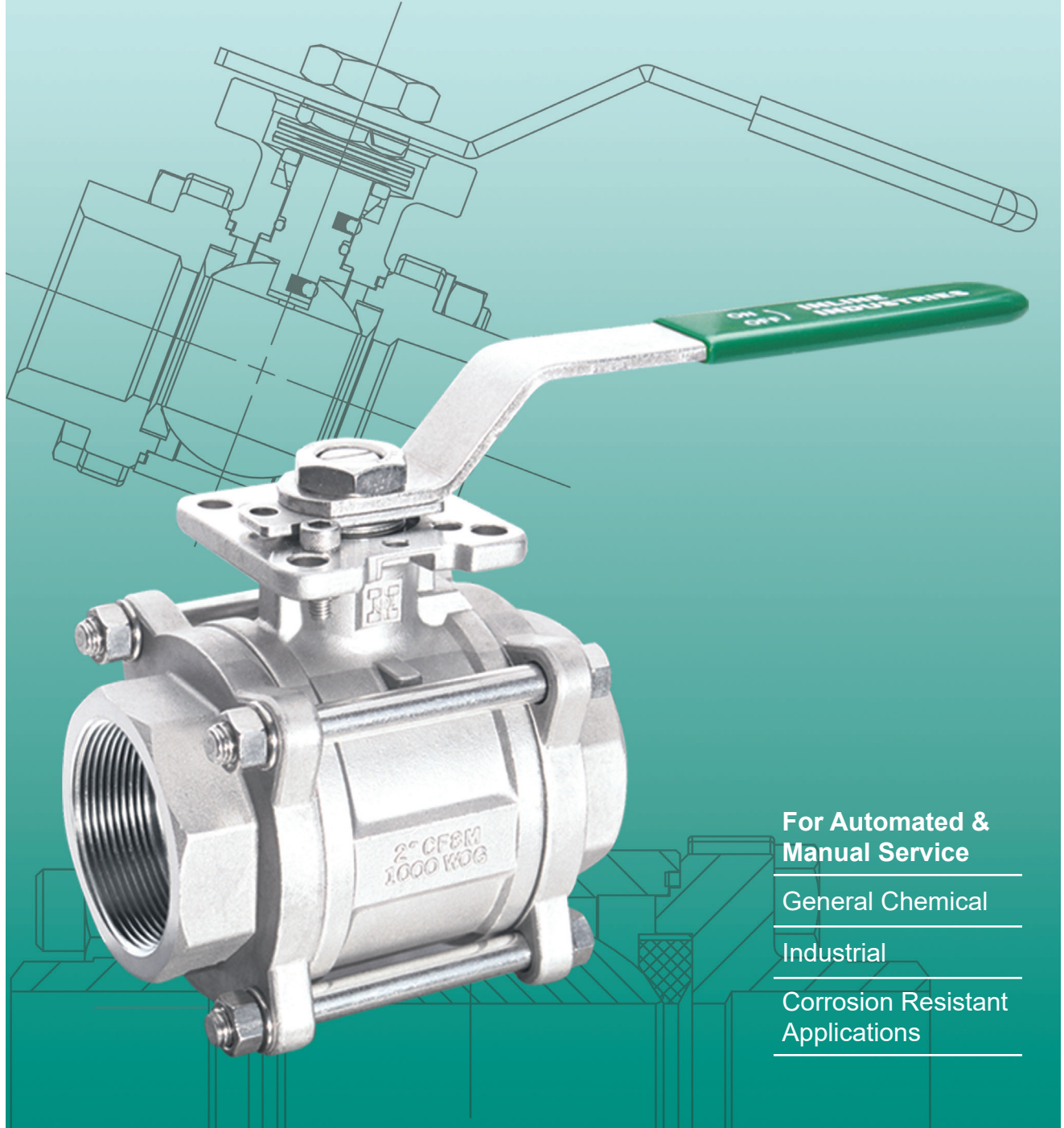


304F Ball Valve

3 Piece Full Port
ISO 5211 Direct Mount Pad



For Automated &
Manual Service

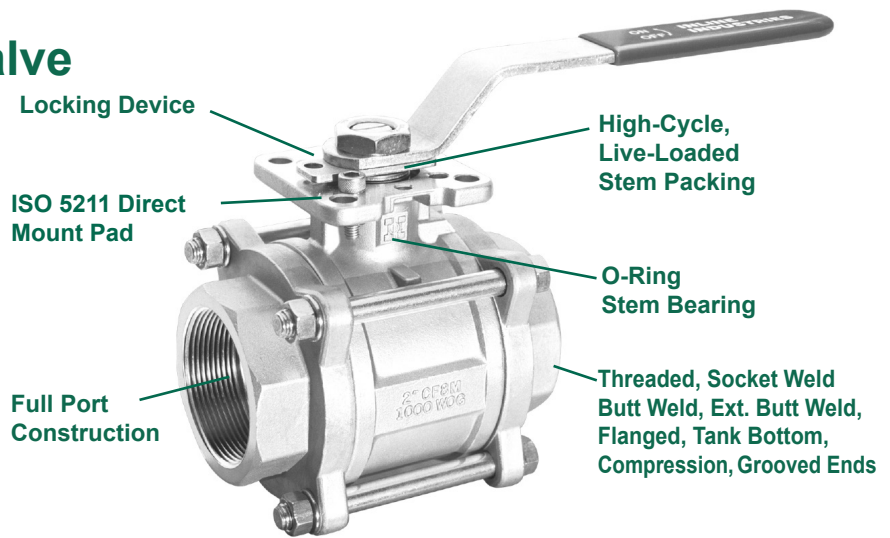
General Chemical

Industrial

Corrosion Resistant
Applications

The 304F Series Ball Valve

The 304F series ball valve incorporates several innovative design features for improved process performance. The uniform bore diameter improves flow rates and minimizes pressure drop through the valve. The dual pattern ISO 5211 mount pad facilitates direct mounting of pneumatic and electric actuators. In combination with our high-cycle live-loaded stem packing system, the 304F series ball valve provides an ideal choice for all your automation requirements.



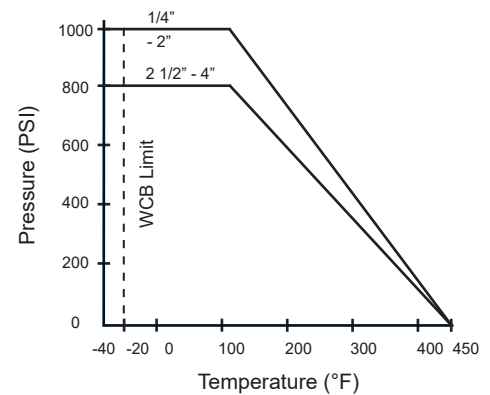
Standard Features and Benefits

- **Dual Pattern ISO 5211 Direct Mount Pad**
 - No bracket or drive coupling needed for automation
 - Eliminates exposed moving parts for safer work environment
 - Direct drive eliminates improper actuator alignment
 - Dual pattern pad fits a wide range of actuator sizes
- **High-Cycle, Live-Loaded Stem Packing**
 - Ensures tight stem seal and extends service life
- **O-ring Stem Bearing**
 - Maintains stem alignment
 - Reduces packing side-loading and wear
 - Enhances stem seal performance
- **Blow-Out-Proof Stem**
 - Bottom loaded to prevent removal when valve is in service
- **3-Piece Full Port Design**
 - Improves flow resulting in increased process efficiencies and easier to repair
- **Locking Device**
 - Enables plant personnel to secure valve in open or closed position when manually operated
- **End Cap Alignment Step**
 - Ensures easy and proper alignment between mating parts
- **Investment Cast**
 - Improves dimensional control and reduces porosity
- **Anti-Static Stem**
- **Standard Valve Suitable for 150 psi Saturated Steam**
- **Castings Meet NACE MR0175/ISO 15156**

Options

- **Material Test Reports Available Upon Request**
- **Stem Extensions**
- **Oval Handle**
- **Spring Return Handle**
- **Air Safety Exhaust Valve Design**
- **Oxygen Cleaning**

304F Pressure/Temperature Chart (TFM Seats)

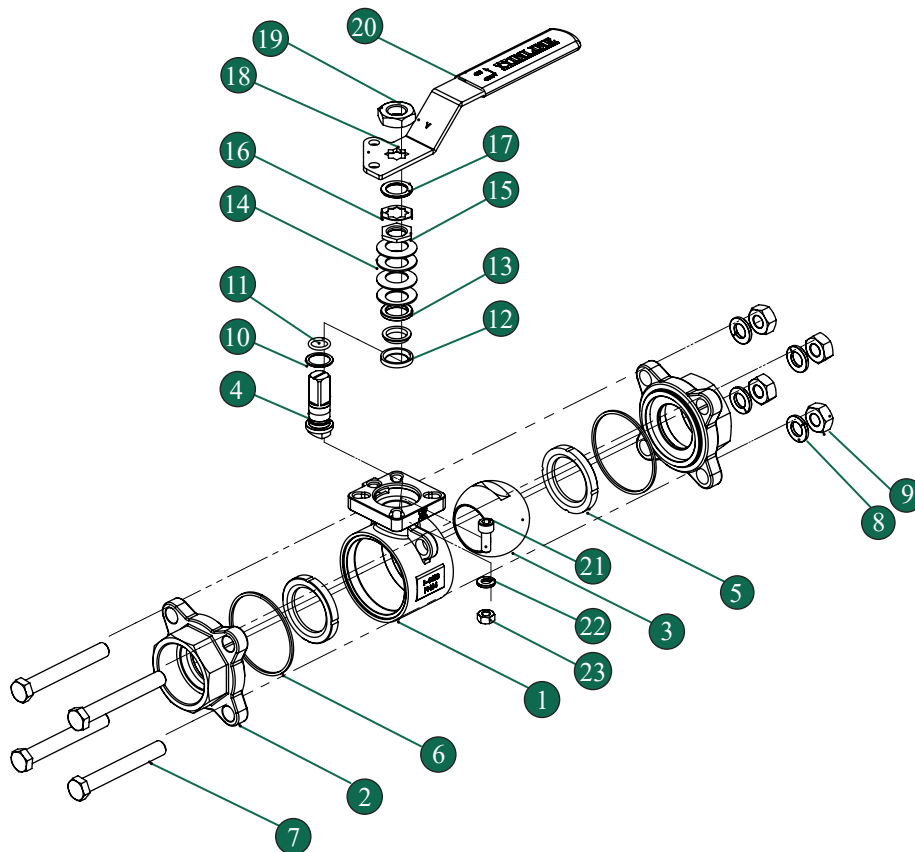


Operating Conditions

- Temperature Range (TFM):
-40°F ~ 450°F
- Maximum Pressure (TFM):
1000 PSI CWP (1/4" - 2")
800 PSI CWP (2 1/2" - 4")

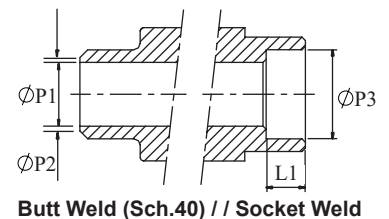
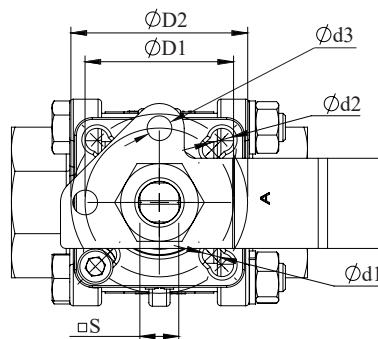
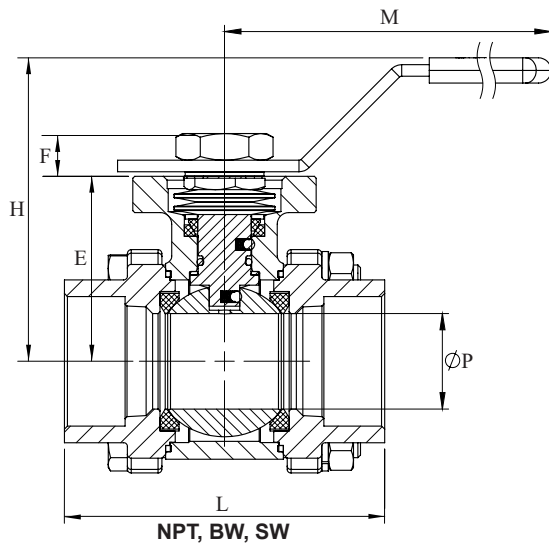
Specifications

- Valves designed and tested to ASME B16.34, API 598 and MSS SP-110, and meet ANSI/FCI 70-2 Class VI and MSS SP-61 leakage requirements
- All materials comply with applicable ASTM material specifications and USDA and FDA material requirements
- NSF/ANSI/CAN 61 & 372 certified
- All soft wetted parts comply with FDA CFR Title 21 Part 177
- **End connections**
 - All to ASME B16.34
 - NPT to ASME B1.20.1
 - Socket Weld to ASME B16.11
 - Butt Weld to ASME B16.25
 - Flanges to ASME B16.5



Valve Components			
No.	Part Name	Material	Qty
1	Body	CF8M	1
2	End Cap	CF8M	2
3	Ball	CF8M	1
4	Stem (Anti-Static)	316 SS	1
5	Seat	TFM	2
6	Body Seal	TFM	2
7	Body Bolt	304 SS	4*
8	Split Lock Washer	304 SS	4*
9	Body Nut	304 SS	4*
10	Thrust Washer	PEEK	1
11	Stem O-Ring	VITON	1
12	Stem Packing Set	TFM	1
13	Packing Gland	304 SS	1
14	Belleville Washer	301 SS	4
15	Gland Nut	304 SS	1
16	Gland Nut Lock Washer	304 SS	1
17	Stem Spacer	304 SS	1
18	Handle	304 SS	1
19	Handle Nut	304 SS	1
20	Handle Cover	Vinyl	1
21	Stop Pin	304 SS	1
22	Split Lock Washer	304 SS	1
23	Stop Pin Nut	304 SS	1

*3" Valve: Body Studs X4, Split Lock Washers X8, Body Nuts X8.
 4" Valve: Body Studs X6, Split Lock Washers X12, Body Nuts X12.



Dimensions (Inches)																		C _v	Torque (in-lbs) ¹	Weight (lbs) ^{**}
Size	L	L1	P	P1	P2	P3	M	H	E	F	D1	D2	d1	d2	d3	S	ISO 5211* Pattern			
1/4"	2.26	0.44	0.59	0.36	0.49	0.56	5.4	2.7	1.46	0.33	1.42	1.65	0.22	0.22	0.31	0.35	F03/F04	4.8	54	1.3
3/8"	2.26	0.44	0.59	0.49	0.62	0.69	5.4	2.7	1.46	0.33	1.42	1.65	0.22	0.22	0.31	0.35	F03/F04	10.6	54	1.3
1/2"	2.32	0.50	0.59	0.62	0.75	0.85	5.4	2.7	1.46	0.33	1.42	1.65	0.22	0.22	0.31	0.35	F03/F04	15.9	54	1.4
3/4"	3.06	0.56	0.79	0.82	0.95	1.07	5.4	2.9	1.65	0.35	1.42	1.65	0.22	0.22	0.31	0.35	F03/F04	30.2	72	2.2
1"	3.30	0.63	0.98	1.05	1.17	1.33	6.4	3.1	1.91	0.42	1.65	1.97	0.22	0.26	0.31	0.43	F04/F05	46.4	108	2.9
1 1/4"	3.91	0.69	1.25	1.38	1.51	1.67	6.4	3.3	2.11	0.42	1.65	1.97	0.22	0.26	0.31	0.43	F04/F05	74.6	162	4.4
1 1/2"	4.42	0.75	1.50	1.61	1.74	1.91	8.0	4.2	2.52	0.56	1.97	2.76	0.26	0.35	0.31	0.55	F05/F07	115	288	7.0
2"	5.16	0.87	2.00	2.07	2.19	2.41	8.0	4.5	2.87	0.56	1.97	2.76	0.26	0.35	0.31	0.55	F05/F07	206	360	10.5
2 1/2"	6.46	0.87	2.56	2.47	2.59	2.91	11.8	5.3	3.62	0.74	2.76	4.02	0.35	0.43	0.39	0.67	F07/F10	341	630	20.0
3"	7.40	1.00	3.15	3.07	3.19	3.54	11.8	5.7	4.02	0.74	2.76	4.02	0.35	0.43	0.39	0.67	F07/F10	543	810	30.3
4"	8.50	1.12	3.90	4.03	4.15	4.55	13.6	7.4	5.26	0.93	4.02	4.92	0.43	0.53	0.39	0.87	F10/F12	908	1260	57.4

*Direct mount may require stem adapter bushings

**Weights based on NPT Ends

C_v value represents flow data to ISA 75.01.01 - 2007

¹ Torques are based on 100 PSI clean water at ambient temperature



Automation Systems



Direct Mount Products

304F Ordering Information

Example: 2" 3-Piece Full Port Ball Valve with ISO 5211 Direct Mount Pad, Lever Handle and Locking Device, 316 SS Body and Trim, TFM Seats and Seals, NPT Ends

304F	D	6	6	6	6	M	M	TT	2	S
Valve Series	Valve Size	Body Material	End Material	Ball Material	Stem Material	Seat	Seal	End Connection	Port Config.	Ball Config.
304F - Full Port 304C - Compression*	2 1/4" 3 3/8" 5 1/2" 7 3/4" A 1" B 1 1/4" C 1 1/2" D 2" E 2 1/2" F 3" G 4"	6 - A351 Gr. CF8M (316)	6 - A351 Gr. CF8M (316) 2 - A216 Gr. WCB 3 - A351 Gr. CF3M (316L)	6 - 316 SS	6 - 316 SS	M - TFM C - RTFE (15% C.F.) F - 50% 316 SS Filled PTFE R - RTFE (15% G.F.) S - Infill (Carbon, Carbon Fiber, Ekonol Filled Modified PTFE) T - PTFE U - UHMWPE	M - TFM T - PTFE F - 50% 316 SS Filled PTFE U - UHMWPE V - Viton	T - NPT S - Socket Weld* 4 - Butt Weld Sch. 40** 1 - Butt Weld Sch. 10** 5 - Butt Weld Sch. 5** 6 - Ext. BW Sch. 10** 7 - Ext. BW Sch. 40** A - ANSI 150# Flanged B - ANSI 300# Flanged G - Grooved K - Tank Bottom** P - Compression	2 - 2 Way	S - Straight Port 7 - ASEV Ball

*Available in 1/4" - 1".

All valves supplied with a PEEK Thrust Washer and Viton Stem Seal O-Ring.
 Due to continuous product development, information may change without notice.

Other materials available upon request.

**316L - Standard Material



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