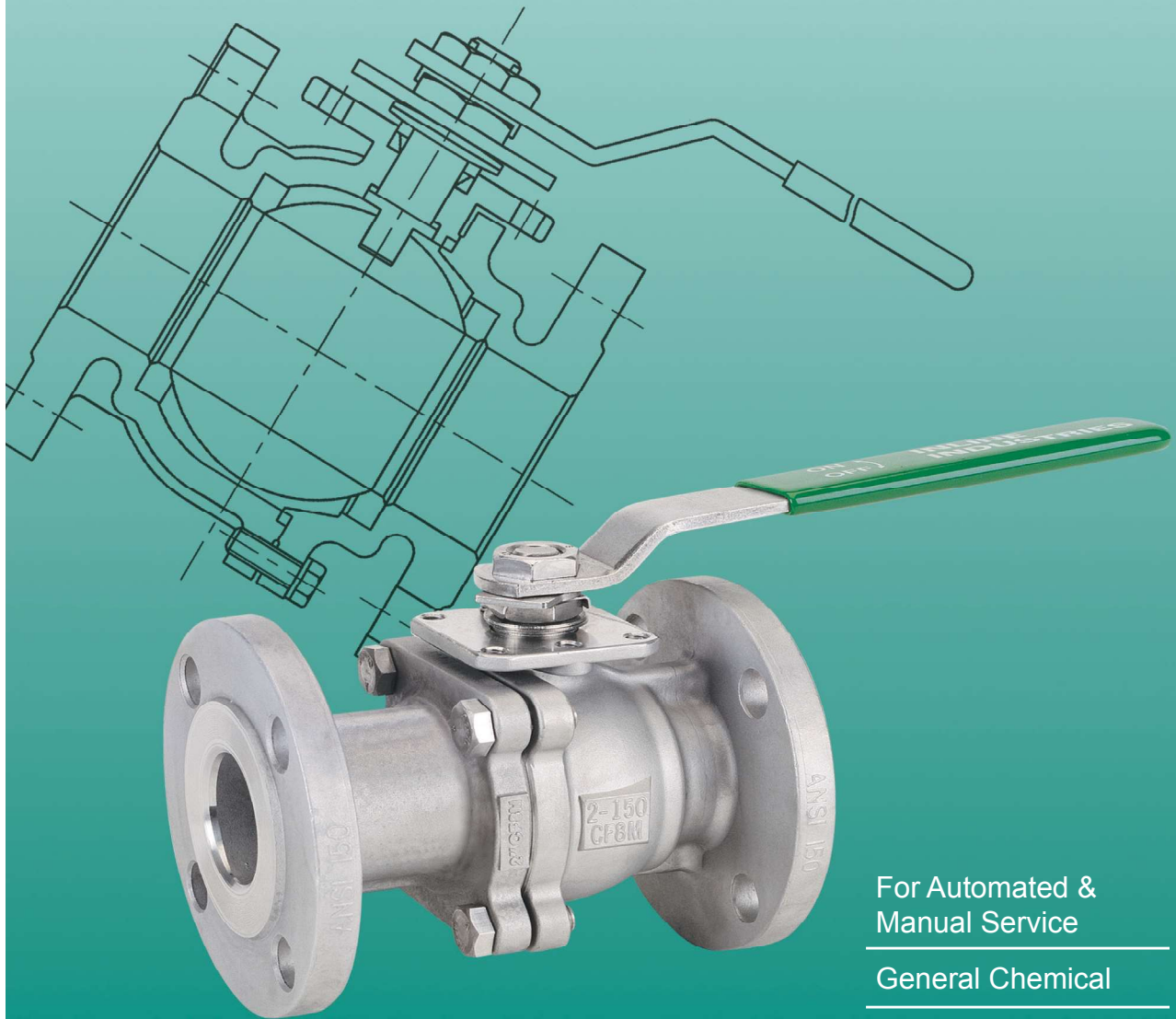


209F Flanged Ball Valve

2-Piece Full Port (ASME 150/300)
ISO 5211 Mounting Pad



For Automated &
Manual Service

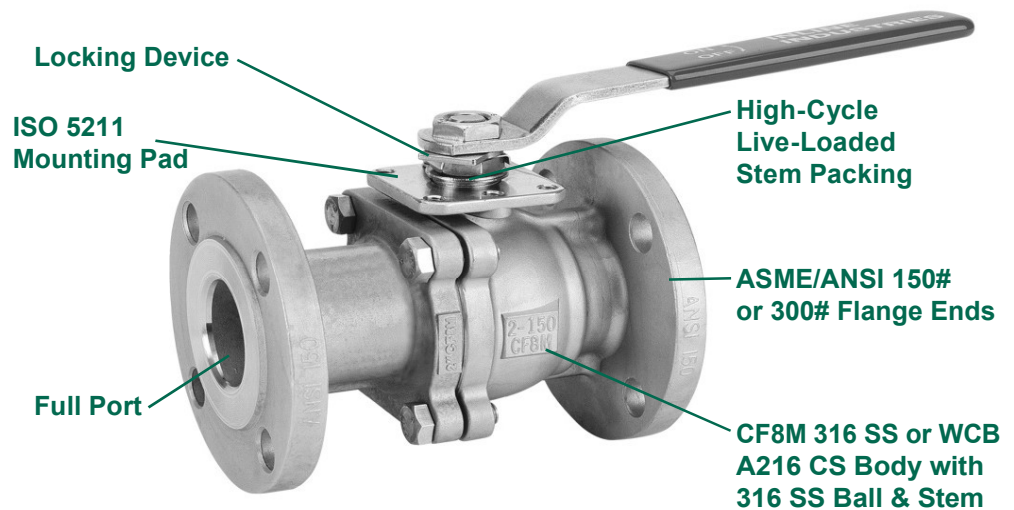
General Chemical

Industrial

Other Corrosion
Resistant Applications

The 209F Series Ball Valve

The 209F series ball valve utilizes a 2-piece full port design and is available in both ASME 150# and 300# flanged end connections. The ISO 5211 mounting pad facilitates mounting of most pneumatic and electric actuators. Available with multiple seat and seal configurations, the 209F series ball valves can be configured for your specific ball valve applications.

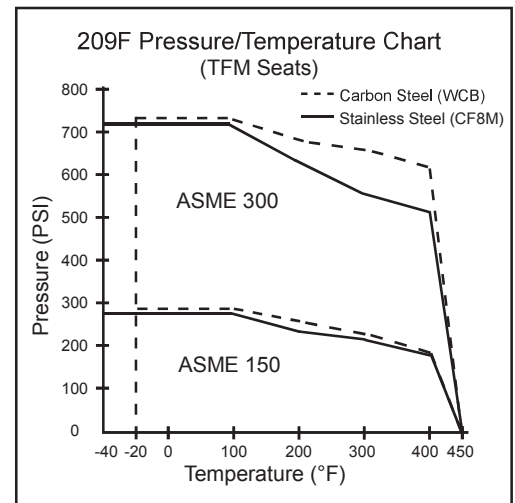


Standard Features and Benefits

- **Full Port Design**
Full port construction improves flow characteristics for greater process efficiencies
- **High-Cycle, Live-Loaded Stem Packing (1/2" - 4")**
Ensures tight stem seal and extends service life
- **Adjustable Gland Packing (6" - 12")**
- **Fully Encapsulated Body Seal**
- **Blow-Out-Proof Stem**
Stem is bottom loaded to prevent removal when valve is in service
- **Locking Device**
Enables plant personnel to secure valve in open or closed position when manually operated
- **ISO 5211 Mounting Pad**
- **Up to 150 PSI Saturated Steam (Standard Configuration)**
- **Up to 250 PSI Saturated Steam with 300# Flanged Ends and Infill Seats / Graphite Body Seals (1/2" - 2")**
- **Anti-Static Stem**
- **Investment Cast (1/2" - 4")**
Improves dimensional control and reduces porosity
- **Sand Cast with Hollow Ball (6" - 12")**
- **Castings Meet NACE MR0175/ISO 15156**

Options

- **Oval Handle (1/2" - 1 1/2")**
- **Stem Extensions**
- **Gear Box**
- **Material Test Reports Available Upon Request**



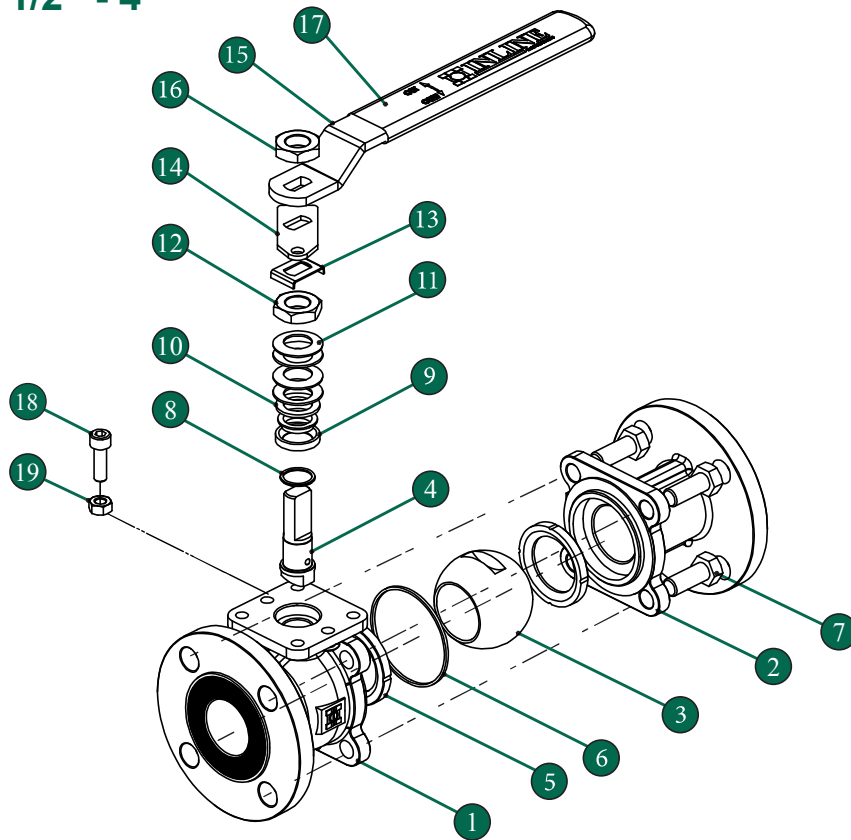
Operating Conditions

- **Temperature Range (TFM):**
-40°F ~ 450°F
- **Maximum Pressure (TFM):**
ASME 150: 285 PSI CWP (WCB)
275 PSI CWP (CF8M)
ASME 300: 740 PSI CWP (WCB)
720 PSI CWP (CF8M)

Specifications

- All valves shell and seat tested to ANSI/ASME B16.34 and API 598
- Length to ASME B16.10
End connections to ASME B16.5

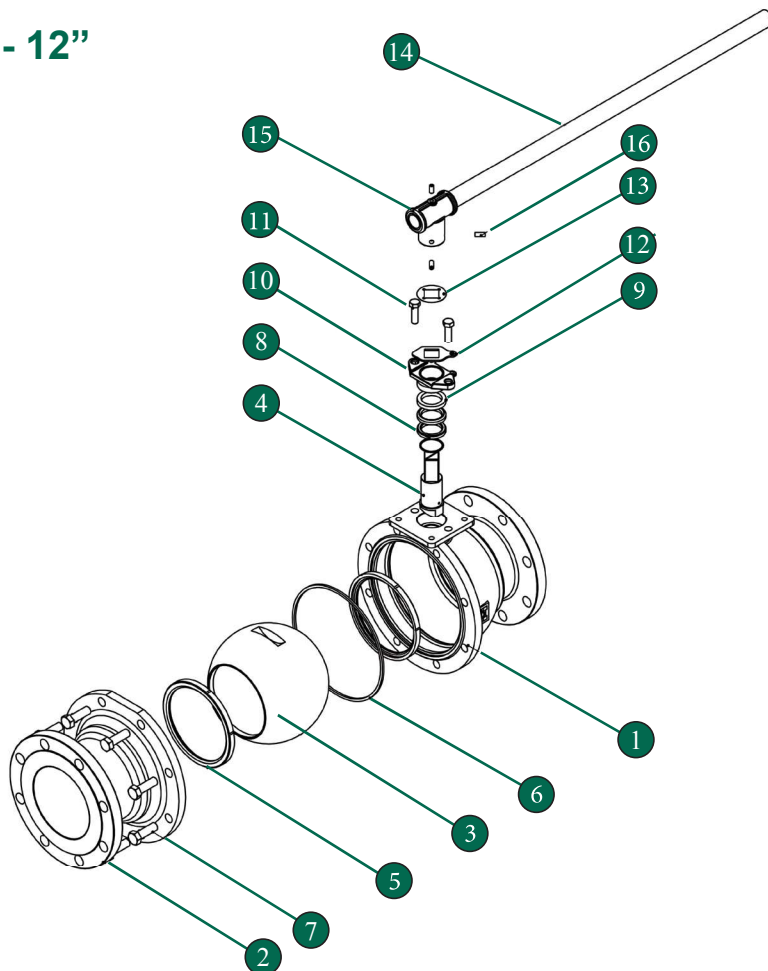
1/2" - 4"



Valve Components			
No.	Part Name	Material	Qty
1	Body	A351 CF8M	1
2	End Cap	A351 CF8M	1
3	Ball	316 SS	1
4	Stem	316 SS	1
5	Seat	TFM	2
6	Body Seal	TFM	1
7	Body Bolt	304 SS	4*
8	Thrust Washer	PEEK	1
9	Stem Packing Set	TFM	1
10	Packing Gland	304 SS	1
11	Belleville Washer	301 SS	4
12	Gland Nut	304 SS	1
13	Gland Nut Lock Washer	304 SS	1
14	Stop Plate	304 SS	1
15	Handle	304 SS	1
16	Handle Nut	304 SS	1
17	Handle Cover	Vinyl	1
18	Stop Pin	304 SS	1
19	Stop Pin Nut	304 SS	1

*Number of Body Bolts Varies Depending on Size & Flange

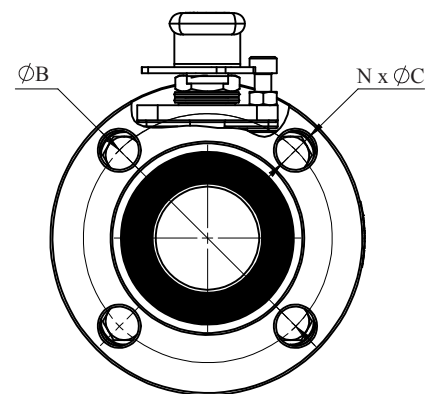
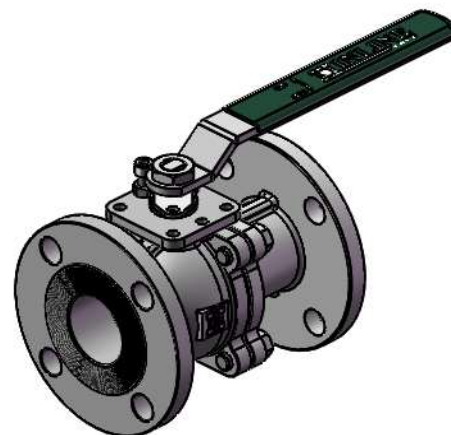
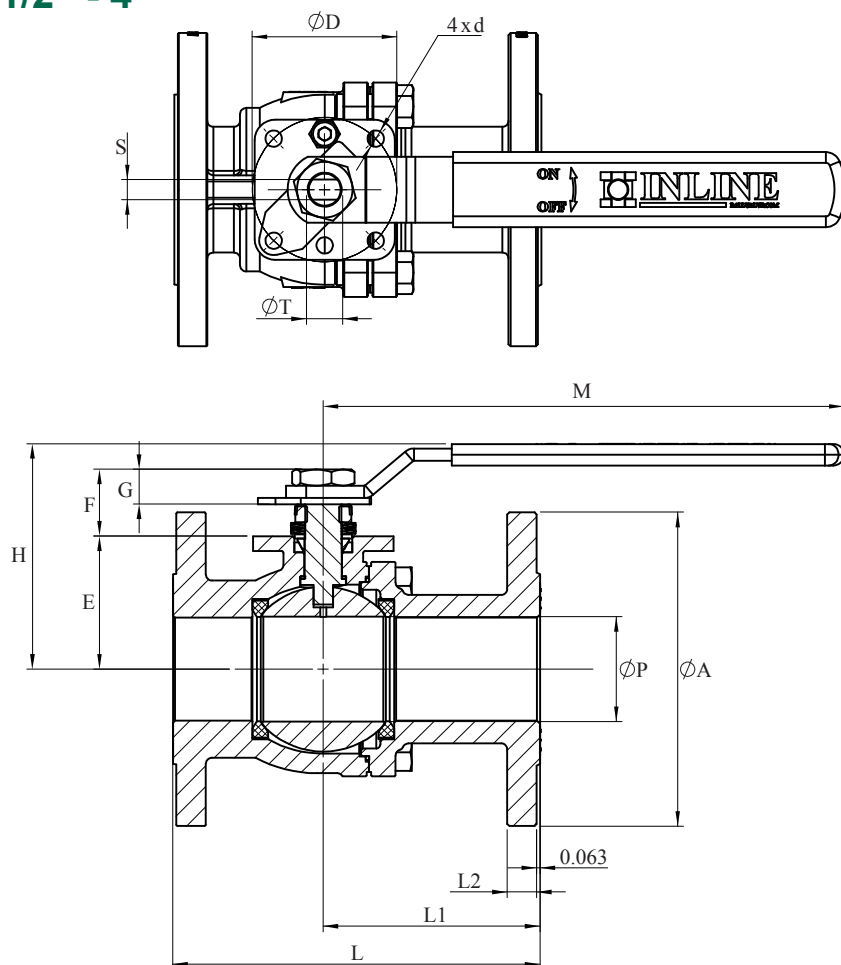
6" - 12"



Valve Components			
No.	Part Name	Material	Qty
1	Body	A351 CF8M	1
2	End Cap	A351 CF8M	1
3	Ball	316 SS	1
4	Stem	316 SS	1
5	Seat	TFM	2
6	Body Seal	TFM	1
7	Body Bolt	304 SS	8*
8	Thrust Washer	PEEK	1
9	Stem Packing Set	TFM	1
10	Packing Gland	304 SS	1
11	Packing Gland Bolt	304 SS	2
12	Stop Plate	304 SS	1
13	Lock Plate	301 SS	1
14	Pipe Handle	Carbon Steel	1
15	Handle Drive Coupling	Steel/Ductile	1
16	Hex Socket Set Screw	316 SS	1

*Number of Body Bolts Varies Depending on Size & Flange

1/2" - 4"



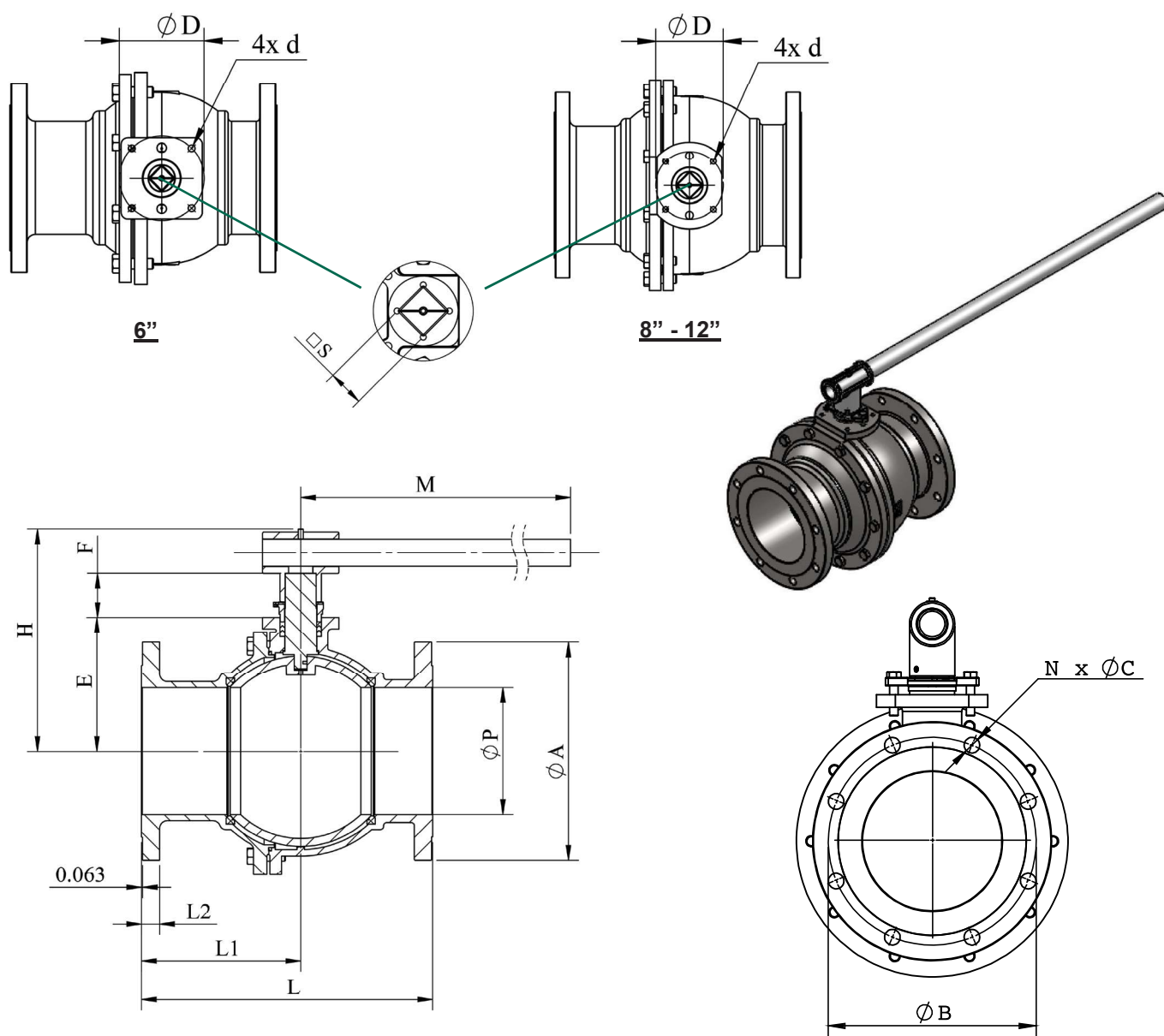
Dimensions Table 1.1 (Inches)									Cv	Weight (lbs)
Size	ASME 150									
	L	L1	L2	H	A	B	C	N		
1/2"	4.25	2.68	0.38	2.7	3.50	2.38	0.63	4	15.0	3.5
3/4"	4.62	2.83	0.38	2.9	3.88	2.75	0.63	4	29.8	4.4
1"	5.00	3.19	0.38	3.4	4.25	3.12	0.63	4	47.0	5.9
1 1/2"	6.50	4.02	0.50	4.3	5.00	3.88	0.63	4	112	12.1
2"	7.00	4.13	0.56	4.7	6.00	4.75	0.75	4	207	18.0
2 1/2"	7.50	4.11	0.63	5.4	7.01	5.50	0.75	4	359	27.8
3"	8.00	4.31	0.69	5.8	7.50	6.00	0.75	4	575	36.9
4"	9.00	4.69	0.88	7.5	9.02	7.50	0.75	8	935	62.7

Dimensions Table 1.1 (Inches)								Cv	Weight (lbs)
ASME 300									
L	L1	L2	H	A	B	C	N		
5.51	3.35	0.50	2.7	3.75	2.62	0.63	4	14.0	4.6
6.00	3.62	0.56	2.9	4.62	3.25	0.75	4	26.9	7.1
6.50	3.82	0.63	3.4	4.88	3.50	0.75	4	45.9	9.3
7.50	4.61	0.75	4.3	6.14	4.50	0.88	4	107	18.7
8.50	5.04	0.81	4.7	6.50	5.00	0.75	8	202	22.7
9.50	5.81	0.93	5.4	7.50	5.87	0.88	8	354	35.9
11.14	7.03	1.07	5.8	8.25	6.61	0.88	8	568	50.6
12.01	6.89	1.19	7.5	10.00	7.88	0.88	8	919	85.5

Cv value represents flow data to ISA 75.01.01 - 2007

Dimensions Table 1.2 (Inches)										Torque (in-lbs)
ASME 150 and ASME 300										
Size	M	P	E	F	G	D	d	S	T	
1/2"	5.8	0.59	1.32	0.63	0.34	1.65	M5 x 0.80	0.26	0.38	54
3/4"	5.8	0.79	1.51	0.63	0.34	1.65	M5 x 0.80	0.26	0.38	72
1"	7.7	0.98	1.71	0.77	0.46	1.97	M6 x 1.00	0.38	0.54	108
1 1/2"	9.9	1.50	2.20	1.27	0.66	2.76	M8 x 1.25	0.38	0.69	288
2"	9.9	2.00	2.54	1.27	0.66	2.76	M8 x 1.25	0.38	0.69	360
2 1/2"	12.3	2.56	3.28	1.34	0.83	4.02	M10 x 1.50	0.47	0.77	630
3"	12.3	3.15	3.65	1.34	0.83	4.02	M10 x 1.50	0.47	0.77	810
4"	13.5	3.90	4.32	1.79	0.93	4.02	M10 x 1.50	0.59	0.93	1260

6" - 12"



ASME 150 Dimensions Table 2.1 (Inches)

Size	L	L1	L2	P	M	H	E	F	S	D	d	A	B	C	N	Weight (lbs)
6"	15.51	8.82	1.00	5.91	35.4	11.4	6.38	2.62	1.10	4.92	M12x1.75	11.00	9.50	0.87	8	146.0
8"	17.99	9.84	1.13	7.87	43.3	13.7	8.29	2.74	1.42	4.92	M12x1.75	13.50	11.75	0.88	8	214.10
10"	20.98	10.20	1.20	9.84	43.3	15.3	9.88	2.74	1.42	4.92	M12x1.75	16.00	14.25	0.98	12	382.3
12"	24.02	13.15	1.26	11.81	59.0	17.4	11.81	2.87	1.42	5.51	M16x2.00	19.02	17.00	1.00	16	530.0

ASME 300 Dimensions Table 2.2 (Inches)

Size	L	L1	L2	P	M	H	E	F	S	D	d	A	B	C	N	Weight (lbs)
6"	15.87	8.60	1.46	5.91	35.4	11.4	6.81	2.19	1.10	4.92	M12x1.75	12.52	10.62	0.88	12	146.0
8"	19.76	10.83	1.46	7.87	43.3	13.7	8.54	2.48	1.42	4.92	M12x1.75	15.00	13.00	1.00	12	283.0
10"	22.36	11.57	1.81	9.84	43.3	15.3	10.28	2.34	1.42	4.92	M12x1.75	17.52	15.25	1.12	16	447.2



Automation Systems



Direct Mount Products

209F Ordering Information

Example: 2" Full Port Ball Valve, with ISO 5211 Actuator Mounting Pad and Locking Device, 316 SS Body and Trim, TFM Seats and Seals, ASME 150# Flanged Ends

<u>209F</u>	<u>D</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>M</u>	<u>M</u>	<u>AA</u>	<u>2</u>	<u>S</u>
Series	Size	Body Material	End Material	Stem Material	Seat	Seal	End Connection	Port Configuration	Ball Configuration
209F - Full Port	5 1/2" 7 3/4" A 1" C 1 1/2" D 2" E 2 1/2" F 3" G 4" I 6" J 8" K 10" L 12"	6 - A351 Gr CF8M (316) 2 - A216 Gr. WCB (CS)	6 - 316 SS	6 - 316 SS	M - TFM C - RTFE (15% C.F.) P - PEEK (1/2" - 2") S - Infill (Carbon, Carbon Fiber, Ekonol Filled Modified PTFE) T - PTFE U - UHMWPE	M - TFM G - Grafoil T - PTFE U - UHMWPE	A - ASME 150# Flanged B - ASME 300# Flanged	2 - 2 Way	S - Straight Port



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