

## Floating Ball Valve Catalog

API 6D MONOGRAMMED • ISO 9001:2008 CERTIFIED



# Introduction

SPX FLOW, Inc. manufactures its products at strategically located facilities throughout the world, to provide competitive costs, high quality and local content.

SPX FLOW is known for its high quality, competitively priced products, and superior service and aftermarket support globally.

SPX FLOW products are sold worldwide through select sales channels. In the USA, contact your local PVF distributor. SPX FLOW supports distribution through its Houston-based distribution center and factory trained inside and outside sale support staff. Outside of the USA, contact your local SPX FLOW office or sales person for further information.

SPX FLOW ball valves are specifically designed in accordance to ASME B16.34 and manufactured to API 6D standards to satisfy the rigorous demands of oil and gas applications utilizing these products.

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SPX FLOW ball valves have been manufactured to the following specifications or standards:

- ISO 9001:2008 and API Spec Q1 registered quality systems
- ASME B16.34, BS 5351
- ASME B16.11, B16.10, B16.5
- ASTM Materials
- API 598 & API 607 & API 608
- API 6D Monogram (Reg. No. 0936)
- ISO 5211
- NACE MR0175 / ISO 15156
- MSS SP25
- Canadian Registration Numbers (CRN's)

## General Design Features

SPX FLOW floating ball valves offer customers a value-priced alternative to trunnion-mounted ball valves for use in less demanding applications. Properly applied, they provide outstanding service life and low cost of ownership.

SPX FLOW offers floating ball valves in 1" thru 8" sizes, with flanged connections in ASME class 150 to 600 pressure ratings.

SPX FLOW offers a wide variety of body and trim materials, and inventories A216 WCB carbon body with 316SS trim as standard. Seat materials include RTFM as standard along with a wide variety of other materials as options. Standard seal material is a 90 durometer peroxide-cured HNBR; and other materials, such as PTFE, Graphite and Viton are also available.

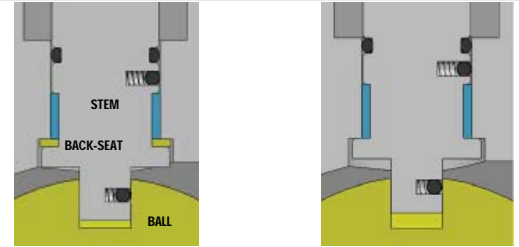
All SPX FLOW floating ball valves are monogrammed API 6D, and comply to the NACE MR0175 / ISO 15156 standard, as well as the API 607 Rev. 5 Fire Safe standard. SPX FLOW has rigorously cycle tested and then re-tested the floating valve design to API 6D requirements - passing the low/high hydrostatic and low/high gas API 6D pressure tests - to insure our valves withstand the tough service conditions required in the field.

### DOUBLE SEAL BODY CONNECTIONS

Two-piece flanged floating ball valve features an interlocked body design along with an elastomer o-rings and a back seat to provide three sealing points at the body connection to prevent any leakage.

### FIRE-SAFE CERTIFIED

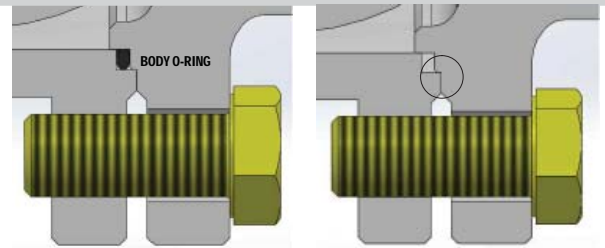
All SPX FLOW API 6D monogrammed floating ball valves are certified to and conform to API 607 Rev 5 and API 6FA standards. When a fire occurs near the valve location, non-metallic soft goods, such as the elastomer seats, seals, bushings, bearings, back seat, packing and gaskets may be incinerated. However, the design of the SPX FLOW floating ball valve provides sufficient metal-to-metal sealing at critical areas in the valve to minimize (per the relative API code) external or internal leakage. See Figures 1, 2 and 3 to the right.



(Before Fire)

(After Fire)  
Metal-to-Metal Contact

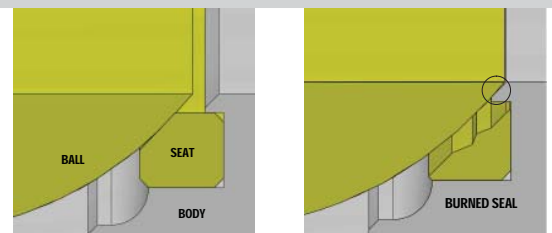
**Figure 1 — Contact between stem and valve shell**



(Before Fire)

(After Fire)  
Metal-to-Metal Contact

**Figure 2 — Valve shell coupling flanges of spill body design**



(Before Fire)

(After Fire)  
Metal-to-Metal Contact

**Figure 3 — Secondary metal seat**

# General Design Features

## TRIPLE STEM SEAL DESIGN

SPX FLOW flanged floating ball valves feature graphite packing and HNBR O-Ring on stem seals.

## MOUNTING PAD

All SPX FLOW flanged floating ball valves feature a standard ISO 5211 mounting pad that allows easy actuation.

## LOCKING DEVICE

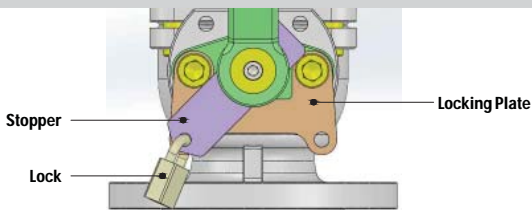
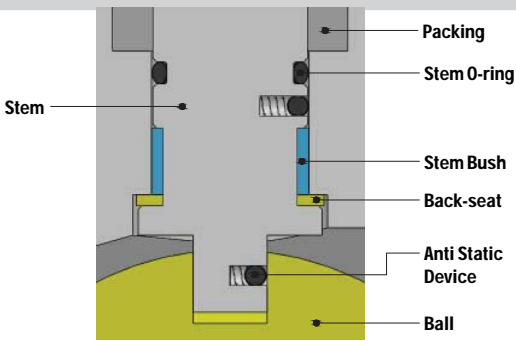
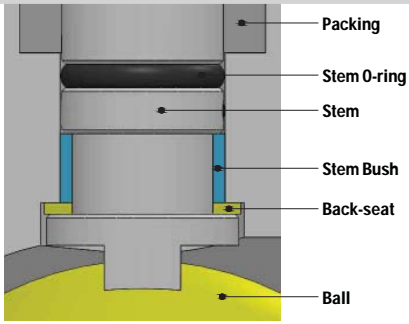
SPX FLOW flanged floating ball valves are equipped with a standard locking device (lever or gear).

## ANTI-STATIC DEVICE

All SPX FLOW flanged floating ball valves feature a standard anti-static device to prevent an electrical discharge into a piping system.

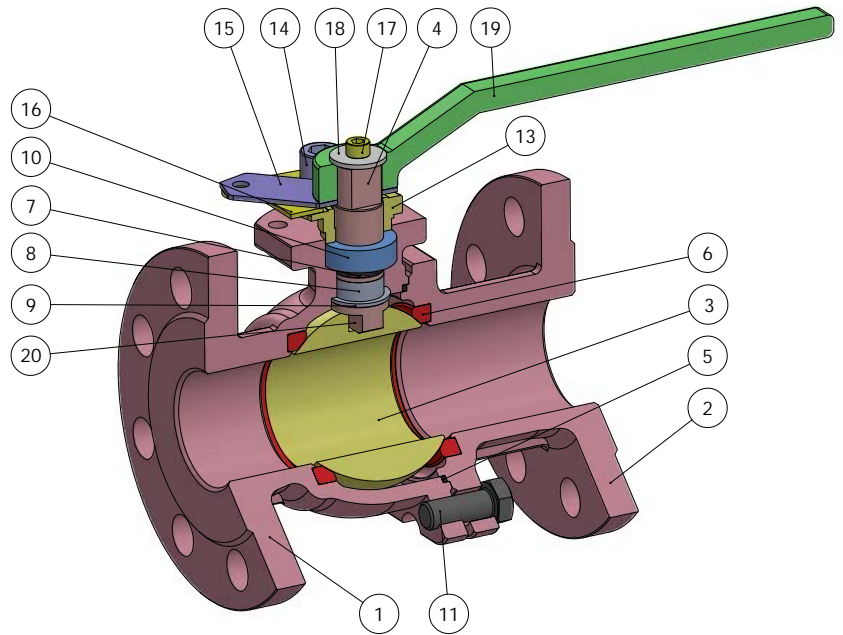
## BLOW-OUT PROOF STEM

All SPX FLOW flanged floating ball valves feature an internally installed blow-out proof stem.



# SPX FLOW Floating Ball Valve

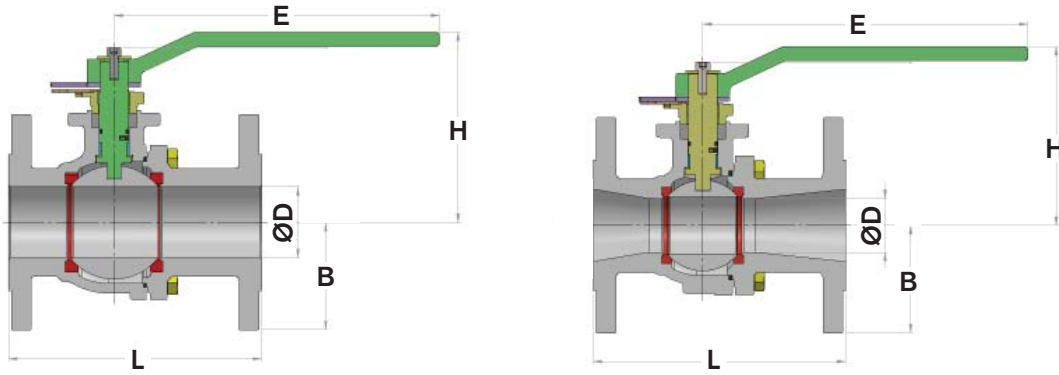
- Flanged two-piece bolted body, floating ball valve
- Full and regular port offerings
- 1" to 8" sizes, ASME class 150 & 300 pressures
- 1" to 4" sizes, ASME class 600 pressures
- Resilient and fire safe stem seal and body connection
- Fire safe certified to API 607 rev. 5
- ISO 5211 mounting pad
- API 6D monogrammed
- Standard locking device (lever or gear)
- Standard anti-static device
- Standard NACE internals and bolting



2-Piece Floating Ball Valve

ITEM	PART	QTY	STANDARD (NACE)	LOW TEMP (NACE)	STAINLESS STEEL (NACE)
1	BODY	1	A216-WCB	A352-LCC	A351-CF8M
2	CAP	1	A216-WCB	A352-LCC	A351-CF8M
3	BALL	1	A351-CF8M	A351-CF8M	A351-CF8M
4	STEM	1	A276-316	A276-316	A276-316
5	BODY O-RING	1	HNBR	HNBR	HNBR
6	SEAT	2	RTFM	RTFM	RTFM
7	STEM O-RING	1	HNBR	HNBR	HNBR
8	STEM BUSH	1	RTFE	RTFE	RTFE
9	BACK SEAT	1	RTFE	RTFE	RTFE
10	PACKING	1	GRAPHITE	GRAPHITE	GRAPHITE
11	BODY/CAP BOLT	1 SET	A193-B7M	A193-L7	A193-B8M
13	GLAND	1	A351-CF8	A351-CF8	300 SERIES SS
14	GLAND BOLT	2	A4135+H1150	A4135+H1150	A4135+H1150
15	STOPPER	1	C,S+Zn.Plating	C,S+Zn.Plating	C,S+Zn.Plating
16	LOCKING PLATE	1	C.S+Zn.Plating	C.S+Zn.Plating	C.S+Zn.Plating
17	LEVER BOLT	1	304 SS	304 SS	304 SS
18	LEVER WASHER	1	304 SS	304 SS	304 SS
19	LEVER	1	A536	A536	A536
20	ANTI-STATIC	1	316L SS	316L SS	316L SS

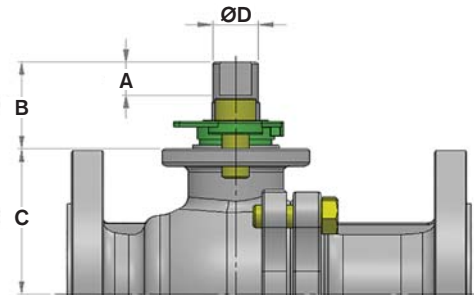
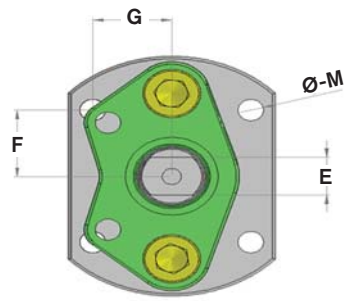
# SPX FLOW Floating Ball Valve



## WEIGHTS AND DIMENSIONS

SIZE		B		D		E		H		L-RF		L-RTJ		L-BW		WEIGHT	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg
<b>CLASS 150</b>																	
1	25	2.13	54	1	25	7	175	3.86	98	5	127	5.5	140	6.5	165	19	8.8
2×1-1/2	50×40	2.50	64	1.5	50	9.5	238	5	127	7	178	7.5	190	8.5	216	37	17
2	50	3.00	76	2	50	9.5	238	5.24	133	7	178	7.5	190	8.5	216	44	20
3×2	80×50	3.00	76	2	80	9.5	238	5.24	133	8	203	8.5	216	11.12	283	77	35
3	80	3.75	95	3	80	13.75	344	6.89	175	8	203	8.5	216	11.12	283	92	42
4×3	100×80	4.50	114	3	100	13.75	344	6.89	175	9	229	9.5	241	12	305	125	57
4	100	4.50	114	4	100	13.75	344	7.68	195	9	229	9.5	241	12	305	145	66
6×4	150×100	5.50	140	4	150	13.75	344	7.68	195	15.5	394	16	406	18	457	295	134
6	150	6.52	166	6	150	23.62	591	10.89	277	15.5	394	16	406	18	457	363	165
8×6	200×150	6.75	171	6	200	23.62	591	10.89	277	18	457	18.5	470	20.5	521	513	233
8	200	7.78	198	8	200	23.62	591	11.8	299	18	457	18.5	470	20.5	521	601	273
<b>CLASS 300</b>																	
1	25	2.44	62	1	25	7.09	177	3.86	98	6.5	165	7	178	6.5	165	26	12
2×1-1/2	50×40	3.25	83	1.5	50	9.45	236	5	127	8.5	216	9.1	232	8.5	216	55	25
2	50	3.25	83	2	50	9.45	236	5.24	133	8.5	216	9.1	232	8.5	216	62	28
3×2	80×50	3.25	83	2	80	9.45	236	5.24	133	11	283	11.7	298	11.1	283	103	47
3	80	4.13	105	3	80	13.78	345	6.89	175	11	283	11.7	298	11.1	283	134	61
4×3	100×80	5.00	127	3	100	13.78	345	6.89	175	12	305	12.6	321	12	305	163	74
4	100	5.00	127	4	100	13.78	345	7.68	195	12	305	12.6	321	12	305	202	92
6×4	150×100	6.26	159	4	150	13.78	345	7.68	195	15.87	403	16.5	419	18	457	541	246
6	150	6.89	175	6	150	23.62	591	11.61	295	15.87	403	16.5	419	18	457	638	290
8×6	200×150	7.50	191	6	200	23.62	591	11.61	295	19.76	502	20.4	518	20.5	521	871	396
8	200	8.74	222	8	200	23.62	591	13.3	337	19.76	502	20.4	518	20.5	521	968	440
<b>CLASS 600</b>																	
1	25	2.44	62	1.00	25	7.09	177	4	98	9	216	9	219	9	216	37	17
2×1-1/2	50×40	3.25	83	1.50	50	13.78	345	5	123	12	292	12	295	12	292	73	33
2	50	3.25	83	2.00	50	13.78	345	5	127	12	292	12	295	12	292	88	40
3×2	80×50	4.29	109	2.00	80	13.78	345	5	127	14	356	14	359	14	356	121	55
3	80	4.29	109	3.00	80	19.68	492	8	191	14	356	14	359	14	356	189	86
4×3	100×80	5.37	136	3.00	100	19.68	492	8	191	17	432	17	435	17	432	266	121
4	100	5.38	137	4.00	100	19.68	492	8	204	17	432	17	435	17	432	363	165

# Actuator Mounting Dimensions



SIZE		CLASS	A		B		C		D		E		BOLT CIR.		ISO FLG
in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
1	25	150	0.22	5.5	0.77	19.5	2.13	54	0.59	15	0.39	10	1.97	50	F05
2x1-1/2	50x40	150	0.69	17.5	1.40	35.5	2.80	71	0.79	20	0.55	14	2.76	70	F07
2	50	150	0.69	17.5	1.40	35.5	3.03	77	0.79	20	0.55	14	2.76	70	F07
3x2	80x50	150	0.69	17.5	1.40	35.5	3.03	77	0.79	20	0.55	14	2.76	70	F07
3	80	150	0.98	25	1.81	46	4.37	111	1.18	30	0.79	20	4.02	102	F10
4x3	100x80	150	0.98	25	1.81	46	4.37	111	1.18	30	0.79	20	4.02	102	F10
4	100	150	0.98	25	1.81	46	5.16	131	1.18	30	0.79	20	4.02	102	F10
6x4	150x100	150	0.98	25	1.81	46	5.16	131	1.18	30	0.79	20	4.02	102	F10
6	150	150	1.18	30	2.66	67.5	7.28	185	1.57	40	1.06	27	4.92	125	F12
8x6	200x150	150	1.18	30	2.66	67.5	7.28	185	1.57	40	1.06	27	4.92	125	F12
8	200	150	2.17	55	2.66	67.5	8.43	214	1.57	40	1.57	40	5.51	140	F14
1	25	300	0.22	5.5	0.77	19.5	2.13	54	0.59	15	0.39	10	1.97	50	F05
2x1-1/2	50x40	300	0.69	17.5	1.40	35.5	2.80	71	0.79	20	0.55	14	2.76	70	F07
2	50	300	0.69	17.5	1.40	35.5	3.03	77	0.79	20	0.55	14	2.76	70	F07
3x2	80x50	300	0.69	17.5	1.40	35.5	3.03	77	0.79	20	0.55	14	2.76	70	F07
3	80	300	0.98	25	1.81	46	4.37	111	1.18	30	0.79	20	4.02	102	F10
4x3	100x80	300	0.98	0.3	1.81	46.0	5.00	127	1.18	30	0.79	20	4.02	102	F10
4	100	300	0.98	0.3	1.81	46.0	5.15	131	1.18	30	0.79	20	4.02	102	F10
6x4	150x100	300	0.98	25	1.81	46	5.16	131	1.18	30	0.79	20	4.02	102	F10
1	25	600	0.22	5.5	0.77	19.5	2.13	54	0.59	15	0.39	10	1.97	50	F05
2x1-1/2	50x40	600	0.69	17.5	1.38	35.0	2.67	68	0.79	20	0.55	14	2.76	70	F07
2	50	600	0.69	17.5	1.40	35.5	3.31	84	0.79	20	0.55	14	2.76	70	F07
3x2	80x50	600	0.69	17.5	1.40	35.5	3.31	84	0.79	20	0.55	14	2.76	70	F07
3	80	600	1.00	25.5	1.16	29.5	5.51	141	1.18	30	0.79	20	4.02	102	F10
4x3	100x80	600	1.00	25.5	1.16	29.5	5.55	141	1.18	30	0.79	20	4.02	102	F10
4	100	600	1.00	25.5	1.16	29.5	6.06	154	1.18	30	0.79	20	4.02	102	F10

# Torque Data

Torque and MAST in in-lb.

Please contact your local representative for details.

SIZE		PRESSURE (PSIG)						
		CLASS 150		MAST	CLASS 300	MAST	CLASS 600	MAST
in	mm	(0psi)	(285psi)		(740psi)		(1480psi)	
1	25	87	105	781	156	781	338	781
1-1/2	40	174	265	1736	390	1736	585	1736
2	50	260	325	1736	592	1736	897	1736
3	75	443	741	5989	1009	5989	1675	5989
4	100	868	980	5989	1539	5989	2974	5989
6	150	2604	3309	9461	4287	9461	8349	20224
8	200	5208	4205	9461	5100	9461	18700	47825

*The above torque values do not contain service factors.*

*Soaking effects and/or particle matter in the valve may cause an increase in the torque.*

*For intermediate pressure use the torque expressions for the stated pressure range.*

*The re-seat torque is taken as 0.75 times the break torque.*

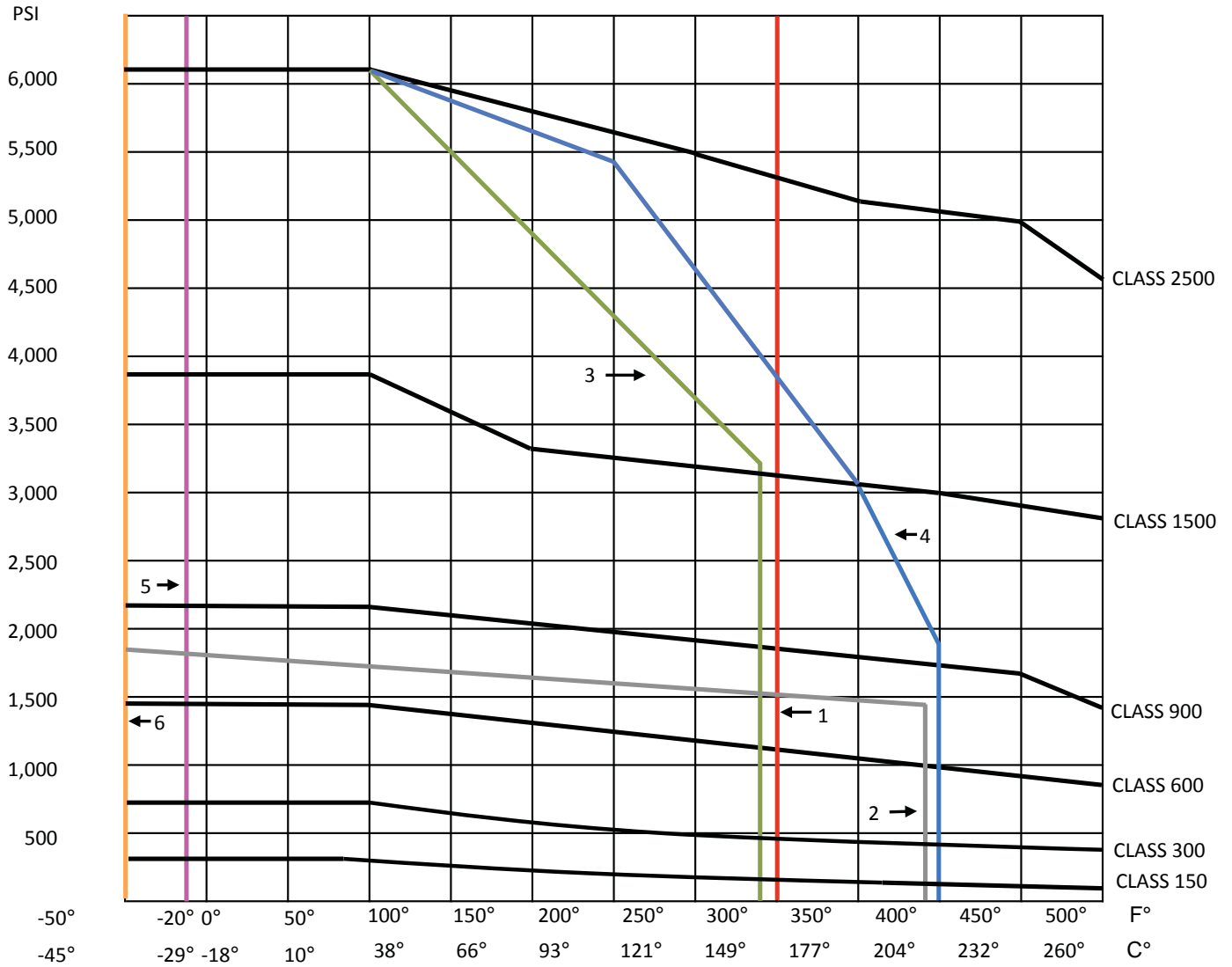
*For power operation, multiply all of the above values by a factor of 1.25 or customer specified factor whichever is larger.*

*For operating temperatures between -20°F to -50°F (-29°C to -46°C) multiply these values by 1.20.*

*Actuator selection should be made on customer experience and appropriate service factors.*

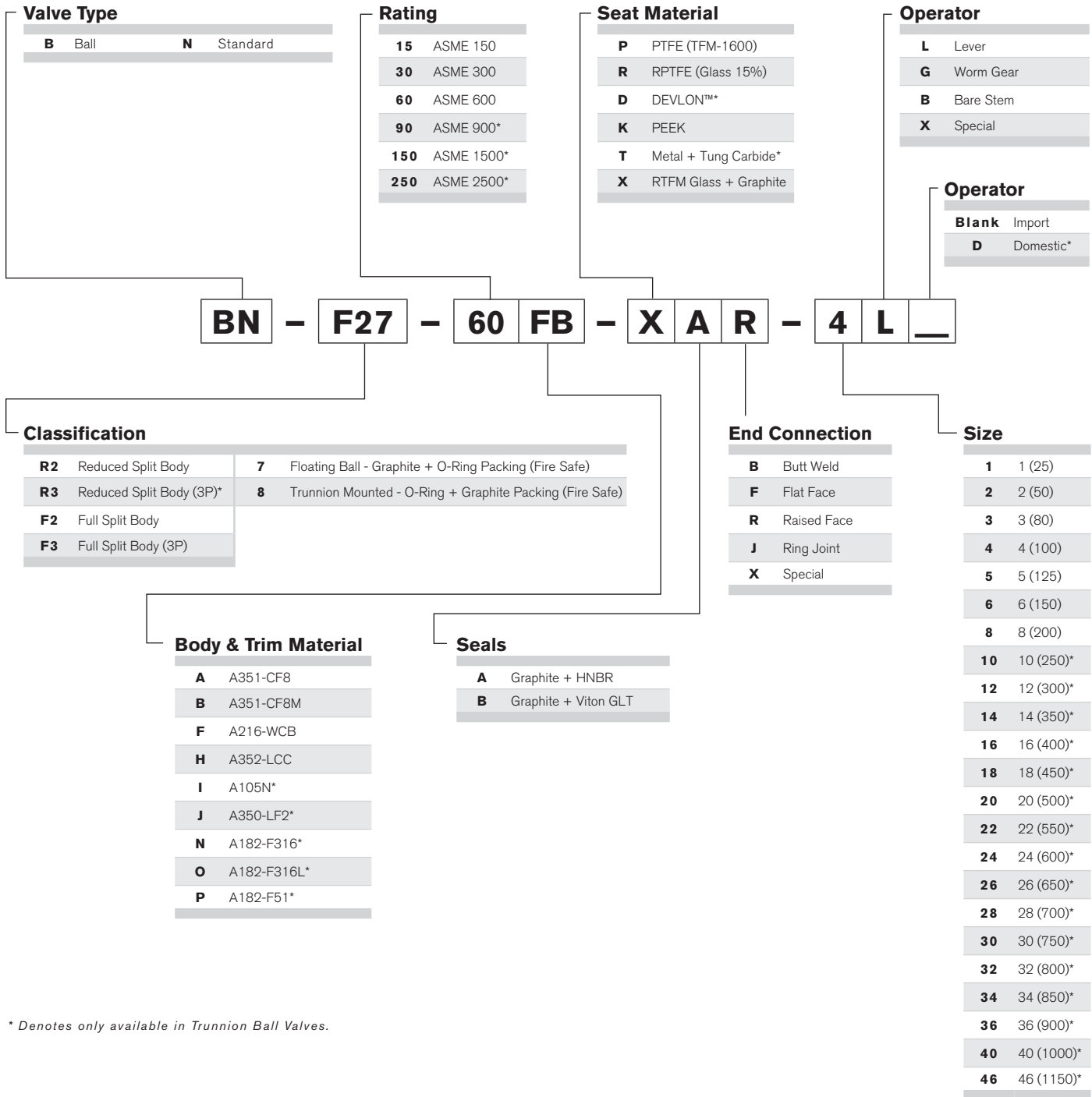


# Pressure / Temperature Rating



- 1 — HNBR (90)
- 2 — RTFM + HNBR
- 3 — Devlon API V™
- 4 — PEEK
- 5 — Low Temperature Limit HNBR
- 6 — Low Temperature Limit LT HNBR (70-80)

# Ball Valve Model Number Key



\* Denotes only available in Trunnion Ball Valves.

## FOR EXAMPLE

### BN-F27-60FB-XAR-4L\_

4" API 6D Monogrammed NACE MR0175 Compliant, 2-Pc End Entry Floating Ball Valve, Full Port, Class 600, A216-WCB Body, 316SS Trim, RTFM Seat, HNBR Seals, RFF, Lever OP

# Other M&J Valve Branded Products

## EXPANDING GATE VALVES

The M&J Model EG valves are full-bore through-conduit valves with rising stem, parallel expanding gate and segment for tight mechanical seal and positive shut-off, both upstream and downstream, under both low and high differential pressure. This valve provides a superior bidirectional mechanical seal because the two-piece gate assembly expands against the seating areas in open or closed position. The greater the torque, the tighter the seal. The result is an extremely heat-resistant seal, unaffected by line pressure or vibration.

### Key Features

- Increased throughput full-bore unrestricted flow
- Tight seal in all flow conditions; bi-directional mechanical sealing
- Can replace two valves; double block and bleed capability
- Long, leak-free service life; protected seat design
- Easy to operate and maintain
- Sizes 2" and larger in all ANSI classes

## COMPACT EXPANDING GATE VALVE

The M&J Model CEG valves are full- or reduced-opening, non-through-conduit valves with rising stem, parallel expanding gate and segment for tight mechanical seal and positive shut-off, both upstream and downstream, under both low and high differential pressure. This design has proven performance in applications worldwide, such as isolation valves in power plants, ESD valves in production, block valves in process systems, high-temperature valves in refineries, and pipeline valves in critical areas.

### Key Features

- Superior sealability through use of two-piece parallel expanding gate
- Double block and bleed
- Traps pressure in body cavity when in closed position
- Pressure gauge seating; long seat life
- Stem seal's chevron rings ensure sealing integrity
- In-line maintenance
- Sizes 4" and larger, Classes 150 and 300

## DANFLO SURGE RELIEF VALVES

DANFLO surge relief valves are engineered to track unabated surge (wave pressure transients), open quickly and then close without slamming shut. The "speed of response" in surge valves is defined as the valve's ability to relieve peak wave surge flow in the time stated in a hydraulic transient surge analysis. Although this time varies with each application, timed responses of 100 milliseconds or less are not unusual. DANFLO surge relief valves meet these criteria.

### Key Features

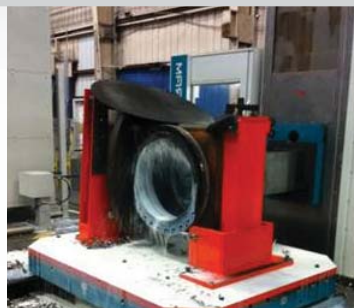
- High flow capacities (Cv) achieve required surge protection with smaller and/or fewer valves, saving both installation cost and weight
- Fast response — rapid opening/closing without slamming shut — enables tracking of the surge
- Additional reserve flow capacity accommodates unforeseen transient surge flow
- Set pressure test port to meet DOT periodic-testing requirements



# SPXFLOW



Houston, TX



Large Valve CNC



Robotic Welder

## ISO/API Certificates



Based in Charlotte, North Carolina, SPX FLOW, Inc. (NYSE:FLOW) is a leading global supplier of highly engineered flow components, process equipment and turn-key systems, along with the related aftermarket parts, serving the food and beverage, power and energy and industrial end markets. For more information, please visit [www.spxflow.com](http://www.spxflow.com).

### SPX FLOW, INC.

8800 Westplain Dr.  
Houston, TX 77041  
P: (800) 231-3690 or (281)469-0550  
F: (281) 894-1332  
E: [mjvalve@spxflow.com](mailto:mjvalve@spxflow.com)

SPX FLOW, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction, and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information, visit [www.spxflow.com](http://www.spxflow.com).

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