316	A216 WCB
Ball	A351 CF8M 316	A351 CF8M	A351 CF8M 316	304 Stainless Steel
Seat	Super-Tek®	Super-Tek	RPTFE	RPTFE
Gasket	TFM	TFM	Super-Tek TFM	Super-Tek TFM
Gasket	Graphite	Graphite	Graphite	Graphite
Bolt	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Stem	17-4 PH	17-4 PH	17-4 PH	17-4 PH
Thrust Bearing	50% SS316 Filled PTFE	50% SS316 Filled PTFE	50% SS316 Filled PTFE	50% SS316 Filled PTFE
Thrust Washer	RPTFE	RPTFE	Super-Tek TFM	Super-Tek TFM
Stem Packing	RPTFE	RPTFE	Super-Tek TFM	Super-Tek TFM
Packing Follower	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Belleville Washer	304 Stainless Steel	304 Stainless Steel	N/A	N/A
Lock Washer	304 Stainless Steel	304 Stainless Steel	N/A	N/A
Stem Nut	304 Stainless Steel	304 Stainless Steel	N/A	N/A
Handle	304 Stainless Steel	304 Stainless Steel	Ductile Iron	Ductile Iron
Stopper	304 Stainless Steel	304 Stainless Steel	N/A	N/A
Handle Sleeve	Vinyl	Vinyl	N/A	N/A
Locking Device	304 Stainless Steel	304 Stainless Steel	N/A	N/A
Anti-Static Spring	301 Stainless Steel	301 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Anti-Static Ball	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Bearing Sleeve	N/A	N/A	Super-Tek TFM	Super-Tek TFM
Gland Plate	N/A	N/A	304 Stainless Steel	304 Stainless Steel
Gland Bolt	N/A	N/A	304 Stainless Steel	304 Stainless Steel
Set Screw	N/A	N/A	304 Stainless Steel	304 Stainless Steel
Stop Housing	N/A	N/A	A351 CF8M	A216 WCB
Snap Ring	N/A	N/A	Nickel Plated CS	Nickel Plated CS
Housing Bolt	N/A	N/A	304 Stainless Steel	304 Stainless Steel

* Weld End, End Caps are 316L

Pressure and Temperature Specifications



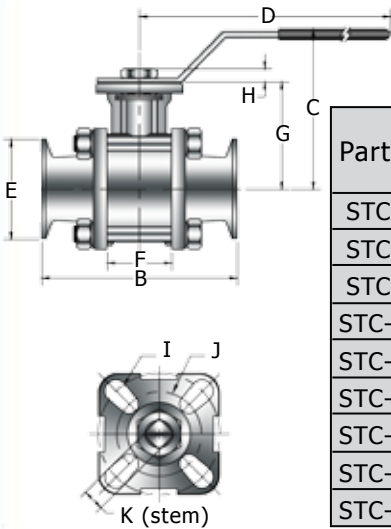


STC SERIES BALL VALVE



Features:

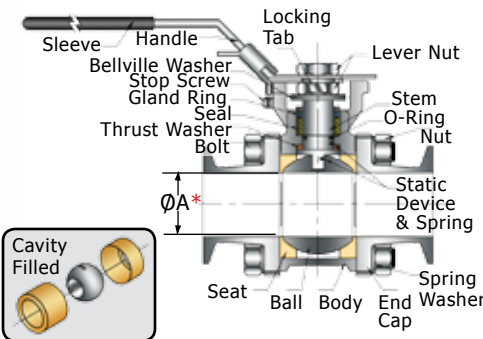
- Stainless Steel Full Port Sanitary Tri-Clamp Ball Valve
- ISO 5211 Mounting Pad w/Latch Lock Handle
- 29" Hg-1000psi WOG, Cold Non-Shock
- 316 Stainless Steel Ball+Stem, CF8M S.S. Body
- Blow Out Proof Stem
- Cavity Filled Teflon Seats Std., Cavity Fillers are Virgin PTFE-meets CFR21 (Non-Cavity Filled Seats Optional)
- Temperature 0°F to 400°F
- Complies with FDA, USDA and 3A



Dimensions

Part #	NPT	ØA*	B	C	D	E	F	G	H	I	J	K in/mm	ISO 5211	Break Torque ft/Lbs.		WT. Lbs.
														non cavity filled	cavity filled	
STC-4	1/2"	0.37	3.50	2.79	4.33	1.00	0.99	1.67	0.32	1.65	1.42	0.35/9	F03/F04	75	80	1.67
STC-6	3/4"	0.63	4.00	2.89	4.33	1.00	1.09	1.76	0.32	1.65	1.42	0.35/9	F03/F04	85	90	1.91
STC-8	1"	0.87	4.50	3.31	5.32	1.98	1.30	2.13	0.39	1.97	1.65	0.43/11	F04/F05	130	180	3.17
STC-12	1-1/2"	1.37	5.50	4.31	6.50	1.98	1.94	2.89	0.58	2.76	1.97	0.55/14	F05/F07	204	410	7.24
STC-16	2"	1.87	6.25	4.68	6.50	2.52	2.50	3.26	0.58	2.76	1.97	0.55/14	F05/F07	370	460	10.10
STC-20	2-1/2"	2.37	7.00	5.25	9.06	3.05	2.76	4.21	0.67	4.02	2.76	0.67/17	F07/F10	610	980	21.80
STC-24	3"	2.88	9.00	6.30	11.81	3.58	4.02	4.62	0.67	4.02	2.76	0.67/17	F07/F10	760	1050	29.00
STC-32	4"	3.84	9.50	6.90	11.81	8.90	4.02	5.21	0.67	4.02	2.76	0.67/17	F07/F10	1315	1420	46.50
STC-48	6"	5.78	15.50	8.51	19.68	6.57	7.42	8.50	1.06	4.92	4.02	1.06/27	F10/F12	C/F	C/F	C/F

Bill of Materials



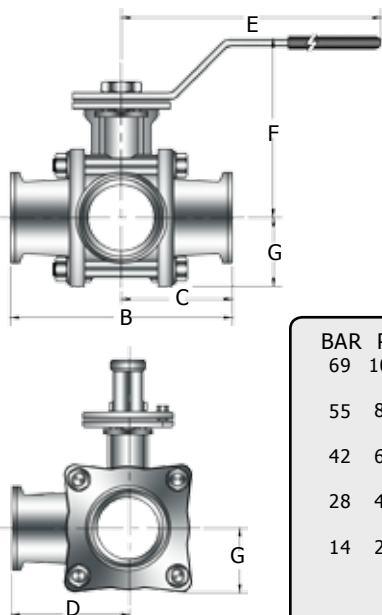
PART	Material	PART	Material
Body	316 Stainless Steel/ CF8M	Locking Tab	304 Stainless Steel
End Caps		Handle	
Seats	PTFE	O-Ring	Viton®
Ball	316 Stainless Steel	Bolts	304 Stainless Steel
Stem		Bolt Nuts	
Thrust Washer	PTFE	Spring Washer	
Seal		Stop Screw	
Gland Ring	304 Stainless Steel	Handle Sleeve	Vinyl
Bellville Washer	301 Stainless Steel	Static Device	316 Stainless Steel
Lever Nut	304 Stainless Steel	Spring	

STC-TT & TL SERIES BALL VALVE



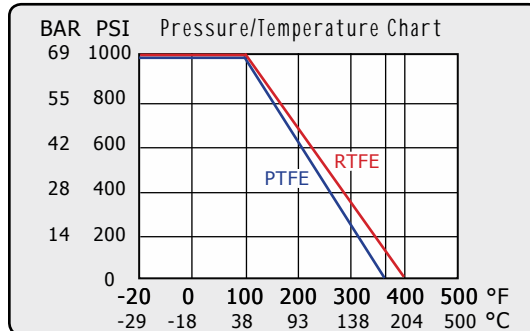
Features:

- Stainless Steel 3-Way Sanitary Tri-Clamp Ball Valve
- ISO 5211 Mounting Pad w/Latch Lock Handle
- 316 Stainless Steel Ball & Stem, CF8M S.S. Body
- Blow Out Proof Stem
- Cavity Filled Teflon Seats Std. (Non-Cavity Filled Seats Optional)
- Complies with FDA, USDA 3A (Cavity Filled Only)



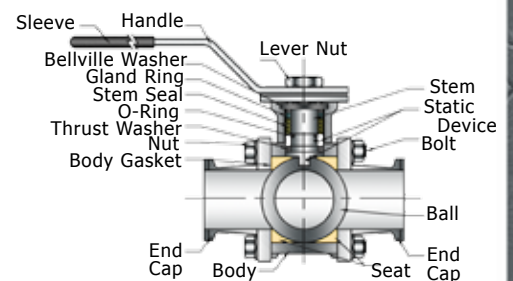
Dimensions

Part #	NPT	ØA*	B	C	D	E	F	G	ISO 5211	Stem (mm)	Lbs
STC-8T*	1"	1.13	4.50	2.25	2.23	7.28	3.62	1.12	F04/05	11	3.5
STC-12T*	1-1/2"	1.37	5.50	2.75	2.44	8.66	4.41	1.53	F05/07	14	6
STC-16T*	2"	1.87	6.25	3.13	3.13	8.66	4.76	1.82	F07/10	14	9.5
STC-24T*	3"	2.88	9.00	4.50	4.50	13.78	6.63	2.91	F07/10	17	29
STC-32T*	4"	3.83	9.50	4.75	4.75	13.78	7.22	3.46	F10/012	17	44



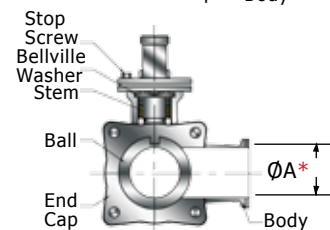
NOTE:
For Suffix * use "T" (T-Port) or "L" (L-Port)

Example:
STC-16TT = 2" T-Port
STC-8TL = 1" L-Port



Bill of Materials

PART	Material	PART	Material
Body	CF8M/	Lever Nut	304 Stainless Steel
End Cap	316 Stainless Steel	Locking Tab	304 Stainless Steel
Seat	PTFE	Handle	Vinyl
Ball	316 Stainless Steel	Handle Sleeve	Vinyl
Stem	316 Stainless Steel	Stop Screw	304 Stainless Steel
Thrust Washer	PTFE	Bolt	304 Stainless Steel
Stem Seal	PTFE	Bolt Nut	304 Stainless Steel
Gland Ring	304 Stainless Steel	Lock Washer	316 Stainless Steel
O-Ring	Viton®	Static Device	316 Stainless Steel
Bellville Washer	301 Stainless Steel	Body Gasket	PTFE



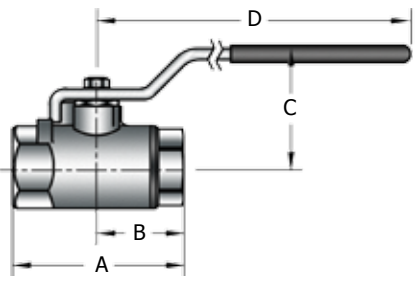


SHM SERIES BALL VALVE

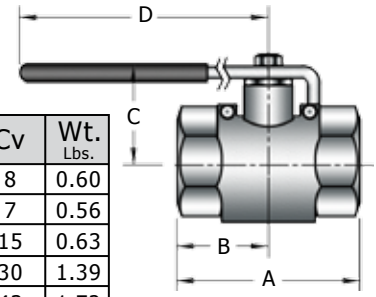
MSS SP-110 Compliant



- ### Features:
- CF8M Stainless Steel Ball Valve
 - 29" Hg-2000psi WOG (1/4" to 1")
 - 29" Hg-1500psi WOG (1-1/4" to 2")
 - 29" Hg-1000psi WOG (2-1/2" to 3")
 - 150psi Saturated Steam
 - RPTFE Seats and PTFE Seals
 - Blowout Proof Stem with Adjustable Packing
 - Temperature -35°F to 400°F



1/4" to 2"

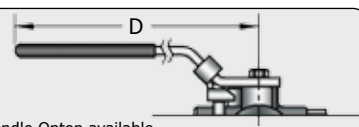


2-1/2" to 3"

Dimensions

Part#	NPT	A	B	C	D	Cv	Wt. Lbs.
SHM-2	1/4"	2.05	1.02	1.71	3.85	8	0.60
SHM-3	3/8"	2.05	1.02	1.71	3.85	7	0.56
SHM-4	1/2"	2.23	1.12	1.79	3.85	15	0.63
SHM-6	3/4"	2.96	1.47	2.03	4.75	30	1.39
SHM-8	1"	3.34	1.67	2.16	4.75	43	1.72
SHM-10	1-1/4"	4.00	2.00	2.68	5.40	48	3.10
SHM-12	1-1/2"	4.34	2.17	3.25	7.75	84	4.20
SHM-16	2"	5.43	2.69	3.24	7.75	108	6.10
SHM-20	2-1/2"	6.75	3.38	4.03	7.75	190	15.6
SHM-24	3"	6.75	3.38	4.03	7.75	370	16.5

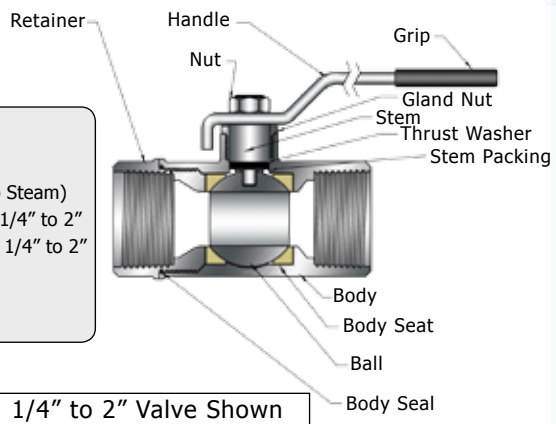
Note:
 Locking Handle Option available
 Locking Handle Orientated 180° from Non-Locking Handle.



Bill of Materials

PART	Material
Body	A351-CF8M Stainless Steel
Retainer	
Stem Bearing	RPTFE
Seat	
Body Seal	PTFE
Gland Nut	A276-316 Stainless Steel
Stem	
Ball	
Stem Packing	MPTFE
Handle	304 Stainless Steel
Nut	18-8 Stainless Steel
Grip	Vinyl

- ### Suffix Options:
- LL = Latch Lock Handle
 - HT = High Temp Option (250lb Steam)
 - BSPP = BSPP threads, parallel, 1/4" to 2"
 - BSPT = BSPT threads, tapered, 1/4" to 2"
 - OX = Oxygen Cleaned
 - DMC = Spring Return Closed
 - DMO = Spring Return Open



1/4" to 2" Valve Shown
 2-1/2"-3" Valves Similar

SHM-T SERIES BALL VALVE



Features:

- CF8M Stainless Steel 3-Way L-Port Diverter Valve
- 29" Hg-800psi WOG, Cold Non-Shock
- 150psi Saturated Steam
- CF8M Body, 316 Stainless Ball and Stem
- Blowout Proof Stem w/Adjustable Stem Packing
- RPTFE Seats and PTFE Seals
- Meets NACE MR0175 (2000) & MR0103 (2012)
- Temperature -35°F to 400°F

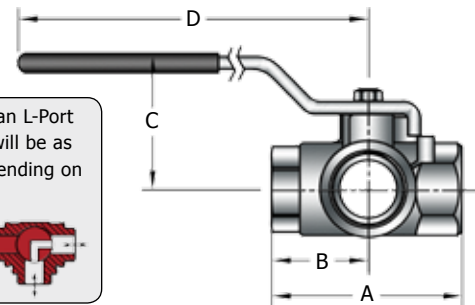
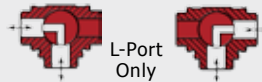
Dimensions

Part#	NPT	A	B	C	D	Cv	Wt Lbs.
SHM-2T	1/4"	2.32	1.12	1.80	3.88	2	0.70
SHM-3T	3/8"	2.32	1.12	1.80	3.88	4	0.68
SHM-4T	1/2"	2.32	1.12	1.80	3.88	5	0.75
SHM-6T	3/4"	2.97	1.47	2.06	4.78	12	1.45
SHM-8T	1"	3.20	1.60	2.15	4.78	14	1.86
SHM-12T	1-1/2"	4.38	1.99	3.03	5.43	34	4.67
SHM-16T	2"	5.45	2.75	3.22	5.43	47	7.02

Suffix Options:

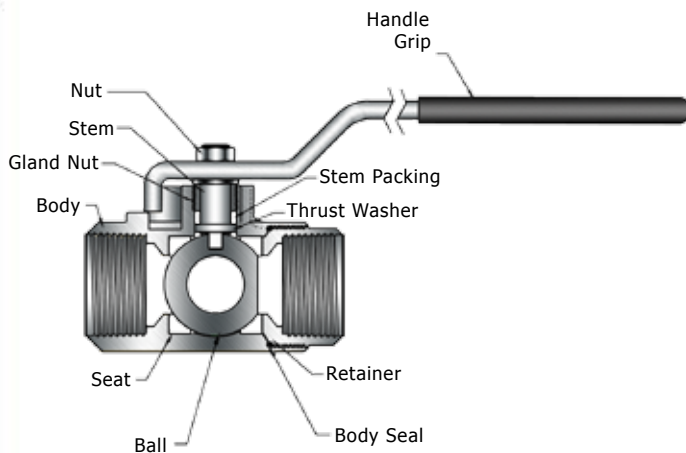
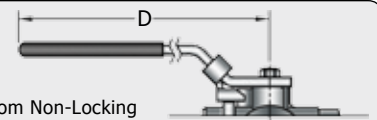
- LL = Latch Lock Handle
- HT = High Temp Option (250Lb Steam)
- BSPP = BSPP threads, parallel, 1/4" to 2"
- BSPT = BSPT threads, tapered, 1/4" to 2"
- OX = Oxygen Cleaned

SHM-T Valves are in an L-Port Configuration. Flow will be as Depicted Below, Depending on Lever Position



Note:

Locking Handle Option available
Locking Handle Orientated 180° from Non-Locking Handle. Locking handle Part Number Denotation SHM-**TLL



Bill of Materials

PART	Material
Lever	304 Stainless Steel
Grip	Vinyl
Stem Packing	MPTFE
Stem Bearing	RPTFE
Ball	A276-316 Stainless Steel
Seat	RPTFE
Retainer	A276-316 SS 1/4"-1"/A351-CF8M 1-1/2"-2"
Gland Nut	A276-316 Stainless Steel
Stem	A276-316 Stainless Steel
Lever Nut	18-8 Stainless Steel
Body Seal	PTFE
Body	A351-CF8M Stainless Steel

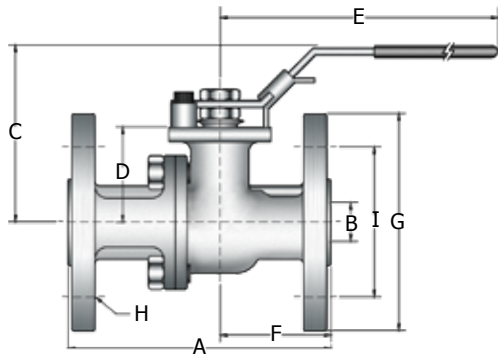


F150/F300 ANSI CLASS FLANGE VALVE

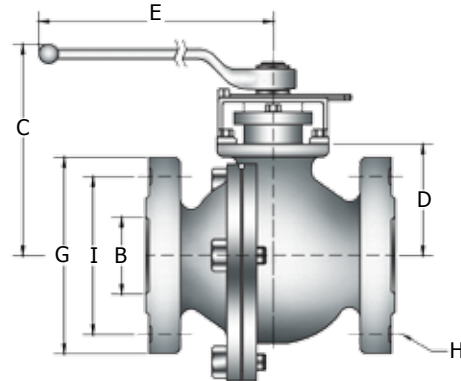


- ### Features:
- Full Port Split Body ANSI Class 150 & 300
 - Class 150 29"Hg-285psi, Cold Non-Shock
 - Class 300 29"Hg-740psi, Cold Non-Shock
 - Live Loaded Stem Design, Anti-Static Device
 - Standard Locking Device
 - Blowout Proof Stem with Adjustable Packing
 - Temperature -20°F to 400°F
 - Fire Safe Approved API 607-5
 - Available with Optional Seats and V-Ball Option C/F

Class 150



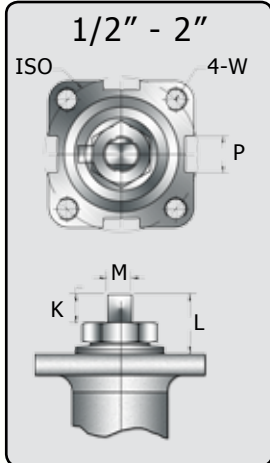
Class 300



Dimensions

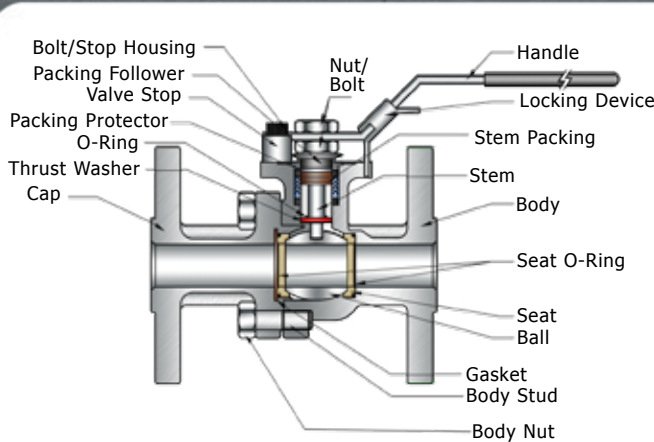
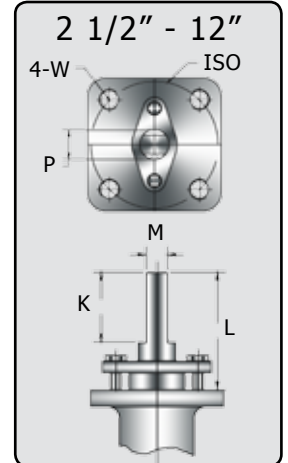
PART# Carbon	PART# Stainless	NPT	A	B	C	D	E	F	G	H Qty x Dia.	I	Cv	Torque in/Lbs	Wt. Lbs
C2FF150-4	S2FF150-4	1/2"	4.25	0.59	2.60	1.54	6.50	1.79	3.50	4 x 0.62	2.38	17	62	4
C2FF300-4	S2FF300-4		5.50						3.75	4 x 0.62	2.62	15	65	5
C2FF150-6	S2FF150-6	3/4"	4.62	0.79	2.91	1.70	6.50	2.01	3.88	4 x 0.62	2.75	43	90	5
C2FF300-6	S2FF300-6		6.00						4.62	4 x 0.75	3.25	40	95	7
C2FF150-8	S2FF150-8	1"	5.00	0.98	3.43	2.06	7.87	2.05	4.25	4 x 0.62	3.12	74	100	7.5
C2FF300-8	S2FF300-8		6.50						4.88	4 x 0.75	3.50	70	105	10
C2FF150-10	S2FF150-10	1-1/4"	5.50	1.26	3.62	2.35	7.87	2.45	4.62	4 x 0.62	3.50	192	240	13.5
C2FF300-10	S2FF300-10		7.00						5.25	4 x 0.75	3.88	189	252	C/F
C2FF150-12	S2FF150-12	1-1/2"	6.50	1.50	4.13	2.65	9.84	2.76	5.00	4 x 0.62	3.88	290	270	14.5
C2FF300-12	S2FF300-12		7.50						6.12	4 x 0.88	4.50	300	284	19
C2FF150-16	S2FF150-16	2"	7.00	1.97	4.53	2.90	10.4	3.07	6.00	4 x 0.62	4.75	410	360	21
C2FF300-16	S2FF300-16		8.50						6.50	8 x 0.75	5.00	430	378	25
C2FF150-20	S2FF150-20	2-1/2"	7.50	2.56	6.22	3.39	15.4	3.08	7.00	4 x 0.75	5.50	780	620	33.5
C2FF300-20	S2FF300-20		9.50						7.50	8 x 0.88	5.88	768	651	42
C2FF150-24	S2FF150-24	3"	8.00	3.00	6.54	3.67	15.4	3.74	7.50	4 x 0.75	6.00	1120	800	42.5
C2FF300-24	S2FF300-24		11.12						8.25	8 x 0.88	6.62	1090	840	60
C2FF150-32	S2FF150-32	4"	9.00	4.00	7.20	4.40	15.4	4.47	9.00	8 x 0.75	7.50	1825	1700	62
C2FF300-32	S2FF300-32		12.00						10.00	8 x 0.88	7.88	1900	1785	93
S2FF150-48	S2FF150-48	6"	15.50	5.98	11.2	7.20	25.6	7.62	11.00	8 x 0.88	9.50	4700	4600	165
C2FF150-48	S2FF300-48		15.88						12.50	12 x 0.88	10.62	4800	4830	221
S2FF150-64	S2FF150-64	8"	18.00	7.87	11.6	7.60	37.4	8.35	13.50	8 x 0.88	11.75	10100	9900	262
C2FF150-64	S2FF300-64		19.75						15.00	12 x 1.00	13.00	10000	10395	371
C2FF150-80	S2FF150-80	10"	21.00	9.84	14.4	9.88	38.0	10.5	16.00	12 x 1.00	14.25	17500	17000	468
C2FF300-80	S2FF300-80		22.38						17.50	16 x 1.12	15.25	17350	17850	576
C2FF150-96	S2FF150-96	12"	24.00	11.8	16.1	11.5	38.0	12.0	19.00	12 x 1.00	17.00	22400	23000	714
C2FF300-96	S2FF300-96		25.50						20.50	16 x 1.25	17.75	21700	24150	C/F

F150/F300 ANSI CLASS FLANGE VALVE

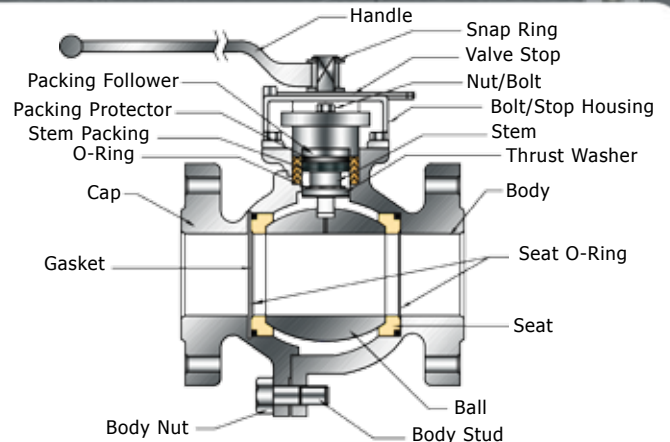


Valve Mounting Dimensions:

Size	K	L	M	P	W _(unc)	ISO
1/2" - 3/4"	0.32	0.57	0.250	0.37	10-24	F04
1" - 1 1/4"	0.43	0.75	0.315	0.43	1/4"-20	F05
1 1/2" - 2"	0.55	0.93	0.374	0.62	5/16"-18	F07
2 1/2" - 4"	1.75	3.07	0.669	1.10	1/2"-13	F10
6" - 12"	Consult Factory					



Class 150



Class 300

Bill of Materials

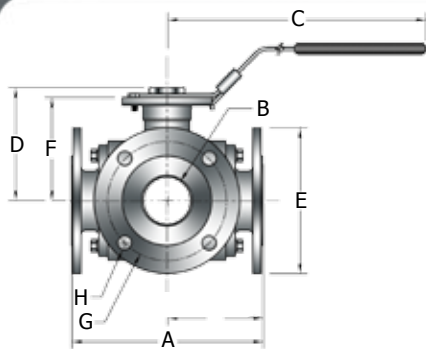
PART	Stainless Steel	Carbon Steel
Body	ASTM A351 CF8M	ASTM A216 WCB
Cap	ASTM A351 CF8M	ASTM A216 WCB
Stem	316 Stainless Steel	316+304 Stainless Steel
Packing Follower	304 Stainless Steel	304 Stainless Steel
Ball	316 Stainless Steel	316+304 Stainless Steel
Seat	TFM	TFM
gasket	RPTFE/Graphite	RPTFE/Graphite
Stem Packing	TFM/Graphite	TFM/Graphite
Packing Protector	50%PTFE+316 Stainless Steel	50%PTFE+316 Stainless Steel
Thrust Washer	25% Carbon+TFM	25% Carbon+TFM
Valve Stop	304 Stainless Steel	304 Stainless Steel
Handle	304 Stainless Steel	304 Stainless Steel
Locking Device/Snap Ring	304 Stainless Steel	304 Stainless Steel
Nut/Bolt	304 Stainless Steel	304 Stainless Steel
Body Stud	ASTM A193 B8	ASTM A193 B7
Body Nut	ASTM A194 Gr.8	ASTM A194 2H
Bolt/Stop Housing	304 Stainless Steel	304 Stainless Steel
O-Ring	Viton®	Viton®
Seat O-Ring	Viton®	Viton®



S2FF150/C2FF150-TT & TL SERIES BALL VALVE

Features:

- Full Port 3-Way ANSI Class 150 Flange Valve
- Available in "T" and "L" Port
- Live Loaded Stem Design, Anti-Static Device
- One Piece Ball/Stem Trunnion-Support Type
- Blowout Proof Stem with Adjustable Stem Packing
- 3 Seat Design Maintains Proper Ball Position
- Available with Optional Seats



Dimensions

PART#	Size	A	B	C	D	E	F	G	H	Cv		Torque in/Lbs	Wt. Lbs
										90°	180°		
2FF150-6T	3/4"	6.65	0.75	7.48	3.16	3.88	2.62	2.75	0.63 x 4	16	40	250	12
2FF150-8T	1"	7.30	1.00	8.38	3.28	4.25	2.66	3.12	0.63 x 4	30	70	385	16
2FF150-10T	1-1/2"	7.17	1.50	15.00	4.10	5.00	2.48	3.88	0.63 x 4	50	230	480	20
2FF150-12T	2"	8.66	2.01	15.00	4.92	5.99	2.87	4.75	0.75 x 4	100	390	700	36
2FF150-16T	3"	11.26	3.00	15.00	6.68	7.52	3.62	6.00	0.75 x 4	240	930	1600	72
2FF150-32T	4"	13.66	4.02	2.00	8.03	9.01	4.88	7.50	0.75 x 8	400	1650	2800	128
2FF150-48T	6"	16.77	5.98	C/F	10.04	11.00	6.50	9.50	0.90 x 8	970	5000	8600	250
2FF150-64T	8"	20.94	7.95	C/F	11.54	13.50	7.60	11.75	0.90 x 8	1850	9000	15500	450
2FF150-80T	10"	27.56	9.84	C/F	13.00	16.00	9.06	14.25	1.02 x 12	3500	16000	C/F	850
2FF150-96T	12"	29.92	11.77	C/F	14.55	18.99	10.97	17.18	1.26 x 12	C/F	C/F	C/F	C/F

Ordering Information

*2FF150-*T*

S= Stainless
C= Carbon

Size of
Port

T= T-Port
L= L-Port

Handle Configuration

3/4" to 1-1/2"

Lever

Grip
Stem Packing
End
Connector

Gland
Ring

Body Nut
Body Stud
Seat
Ball

End Gasket
Body
Thrust
Bearing

Handle Configuration

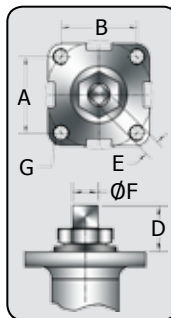
2" to 12"

Snap Ring

Port Sign and
Sign Nut
Gland Bolt
Gland
Housing Bolt
Cover
Cover Stud
(not shown)

Travel Stop
Stop Housing
Cover Nut
Cover
Gasket

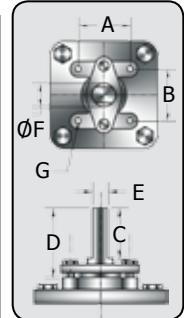
3/4" to 1-1/2"



Mounting Dimensions

Size	A	B	C	D	E	ØF	G
3/4"	1.95	1.95	0.47	0.49	0.354	0.46	0.33
1"	1.95	1.95	0.47	0.53	0.433	0.55	0.28
1-1/2"	1.95	1.95	0.63	0.73	0.551	0.61	0.36
2"	1.89	2.83	1.57	1.93	0.669	0.87	5/16-18
3"	1.89	3.50	1.97	3.15	0.669	1.16	1/2-13
4"	3.50	3.50	2.44	3.15	0.906	1.34	1/2-13
6"	3.50	3.50	2.36	3.54	1.378	1.77	1/2-13
8"	4.53	4.53	2.36	3.27	1.772	2.36	5/8-11
10"	4.53	4.53	2.76	4.29	1.772	2.36	5/8-11
12"	4.53	4.53	2.76	4.33	2.165	2.76	5/8-11

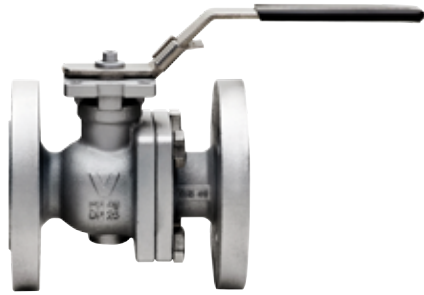
2" to 12"



Bill of Materials

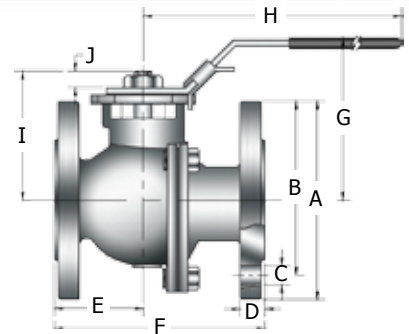
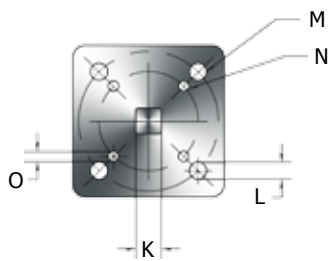
PART	Stainless Steel	Carbon Steel	PART	Stainless Steel	Carbon Steel
Body + Cover	A351 GR CF8M	A216 GR WCB	Gland Bolt	B8	B7
End Connection			Stop Housing	A351 GR CF8M	Carbon Steel
Ball	316 Stainless Steel	316 Stainless Steel	Lever	Ductile Iron	Ductile Iron
Gland			Port Sign	A167 Type 304	A167 Type 304
Gland Ring			Sign Nut		
Cover Nut	A167 Type 304	Carbon Steel	Grip	Vinyl	Vinyl
Travel Stop			Seat	TFM Super-Tek	TFM Super-Tek
Body Nut			Stem Packing		
Cover Stud			End Gasket		
Housing Bolt	B8	B7	Cover Gasket	50/50	50/50
Body Stud			Thrust Bearing		

C2FF150DM/S2FF150DM SERIES BALL VALVE



Features:

- Full Port ANSI Class 150 Flange Valve
- ISO 5211 Mounting Pad w/Locking Handle Std.
- Available in Carbon and Stainless Steel
- Blow-Out Proof Stem, Grounded Ball & Stem Std.
- Fire Safe Certified to API607, 6th Edition
- Designed to ANSI B16.5, B16.10, B16.34
- Complies with NACE MR 0175/ISO 15156 and NACE MR 0103

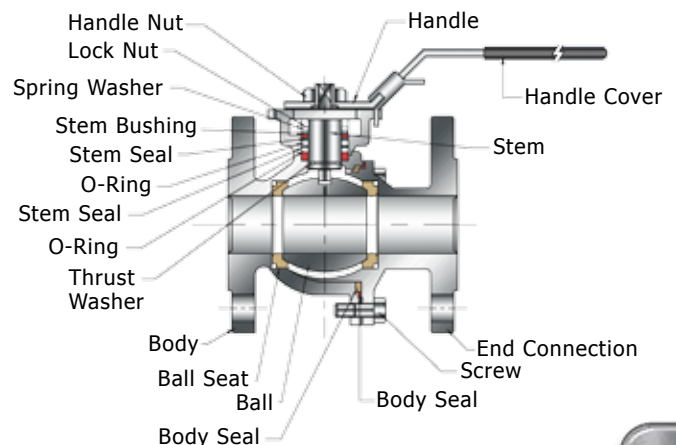


Dimensions

Part # Stainless Steel	Part # Carbon Steel	NPT	A	B	C	D	E	F	G	H	I	J	K (in/mm)	L	M	N	O	Cv	Torq in/Lbs	Lbs
S2FF150DM-8	C2FF150DM-8	1"	4.33	3.13	.63x4	.057	2.13	5.00	3.66	6.30	2.72	0.43	0.35/9	0.28	F05	-	-	50	89	8.38
S2FF150DM-12	C2FF150DM-12	1-1/2"	5.12	3.88	.63x4	0.69	2.99	6.50	4.65	9.45	3.70	0.55	0.43/11	0.33	F07	F05	M6	267	195	15.4
S2FF150DM-16	C2FF150DM-16	2"	5.91	4.04	.75x4	0.77	3.33	7.01	5.00	9.45	4.06	0.53	0.43/11	0.33	F07	F05	M6	308	372	21.2
S2FF150DM-24	C2FF150DM-24	3"	7.48	6.00	.75x4	0.94	3.66	7.99	6.38	12.60	5.41	0.69	0.55/14	0.43	F10	F07	M10	1015	796	39.5
S2FF150DM-32	C2FF150DM-32	4"	9.06	7.50	.75x8	0.94	3.92	9.02	6.97	14.96	6.04	0.75	0.67/17	0.43	F10	F07	M10	1616	841	53.6

Bill of Materials

PART	Material Stainless Steel	Material Carbon Steel
Body	A351 CF8M	A216 WCB
End Connection	A352 CF8M	A216 WCB
Ball	A216-316/A351-CF8M	A216-316/A351-CF8M
Ball Seat	PTFE	PTFE
Screw	Stainless Steel	Carbon Steel
Body Seal	Graphoil	Graphoil
Body Seal	PTFE	PTFE
Stem	A276-316	A276-304
Screw	Stainless Steel	Carbon Steel
Handle Nut	Stainless Steel	Carbon Steel
Lock Nut	Stainless Steel	Carbon Steel
Spring Washer	Stainless Steel	Carbon Steel
Stem Bushing	A276-316	A276-316
Stem Seal	Graphoil	Graphoil
O-Ring	FKM-Viton®	FKM-Viton®
Stem Seal	PTFE	PTFE
O-Ring	FKM-Viton®	FKM-Viton®
Thrust Washer	PTFE	PTFE
Handle	Stainless Steel	Stainless Steel





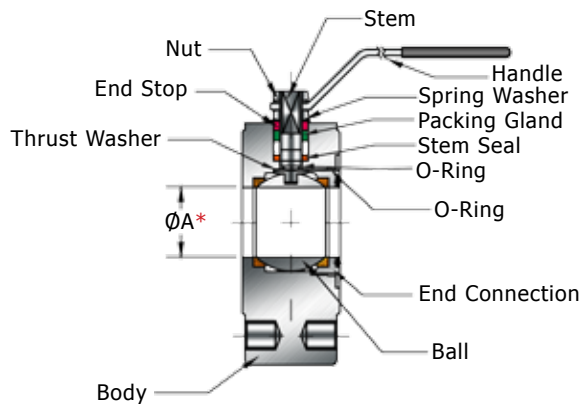
CWFF150/SWFF150 SERIES BALL VALVE



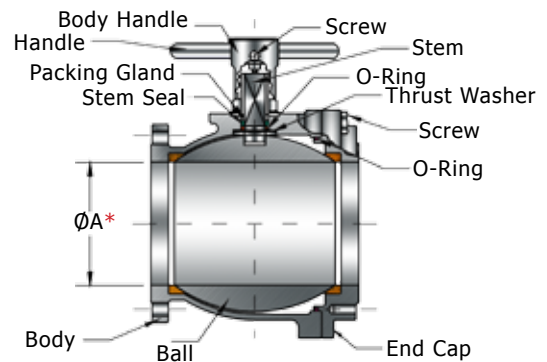
Features:

- Full Port Wafer ANSI Class 150 & 300
- Class 150 29"Hg-285psi, Cold Non-Shock
- Class 300 29"Hg-740psi, Cold Non-Shock
- Stainless Steel Ball and Stem
- Blowout Proof Stem with Adjustable Packing
- Temperature -4°F to 366°F

Class 150



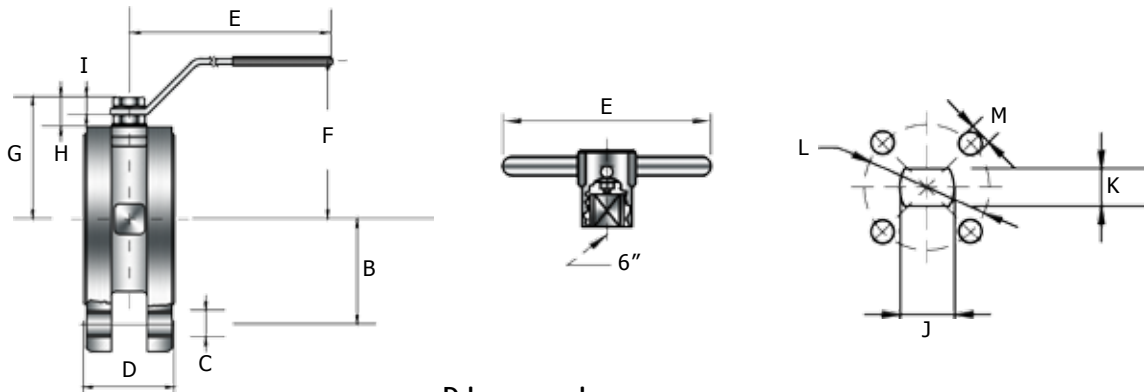
Class 300



Bill of Materials

PART	Stainless Steel	Carbon Steel
Body	A479-316/A351-CF8M	ASTM A105
End Connection	A479-316/A351-CF8M	ASTM A105
Ball	AISI 316-CF8M	AISI 304
Ball Seats	RPTFE	RPTFE
O-Ring	FKM (Viton®)	FKM (Viton®)
Thrust Washer	PTFE	PTFE
O-Ring	FKM (Viton®)	FKM (Viton®)
Stem Seal	PTFE	PTFE
Packing Gland	Steel	Steel
End Stop	Steel	Steel
Spring Washer	Steel	Steel
Nut	Steel	Steel
Stem	A182-F316 (150)/AISI 316 (300)	AISI 304
Handle	Steel	Steel
Handle (6"-8")	Steel	Steel
Screw	Steel	Steel
Screw	Steel	Steel
Body Handle (6"-8")	Cast Iron	Cast Iron

CWFF300/SWFF300 SERIES BALL VALVE



Dimensions

PART#	ANSI Class	Version	NPT	ØA*	B	C UNC	D	E	F	G	H	I	J	K	L	M	Cv	Lbs
SWFF150-4	150	Stainless	1/2"	0.59	3.50	4x1/2"	1.37	5.17	2.53	1.85	0.61	0.35	0.39	0.27	F03	4xM5	18.90	2.86
CWFF150-4		Carbon		0.59	3.50	4x1/2"	1.37	5.17	2.53	1.85	0.61	0.35	0.39	0.27	F03	4xM5	18.90	2.86
SWFF300-4	300	Stainless	1/2"	0.59	3.75	4x1/2"	1.38	5.17	2.54	1.85	0.45	0.33	0.39	0.28	F03	4xM5	18.90	3.10
CWFF300-4		Carbon		0.59	3.75	4x1/2"	1.38	5.17	2.54	1.85	0.45	0.33	0.39	0.28	F03	4xM5	18.90	3.10
SWFF150-6	150	Stainless	3/4"	0.78	3.88	4x1/2"	1.57	5.17	2.71	2.02	0.61	0.35	0.39	0.27	F03	4xM5	34.22	3.96
CWFF150-6		Carbon		0.78	3.88	4x1/2"	1.57	5.17	2.71	2.02	0.61	0.35	0.39	0.27	F03	4xM5	34.22	3.96
SWFF300-6	300	Stainless	3/4"	0.78	4.62	4x5/8"	1.57	5.17	2.71	2.03	0.37	0.33	0.39	0.28	F03	4xM5	34.22	5.50
CWFF300-6		Carbon		0.78	4.62	4x5/8"	1.57	5.17	2.71	2.03	0.37	0.33	0.39	0.28	F03	4xM5	34.22	5.50
SWFF150-8	150	Stainless	1"	0.98	4.25	4x1/2"	1.81	6.87	3.16	2.40	0.76	0.45	0.47	0.31	F04	4xM5	49.88	5.95
CWFF150-8		Carbon		0.98	4.25	4x1/2"	1.81	6.87	3.16	2.40	0.76	0.45	0.47	0.31	F04	4xM5	49.88	5.95
SWFF300-8	300	Stainless	1"	0.98	4.88	4x5/8"	1.81	6.87	3.17	2.40	0.51	0.45	0.47	0.32	F04	4xM5	49.88	6.80
CWFF300-8		Carbon		0.98	4.88	4x5/8"	1.81	6.87	3.17	2.40	0.51	0.45	0.47	0.32	F04	4xM5	49.88	6.80
SWFF150-10	150	Stainless	1-1/4"	1.26	4.62	4x1/2"	2.12	6.87	3.32	2.53	0.64	0.45	0.47	0.31	F04	4xM5	103.24	9.47
CWFF150-10		Carbon		1.26	4.62	4x1/2"	2.12	6.87	3.32	2.53	0.64	0.45	0.47	0.31	F04	4xM5	103.24	9.47
SWFF300-10	300	Stainless	1-1/4"	1.26	5.25	4x5/8"	2.12	6.87	3.33	2.54	0.65	0.45	0.47	0.32	F04	4xM5	103.24	9.30
CWFF300-10		Carbon		1.26	5.25	4x5/8"	2.12	6.87	3.33	2.54	0.65	0.45	0.47	0.32	F04	4xM5	103.24	9.30
SWFF150-12	150	Stainless	1-1/2"	1.57	5.00	4x1/2"	2.50	9.86	4.03	3.07	0.96	0.51	0.62	0.39	F05	4xM6	266.80	7.27
CWFF150-12		Carbon		1.57	5.00	4x1/2"	2.50	9.86	4.03	3.07	0.96	0.51	0.62	0.39	F05	4xM6	266.80	11.31
SWFF300-12	300	Stainless	1-1/2"	1.57	6.12	4x3/4"	2.50	9.86	4.03	3.07	0.80	0.47	0.62	0.39	F05	4xM6	266.80	15.00
CWFF300-12		Carbon		1.57	6.12	4x3/4"	2.50	9.86	4.03	3.07	0.80	0.47	0.62	0.39	F05	4xM6	266.80	15.00
SWFF150-16	150	Stainless	2"	1.97	6.00	4x5/8"	3.22	9.86	4.37	3.42	0.98	0.53	0.62	0.39	F05	4xM6	307.40	12.12
CWFF150-16		Carbon		1.97	6.00	4x5/8"	3.22	9.86	4.37	3.42	0.98	0.53	0.62	0.39	F05	4xM6	307.40	19.18
SWFF300-16	300	Stainless	2"	1.97	6.50	8x5/8"	3.23	9.86	4.43	3.43	0.63	0.47	0.62	0.39	F05	4xM6	307.40	23.00
CWFF300-16		Carbon		1.97	6.50	8x5/8"	3.23	9.86	4.43	3.43	0.63	0.47	0.62	0.39	F05	4xM6	307.40	23.00
SWFF150-20	150	Stainless	2-1/2"	2.52	7.00	4x5/8"	4.05	12.65	5.03	4.11	1.10	0.70	0.78	0.55	F07	4xM8	626.40	21.16
CWFF150-20		Carbon		2.52	7.00	4x5/8"	4.05	12.65	5.03	4.11	1.10	0.70	0.78	0.55	F07	4xM8	626.40	34.17
SWFF300-20	300	Stainless	2-1/2"	2.52	7.50	8x3/4"	4.05	12.66	5.08	4.11	0.73	0.67	0.78	0.55	F07	4xM8	626.40	39.00
CWFF300-20		Carbon		2.52	7.50	8x3/4"	4.05	12.66	5.08	4.11	0.73	0.67	0.78	0.55	F07	4xM8	626.40	39.00
SWFF150-24	150	Stainless	3"	2.99	7.50	4x5/8"	4.80	12.65	5.45	4.52	1.12	0.70	0.78	0.55	F07	4xM8	1012.68	28.21
CWFF150-24		Carbon		2.99	7.50	4x5/8"	4.80	12.65	5.45	4.52	1.12	0.70	0.78	0.55	F07	4xM8	1012.68	45.85
SWFF300-24	300	Stainless	3"	2.99	8.25	8x3/4"	4.80	12.66	5.45	4.53	0.83	0.71	0.78	0.55	F07	4xM8	1012.68	55.00
CWFF300-24		Carbon		2.99	8.25	8x3/4"	4.80	12.66	5.45	4.53	0.83	0.71	0.78	0.55	F07	4xM8	1012.68	55.00
SWFF150-32	150	Stainless	4"	3.74	9.00	8x5/8"	5.98	15.01	6.16	5.39	1.35	0.86	0.94	0.70	F10	4xM10	1612.40	46.07
CWFF150-32		Carbon		3.74	9.00	8x5/8"	5.98	15.01	6.16	5.39	1.35	0.86	0.94	0.70	F10	4xM10	1612.40	75.39
SWFF300-32	300	Stainless	4"	3.74	10.00	8x3/4"	5.98	15.02	6.20	5.39	0.93	0.83	0.94	0.71	F10	4xM10	1612.40	100.00
CWFF300-32		Carbon		3.74	10.00	8x3/4"	5.98	15.02	6.20	5.39	0.93	0.83	0.94	0.71	F10	4xM10	1612.40	100.00
SWFF150-48	150	Stainless	5"	4.92	10.00	8x3/4"	7.71	15.01	7.02	6.25	1.33	0.86	0.94	0.70	F10	4xM10	1980.12	82.67
CWFF150-48		Carbon		4.92	10.00	8x3/4"	7.71	15.01	7.02	6.25	1.33	0.86	0.94	0.70	F10	4xM10	1980.12	115.74
SWFF300-48	300	Stainless	5"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CWFF300-48		Carbon		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SWFF150-64	150	Stainless	6"	5.91	11.00	8x3/4"	9.13	27.55	9.33	7.93	2.02	1.18	1.65	1.18	F12	4xM12	2347.84	101.63
CWFF150-64		Carbon		5.91	11.00	8x3/4"	9.13	27.55	9.33	7.93	2.02	1.18	1.65	1.18	F12	4xM12	2347.84	135.50
SWFF300-64	300	Stainless	6"	5.91	15.74	12x3/4"	9.13	27.56	9.33	7.93	2.03	1.18	1.65	1.18	F12	4xM12	2347.84	223.00
CWFF300-64		Carbon		5.91	12.50	12x3/4"	9.13	27.56	9.33	7.93	2.03	1.18	1.65	1.18	F12	4xM12	2347.84	223.00



S2F3M/C2F3M SERIES BALL VALVE

Features:

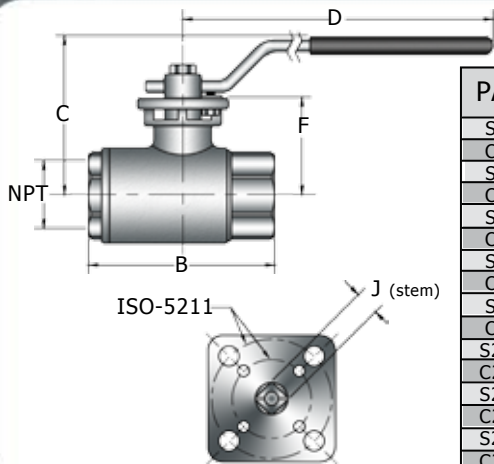
- Direct Mount 2-Piece Ball Valve
- Available in Stainless Steel and Carbon Steel
- ISO 5211 Mounting Pad
- 29"Hg-3000psi (100°F), Tested to 4500psi
- Full Port Ball Valve (2" Reduced Port)
- Delrin® Seats, Viton® O-rings
- Blow-Out Proof Stem, Anti-Static Design
- NACE MR0175
- Temperature -20°F to 185°F



S2F3M

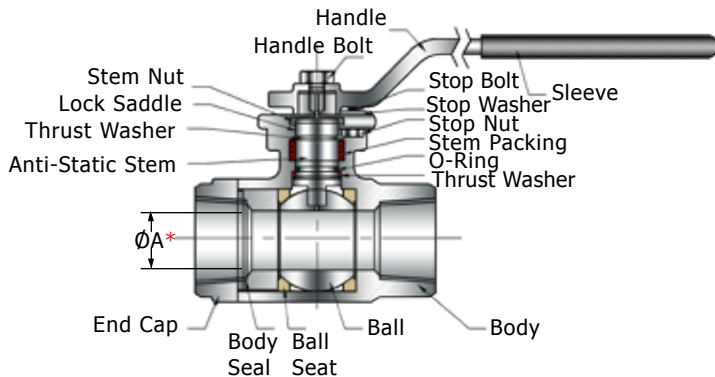
C2F3M

Dimensions



PART #	NPT	ØA*	B	C	D	F	J in/mm	ISO 5211	Break Torque in/Lbs	Cv	Wt. Lbs.
S2F3M-2	1/4"	0.38	2.95	2.31	6.30	1.61	.35/9	F03/F04	101	5	2
C2F3M-2	1/4"	0.38	2.95	2.31	6.30	1.61	.35/9	F03/F04	101	5	2
S2F3M-3	3/8"	0.38	2.95	2.31	6.30	1.61	.35/9	F03/F04	104	8	2
C2F3M-3	3/8"	0.38	2.95	2.31	6.30	1.61	.35/9	F03/F04	104	8	2
S2F3M-4	1/2"	0.50	2.95	2.31	6.30	1.61	.35/9	F03/F04	130	19	2
C2F3M-4	1/2"	0.50	2.95	2.31	6.30	1.61	.35/9	F03/F04	130	19	2
S2F3M-6	3/4"	0.69	3.19	2.60	6.30	1.72	.35/9	F03/F04	156	35	2
C2F3M-6	3/4"	0.69	3.19	2.60	6.30	1.72	.35/9	F03/F04	156	35	2
S2F3M-8	1"	0.87	3.58	3.02	6.30	2.11	.43/11	F04/F05	208	50	4
C2F3M-8	1"	0.87	3.58	3.02	6.30	2.11	.43/11	F04/F05	208	50	4
S2F3M-10	1-1/4"	1.14	4.33	3.19	6.30	2.32	.43/11	F04/F05	390	110	5
C2F3M-10	1-1/4"	1.14	4.33	3.19	6.30	2.32	.43/11	F04/F05	390	110	5
S2F3M-12	1-1/2"	1.37	4.76	3.84	8.27	2.96	.55/14	F04/F05	468	180	9
C2F3M-12	1-1/2"	1.37	4.76	3.84	8.27	2.96	.55/14	F04/F05	468	180	9
S2F3M-16	2"	1.37	5.71	4.14	8.27	2.96	.55/14	F04/F05	468	210	11
C2F3M-16	2"	1.37	5.71	4.14	8.27	2.96	.55/14	F04/F05	468	210	11

Bill of Materials



PART	Material	
Body	Stainless / Carbon	
End Cap	CF8M / WCB	
Ball	CF8M	
Anti-static Stem	316 Stainless Steel	
Ball Seat	Delrin	
Body Seal	PTFE	
Thrust Washer	PTFE	
Stem Packing	Viton®	
O-ring	Viton®	
Thrust Washer (2)	50% SS - 50% PTFE	
Stem Nut	304 Stainless Steel	
Lock Saddle		
Handle		
Stop Bolt		
Stop Nut		
Stop Washer		
Handle Bolt		
Handle Sleeve		Vinyl

CG/CFH SERIES BALL VALVE



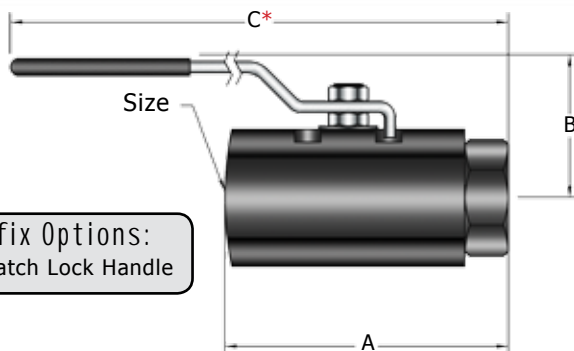
Features:

CG Series Carbon Steel 2000psi Ball Valve

- 29"-Hg 2000psig WOG, Cold Non-Shock (1/4"-1")
- 29"-Hg 1500psig WOG, Cold Non-Shock (1-1/4"-2")
- Blowout Proof Stem, W/Adjustable Stem Packing
- RTFE Seats
- 150psig Saturated Steam
- Temperature Range -20°F to 425°F

CFH Series Carbon Steel 3000psi Ball Valve

- 29"-Hg 3000psig WOG, Cold Non-Shock
- Full Port
- Blowout Proof Stem, W/Adjustable Stem Packing
- RTFE Seats
- 150psig Saturated Steam
- Temperature Range -20°F to 425°F



CG and CG-LL Series 2,000psi

Part	Size NPT	A	B	C	Cv	C* Lock handle	Wt. Lbs.
CG-2	1/4"	2.00	1.63	3.78	6	4.18	0.60
CG-3	3/8"	2.00	1.63	3.78	12	4.18	0.60
CG-4	1/2"	2.37	1.73	3.78	15	4.18	0.80
CG-6	3/4"	2.90	2.08	5.10	23	5.22	1.45
CG-8	1"	3.41	2.30	5.10	36	5.22	2.35
CG-10	1-1/4"	3.94	2.76	6.10	44	7.60	2.70
CG-12	1-1/2"	4.65	2.98	6.10	64	7.60	4.50
CG-16	2"	4.98	3.54	8.60	114	8.60	6.10

Dimensions

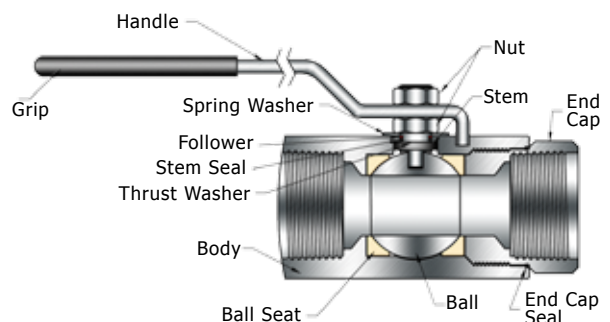
CFH and CFH-LL Series 3,000psi

Part	Size	A	B	C	Cv	C* Lock handle	Wt. Lbs.
CFH-2	1/4" NPT	2.01	1.63	3.78	6	4.18	0.60
CFH-S4	7/16"-20 SAE						
CFH-3	3/8" NPT	2.01	1.63	3.78	12	4.18	0.60
CFH-S6	9/16"-18 SAE						
CFH-4	1/2" NPT	2.84	2.16	4.78	19	4.18	1.50
CFH-S8	3/4"-16 SAE					4.75	
CFH-6	3/4" NPT	3.71	2.35	4.78	34	5.22	2.40
CFH-S12	1-1/16"-12 SAE					5.33	
CFH-8	1" NPT	4.15	2.85	6.10	54	5.22	5.30
CFH-S16	1-5/16"-12 SAE					6.20	
CFH-10	1-1/4" NPT	4.65	3.43	8.00	48	7.60	7.73
CFH-S20	1-5/8"-12 SAE						
CFH-12	1-1/2" NPT	5.23	3.56	8.00	84	7.60	10.2
CFH-S24	1-7/8"-12 SAE						
CFH-16	2" NPT	5.84	4.18	9.00	108	7.60	14.9
CFH-S32	2-1/2"-12 SAE					8.60	

* - with Locking Handle

Bill of Materials

PART	Stainless Steel
Body	Steel C12L14 Zinc Phos Coated
End Cap	Steel C12L14 Zinc Phos Coated
Stem	316 Stainless Steel
Ball	316 Stainless Steel
End Cap Seal	PTFE
Stem Seal	RPTFE
Thrust Washer	RPTFE
Ball Seat	RPTFE
Handle	Zinc Plated Steel
Nut	Zinc Plated Steel
Spring Washer	Zinc Plated Steel
Follower	304 Stainless Steel
Grip	Vinyl

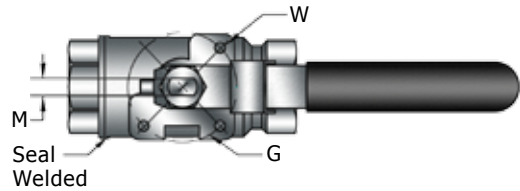
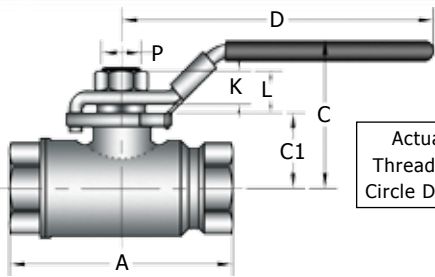




SS6M/CS6M SERIES BALL VALVE

Features:

- Seal Welded, Full Port Ball Valve
- Available in Stainless and Carbon Steel
- 6000psi WOG
- Delrin® Seats and Viton® O-Rings
- Latch Lock Handle Standard
- Blow-Out Proof Stem
- NACE MR0175-90
- API 607-4 Fire Safe/API 608 Compliance
- API Standard 6D

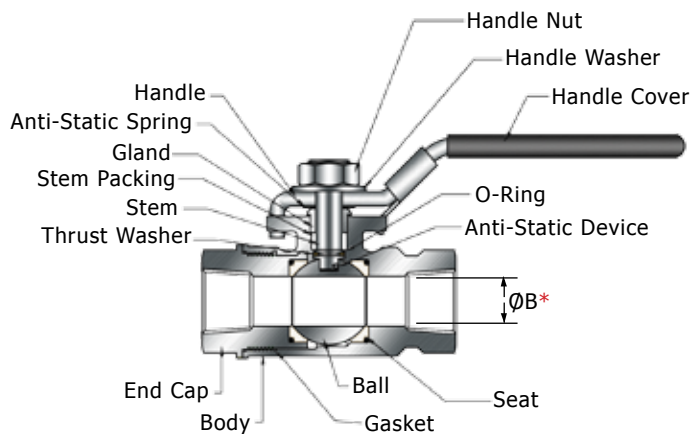


Dimensions

Part # Stainless Steel	Part # Carbon Steel	NPT	A	ØB*	C	C1	D	G	K	L	M	P	W	ISO 5211	Cv	Torque in/Lbs	Lbs
SS6M-2	CS6M-2	1/4"	2.80	0.37	2.34	0.96	4.25	1.42	0.31	0.50	0.20	0.31	M5	F03/F04	7	195	1.19
SS6M-3	CS6M-3	3/8"	2.80	0.37	2.34	0.96	4.25	1.42	0.31	0.50	0.20	0.31	M5	F03/F04	8	195	1.15
SS6M-4	CS6M-4	1/2"	3.19	0.49	2.34	0.96	4.25	1.42	0.31	0.50	0.20	0.31	M5	F03/F04	10	233	1.50
SS6M-6	CS6M-6	3/4"	3.78	0.79	2.50	1.24	5.16	1.65	0.55	0.83	0.28	0.39	M5	F03/F04	35	404	2.76
SS6M-8	CS6M-8	1"	4.25	0.98	3.00	1.61	6.57	1.97	0.75	1.06	0.39	0.55	M6	F04/F05	68	825	4.87
SS6M-10	CS6M-10	1-1/4"	4.72	1.26	3.19	1.81	6.57	1.97	0.75	1.06	0.39	0.55	M6	F04/F05	110	860	7.41
SS6M-12	CS6M-12	1-1/2"	5.12	1.50	4.30	2.40	8.66	2.76	1.14	1.56	0.47	0.79	M8	F05/F07	155	997	12.1
SS6M-16	CS6M-16	2"	5.91	1.50	4.30	2.40	8.66	2.76	1.14	1.56	0.47	0.79	M8	F05/F07	155	1490	14.7

Bill of Materials

PART	Material Stainless	Material Carbon
Body	A351 CF8M	A216 WCB
End Cap	A351 CF8M	A216 WCB
Seat	Derlin	Derlin
Ball	316 Stainless Steel	304 Stainless Steel
Gasket	Graphite	Graphite
Thrust Washer	PTFE	PTFE
Stem	A276 316	A276 304
Stem Packing	Graphite	Graphite
Gland	304 Stainless Steel	304 Stainless Steel
Handle	304 Stainless Steel	Zinc Plated C.S.
Handle Washer	304 Stainless Steel	304 Stainless Steel
Handle Nut	304 Stainless Steel	304 Stainless Steel
Handle Cover	PVC	PVC
Anti-Static Spring	301 Stainless Steel	301 Stainless Steel
O-Ring	Viton®	Viton®
Anti-Static Device	316 Stainless Steel	304 Stainless Steel

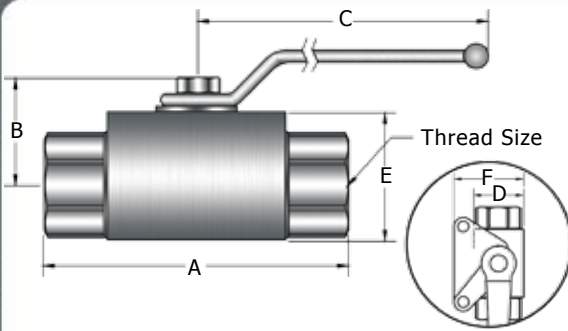


SFM SERIES BALL VALVE



Features:

- 316 Stainless Steel full Port Ball Valve
- Available in NPT and SAE
- Delrin® Seats and Viton® O-Rings
- Options: Suffix "LP" for Locking Plate
- Blow-Out Proof Stem
- Temperature -4°F to 215°F



Dimensions

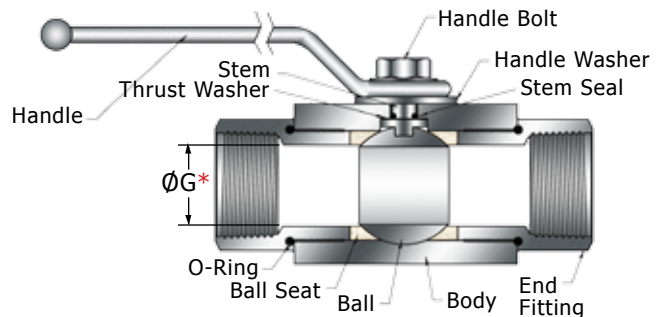
Part#	Thread	Size	Psi	A	B	C	D	E	F	ØG*
SFM-2	1/4" NPT	1/4"	5880	2.72	1.20	4.21	1.02	1.26	1.88	0.24
SFM-S4	7/16"-20 ORB									
SFM-3	3/8" NPT	3/8"	5880	2.87	1.29	4.21	1.26	1.50	2.00	0.39
SFM-S6	9/16"-18 ORB									
SFM-4	1/2" NPT	1/2"	5880	3.62	1.31	4.21	1.38	1.57	2.06	0.51
SFM-S8	3/4"-16 ORB									
SFM-6	3/4" NPT	3/4"	5145	3.82	1.91	6.50	1.93	2.24	2.76	0.79
SFM-S12	1-1/16"-12 ORB									
SFM-8	1" NPT	1"	5145	4.45	1.95	6.50	2.36	2.36	2.97	0.94
SFM-S16	1-5/16"-12 ORB									
SFM-10	1-1/4" NPT	1-1/4"	5145	6.54	2.59	8.30	3.54	3.30	2.97	1.25
SFM-S20	1-5/8"-12 ORB									
SFM-12	1-1/2" NPT	1-1/2"	5145	7.14	2.73	8.30	3.26	3.62	3.32	1.49
SFM-S24	1-7/8"-12 ORB									
SFM-16	2" NPT	2"	5145	9.30	3.15	8.50	3.94	4.37	4.11	1.89
SFM-S32	2-1/2"-12 ORB									

Locking Plate Dimensions

	LL-1SS	LL-2SS	LL-3SS
	1/4"-1/2"	3/4"-1-1/4"	1-1/2"-2"
A	1.82	2.48	3.15
B	2.75	3.58	4.28

Bill of Materials

PART	Stainless Steel
Body	316 Stainless Steel
End Fitting	316 Stainless Steel
Ball	316 Stainless Steel
Ball Seat	Delrin
O-Ring	Viton®
Stem Seal	Viton®
Thrust Washer	Delrin
Stem	316 Stainless Steel
Handle Washer	Zinc Plated Steel
Handle Bolt	Zinc Plated Steel
Handle	Cast Aluminum

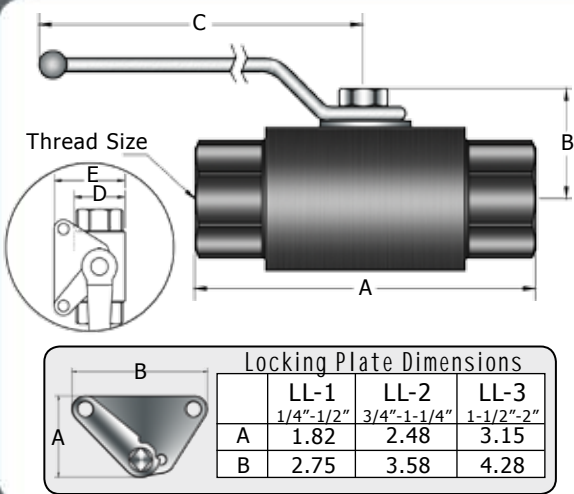




CFM SERIES BALL VALVE



- ### Features:
- Carbon Steel Full Port Ball Valve
 - Available in NPT and SAE
 - Delrin® Seats and Viton® O-Ring
 - Options: Suffix "LP" for Locking Plate
 - Blow-Out Proof Stem
 - Temperature -20°F to 215°F

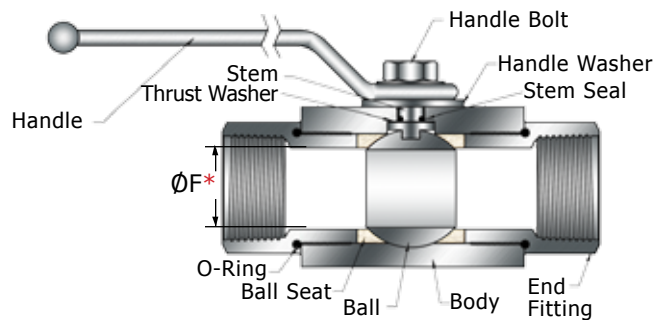


Dimensions

Part#	Thread	Size	Psi	A	B	C	D	E	ØF*
CFM-2	1/4" NPT	1/4"	7350	2.72	1.20	4.21	1.02	1.88	0.24
CFM-S4	7/16"-20 ORB								
CFM-3	3/8" NPT	3/8"	7350	2.87	1.29	4.21	1.26	2.00	0.39
CFM-S6	9/16"-18 ORB								
CFM-4	1/2" NPT	1/2"	7350	3.62	1.31	4.21	1.38	2.06	0.51
CFM-S8	3/4"-16 ORB								
CFM-6	3/4" NPT	3/4"	5880	3.82	1.91	6.50	1.93	2.76	0.78
CFM-S12	1-1/16"-12 ORB								
CFM-8	1" NPT	1"	5145	4.45	1.95	6.50	2.36	2.97	0.94
CFM-S16	1-5/16"-12 ORB								
CFM-10	1-1/4" NPT	1-1/4"	5145	5.16	1.95	6.50	2.36	2.97	0.94
CFM-S20	1-5/8"-12 ORB								
CFM-12	1-1/2" NPT	1-1/2"	5145	5.47	1.95	6.50	2.36	3.32	0.94
CFM-S24	1-7/8"-12 ORB								
CFM-16	2" NPT	2"	5880	5.50	3.15	8.50	3.94	4.11	0.94
CFM-S32	2-1/2"-12 ORB								

Bill of Materials

PART	Carbon Steel
Body	Oxide Coated Carbon Steel*
End Fitting	Oxide Coated Carbon Steel*
Stem	Coated Steel
O-Ring	Viton®**
Stem Seal	Viton®**
Ball Seat	Delrin**
Thrust Washer	Delrin**
Handle	Cast Aluminum
Handle Bolt	Zinc Plated Steel
Handle Washer	Zinc Plated Steel



Note:
 * Zinc Plated Option Available
 ** Other Seats and Seals Available
 (consult factory)

CFM-TL SERIES BALL VALVE



with Locking Plate

Features:

- Carbon Steel 3-Way Full Port Diverter Valve
- Available in NPT and SAE
- Delrin® seats and Viton® O-Rings
- Options: Suffix "LP" for Locking Plate
- Blow-Out Proof Stem
- Available in Stainless Steel C/F
- Temperature -20°F to 215°F

Dimensions

Part#	Thread	Size	Psi	A	C	D	E	F	ØG*	H
CFM-2TL	1/4" NPT	1/4"	5880	2.72	4.21	1.20	1.26	1.02	0.24	1.88
CFM-S4TL	7/16"-20 ORB									
CFM-3TL	3/8" NPT	3/8"	5880	2.87	4.21	1.29	1.50	1.26	0.39	2.00
CFM-S6TL	9/16"-18 ORB									
CFM-4TL	1/2" NPT	1/2"	5145	3.62	4.21	1.31	1.57	1.38	0.51	2.06
CFM-S8TL	3/4"-16 ORB									
CFM-6TL	3/4" NPT	3/4"	5145	3.82	6.50	1.91	2.24	1.93	0.79	2.76
CFM-S12TL	1-1/16"-12 ORB									
CFM-8TL	1" NPT	1"	5145	4.45	6.50	1.95	2.36	2.36	0.94	2.97
CFM-S16TL	1-5/16"-12 ORB									
CFM-10TL	1-1/4" NPT	1-1/4"	5145	4.53	6.50	2.60	3.30	2.99	1.18	2.97
CFM-S20TL	1-5/8"-12 ORB									
CFM-12TL	1-1/2" NPT	1-1/2"	5145	4.81	6.50	2.73	3.62	3.27	1.37	3.32
CFM-S24TL	1-7/8"-12 ORB									
CFM-16TL	2" NPT	2"	5145	5.53	8.50	3.15	4.37	3.94	1.73	4.11
CFM-S32TL	2-1/2"-12 ORB									

Note: Available as L-Port Only

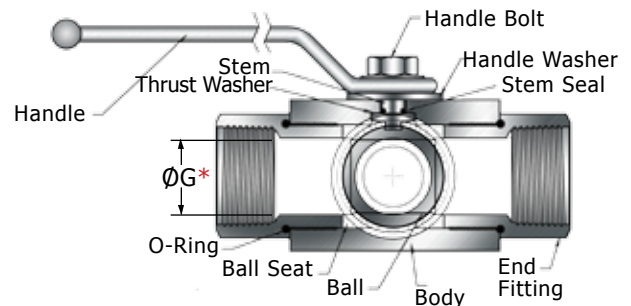
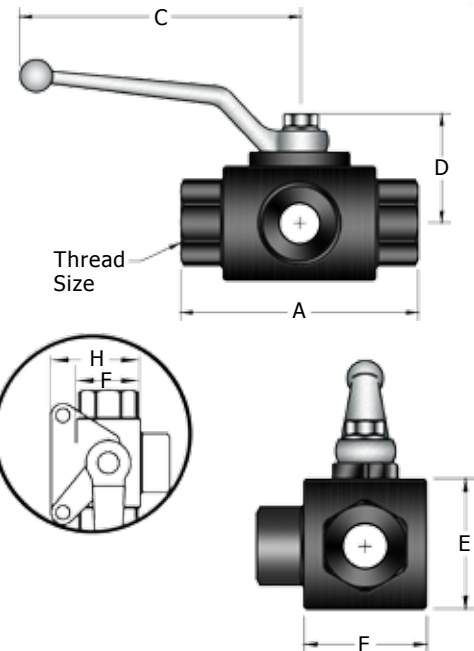
Locking Plate Dimensions		LL-1	LL-2	LL-3
			1/4"-1/2"	3/4"-1-1/4"
A		1.82	2.48	3.15
B		2.75	3.58	4.28

Bill of Materials

PART	Carbon Steel
Body	Oxide Coated Carbon Steel*
End Fitting	Oxide Coated Carbon Steel*
Stem	Coated Steel
O-Ring	Viton®**
Stem Seal	Viton®**
Ball Seat	Delrin®**
Thrust Washer	Delrin®**
Handle	Cast Aluminum
Handle Bolt	Zinc Plated Steel
Handle Washer	Zinc Plated Steel

Note:

- * Zinc Plated Option Available
- ** Other Seats and Seals Available (consult factory)



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