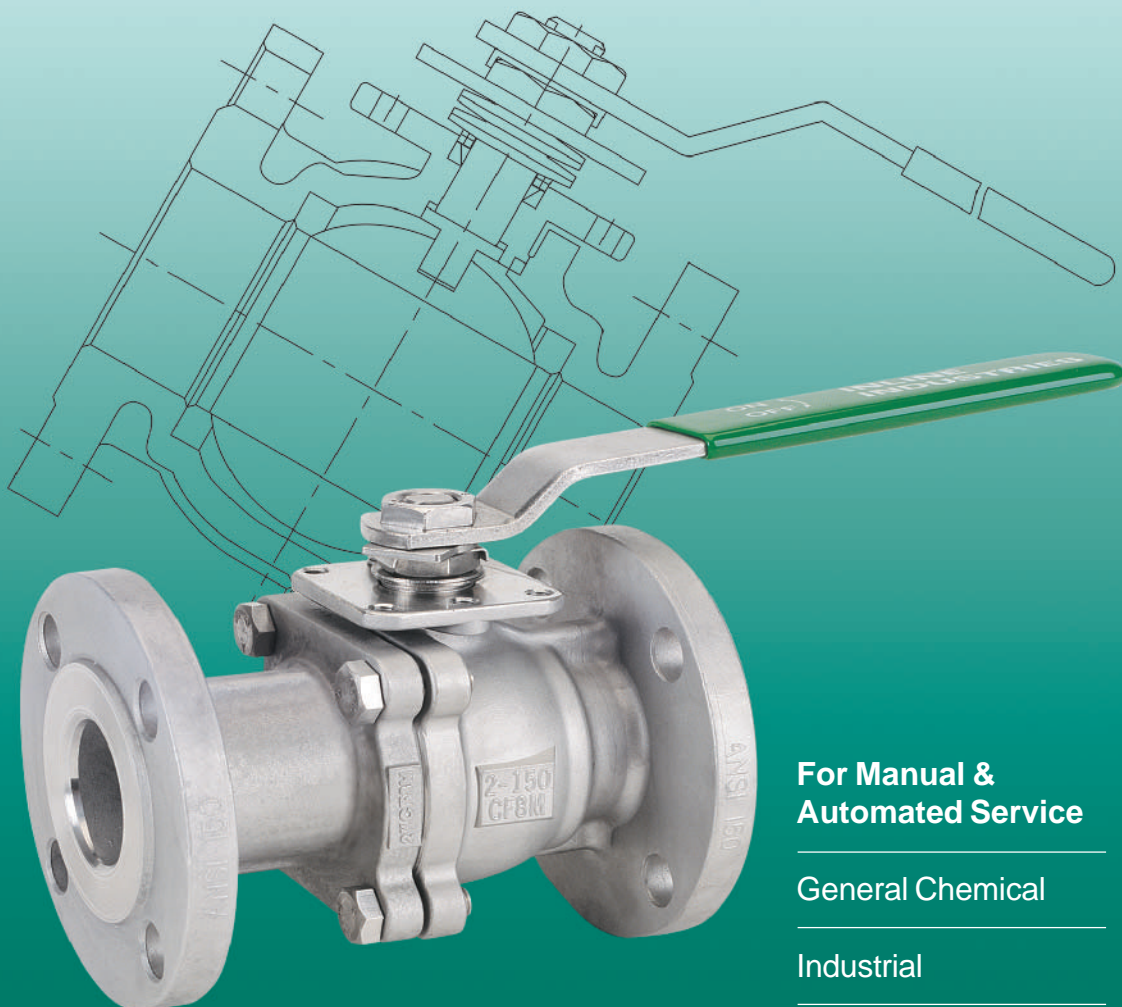


# 209F Flanged Ball Valve

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



**For Manual &  
Automated Service**

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General Chemical

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Industrial

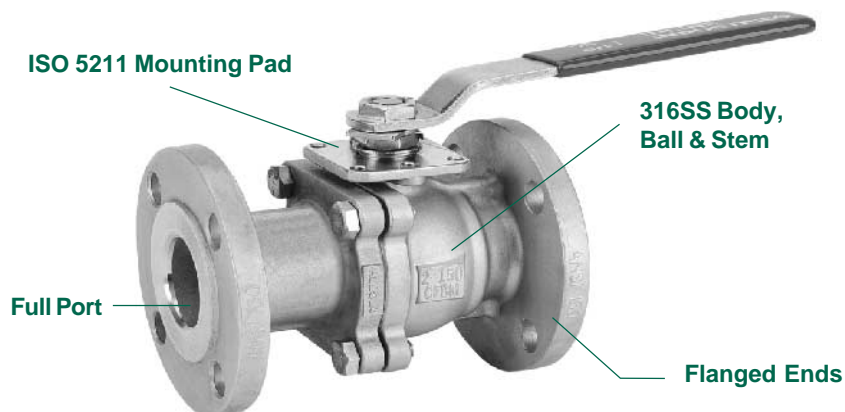
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Other Corrosion  
Resistant Applications

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# The 209F Series Ball Valve

The 209F series ball valve has a full port design and is available with 150# or 300# flanged ends. The dual pattern ISO 5211 mounting pad facilitates mounting of pneumatic and electric actuators.



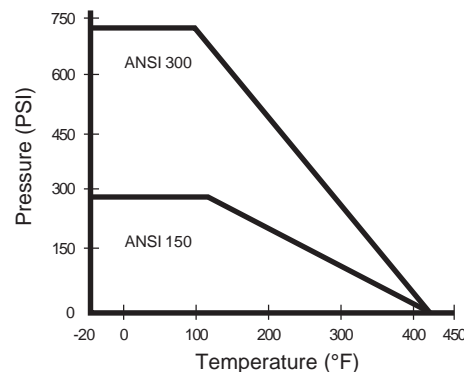
## Standard Features and Benefits

- 1 **Full Port Design**  
Full port construction improves flow characteristics for greater process efficiencies
- 1 **High-Cycle, Live-Loaded Stem Packing (1/2" - 4")**  
Ensures tight seal  
Extends service life
- 1 **Adjustable Gland Packing (6" - 12")**
- 1 **Blow-Out-Proof Stem**  
Stem is bottom loaded to prevent removal when valve is in service
- 1 **Fully Encapsulated Body Seal**
- 1 **Locking Device**  
Enables plant personnel to secure valve in open or closed position when manually operated
- 1 **ISO 5211 Mounting Pad**
- 1 **Steam Service to 150 PSI Saturated Steam (Standard)**  
250 psi saturated steam through 2" (300# flanges + S seat / Grafoil body seal)
- 1 **Anti-Static Stem**
- 1 **Investment Cast (1/2" - 4")**  
Improves dimensional control and reduces porosity
- 1 **Sand Cast with Hollow Ball (6" - 12")**
- 1 **Standard Seats and Seals Suitable for 150 PSI Saturated Steam**

## Options

- 1 **Carbon Steel construction to NACE MR01.75**
- 1 **Oval Handle (1/2" - 1-1/2")**
- 1 **One-Piece Stem Extension**
- 1 **Gear Box**

209F Pressure / Temperature Chart  
(RTFE Seats)



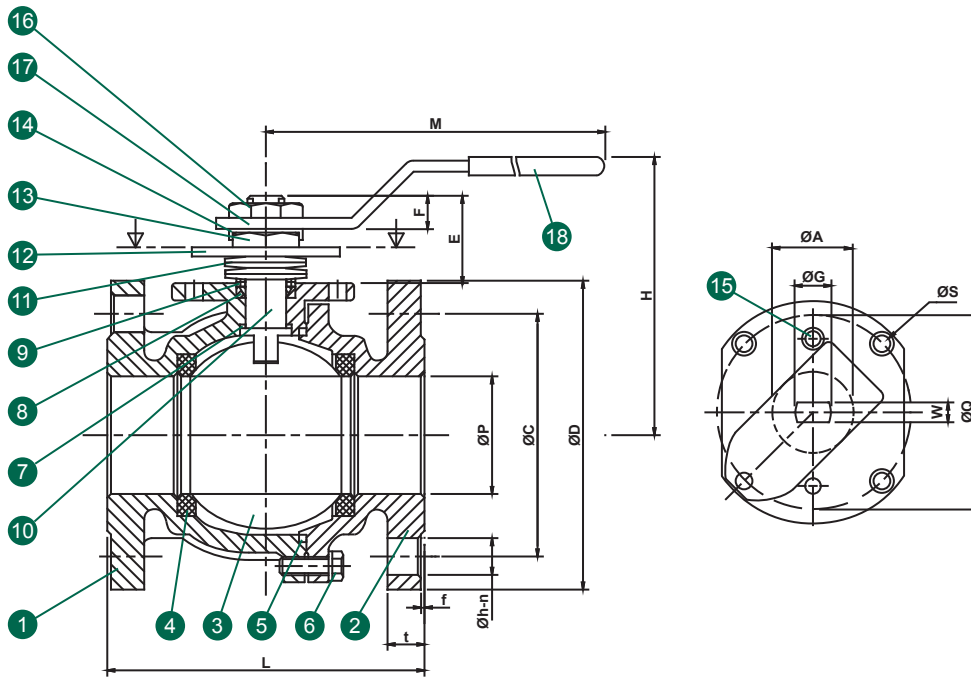
## Operating Conditions

- 1 Temperature range (RTFE):  
-20°F ~ 420°F
- 1 Maximum pressure (RTFE):  
ANSI 150: 275 PSI WOG @ 100°F  
ANSI 300: 720 PSI WOG @ 100°F

## Specifications

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

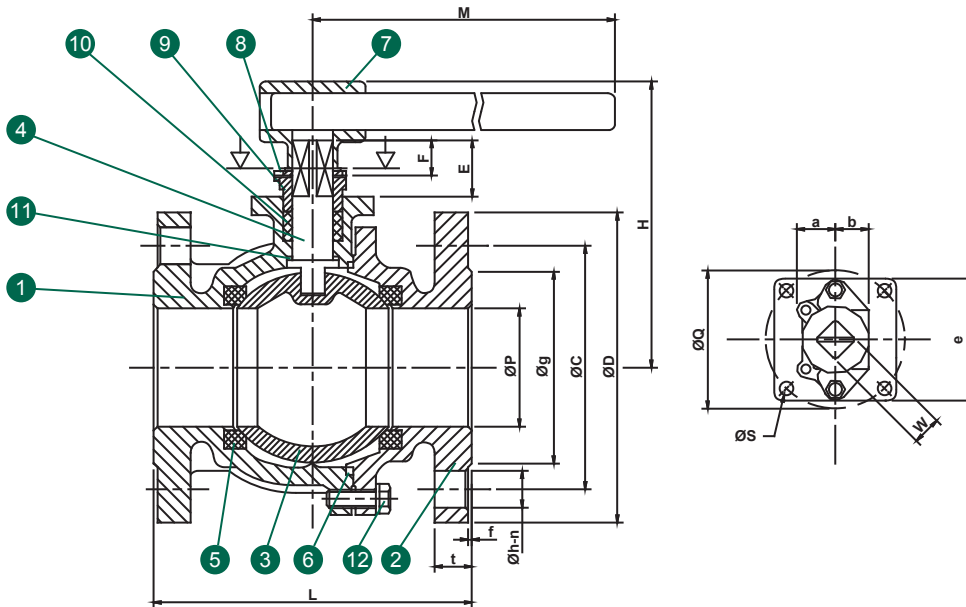
1/2" - 4"



Valve Components			
#	Part Name	Material	Qty.
1	Body	A351 Gr. CF8M	1
2	End Cap	A351 Gr. CF8M	1
3	Ball	316SS	1
4	Seat	RTFE (15% C.F.)	2
5	Body Seal	PTFE	1
6	Bolt & Washer	304SS	n*
7	Thrust Washer	PEEK	1
8	Stem Packing Set	PTFE	1
9	Packing Gland	304SS	1
10	Stem	316SS	1
11	Belleville Washer	301SS	4
12	Stop Plate	304SS	1
13	Gland Nut	304SS	1
14	Gland Nut Lock Washer	304SS	1
15	Positioning Pin	304SS	1
16	Handle Nut	304SS	1
17	Handle	304SS	1
18	Handle Cover	Vinyl	1

\* See dimension table below

6" - 12"



Valve Components			
#	Part Name	Material	Qty.
1	Body	A351 Gr. CF8M	1
2	End Cap	A351 Gr. CF8M	1
3	Ball	316SS	1
4	Stem	316SS	1
5	Seat	RTFE (15% C.F.)	2
6	Body Seal	PTFE	1
7	Handle	Ductile (Steel Pipe)	1
8	Stop Plate	304SS	1
9	Gland	304SS	1
10	Stem Packing Set	PTFE	1
11	Thrust Washer	PEEK	1
12	Bolt & Washer	304SS	n*

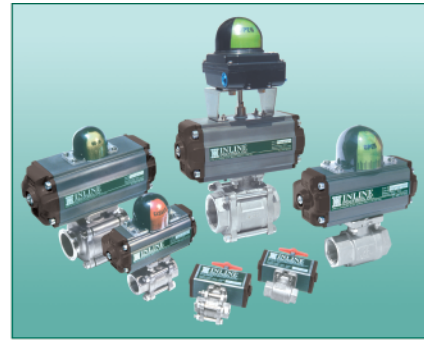
\* See dimension table below

Dimensions (Inches)																														
Size	ØA	F	ØP	H	M	E	W	ØQ	ØS	ØG	a	b	e	Øg	f	L		End Flange (ANSI 150)					End Flange (ANSI 300)					Wt. (lbs)		CV
																ANSI 150	ANSI 300	ØD	Bolt Hole			t	ØD	Bolt Hole			t	ANSI 150	ANSI 300	
																			ØC	n	Øh			ØC	n	Øh				
1/2	1.00	0.32	0.59	2.56	5.51	0.64	0.26	1.65	M5	0.39	-	-	-	-	0.06	4.25	5.51	3.50	2.38	4	0.63	0.44	3.74	2.62	4	0.56	0.56	3.50	5.80	29
3/4	1.00	0.32	0.79	2.95	5.51	0.64	0.26	1.65	M5	0.39	-	-	-	-	0.06	4.61	5.98	3.96	2.76	4	0.63	0.44	4.61	3.25	4	0.63	0.63	4.50	8.10	54
1	1.15	0.43	0.98	3.34	6.69	0.79	0.38	1.96	M6	0.55	-	-	-	-	0.06	5.00	6.50	4.25	3.13	4	0.63	0.44	4.88	3.50	4	0.70	0.70	6.00	10.0	89
1 1/2	1.60	0.59	1.57	4.13	9.06	1.28	0.38	2.76	M8	0.71	-	-	-	-	0.06	6.50	7.48	5.00	3.88	4	0.63	0.62	6.14	4.51	4	0.81	0.81	12.5	19.7	219
2	1.60	0.59	1.97	4.53	9.06	1.28	0.38	2.76	M8	0.71	-	-	-	-	0.06	7.01	8.50	5.98	4.74	4	0.75	0.76	6.50	5.50	8	0.88	0.88	18.0	22.3	397
2 1/2	1.75	0.77	2.56	5.20	13.78	1.35	0.47	4.02	M10	0.79	-	-	-	-	0.06	7.48	9.49	7.01	5.49	4	0.75	0.88	7.48	5.87	8	1.00	1.00	29.0	42.5	689
3	1.75	0.77	3.15	5.75	13.78	1.35	0.47	4.02	M10	0.79	-	-	-	-	0.06	7.99	11.14	7.48	6.00	4	0.75	0.94	8.63	6.61	8	1.13	1.13	37.0	54.9	1020
4	1.90	0.91	3.94	6.50	13.78	1.80	0.59	4.02	M10	0.94	-	-	-	-	0.06	9.02	12.00	9.02	7.50	8	0.75	0.94	10.00	7.87	8	1.25	1.25	60.0	81.2	1680
6	-	1.67	5.95	10.04	32.28	2.46	1.10	4.92	M12	-	1.42	1.20	4.50	8.50	0.06	15.51	16.00	10.98	9.51	8	0.87	1.00	12.52	10.63	12	0.87	1.46	118.0	168.0	5000
8	-	1.69	7.90	13.39	41.34	2.56	1.41	4.92	M12	-	1.71	1.40	5.35	10.63	0.06	17.99	20.00	13.50	11.75	8	0.87	1.13	15.00	13.00	12	1.00	1.63	202.0	304.0	9800
10	-	1.83	9.90	14.96	41.34	2.60	1.41	4.92	M12	-	1.71	1.40	5.35	12.76	0.06	20.98	22.50	15.98	14.25	12	0.98	1.19	17.52	15.25	16	1.12	1.89	326.0	476.0	15200
12	-	1.61	11.85	22.36	57.48	2.91	1.41	5.51	M16	-	1.71	1.50	5.50	15.00	0.06	24.01	-	19.02	17.01	12	0.98	1.25	20.47	17.75	16	1.25	2.01	-	-	21200

\*\* Torque data available upon request.



Automation Systems



Direct Mount Products

## 209F Ordering Information

Example: 2" 209F Full Port Ball Valve, with ISO 5211 Actuator Mounting Pad and Locking Device, 316SS Body and Trim, RTFE (15% C.F.) Seats, PTFE Seals, ANSI 150# Flanged Ends

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

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