



Valves, Automation & Controls

Series FS50
FIRE SAFE API 607 4TH EDITION
FULL PORT FLANGED BALL VALVES

Design Features

- Fire Safe API 607 4TH Edition**
Series FS50 flanged valves have been qualified by testing to API standards 607, 4th Edition. The valve design incorporates a secondary metal seat in the body, providing the required shutoff should the primary seats be destroyed by fire.
- ASME B16.34 Design**
Full port, split body design meets all the requirements of ASME B16.34 for Class 150, 300, and 600 ball valves.
- Blow-Out Proof Stem**
The internal entry stem is machined with a heavy shoulder to prevent blowout.
- Anti-Static Configuration**
Anti-static devices are included at two points on the valve stem to provide continuous ball-to-stem and stem-to-body grounding, to prevent build-up of static charge in the valve.
- Live-Loaded Stem Seals**
Stem seals are live-loaded using Belleville washers to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.
- Fully Encapsulated Body Seals**
Provides consistent and controlled loading of the body seal compression through a full metal-to-metal contact joint design, eliminating seal extrusion and potential body joint leakage.
- Integral Mounting Pad**
Ideal for actuation, ISO 5211 mounting dimensions simplify fit and alignment between valve, bracketry, and actuator. Permits easy field conversion from manual operation to actuation.
- Lockable Handle**
Sharpe Series FS50 ball valves are supplied with lever handles designed to permit locking the valve in either the open or closed position. Sizes through 2" are supplied with a latch engaged at open and closed positions to prevent inadvertent operation. Larger sizes have a lockable pipe handle.



- Slotted Seat Design**
Relief slots are provided at the perimeter of the seats to equalize pressure in the body cavity with the upstream line when the valve is closed, preventing upstream seat extrusion and enhancing downstream seating performance.
- Choice of Seats and Seals**
A variety of seat materials are available for the most demanding applications, including RTFE, TFM™, and Nova. Stem packing and body seals are die formed flexible graphite.
- Floating Ball Design**
Precision engineered and machined solid stainless steel ball with relief hole in the stem slot prevents build-up of cavity pressure while the valve is in the open position. Class 150 10" and 12" and Class 300 6" through 12" have supported balls.
- Material Traceability**
Body and end piece casting are marked with the heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.
- NACE**
Class 150 and Class 300 are NACE MR-0175

USA 800-766-0076

Fax 323-890-4456

www.smithcooper.com

www.sharpevalves.com

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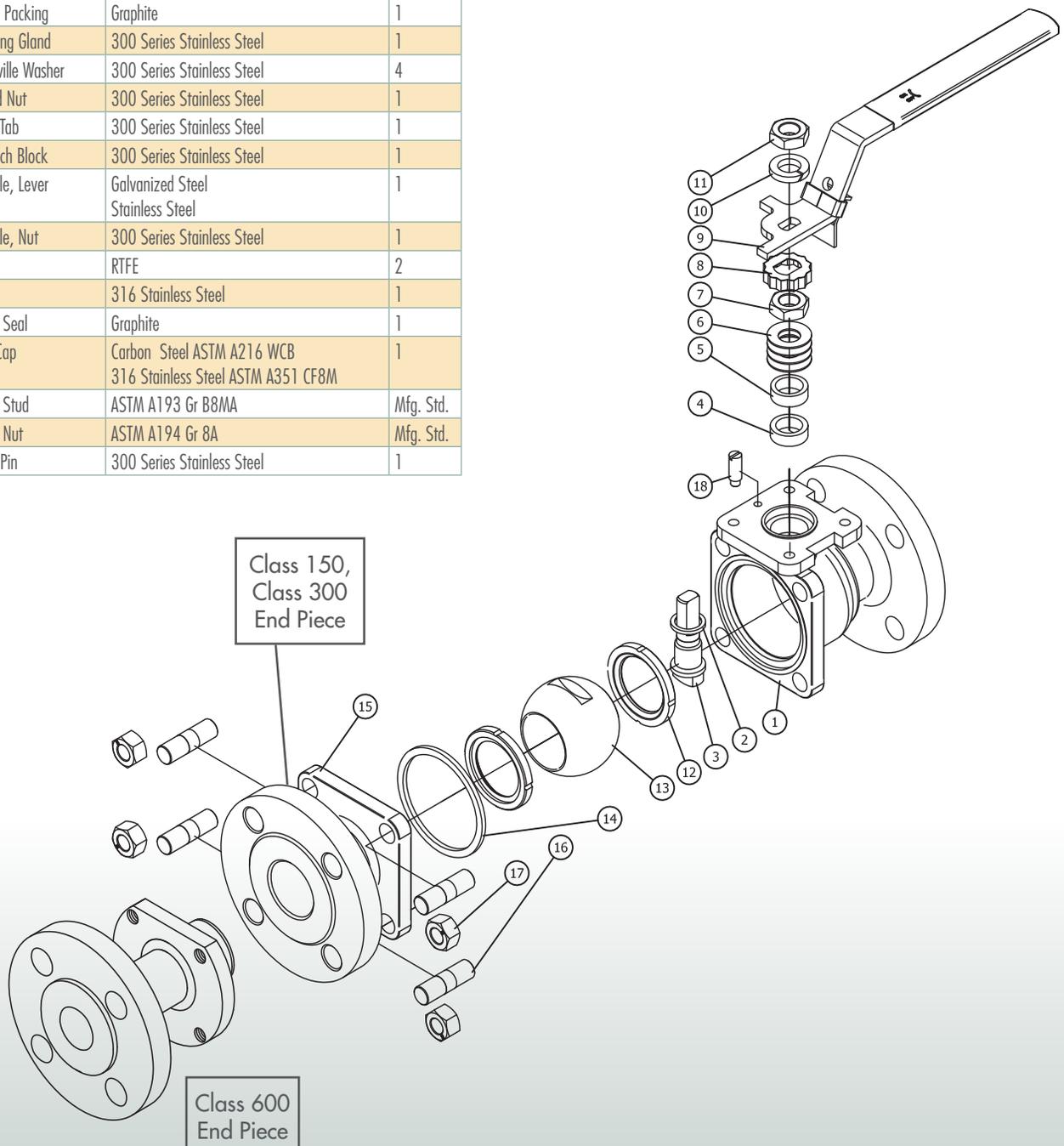
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FIRE SAFE API 607 4TH EDITION FULL PORT FLANGED BALL VALVES

Parts & Materials 1/2" - 2" Class 150, 300, 600

No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	Thrust Bearing	RTFE	1
3	Stem	316 Stainless Steel	1
3A	Anti-Static Device Ball Spring	(Located on Stem, Not Shown) 300 Series Stainless Steel Hard Drawn Stainless Steel	2
4	Stem Packing	Graphite	1
5	Packing Gland	300 Series Stainless Steel	1
6	Belleville Washer	300 Series Stainless Steel	4
7	Gland Nut	300 Series Stainless Steel	1
8	Lock Tab	300 Series Stainless Steel	1
9	Wrench Block	300 Series Stainless Steel	1
10	Handle, Lever	Galvanized Steel Stainless Steel	1
11	Handle, Nut	300 Series Stainless Steel	1
12	Seat	RTFE	2
13	Ball	316 Stainless Steel	1
14	Body Seal	Graphite	1
15	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
16	Body Stud	ASTM A193 Gr B8MA	Mfg. Std.
17	Body Nut	ASTM A194 Gr 8A	Mfg. Std.
18	Stop Pin	300 Series Stainless Steel	1





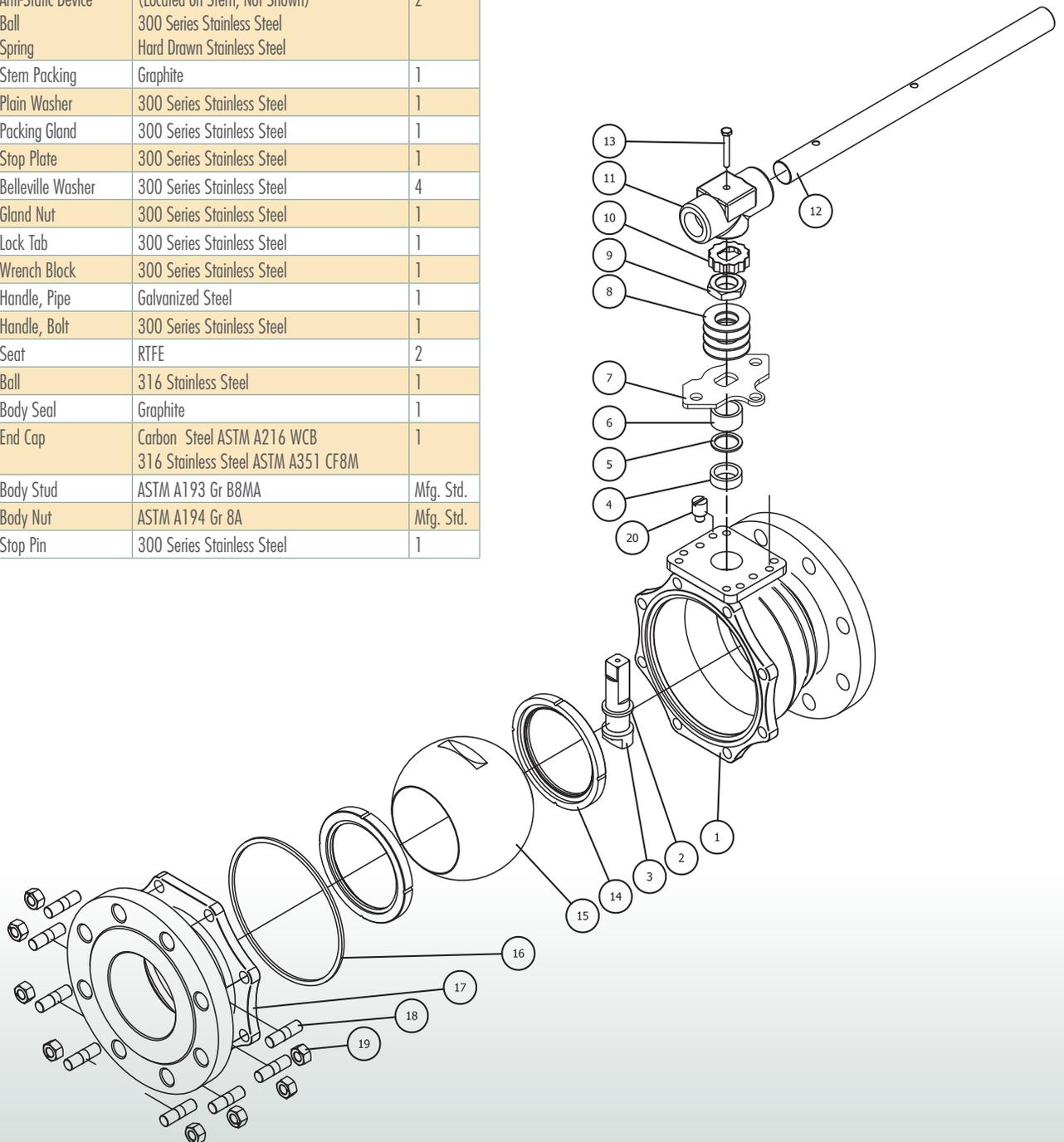
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FIRE SAFE API 607 4TH EDITION FULL PORT FLANGED BALL VALVES

Parts & Materials 2½" - 4" Class 150, 300 3" - 4" Class 600

No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	Thrust Bearing	RTFE	1
3	Stem	316 Stainless Steel	1
3A	Anti-Static Device Ball Spring	(Located on Stem, Not Shown) 300 Series Stainless Steel Hard Drawn Stainless Steel	2
4	Stem Packing	Graphite	1
5	Plain Washer	300 Series Stainless Steel	1
6	Packing Gland	300 Series Stainless Steel	1
7	Stop Plate	300 Series Stainless Steel	1
8	Belleville Washer	300 Series Stainless Steel	4
9	Gland Nut	300 Series Stainless Steel	1
10	Lock Tab	300 Series Stainless Steel	1
11	Wrench Block	300 Series Stainless Steel	1
12	Handle, Pipe	Galvanized Steel	1
13	Handle, Bolt	300 Series Stainless Steel	1
14	Seat	RTFE	2
15	Ball	316 Stainless Steel	1
16	Body Seal	Graphite	1
17	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
18	Body Stud	ASTM A193 Gr B8MA	Mfg. Std.
19	Body Nut	ASTM A194 Gr 8A	Mfg. Std.
20	Stop Pin	300 Series Stainless Steel	1

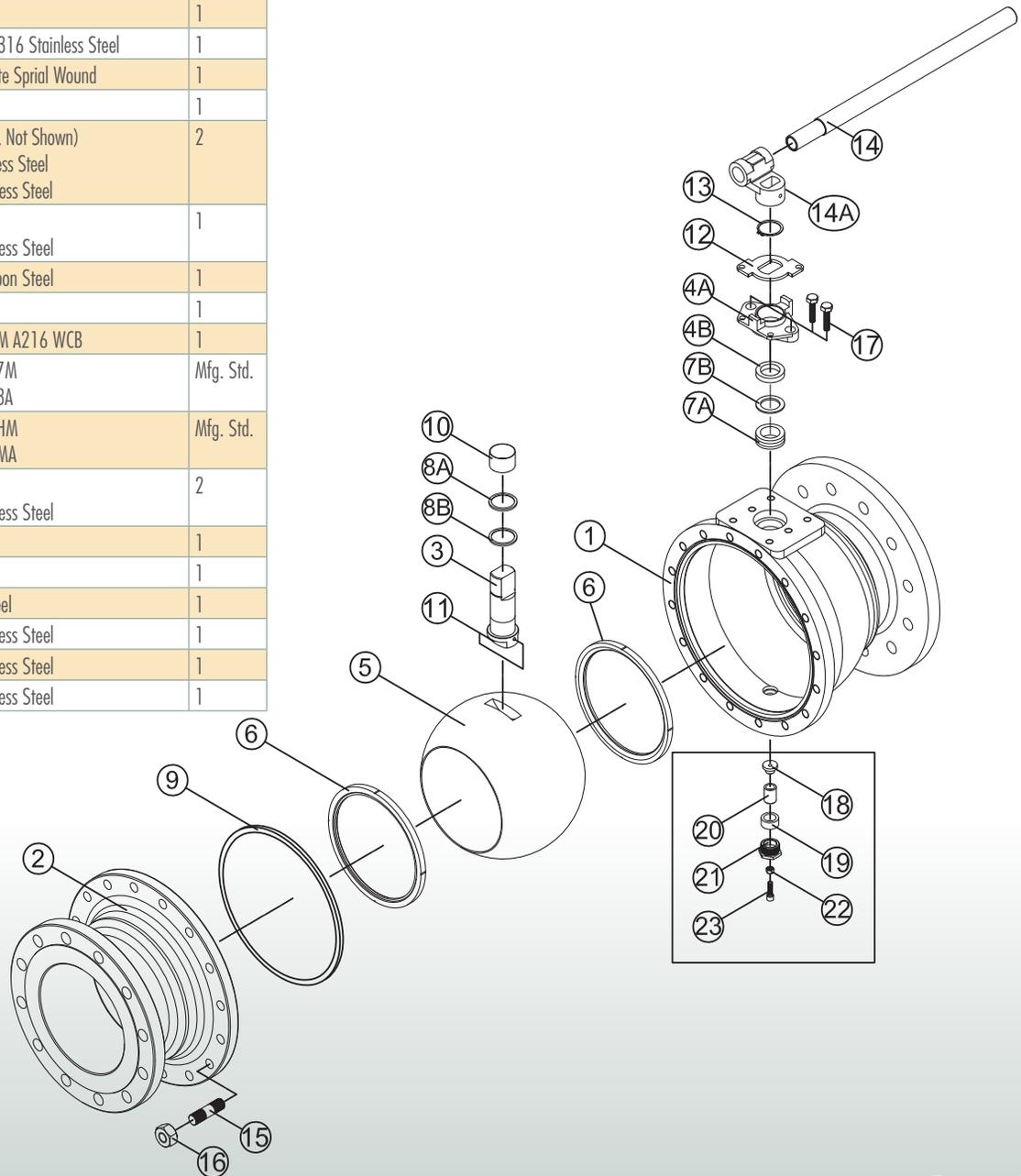


FIRE SAFE API 607 4TH EDITION FULL PORT FLANGED BALL VALVES

Parts & Materials 6" - 12" Class 150, 300

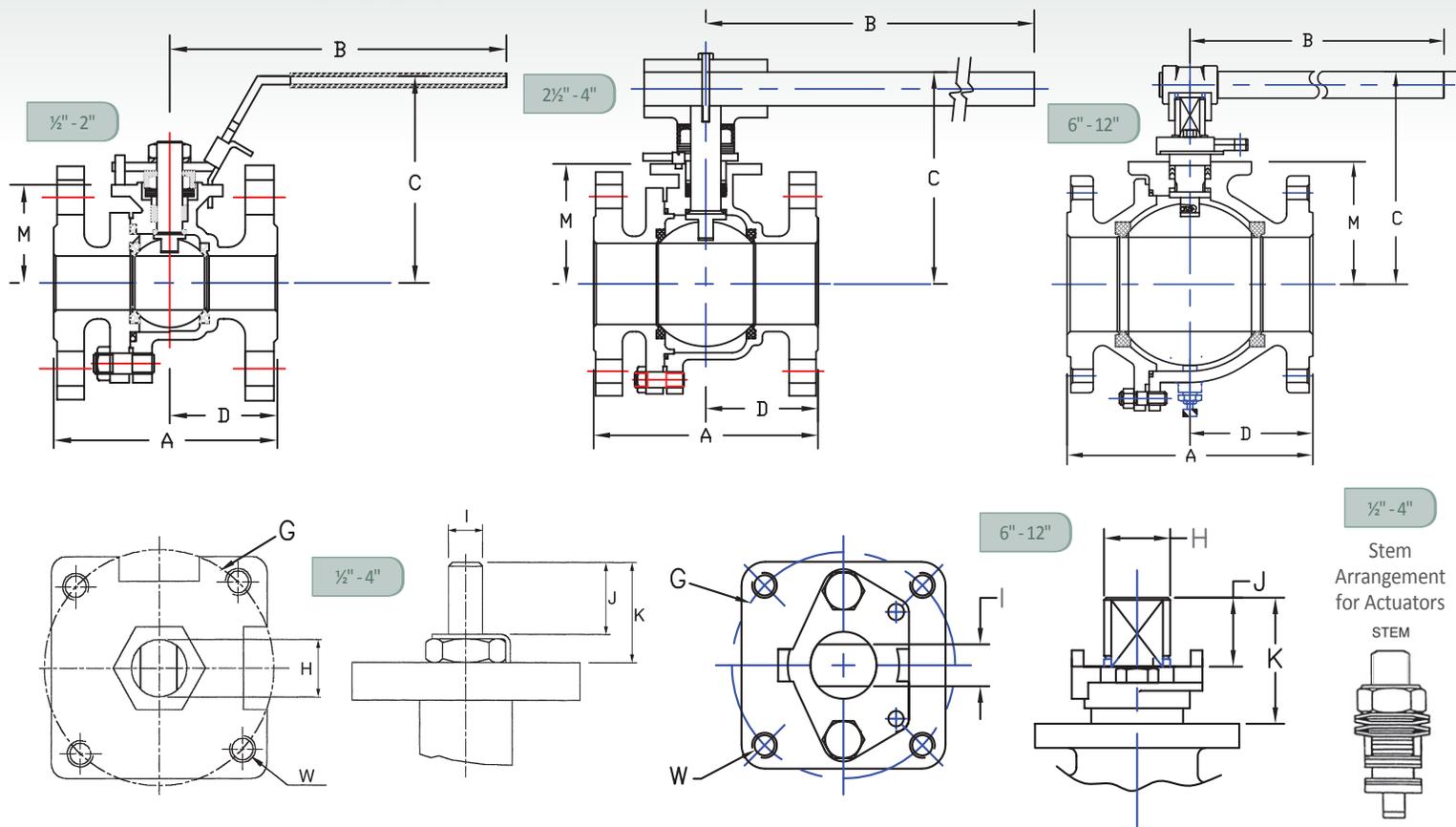
No.	Part Name	Material	Qty
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
2	End Cap	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
3	Stem	316 Stainless Steel	1
4A	Gland	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M	1
4B	Sleeve	Steel 300 Series Stainless Steel	1
5	Ball	316 Stainless Steel	1
6	Seat	RTFE	2
7A	Stem Packing	RTFE	3-4
7B	Stem Packing	Graphite	1
8A	Thrust Bearing	RTFE	1
8B	Thrust Bearing	50% PTFE/50% 316 Stainless Steel	1
9	Body Seal	316 SS / Graphite Sprial Wound	1
10	Stem Bearing	RTFE	1
11	Anti-Static Device Ball Spring	(Located on Stem, Not Shown) 300 Series Stainless Steel Hard Drawn Stainless Steel	2
12	Travel Stop	Zinc Plated Steel 300 Series Stainless Steel	1
13	Snap Ring	Nickel Plated Carbon Steel	1
14	Handle, Pipe	Ductile Iron	1
14a	Wrench Block	Carbon Steel ASTM A216 WCB	1
15	Stud	ASTM A193 Gr B7M ASTM A193 Gr B8A	Mfg. Std.
16	Nut	ASTM A194 Gr 2HM ASTM A194 Gr 8MA	Mfg. Std.
17	Gland Bolt	Steel 300 Series Stainless Steel	2
18*	Ball Support Seat	RTFE	1
19*	Ball Support Packing	Graphite	1
20*	Ball Support Pin	316 Stainless Steel	1
21*	Ball Support Nut	300 Series Stainless Steel	1
22*	Set Nut	300 Series Stainless Steel	1
23*	Tuning Screw	300 Series Stainless Steel	1

*Ball Support for:
Class 150 10"-12"
Class 300 6"-12"



FIRE SAFE API 607 4TH EDITION FULL PORT FLANGED BALL VALVES

1/2" - 12" Dimensions



Class 150 and Class 300 Dimensions (Inches)

Class		150	300		150	300	150	300	150	300						
Size	Port	A	A	B	C	C	D	D	M	M	G	H	I**	J	K	W
1/2"	0.59	4.25	5.50	4.78	3.58	3.58	1.97	2.64	1.36	1.36	F03	3/8-24 UNF	0.220	0.39	0.73	M5 X 0.8P
3/4"	0.79	4.62	6.00	4.78	3.72	3.72	2.24	2.94	1.50	1.50	F03	3/8-24 UNF	0.220	0.34	0.70	M5 X 0.8P
1"	0.98	5.00	6.50	6.25	3.80	3.80	2.20	3.19	0.77	1.77	F04	7/16-20 UNF	0.291	0.60	0.85	M5 X 0.8P
1 1/2"	1.50	6.50	7.50	9.03	4.45	4.45	3.01	3.70	2.24	2.24	F05	9/16-18 UNF	0.340	0.68	1.17	M6 X 1.0P
2"	2.00	7.00	8.50	9.03	4.82	4.82	3.47	4.30	2.61	2.61	F05	9/16-18 UNF	0.340	0.61	1.15	M6 X 1.0P
2 1/2"	2.56	7.50	9.50	13.75	6.70	6.70	3.54	4.05	3.76	3.76	F10	1-14 UNF	0.748	0.61	1.87	M10 X 1.5P
3"	3.00	8.00	11.12	13.75	7.07	7.07	3.64	5.40	4.15	4.15	F10	1-14 UNF	0.748	0.61	1.87	M10 X 1.5P
4"	3.94	9.00	12.00	13.75	7.70	7.70	4.42	5.93	4.74	4.74	F10	1-14 UNF	0.748	0.65	1.91	M10 X 1.5P
6"	6.00	15.50	15.88	37.40	11.22	11.22	7.64	7.60	7.17	7.17	F12	1.72	1.018*	1.65	3.58	M12 X 1.75
8"	7.88	18.00	19.75	37.40	11.57	13.38	8.66	9.33	7.72	8.64	F12	1.72	1.018*	1.65	3.58	M12 X 1.75
10"	9.84	21.00	22.38	43.31	14.65	14.49	10.47	11.18	9.88	9.69	F14	1.97 2.16	1.377*	2.13	3.86	M16 X 2.0P
12"	11.80	24.00	25.50	43.31	16.26	16.06	12.00	12.80	11.46	11.26	F14	1.97 2.16	1.377*	2.13	3.86	M16 X 2.0P

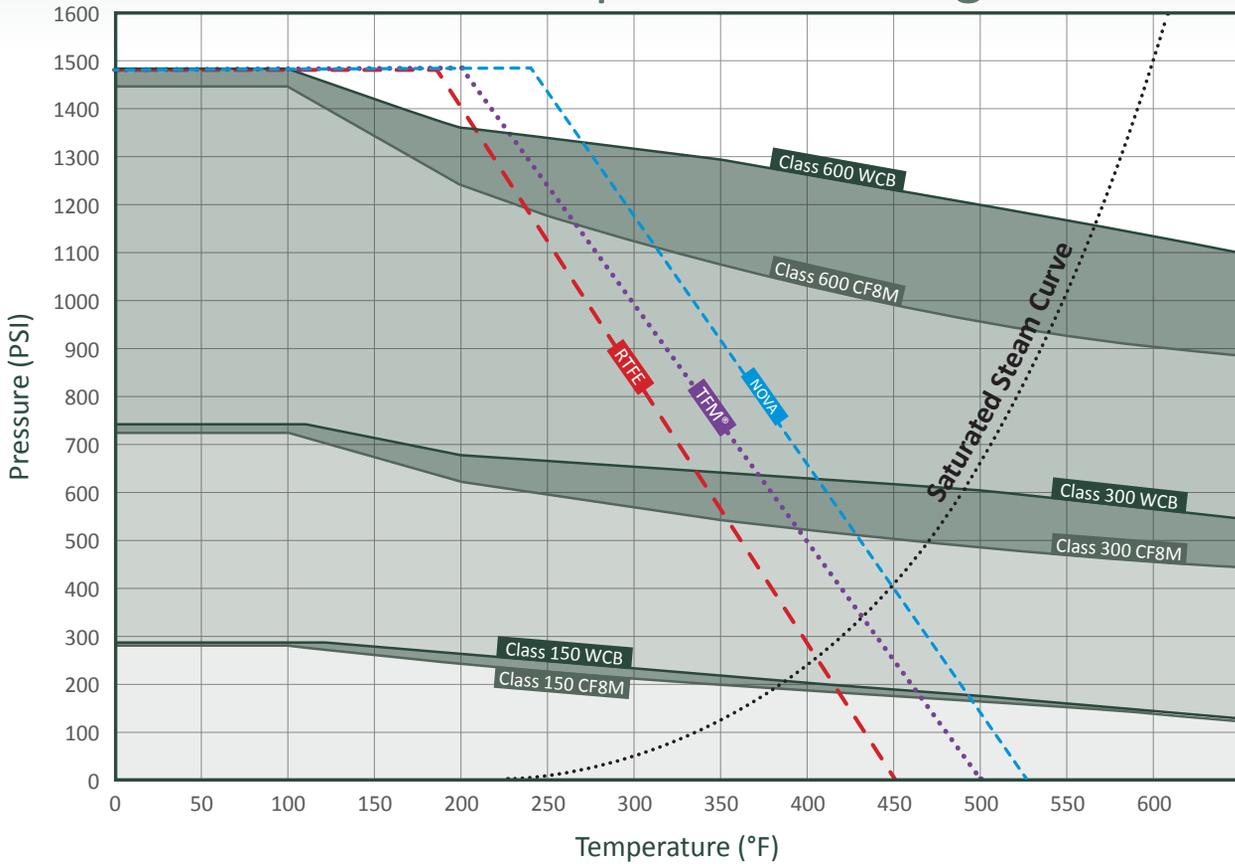
Class 600 Dimensions (Inches)

Size	Port	A	B	C	D	M	G	H	I**	J	K	W
1/2"	0.59	6.50	6.89	3.52	3.25	1.34	F05	3/8-24 UNF	0.224	0.39	0.73	M6 X 1.0P
3/4"	0.79	7.50	6.89	3.68	3.40	1.48	F05	3/8-24 UNF	0.224	0.34	0.70	M6 X 1.0P
1"	0.98	8.50	7.68	3.84	4.25	1.77	F05	9/16-18 UNF	0.393	0.60	0.85	M6 X 1.0P
1 1/2"	1.50	9.50	9.45	4.63	4.55	2.32	F07	3/4-16 UNF	0.472	0.84	1.36	M8 X 1.25P
2"	2.00	11.50	9.45	4.86	5.47	2.69	F07	3/4-16 UNF	0.472	0.77	1.22	M8 X 1.25P
3"	3.00	14.00	13.75	7.06	6.18	4.43	F10	1-14 UNS	0.748	0.53	1.79	M10 X 1.5P
4"	3.94	17.00	13.75	7.72	8.64	4.74	F10	1-14 UNS	0.748	0.71	1.93	M10 X 1.5P

The dimensions above are for informational purposes only. Please contact Sharpe Valves if you need dimensions for construction
 ** +0.000/ -0.002 * +.000 / -.003

FIRE SAFE API 607 4TH EDITION FULL PORT FLANGED BALL VALVES

Seat Pressure -Temperature Rating



Note:
 The maximum pressure/temperature ratings of the valve assemblies are limited to lowest of the body or seat material fitted.
 The valve body ratings are based on ASME B16.34 rating for materials.
 The graphs are based on laboratory testing and our experience in field.
 The seat ratings depend on the material, design, application and function.

Sharpe Seat Materials

- TFM** **M - TFM® PTFE**
 Dyneon® TFM PTFE is a second generation PTFE with improved chemical and heat resistant properties and stress recovery. Its temperature range is -100°F to 500°F (-73°C to 260°C) Color - white.
- RTFE** **R - Reinforced Polytetrafluoroethylene (RTFE).**
 PTFE's mechanical properties are enhanced by adding 15% filler material to provide improved strength, stability and wear resistance. Its temperature range is from -320°F to 450°F (-196°C to 232°C). Color-off-white.
- NOVA** **N - Nova**
 This is a Teflon base filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction-expansion than PTFE, and is ideal for steam or thermal fluid applications up to 550°F (288°C). Color - black.



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Technical Information

Size	C _v	Weight (lbs.)		
		Class 150	Class 300	Class 600
1/2	26	4	5	6
3/4	50	6	7	8
1	94	8	10	12
1-1/2	260	15	19	22
2	480	20	33	38
2-1/2	750	36	50	-
3	1150	45	68	78
4	2110	75	96	146
6	5070	168	229	-
8	9330	292	378	-
10	14590	479	578	-
12	21000	752	955	-

Applicable Standards

Wall Thickness	ASME B16.34
Face to Face Dimensions	ASME B16.10
Flange Dimensions	ASME B16.5
NACE*	MR-0175
Fire Safe	API 607 4th Edt.
Pressure Test	ASME B16.34, API 598 (optional)
Basic Design	ASME B16.34

*Class 150 and Class 300 with standard 316 SS Stem
Class 600 has 17-4PH material for Stem, 17-4PH is not a NACE material.

How to Order

Size	Series	Class	Body	Seat	Options	
1/2	FS50	11 150	4 Carbon Steel	M TFM™	OH Oval Handle, Non-locking up to 2" L Lockable Stem Extension, 316SS	
3/4		33 300	6 Stainless Steel	R RTFE		
1		66 600 (1/2" - 2", 3" and 4")		N Nova		
1-1/2						
2						
2-1/2						
3						
4						
6						
8						
10						
12						

3/4" - FS50 - 33 - 4 - R - = 3/4" FS50334-R

Example: 3/4" FS50334-R,
3/4" Fire Safe Series 50 Full Port, Split Body Flanged, Raised Face, Class 300 Ball Valve,
Cast Carbon Steel Body with 316 Stainless Ball and Stem, RTFE Seats, Graphite Body Seal and Stem Packing.