

FLANGED BALL VALVES ASME CLASS 150 & 300

FULL BORE:

½" - 24" (DN 15 - 600) SERIES 9000

The Jamesbury® polymer-seated flanged ball valves provide industry leading performance and reliability. Offered in a wide variety of materials to suit an extensive range of applications these valves are designed and manufactured with all our latest technology and expertise.



Unique Sealing

The superior performance of *Jamesbury* ball valves is achieved by the unique design of the seats. The flexible lip seats exert continuous sealing pressure on the ball and automatically compensate for wear and changes in pressure and temperature, yielding positive bi-directional zero-leak shut-off. The stem seal sealing system ensures minimum emissions.

Materials

Standard products are available with carbon steel body and stainless steel trim or all stainless steel construction. Special body and trim materials such as Alloy 20, Hastelloy® C, and others are available upon request. For applications involving chemicals, acids, caustics, and steam we recommend our Xtreme® seat material, which provides superior life-cycle and sealing performance compared to virgin or filled PTFE. We can accommodate nearly any special customer or application specific requirement.

Fire-Tite® Valves

All *Jamesbury Fire-Tite* flanged ball valves are qualified to API 607 and ISO 10497. This ensures minimal leakage in the event of a fire.

CE marked

CE marked and documented product conforming to the European Pressure Equipment Directive (PED) 2014/68/EU and ATEX Directive 2014/34/EU is available as standard product.

Features And Benefits

- Robust engineering design yields leading cycle life
- Outstanding quality provides confidence
- Flexible lip seat provides bi-directional zero-leak shut-off and minimum maintenance
- Xtreme seats provide longer life and expanded pressure-temperature capability
- Patented stem seal system engineered to provide superior emissions performance (1/2" - 11/2")
- Live loaded stem packing enhances emissions performance and reduces maintenance (1/2" - 6")
- ISO 5211 bonnet mounting design (1/2" - 6")
- API 607 qualified
- API 608 compliance & grounding as standard (2" - 6")
- ISO 15848-1 Class BH rated (1/2" - 6")
- Standard materials meet requirements of NACE MR0103 and MR0175 (See p32 & 33)
- SIL 3 qualified

Emission-Pak® Valves

Jamesbury Emission-Pak products feature a double steam seal packing system to provide additional sealing performance for critical services. This feature is ISO 15848-1 Class AH rated.

Automated Assemblies

Valves, actuators, and accessories designed to mate together with precision ensures superior performance.

SPECIFICATIONS

Flow Data

The table at right provides flow coefficients for *Jamesbury* valves covered in this bulletin. C_v values represent the flow of water at +60°F through the valve in U.S. gallons per minute at a pressure drop of 1 psi. The metric equivalent, K_v , is the flow of water at +16°C through the valve in cubic meters per hour at a pressure drop of 1 kg/cm². To convert C_v to K_v , multiply by 0.8569.

Valve Body Ratings

These are the maximum working pressure ratings of the valve body only. The seat ratings, shown on the next page, determine the practical temperature and pressure limitations according to actual service conditions. Test pressures are recommended pressures for hydrostatic test with ball half open.

Valve Size	Cv	
Inches	DN	Full Bore
1/2	15	9
3/4	20	50
1	25	100
1-1/2	40	270
2	50	490
3	80	1160
4	100	2200
6	150	5100
8	200	9300
10	250	15,200
12	300	22,400
14	350	27,000
16	400	37,000
18	450	47,000
20	500	60,000

Maximum Working Pressure, psi						
Temp °F	Class 150				Class 300	
	Carbon steel	316 Stainless steel	Alloy 20	Monel®	Carbon steel	316 Stainless steel
-20 to 100	285	275	230	230	740	720
200	260	235	200	200	675	620
300	230	215	190	190	655	560
400	200	195	190	185	635	515
500	170	170	170	170	600	480
Test Pressure	450	425	350	350	1125	1100

Maximum Working Pressure, bar						
Temp °C	Class 150				Class 300	
	Carbon steel	316 Stainless steel	Alloy 20	Monel	Carbon steel	316 Stainless steel
-29 to 38	19.6	19.0	15.9	15.9	51.1	49.6
93	17.7	16.2	13.5	13.5	46.6	42.2
149	15.8	14.8	13.1	13.1	45.1	38.5
204	13.8	13.7	13.1	13.1	43.8	35.7
260	11.7	11.7	11.7	11.7	41.9	33.4
Test Pressure	30	29	24	24	77	75

Valve Seat Ratings

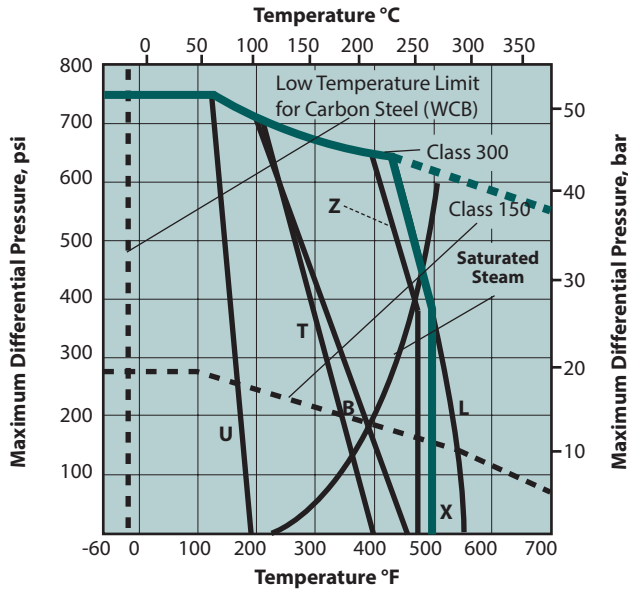
Seat ratings, indicated by solid lines in the charts on the next page, are based on differential pressure with the valve ball in the fully closed position and refer to seats only. The dotted lines indicate maximum working pressures for *WCB carbon steel* valve bodies. (Maximum working pressures of other body materials are shown in the tables above.) The combination of dotted and solid lines indicates the maximum valve rating at specific pressure and temperature conditions. Valves with PTFE, *Xtreme*, PEEK®, PFA, and UHMW polyethylene seats can be used in service to -60°F (-51°C) provided that the valve body material is suitable for such a temperature. Carbon steel valves are rated to -20°F (-29°C).

On saturated steam service, stainless steel trim is recommended at all pressures and is required above 200 psi (14 bar). See Bulletin B150-1. For more application information on seat materials, refer to Bulletin T140-1.

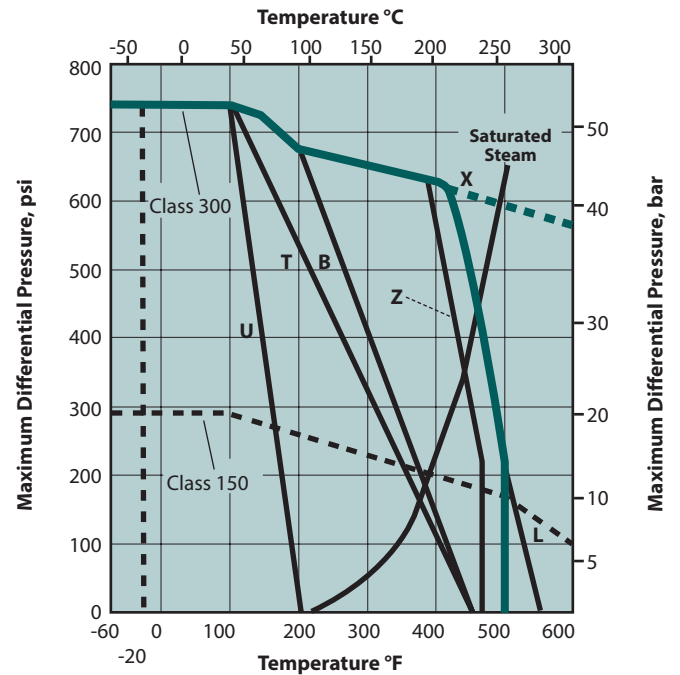
Xtreme Performance and Value

Xtreme seats provide longer life, expanded performance boundaries, and the greatest possible value. *Xtreme* is a unique material that resulted from a technological breakthrough in our polymer research lab. The material is a fluoropolymer based blend proprietary to *Jamesbury* that provides superior quarter-turn performance.

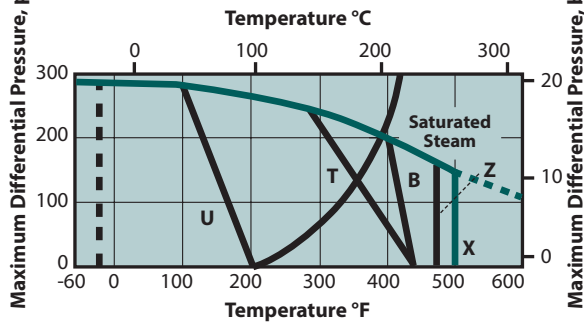
1/2" – 1-1/2" (DN 15 – 40) Full Bore



2" – 4" (DN 50 – 100) Full Bore

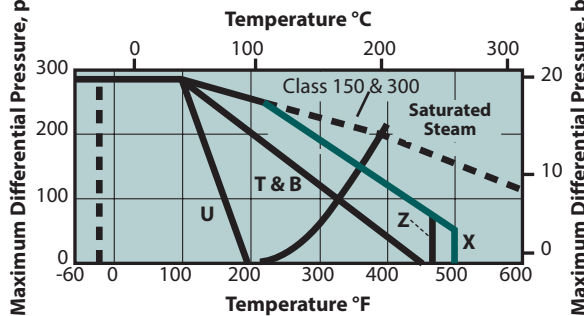


6" (DN 150) Full Bore Non-Trunnion



* ASME Class 300 Non-Trunnion is 275 psi (19 bar) max.

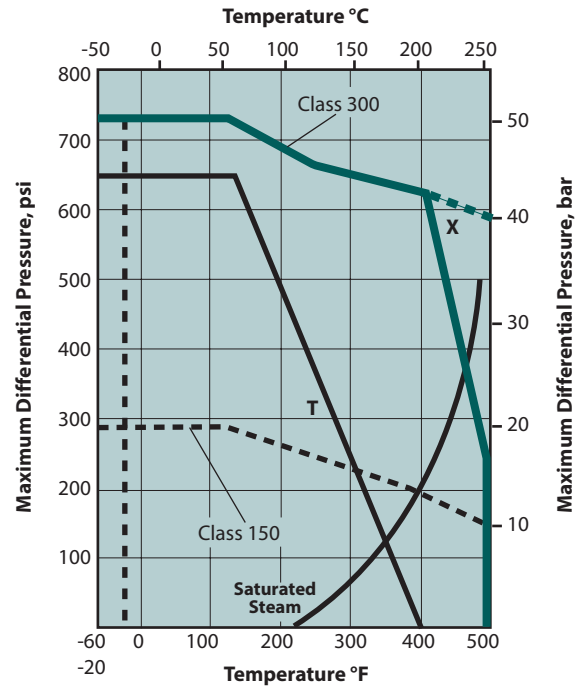
8" (DN 200) Full Bore Non-Trunnion



* ASME Class 300 Non-Trunnion is 275 psi (19 bar) max.

Trunnion Valves

6" – 24" (DN 150 – 600) Full Bore



LEGEND:

T = PTFE

U = UHMW

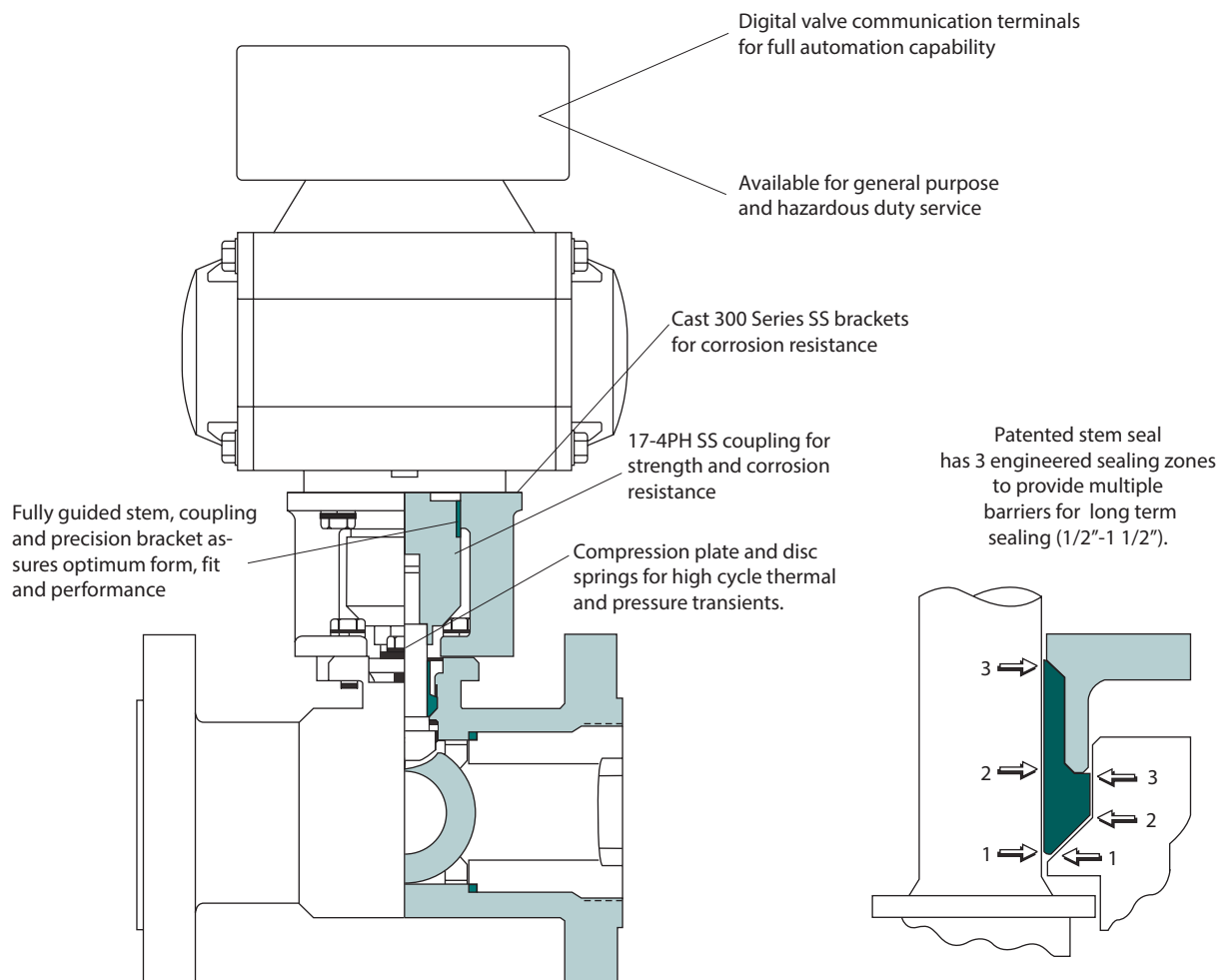
B = PFA

L = PEEK

Z = TFM

X = Xtreme

**The Ultimate Process Automation Package for VPVL Pneumatic Actuators,
V-Series, ADC-Series and QX-Series Electric Actuators
With 1/2" – 6" (DN 15 – 150) Full Port Series 9000**



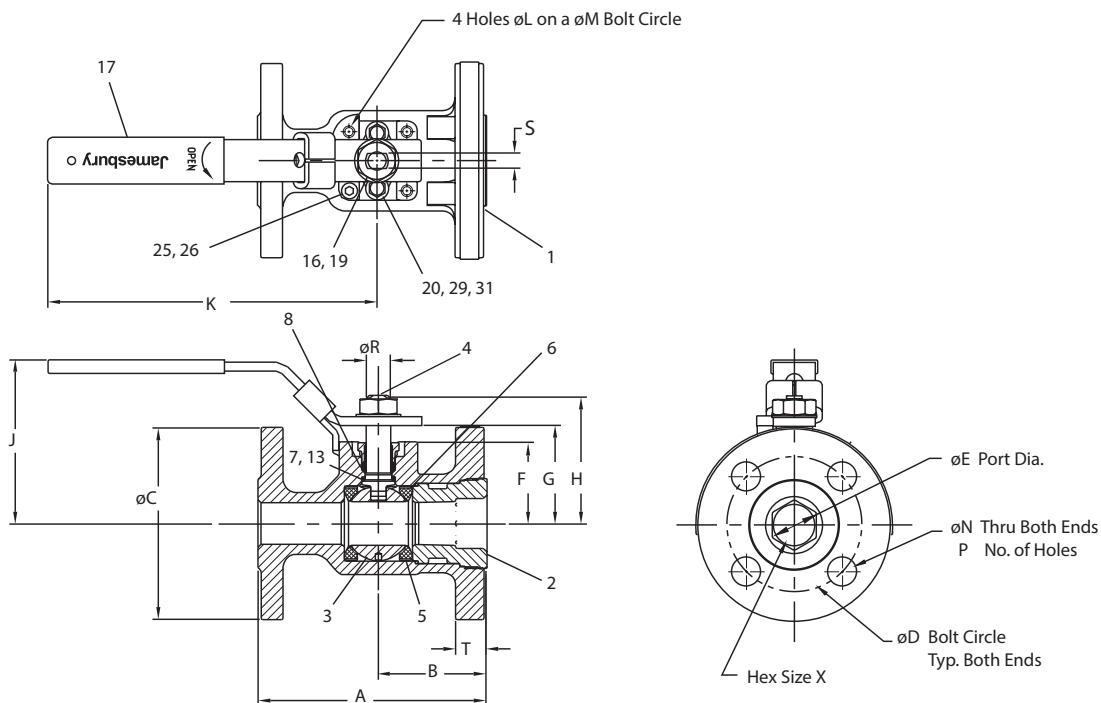
Automation Performance and Value

Valves combined with *Jamesbury* actuators offer a total value and performance package. Available with pneumatic Valv-Powr® VPVL actuators, V-Series, ADC-Series and QX-Series electric actuators and with Stonel® Quartz®

and Hawkeye® digital monitors or VCTs, the packages have a wide range of applications. Visit our website at: www.metso.com/valves

DIMENSIONS

1/2" – 1-1/2" (DN15 – 40) Series 9150 ASME Class 150 and Series 9300 ASME Class 300 (Non-Trunnion)



Valve Size inches	Series 9150 ASME Class 150 Approximate Dimensions - inches																	Hex Size	ISO Bonnet	Approx Weight lb
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T			
1/2	4.25	1.94	3.50	2.38	0.50	1.06	1.33	1.63	3.38	5.00	M5	1.42	0.62	4	0.31	0.18	0.50	0.50	F03	3.5
3/4	4.63	2.19	3.88	2.75	0.88	1.65	2.04	2.58	3.69	6.50	M5	1.65	0.62	4	0.50	0.31	0.63	0.88	F04	10
1	5.00	2.19	4.25	3.12	1.00	1.78	2.17	2.71	3.94	6.50	M5	1.65	0.62	4	0.50	0.31	0.63	1.00	F04	13
1-1/2	6.50	2.64	5.00	3.88	1.50	2.26	2.78	3.49	4.46	8.00	M6	1.97	0.62	4	0.62	0.37	0.69	1.50	F05	17

Valve Size	Series 9150 ASME Class 150 Approximate Dimensions - mm																Hex	ISO	Approx	
DN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Size	Bonnet	Weight kg
15	108	49	89	60	13	27	34	41	86	127	M5	36	16	4	8	5	13	13	F03	1.6
20	118	56	99	70	22	42	52	66	94	165	M5	42	16	4	13	8	16	22	F04	4.5
25	127	56	108	79	25	45	55	69	100	165	M5	42	16	4	13	8	16	25	F04	5.9
40	165	67	127	99	38	57	71	89	113	203	M6	50	16	4	16	9	18	38	F05	7.7

Valve Size inches	Series 9300 ASME Class 300 Approximate Dimensions - inches																	Hex Size	ISO Bonnet	Approx Weight lb
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T			
1/2	5.50	1.94	3.75	2.62	0.50	1.06	1.33	1.63	3.38	5.00	M5	1.42	0.62	4	0.31	0.18	0.56	0.50	F03	6
3/4	6.00	2.19	4.63	3.25	0.88	1.65	2.04	2.58	3.69	6.50	M5	1.65	0.75	4	0.50	0.31	0.63	0.88	F04	13
1	6.50	2.19	4.88	3.50	1.00	1.78	2.17	2.71	3.94	6.50	M5	1.65	0.75	4	0.50	0.31	0.69	1.00	F04	17
1-1/2	7.50	2.64	6.13	4.50	1.50	2.26	2.78	3.49	4.46	8.00	M6	1.97	0.88	4	0.62	0.37	0.81	1.50	F05	22

Valve Size	Series 9300 ASME Class 300 Approximate Dimensions - mm																	Hex	ISO	Approx
DN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Size	Bonnet	Weight kg
15	140	49	95	67	13	27	34	41	86	127	M5	36	16	4	8	5	14	13	F03	2.7
20	152	56	118	83	22	42	52	66	94	165	M5	42	19	4	13	8	16	22	F04	5.9
25	165	56	124	89	25	45	55	69	100	165	M5	42	19	4	13	8	18	25	F04	7.7
40	190	67	156	114	38	57	71	89	113	203	M6	50	22	4	16	9	21	38	F05	10.0

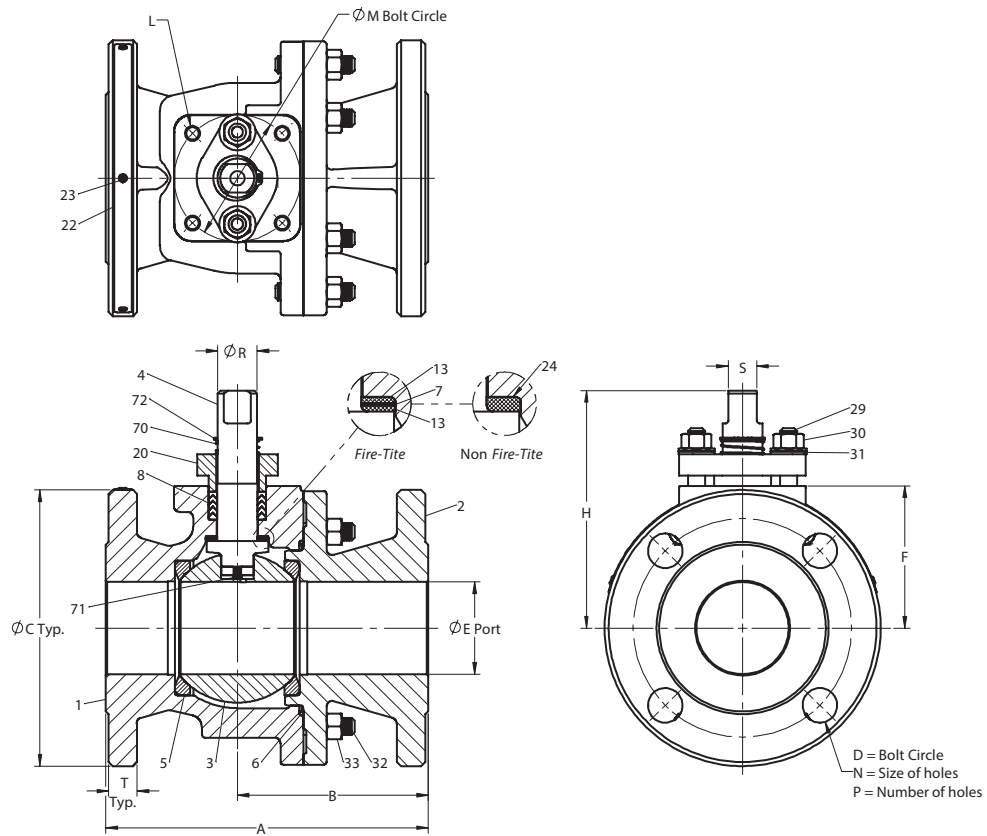
BILLS OF MATERIALS AND PARTS LIST					
<i>Fire-Tite 1/2" – 1-1/2" (DN15 – 40) Full Port Series 9000 Valves</i>					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Insert	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem	316 Stainless Steel, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, Xtreme, PFA			
6	Body Seal	TFM			
7	Secondary Stem Seal	Graphite			
8	Primary Stem Seal	PTFE (w/ PTFE seats), TFM (w/ Xtreme & PFA seats)			
13	Stem Bearing	PTFE, Filled PTFE			
16	Hex Nut	Carbon Steel (zinc plated)	300 Series Stainless Steel		
17	Handle	Carbon Steel (zinc plated)	300 Series Stainless Steel		
19	Lock Washer	Carbon Steel (zinc plated)	300 Series Stainless Steel		
20	Compression Plate	316 Stainless Steel			Monel
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
25	Socket Cap Screw	300 Stainless Steel			
26	Handle Stop Screw	300 Stainless Steel			
29	Hex Cap Screw	300 Stainless Steel			Monel
31	Disc Springs	Inconel®			

BILLS OF MATERIALS AND PARTS LIST					
<i>Non Fire-Tite 1/2" – 1-1/2" (DN15 – 40) Full Port Series 9000 Valves</i>					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Insert	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem	316 Stainless Steel, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, Xtreme, PFA, PEEK ¹ & UHMWPE			
6	Body Seal	TFM (w/ PTFE, Xtreme, PFA seats) , UHMWPE (w/ UHMWPE seats), Graphite (w/ PEEK seats)			
8	Primary Stem Seal	PTFE (w/ PTFE seats), TFM (w/ Xtreme & PFA seats), UHMWPE (w/ UHMWPE seats), Graphite (w/ PEEK seats)			
10	Stem Guide	PEEK (PEEK seated valves)			
16	Hex Nut	Carbon Steel (zinc plated)	300 Series Stainless Steel		
17	Handle	Carbon Steel (zinc plated)	300 Series Stainless Steel		
19	Lock Washer	Carbon Steel (zinc plated)	300 Series Stainless Steel		
20	Compression Plate	316 Stainless Steel			Monel
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
24	Stem Bearing	PTFE (w/ PTFE seats), Filled PTFE (w/ Xtreme & PFA seats), PEEK (w/ PEEK seats), UHMWPE (w/ UHMWPE seats)			
25	Socket Cap Screw	300 Stainless Steel			
26	Handle Stop Screw	300 Stainless Steel			
29	Hex Cap Screw	300 Stainless Steel			Monel
31	Disc Springs	Inconel			

Note 1: 17-4 PH stems required with PEEK seats

DIMENSIONS

2" – 6" (DN50 – 150) Series 9150 ASME Class 150 and 2" – 4" (DN50 – 100) Series 9300 ASME Class 300 (Non-Trunnion)



Series 9150 ASME Class 150 Approximate Dimensions - inches

Valve Size inches	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight lb
2	7.00	4.14	6.00	4.75	2.00	3.09	5.16	M8	2.76	0.75	4	0.86	0.62	0.62	F07	29
3	8.00	4.26	7.50	6.00	3.00	3.90	5.95	M8	2.76	0.75	4	0.86	0.62	0.75	F07	49
4	9.00	4.50	9.00	7.50	4.00	5.51	8.24	M10	4.02	0.75	8	1.11	0.81	0.94	F10	89
6	15.50	8.25	11.00	9.50	6.00	7.27	10.37	M12	4.92	0.88	8	1.61	1.12	1.00	F12	244

Series 9150 ASME Class 150 Approximate Dimensions - mm

Valve Size DN	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight kg
50	178	105	152	121	51	78	131	M8	70	19	4	22	16	16	F07	13
80	203	108	191	152	76	99	151	M8	70	19	4	22	16	19	F07	22
100	229	114	229	191	102	140	209	M10	102	19	8	28	21	24	F10	40
150	394	210	279	241	152	185	263	M12	125	22	8	41	28	25	F12	111

Series 9300 ASME Class 300 Approximate Dimensions - inches

Valve Size inches	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight lb
2	8.50	4.89	6.50	5.00	2	3.09	5.16	M8	2.76	0.75	4	0.86	0.62	0.87	F07	37
3	11.12	6.11	8.25	6.62	3	4.69	7.40	M10	4.02	0.88	8	1.11	0.81	1.12	F10	77
4	12.00	6.86	10.00	7.88	4	5.66	8.75	M12	4.92	0.88	8	1.61	1.12	1.25	F12	136

Series 9300 ASME Class 300 Approximate Dimensions - mm

Valve Size DN	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight kg
80	216	124	165	127	51	78	131	M8	70	19	4	22	16	22	F07	17
100	282	155	210	168	76	119	188	M10	102	22	8	28	21	28	F10	35
150	305	174	254	200	102	144	222	M12	125	22	8	41	28	32	F12	62

BILLS OF MATERIALS AND PARTS LIST					
<i>Fire-Tite 2" - 6" (DN50 - 150) Full Port Series 9150 Valves, 2" - 4" (DN50 - 100) Full Port Series 9300 Valves</i>					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Body Cap	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem ²	316 Stainless Steel, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, Xtreme, PFA			
6	Body Seal ¹	Spiral Wound Graphite/316 Stainless Steel		Spiral Wound Graphite/Alloy 20	Spiral Wound Graphite/Monel
7	Secondary Stem Seal	Graphite			
8	Stem Seal	PTFE (w/ PTFE seats), TFM (w/ Xtreme & PFA seats)			
13	Thrust Bearing	PTFE, Filled PTFE			
20	Compression Plate ¹	316 Stainless Steel			Monel
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
29	Bonnet Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
30	Bonnet Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
31	Disc Springs	Inconel			
32	Body Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
33	Body Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
70	Top Grounding Spring	Stainless Steel			
71	Bottom Grounding Spring	Inconel			
72	Retaining Ring	Stainless Steel			

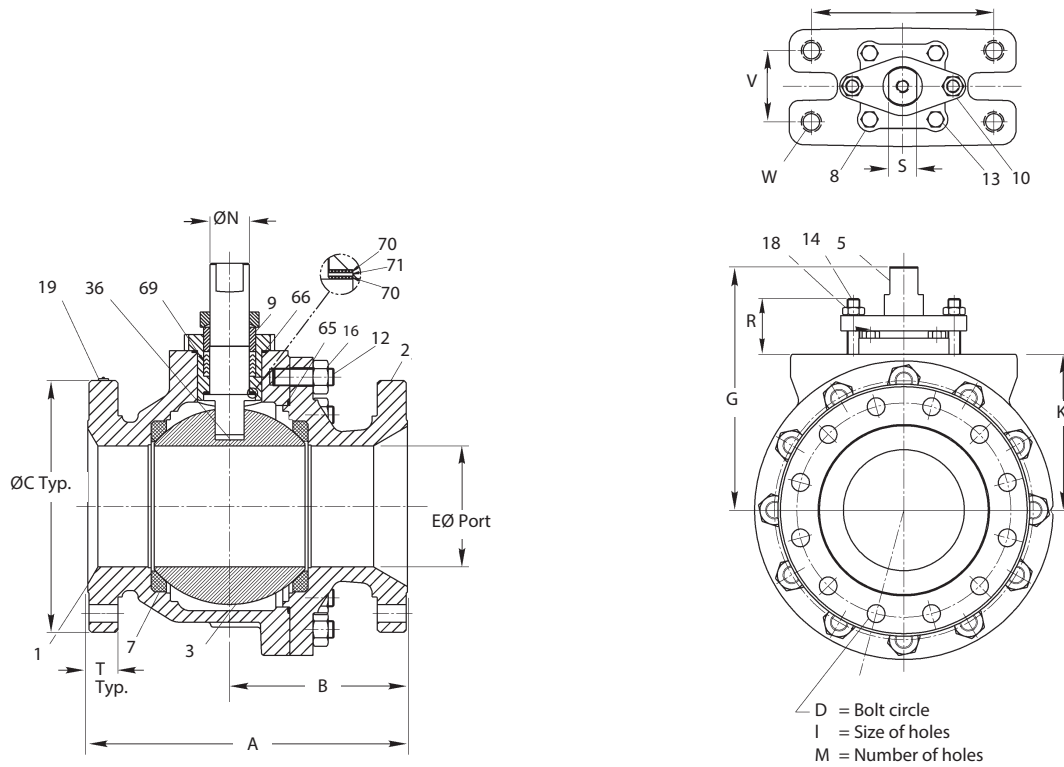
BILLS OF MATERIALS AND PARTS LIST					
<i>Non Fire-Tite 2" - 6" (DN50 - 150) Full Port Series 9150 Valves, 2" - 4" (DN50 - 100) Full Port Series 9300 Valves</i>					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Body Cap	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem	316 Stainless Steel, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, Xtreme, PFA, PEEK ² , UHMWPE			
6	Body Seal	Spiral Wound PTFE/316 Stainless Steel		Spiral Wound PTFE/Alloy 20	Spiral Wound PTFE/Monel
8	Stem Seal	PTFE (w/ PTFE seats), TFM (w/ Xtreme & PFA seats)			
13	Thrust Bearing	PTFE, Filled PTFE			
20	Compression Plate	316 Stainless Steel			Monel
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
29	Bonnet Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
30	Bonnet Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
31	Disc Springs	Inconel			
32	Body Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
33	Body Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
70	Top Grounding Spring	Stainless Steel			
71	Bottom Grounding Spring	Inconel			
72	Retaining Ring	Stainless Steel			

Note 1: Compression plate and body seal are Monel for valves with Monel or Hastelloy C trim.

Note 2: 17-4PH stems are required with PEEK seats.

DIMENSIONS

8" (DN 200) Series 9150 ASME Class 150 and 6" - 8" (DN150 - 200) Series 9300 ASME Class 300 (Non-Trunnion)



8" 9300 also available in long version (930L) with 19.750 face-to-face dimension.

Valve Size inches	Series 9150 ASME Class 150 Approximate Dimensions - inches																Weight lb
	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W	
8	18.00	8.97	13.50	11.75	8.00	15.60	10.22	0.88	8	2.54	2.88	1.82	1.18	9.06	3.54	1-8	300

Valve Size DN	Series 9150 ASME Class 150 Approximate Dimensions - mm																Weight kg
	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W	
200	457	228	343	298	203	369	260	22	8	65	76	46	30	230	90	1-8	136

Valve Size inches	Series 9300 & 930L ASME Class 300 Approximate Dimensions - inches																Weight lb
	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W	
6	15.88	8.84	12.50	10.63	6.00	12.07	7.74	0.88	12	1.95	2.76	1.39	1.50	9.06	3.54	1-8	327
8	16.50	8.82	15.00	13.00	8.00	15.60	10.22	1.00	12	2.54	2.88	1.82	1.64	9.06	3.54	1-8	560

Valve Size DN	Series 9300 & 930L ASME Class 300 Approximate Dimensions - mm																Weight kg
	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W	
150	403	225	318	270	152	307	197	22	12	50	70	35	38	230	90	1-8	149
200	419	209	381	336	203	396	260	25	12	65	73	46	42	230	90	1-8	255

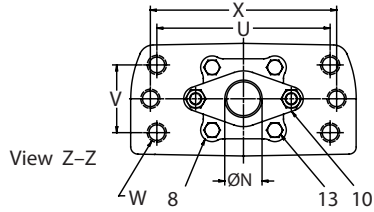
* Screw-thread dimensions are in inches

BILLS OF MATERIALS AND PARTS LIST			
8" (DN 200) Series 9150, 6" & 8" (DN 150 & 200) Series 9300 & 930L (Non-Trunnion)			
Part No.	Part Name	Body Material	
		Carbon Steel	316 Stainless Steel
1	Body	Carbon steel ASTM A216 Gr WCB	316 Stainless steel ASTM A351 Gr CF8M
2	Body Cap	Carbon steel ASTM A216 Gr WCB	316 Stainless steel ASTM A351 Gr CF8M
3	Ball	316 Stainless steel, Alloy 20, Monel ¹ , Hastelloy C ¹ - as specified	
5	Stem	316 Stainless steel, Monel ¹ , Hastelloy C ¹ , 17-4 PH - as specified	
7	Seat	<i>Xtreme</i> , PTFE	
8	Stem Retainer	Carbon steel	Stainless steel
9	Gland Follower ¹	Carbon steel, Stainless steel, Monel ¹	
10	Compression Plate ¹	Stainless steel, Monel ¹	
12	Body Stud	ASTM A193 Gr B7; Gr B7M; Gr <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
13	Stem Retainer Cap Screw	ASTM A193 Gr B7; Gr B7M; Gr <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
14	Stud	ASTM A193 Gr B7; Gr B7M; Gr <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
16	Nut	ASTM A194 Gr 24; Gr 2HM; Gr <u>8B</u> , <u>8CB</u> , <u>8MB</u> , <u>8TB</u> , <u>8FB</u>	
18	Nut	ASTM A194 Gr 2H; Gr 2HM; Gr <u>8B</u> , <u>8CB</u> , <u>8MB</u> , <u>8TB</u> , <u>8FB</u>	
19	Identification Tag	Stainless steel	
36	Grounding Spring	Inconel	
37	Caution Tag	PTFE	
65	Body Gasket ¹	Spiral Wound PTFE / 316 Stainless steel ¹	
66	Stem Retainer ¹	Spiral Wound PTFE / 316 Stainless steel ¹	
69	Packing	PTFE, molecularly enhanced PTFE (<i>Xtreme</i> -seated valves)	
70	Stem Bearing	PTFE	
71	Secondary Stem Seal	Graphite	

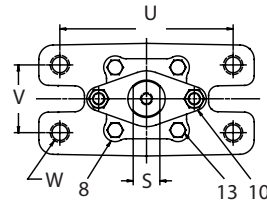
Note 1: Compression plate, body gasket, stem retainer, and gland follower are Monel for valves with Monel or Hastelloy C trim.

DIMENSIONS

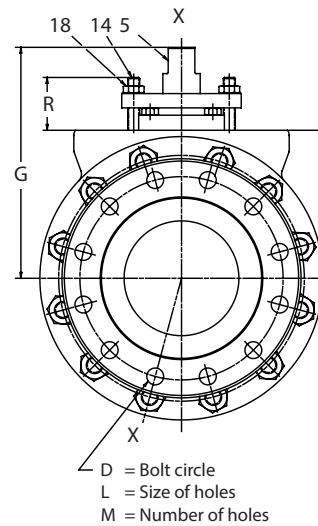
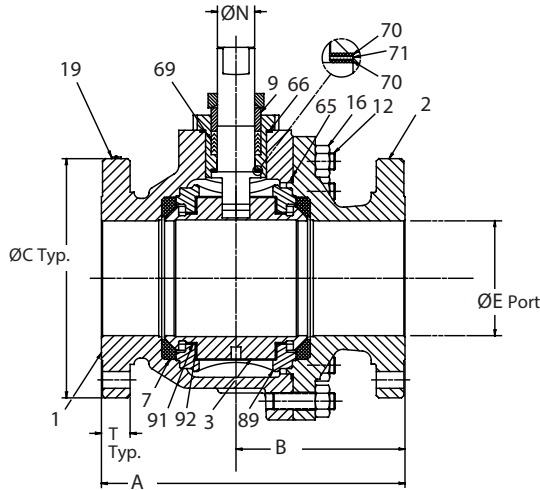
8" - 12" (DN200 - 300) Series 9150 ASME Class 150 and 6" - 12" (DN150 - 300) Series 9300 ASME Class 300 (Trunnion)



10" & 12" (DN 250 & 300) Class 150 & 300



8" (DN 250) Class 150
6" & 8" (DN 150 & 200) Class 300



8" 9300 also available in long version (930L) with 19.750 face-to-face dimension.

Valve Size inches	Series 9150 ASME Class 150 Approximate Dimensions – inches																	Weight lb
	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W	X	
8	18.00	8.97	13.50	11.75	8.00	15.60	10.22	0.88	8	2.54	2.88	1.82	1.18	9.06	3.54	1-8	N/A	300
10	21.00	10.90	16.00	14.25	10.00	23.39	11.82	1.00	12	2.76	3.38	N/A	1.19	12.10	4.72	11/4-7	12.99	710
12	24.00	11.96	19.00	17.00	12.00	25.11	13.44	1.00	12	3.00	3.63	N/A	1.25	12.10	4.72	11/4-7	12.99	1089

Valve Size	Series 9150 ASME Class 150 Approximate Dimensions – mm																	Weight
DN	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W*	X	kg
200	457	228	343	298	203	370	260	22	8	65	76	35	30	230	90	1-8	N/A	136
250	533	276	406	362	254	594	300	25	12	70	86	N/A	30	307	120	11/4-7	330	322
300	610	304	483	432	305	638	341	25	12	76	92	N/A	32	307	120	11/4-7	330	494

Valve Size inches	Series 9300/930L ASME Class 300 Approximate Dimensions – inches																	Weight lb
	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W	X	
6	15.88	8.84	12.50	10.63	6.00	12.07	7.74	0.88	12	1.95	2.76	1.39	1.50	9.06	3.54	1-8	N/A	310
8	16.50	8.26	15.00	13.00	8.00	15.60	10.22	1.00	12	2.54	3.00	1.82	1.64	9.06	3.54	1-8	N/A	560
10	22.38	12.19	17.50	15.25	10.00	23.39	11.82	1.13	16	2.75	3.38	2.75	1.88	12.10	4.72	11/4-7	12.99	968
12	25.50	14.02	20.50	17.75	12.00	25.11	13.44	1.25	16	3.00	3.63	3.00	2.00	12.10	4.72	11/4-7	12.99	1496

Valve Size	Series 9300/930L ASME Class 300 Approximate Dimensions – mm																	Weight
DN	A	B	C	D	E	G	K	L	M	N	R	S	T	U	V	W*	X	kg
150	403	225	318	270	152	307	197	22	12	50	70	35	38	230	90	1-8	N/A	141
200	419	210	381	336	203	396	260	25	12	65	76	46	42	230	90	1-8	N/A	255
250	568	310	445	387	254	594	300	29	16	70	86	70	48	307	120	11/4-7	330	439
300	648	356	521	451	305	638	341	32	16	76	92	76	51	307	120	11/4-7	330	679

* Screw-thread dimensions are in inches

BILLS OF MATERIALS AND PARTS LIST Series 9150, 6" – 12" (DN 150 – 300) Series 9300 (Trunnion)			
Part No.	Part Name	Body Material	
		Carbon Steel (22) All Series	316 Stainless Steel (36) All Series
1	Body	Carbon steel ASTM A216 Gr WCB	316 Stainless steel ASTM A351 Gr CF8M
2	Body Cap	Carbon steel ASTM A216 Gr WCB	316 Stainless steel ASTM A351 Gr CF8M
3	Ball	316 Stainless steel, Alloy 20, Monel ¹ , Hastelloy C ¹ - as specified	
5	Stem	316 Stainless steel, Monel ¹ , Hastelloy C ¹ , 17-4 PH - as specified	
7	Seat	<i>Xtreme</i> , PTFE - as specified	
8	Stem Retainer	Carbon steel ASTM A216 Gr WCB	Stainless steel ASTM A351 Gr CF8M
9	Gland Follower ¹	Carbon Steel, Stainless steel, Monel ¹	
10	Compression Plate ¹	Stainless steel, Monel ¹	
12	Body Stud	ASTM A193 Gr B7; Gr B7M; Gr <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
13	Stem Retainer Bolt	ASTM A193 Gr B7; Gr B7M; Gr <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
14	Stud	ASTM A193 Gr B7; Gr B7M; Gr <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
16	Nut	ASTM A194 Gr 24; Gr 2HM; Gr <u>8B</u> , <u>8CB</u> , <u>8MB</u> , <u>8TB</u> , <u>8FB</u>	
18	Nut	ASTM A194 Gr 2H; Gr 2HM; Gr <u>8B</u> , <u>8CB</u> , <u>8MB</u> , <u>8TB</u> , <u>8FB</u>	
19	Identification Tag	Stainless steel	
23	Rivet	Stainless steel	
36	Grounding Spring ²	Inconel	
65	Body Gasket ¹	Spiral Wound PTFE / 316 Stainless steel ¹	
66	Stem Retainer Seal ¹	Spiral Wound PTFE / 316 Stainless steel ¹	
69	Packing	PTFE, molecularly enhanced PTFE (<i>Xtreme</i> -seated valves)	
70	Stem Bearing	Filled PTFE	
71	Secondary Stem Seal	Graphite	
89	Trunnion	Carbon Steel	Stainless steel
91	Bearing Spacer	Filled PTFE	
92	Trunnion Bearing	316 Stainless steel	

Note 1: Compression plate, body gasket, stem retainer gasket, and gland follower are Monel for valves with Monel or Hastelloy C trim.

Note 2: For grounded valves only.

BILLS OF MATERIALS AND PARTS LIST			
14" – 24" (DN 350 – 600) Series 9150, 14" – 24" (DN 350 – 600) Series 9300 Full-Bore Valves			
Part No.	Part Name	Body Material	
		Carbon Steel (22) All Series	316 Stainless Steel (36)
1	Body	Carbon steel ASTM A216 Type WCB	316 stainless steel ASTM A351 Type CF8M
2	Body Cap	Carbon steel ASTM A216 Type WCB	316 stainless steel ASTM A351 Type CF8M
3	Ball	Alloy 20, 316 Stainless steel, Monel ¹ , Hastelloy C ¹ - as specified	
4	Stem	Alloy 20, 316 Stainless steel, Monel ¹ , Hastelloy C ¹ - as specified	
5	Seat	PTFE or filled PTFE	
6	Body Seal ¹	Spiral wound PTFE/316 Stainless steel ¹	
7	Secondary Stem Seal	Graphite	
8	Stem Bearing	Filled PTFE	
10	Body Stud	ASTM A193 Gr. B7; Gr. B7M; or Gr. <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
11	Nut	ASTM A194 Gr. 2H; Gr. 2HM; or Gr. <u>8B</u> , <u>8CB</u> , <u>8MB</u> , <u>8TB</u> , or <u>8FB</u>	
14	Hex Head Cap Screw	ASTM A193 Gr. B7; Gr. B7M; or Gr. <u>B8</u> , <u>B8C</u> , <u>B8T</u> or <u>B8M</u>	
18	Nut	ASTM A194 Gr. 2H; Gr. 2HM; or Gr. <u>8B</u> , <u>8CB</u> , <u>8MB</u> , <u>8TB</u> , or <u>8FB</u>	
20	Compression Plate ¹	Carbon steel	Stainless steel
21	Compression Ring	Stainless steel	
22	Identification Tag	Stainless steel	
23	Drive Screw	Stainless steel	
25	Stem Retainer Seal	Graphite	
26	Trunnion Plate	Carbon steel Type WCB	316 Stainless steel Type CF8M
27	Trunnion Bearing	316 Stainless steel backed glass-filled PTFE	
28	Bearing Spacer	Filled PTFE	
29	Hex.Hd. Cap Screw	ASTM A193 Gr. B7; Gr. B7M	
30	Stem Retainer	Carbon steel Type WCB	316 Stainless steel Type CF8M
32	Upper Stem Seal	PTFE	
33	Key ²	Carbon steel	
35	Trunnion Ring ³	Carbon steel	Stainless steel
36	Tag: Trunnion Ball	Stainless steel	

Note 1: Compression plate, body seal, and gland follower are Monel for valves with Monel or Hastelloy C trim.

Note 3: Not used in 14" & 16" (DN 350 & 400) Series 9300 valves.

STANDARD VALVE TORQUE DATA

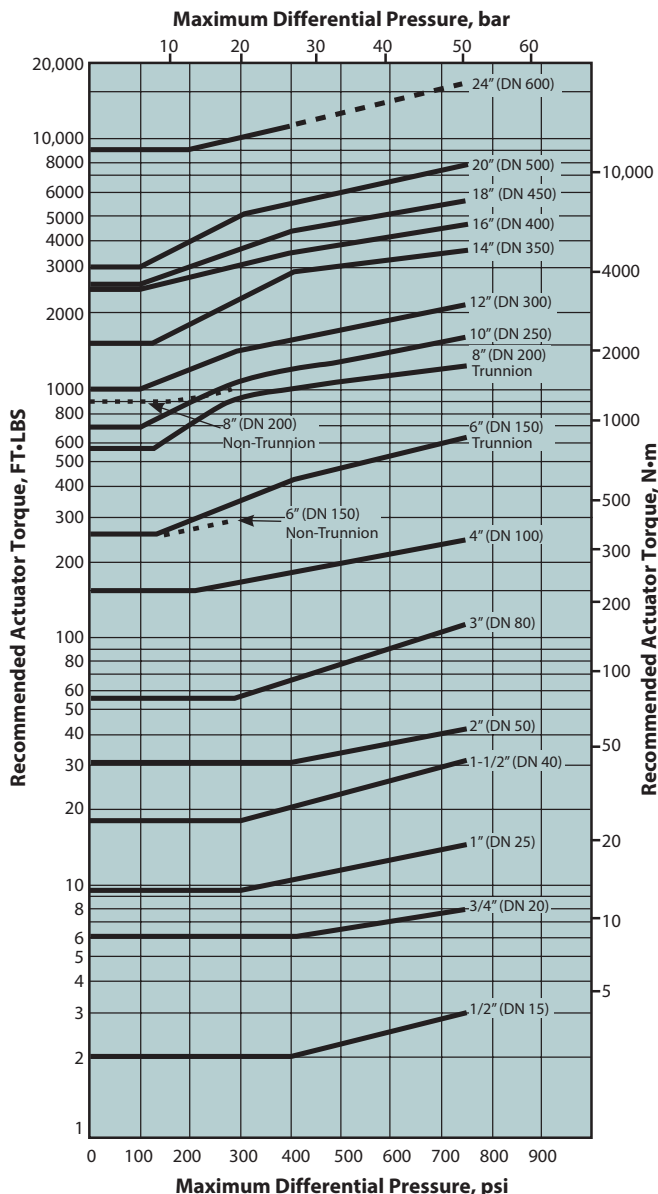
Use these torque charts as a guide for actuator selection. Additional requirements may be imposed by media characteristics, trim, and frequency of valve operation. For clean lubricating fluid service, required torque for PTFE (T), Xtreme (X) and filled PTFE (M) seated valves only may be reduced 20% when the valve is equipped with corrosion resistant trim. For difficult services such as slurries and semi-solids, and for oxygen, increase values by 50%. If in doubt, err on the side of safety by using a larger actuator than would normally be selected.

Torque output values and actuator selection tables for the different types of *Jamesbury* actuators are contained in the bulletins listed below.

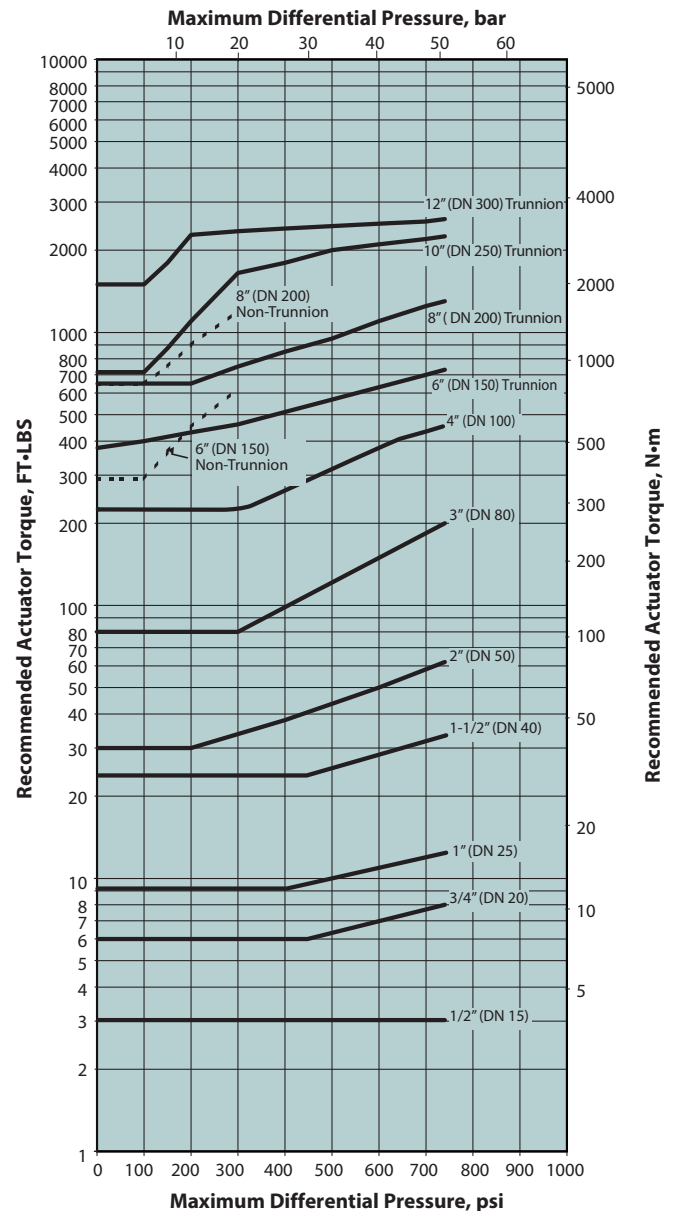
Manual Gear Actuators	A100-1
B-Series Piston Actuators	6B20
<i>Quadra-Powr</i> X Spring Diaphragm	
Rotary Actuators	A110-4
<i>Valv-Powr</i> Series VPVL	A111-5
VPVL Stainless Steel	A111-4
V-Series Electric Actuators	A200-1
ADC Electric Actuators	A201-1
LC Series' Electric Actuators	A202-1 & A203-1
ESR-Series Electric Actuators	A204-1
Q6-Series Electric Actuators	A205-1
QX-Series Electric Actuators	A207-1

ASME Class 150 and 300 Standard Valve Torque Data

PTFE (T) Seated Valves



Xtreme (X) and TFM (Z) Seated Valves 1/2" – 12" (DN 15 – 300)

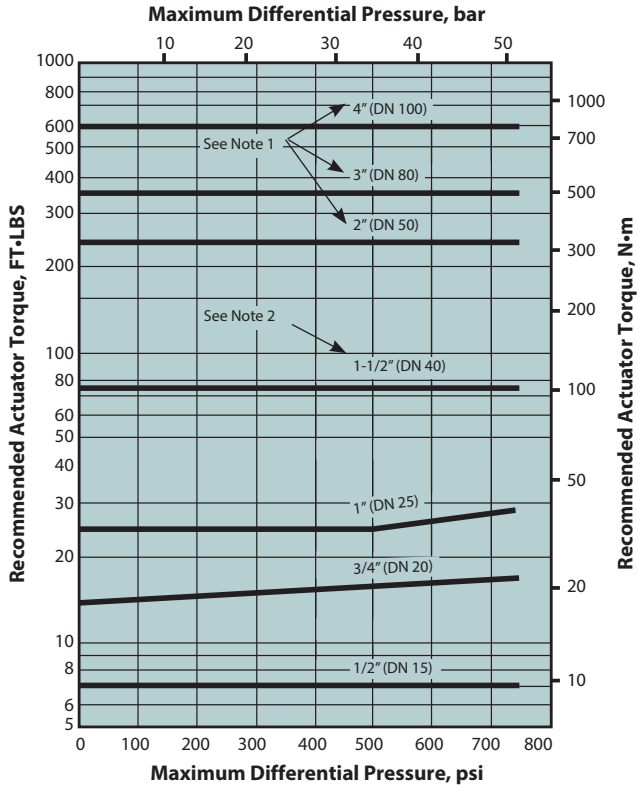


Note: See notes on page 16.

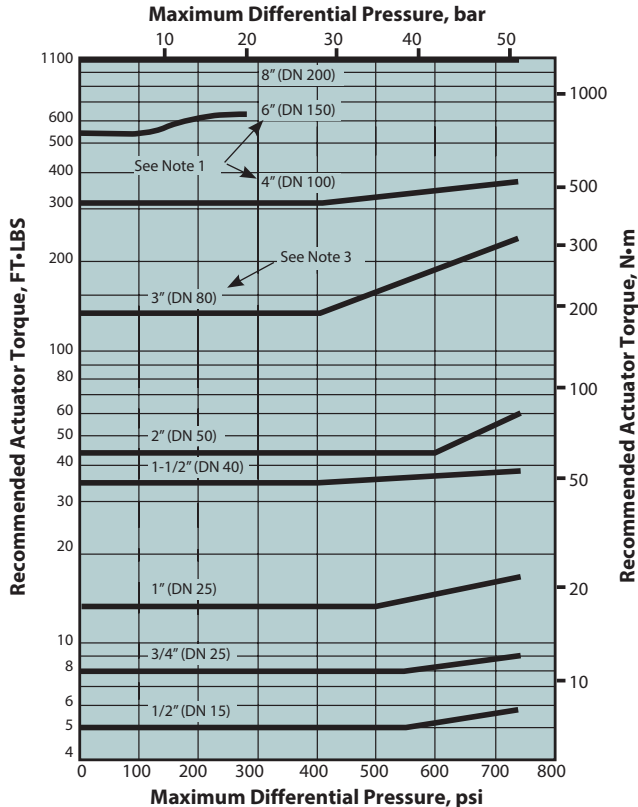
STANDARD VALVE TORQUE DATA

ASME Class 150 and 300 Valves

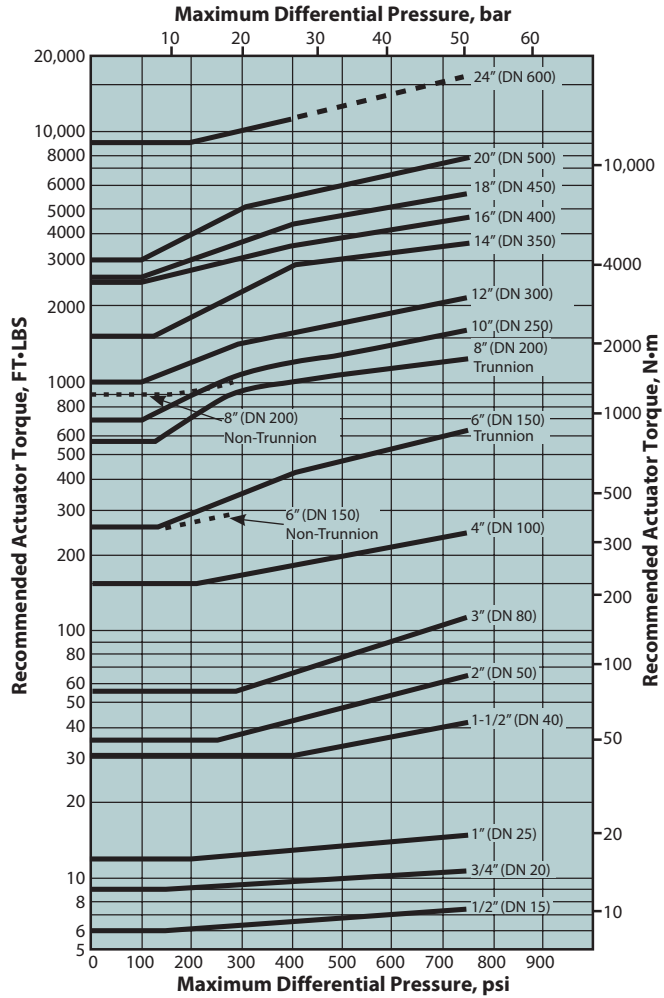
PEEK (L) Seated Valves 1/2" – 6" (DN 15 – 150)



PFA (B) Seated Valves 1/2" – 8" (DN 15 – 200)



UHMW Polyethylene (U) Seated Valves



Note 1: Actuator is required;

Note 2: Actuator is required for difficult service;

Note 3: Actuator is required for difficult service and pressure greater than 500 psi.

Note 4: Dashed line indicates Non-Trunnion and is rated to Class 150 only for seats.

EMISSION-PAK SERIES 9000 BALL VALVES

The *Emission-Pak* provides additional protection from emissions and stem seal leakage, and the ability to monitor leakage for critical applications.

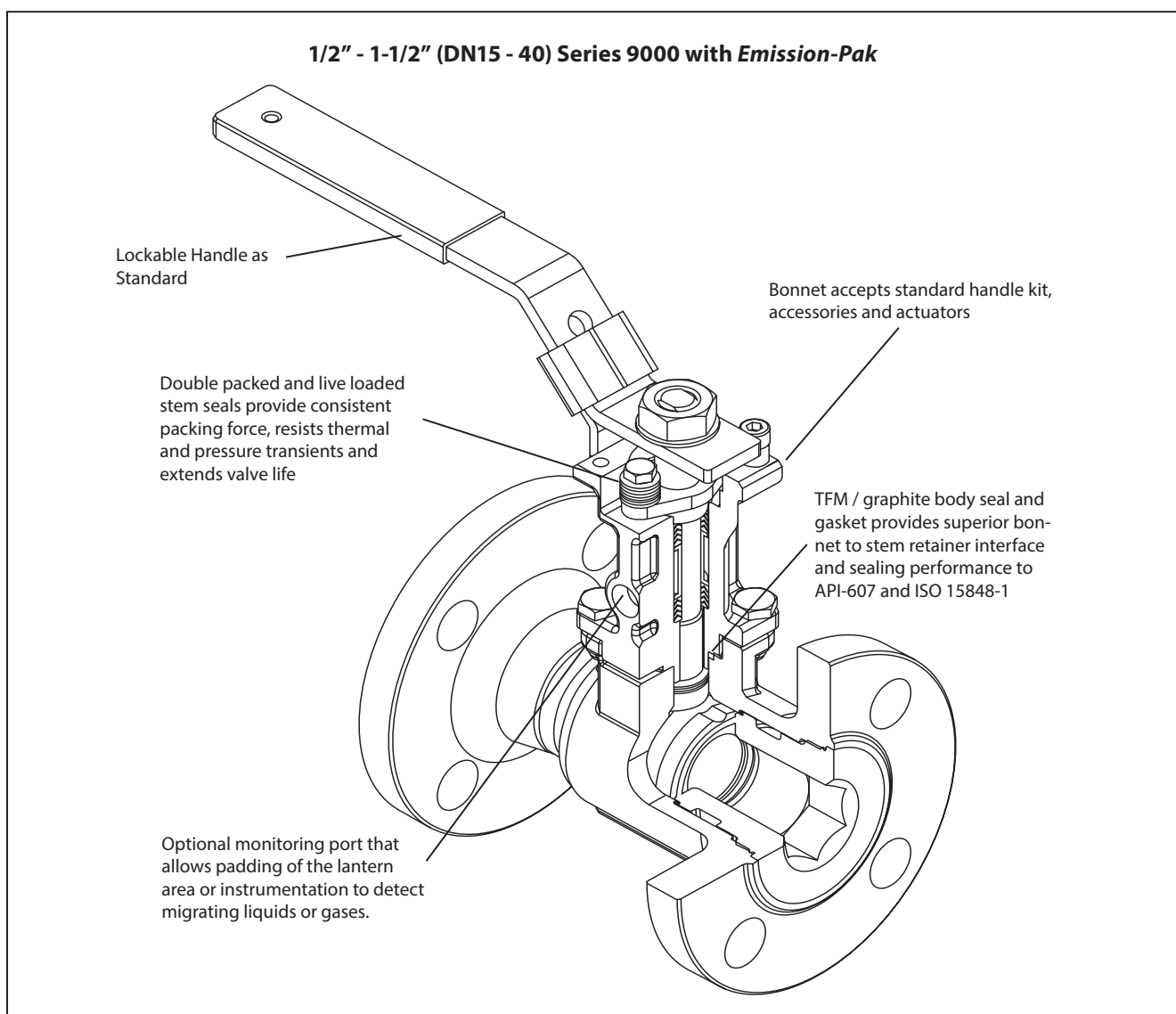
The *Emission-Pak* is an extended stem retainer containing two sets of stem seals which is mounted in the valve body. A special TFM and graphite gasket maintains a leak-free joint and assures that a *Fire-Tite* valve retains its fire tested rating.

AVAILABLE CONFIGURATIONS

Full Bore Valves		
Valve	Size Range	ANSI Class
9150, 9180	1/2" – 6" (DN 15 – 150)	150
9300, 9380	1/2" – 4" (DN 15 – 100)	300

FEATURES

- ❑ Two separate live loaded v-ring stem seals
- ❑ One piece stem
- ❑ Two thrust bearings
- ❑ Optional stem seal monitoring port permits detection of primary stem seal wear or leakage
- ❑ ISO 15848 Class AH rated

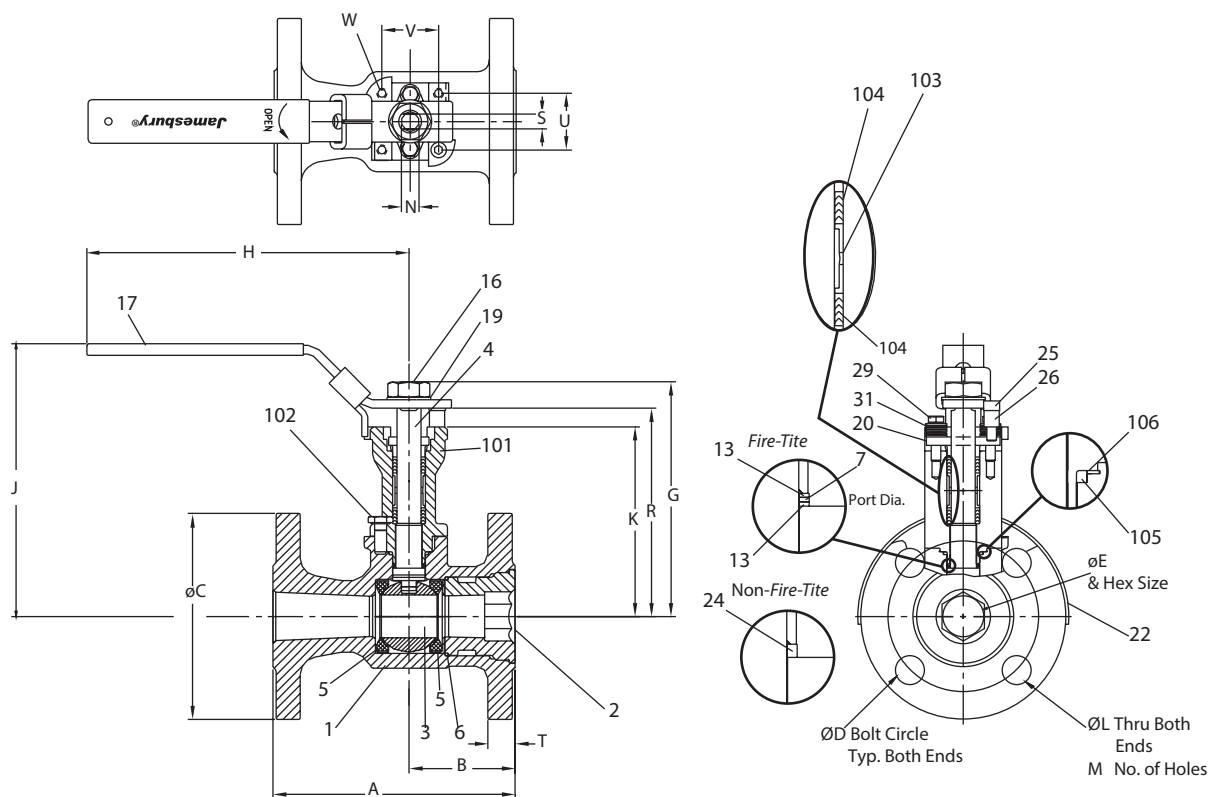


Qualification Test

Emission-Pak 1-1/2" (DN 15 – 40) 9000 series are qualified to ISO 15848-1 AH-CC3-SSA1-T200.

DIMENSIONS

1/2" – 1-1/2" (DN15 – 40) Series 9150 ASME Class 150 and Series 9300 ASME Class 300 with *Emission-Pak* (Non-Trunnion)



Valve Size inches	Series 9150 ASME Class 150 Approximate Dimensions - inches																		ISO Bonnet
	A	B	C	D	E	G	H	J	K	L	M	N	R	S	T	U	V	W	
1/2	4.25	1.94	3.50	2.38	0.50	3.61	5.00	4.42	3.08	0.62	4	0.31	3.30	0.18	0.50	1.002	1.002	M5	F03
3/4	4.63	2.19	3.88	2.75	0.88	4.85	6.50	5.60	3.95	0.62	4	0.50	4.30	0.31	0.63	1.168	1.168	M5	F04
1	5.00	2.19	4.25	3.12	1.00	4.98	6.50	5.73	4.08	0.62	4	0.50	4.43	0.31	0.63	1.168	1.168	M5	F04
1-1/2	6.50	2.64	5.00	3.88	1.50	5.99	8.00	6.97	4.81	0.62	4	0.62	5.26	0.37	0.69	1.392	1.392	M6	F05

Valve Size DN	Series 9150 ASME Class 150 Approximate Dimensions - mm																	ISO Bonnet	
	A	B	C	D	E	G	H	J	K	L	M	N	R	S	T	U	V		W
15	108	49	89	60	13	92	127	112	78	16	4	8	84	5	13	25	25	M5	F03
20	118	56	99	70	22	123	165	142	100	16	4	13	109	8	15	30	30	M5	F04
25	127	56	108	79	25	126	165	146	104	16	4	13	113	8	15	30	30	M5	F04
40	165	67	127	99	38	152	203	177	122	16	4	16	134	9	18	35	35	M6	F05

Valve Size inches	Series 9300 ASME Class 300 Approximate Dimensions - inches																		ISO Bonnet
	A	B	C	D	E	G	H	J	K	L	M	N	R	S	T	U	V	W	
1/2	5.50	1.94	3.75	2.62	0.50	3.61	5.00	4.42	3.08	0.62	4	0.31	3.30	0.18	0.52	1.002	1.002	M5	F03
3/4	6.00	2.19	4.63	3.25	0.88	4.85	6.50	5.60	3.95	0.75	4	0.50	4.30	0.31	0.63	1.168	1.168	M5	F04
1	6.50	2.19	4.88	3.50	1.00	4.98	6.50	5.73	4.08	0.75	4	0.50	4.43	0.31	0.63	1.168	1.168	M5	F04
1-1/2	7.50	2.64	6.13	4.50	1.50	5.99	8.00	6.97	4.81	0.88	4	0.62	5.26	0.37	0.71	1.392	1.392	M6	F05

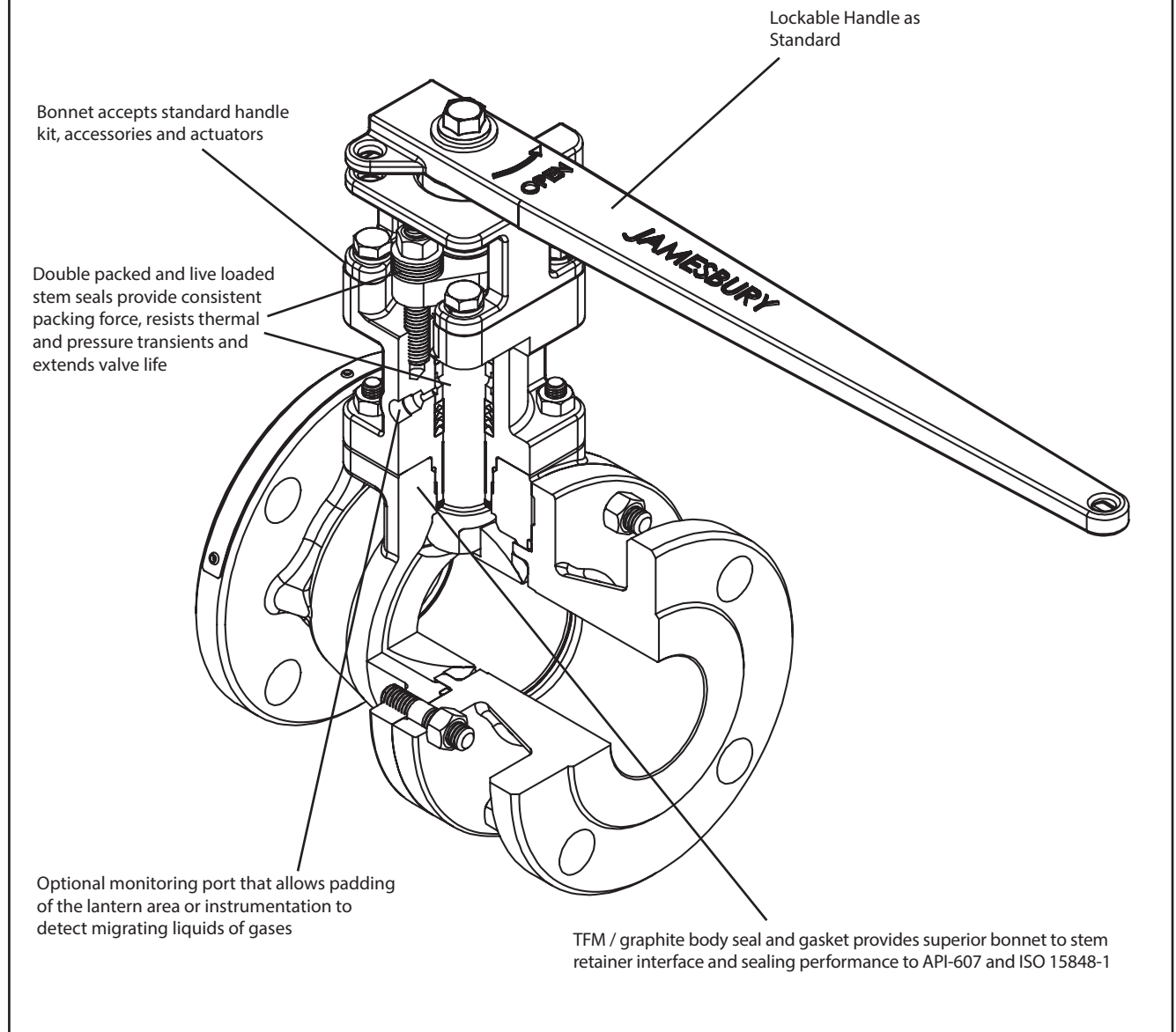
Valve Size	Series 9300 ASME Class 300 Approximate Dimensions - mm																		ISO
DN	A	B	C	D	E	G	H	J	K	L	M	N	R	S	T	U	V	W	Bonnet
15	140	49	95	67	13	92	127	112	78	16	4	8	84	5	13	25	25	M5	F03
20	152	56	118	83	22	123	165	142	100	19	4	13	109	8	16	30	30	M5	F04
25	165	56	124	89	25	126	165	146	104	19	4	13	113	8	16	30	30	M5	F04
40	191	67	156	114	38	152	203	177	122	22	4	16	134	9	18	35	35	M6	F05

BILLS OF MATERIALS AND PARTS LIST					
Fire-Tite 1/2" – 1-1/2" (DN15 – 40) Full Port Series 9000 Valves with Emission-Pak					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Insert	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem	316 Stainless Steel, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, Xtreme, PFA			
6	Body Seal	TFM			
7	Secondary Stem Seal	Graphite			
13	Stem Bearing	PTFE, Filled PTFE			
16	Hex Nut	Carbon Steel (zinc plated)			
17	Handle	Carbon Steel (zinc plated)	300 Series Stainless Steel		
19	Lock Washer	Carbon Steel (zinc plated)	300 Series Stainless Steel		
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
20	Compression Plate	316 Stainless Steel	300 Series Stainless Steel		
25	Socket Cap Screw	300 Stainless Steel			Monel
26	Handle Stop Screw	300 Stainless Steel			
29	Hex Cap Screw	300 Stainless Steel			
31	Disc Springs	Inconel			Monel
101	Emission-Pak Housing	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
102	Hex Head Cap Screw	ASTM A193 GR. B7, ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
103	Lantern Ring	316 Stainless Steel, Monel, Alloy 20			
104	Double Stem Seals	TFM			
105	Emission-Pak Body Seal	TFM			
106	Emission-Pak Body Gasket	Graphite			
107	Pipe Plug	Plastic			
109	Bearing Strip	PTFE			
112	Warning Tag	Polyethylene			

BILLS OF MATERIALS AND PARTS LIST					
Non Fire-Tite 1/2" – 1-1/2" (DN15 – 40) Full Port Series 9000 Valves with <i>Emission-Pak</i>					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Insert	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem	316 Stainless Steel, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, <i>Xtreme</i> , PFA, PEEK ¹ & UHMWPE			
6	Body Seal	TFM (w/ PTFE, <i>Xtreme</i> , PFA seats), UHMWPE (w/ UHMWPE seats), Graphite (w/ PEEK seats)			
8	Primary Stem Seal	PTFE (w/ PTFE seats), TFM (w/ <i>Xtreme</i> & PFA seats), UHMWPE (w/ UHMWPE seats), Graphite (w/ PEEK seats)			
10	Stem Guide	PEEK (PEEK seated valves)			
16	Hex Nut	Carbon Steel (zinc plated)	300 Series Stainless Steel		
17	Handle	Carbon Steel (zinc plated)	300 Series Stainless Steel		
19	Lock Washer	Carbon Steel (zinc plated)	300 Series Stainless Steel		
20	Compression Plate	316 Stainless Steel			Monel
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
24	Stem Bearing	PTFE (w/ PTFE seats), Filled PTFE (w/ <i>Xtreme</i> & PFA seats), PEEK (w/ PEEK seats), UHMWPE (w/ UHMWPE seats)			
25	Socket Cap Screw	300 Stainless Steel			
26	Handle Stop Screw	300 Stainless Steel			
29	Hex Cap Screw	300 Stainless Steel			Monel
31	Disc Springs	Inconel			
101	<i>Emission-Pak</i> Housing	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
102	Hex Head Cap Screw	ASTM A193 GR. B7, ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
103	Lantern Ring	316 Stainless Steel, Monel, Alloy 20			
104	Double Stem Seals	TFM (w/ <i>Xtreme</i> , PTFE & PFA seats), UHMWPE (w/ UHMWPE seats), Graphite (w/ PEEK seats)			
105	<i>Emission-Pak</i> Body Seal	TFM, UHMWPE (w/ UHMWPE seats)			
106	<i>Emission-Pak</i> Body Gasket	Graphite			
107	Pipe Plug	Plastic			
109	Bearing Strip	PTFE			
112	Warning Tag	Polyethylene			

Note 1: 17-4PH stem required with PEEK seats

2" - 6" (DN 50 - 150) Series 9150 valves with *Emission-Pak*
2" - 4" (DN 50 - 100) Series 9300 valves with *Emission-Pak*

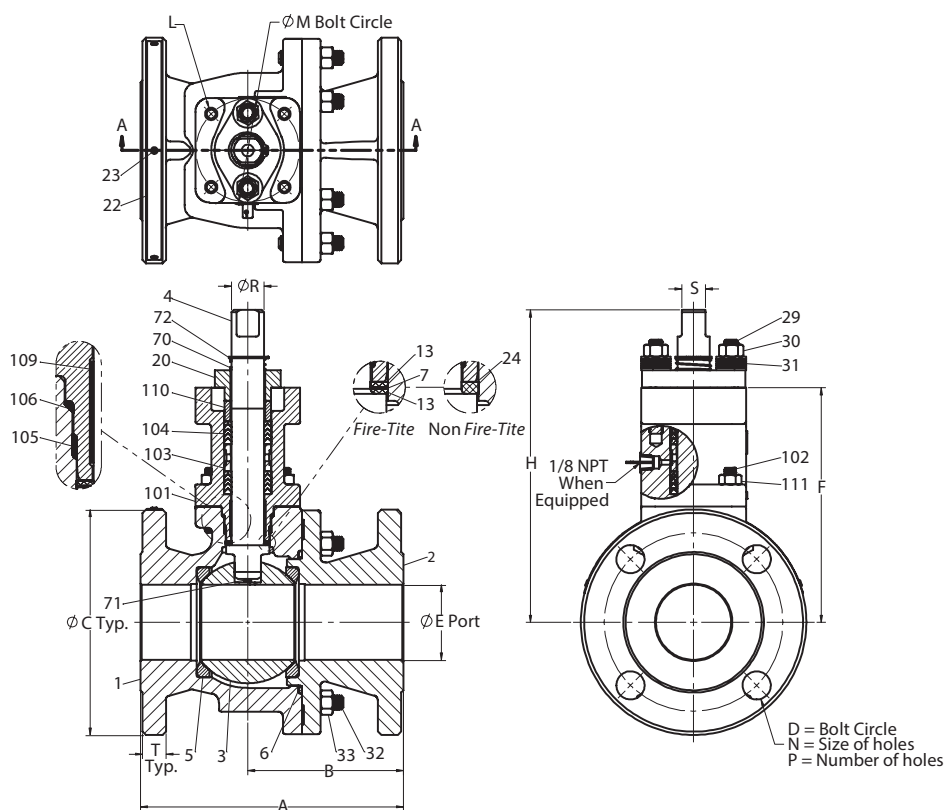


Qualification Test

2" – 6" (DN 50 – 150) 9150 and 2" - 4" 9300 (DN 50 - 100) series with *Emission-Pak* are qualified to ISO 15848-1 AH CO3-SSA3 T(200C).

DIMENSIONS

2" - 6" (DN50 - 150) Series 9150 ASME Class 150 and Series 9300 ASME Class 300 with *Emission-Pak* (Non-Trunnion)



Series 9150 ASME Class 150 Approximate Dimensions - inches

Valve Size inches	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight lb
2	7.00	4.14	6.00	4.75	2.00	6.24	8.31	M8	2.76	0.75	4	0.86	0.62	0.62	F07	39
3	8.00	4.26	7.50	6.00	3.00	7.06	9.11	M8	2.76	0.75	4	0.86	0.62	0.75	F07	59
4	9.00	4.50	9.00	7.50	4.00	9.45	12.18	M10	4.02	0.75	8	1.11	0.81	0.94	F10	105
6	15.50	8.25	11.00	9.50	6.00	11.39	14.49	M12	4.92	0.88	8	1.61	1.12	1.00	F12	276

Series 9150 ASME Class 150 Approximate Dimensions - mm

Valve Size DN	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight kg
50	178	105	152	121	51	158	211	M8	70	19	4	22	16	16	F07	18
80	203	108	191	152	76	179	231	M8	70	19	4	22	16	19	F07	27
100	229	114	229	191	102	240	309	M10	102	19	8	28	21	24	F10	48
150	394	210	279	241	152	289	368	M12	125	22	8	41	28	25	F12	125

Series 9300 ASME Class 300 Approximate Dimensions - inches

Valve Size inches	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight lb
2	8.50	4.89	6.50	5.00	2	6.24	8.31	M8	2.76	0.75	4	0.86	0.62	0.87	F07	47
3	11.12	6.11	8.25	6.62	3	8.63	11.34	M10	4.02	0.88	8	1.11	0.81	1.12	F10	93
4	12.00	6.86	10.00	7.88	4	9.77	12.87	M12	4.92	0.88	8	1.61	1.12	1.25	F12	168

Series 9300 ASME Class 300 Approximate Dimensions - mm

Valve Size DN	A	B	C	D	E	F	H	L	M	N	P	R	S	T	ISO Pattern	Weight kg
80	216	124	165	127	51	158	211	M8	70	19	4	22	16	22	F07	21
100	282	155	210	168	76	219	288	M10	102	22	8	28	21	28	F10	42
150	305	174	254	200	102	248	327	M12	125	22	8	41	28	32	F12	76

BILLS OF MATERIALS AND PARTS LIST					
<i>Fire-Tite 2" - 6" (DN50 - 150) Full Port Series 9150 Valves, 2" - 4" (DN50 - 100) Full Port Series 9300 Valves with Emission-Pak</i>					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Body Cap	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel+, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem	316 Stainless Steel+, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, Xtreme, PFA			
6	Body Seal	Spiral Wound Graphite/316 Stainless Steel		Spiral Wound Graphite/Alloy 20	Spiral Wound Graphite/ Monel
7	Secondary Stem Seal	Graphite			
13	Thrust Bearing	PTFE, Filled PTFE			
20	Compression Plate	316 Stainless Steel			Monel
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
29	Bonnet Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
30	Bonnet Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
31	Disc Springs	Inconel			
32	Body Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
33	Body Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
70	Top Grounding Spring	Stainless Steel			
71	Bottom Grounding Spring	Inconel			
72	Retaining Ring	Stainless Steel			
101	<i>Emission-Pak</i> Stem Retainer	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
102	Stud	ASTM A193 GR. B7, ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
103	Spacer/Lantern Ring	316 Stainless Steel, Monel, Alloy 20			
104	Stem Seal	PTFE (w/ PTFE seats), TFM (w/ Xtreme & PFA seats)			
105	Inner Stem Retainer Seal	TFM			
106	Outer Stem Retainer Seal	Graphite			
107	Pipe Plug	Plastic			
109	Bearing Strip	PTFE			
110	Compression Ring	316 Stainless Steel, Monel			
111	Hex Nut	ASTM A194 GR. 2H, ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
112	Warning Tag	Polyethylene			

BILLS OF MATERIALS AND PARTS LIST					
Non Fire-Tite 2" - 6" (DN50 - 150) Full Port Series 9150 Valves, 2" - 4" (DN50 - 100) Full Port Series 9300 Valves with <i>Emission-Pak</i>					
Part No.	Part Name	Body Material			
		Carbon Steel (22)	316 Stainless Steel (36)	Alloy 20 (35)	Monel (71)
1	Body	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
2	Body Cap	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
3	Ball	316 Stainless Steel, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
4	Stem	316 Stainless Steel+, 17-4PH, Monel, Hastelloy C		Alloy 20	Monel, Hastelloy C as specified
5	Seat	PTFE, <i>Xtreme</i> , PFA			
6	Body Seal	Spiral Wound PTFE/316 Stainless Steel		Spiral Wound PTFE/Alloy 20	Spiral Wound PTFE/Monel
8	Stem Seal	PTFE (w/ PTFE seats), TFM (w/ <i>Xtreme</i> & PFA seats)			
13	Thrust Bearing	PTFE, Filled PTFE			
20	Compression Plate	316 Stainless Steel			Monel
22	Identification Tag	Stainless Steel			
23	Pop Rivet	Stainless Steel			
29	Bonnet Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
30	Bonnet Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
31	Disc Springs	Inconel			
32	Body Stud	ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
33	Body Stud Nut	ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
70	Top Grounding Spring	Stainless Steel			
71	Bottom Grounding Spring	Inconel			
72	Retaining Ring	Stainless Steel			
101	<i>Emission-Pak</i> Stem Retainer	Carbon Steel ASTM A216 Type WCB	316 Stainless Steel ASTM A351 Type CF8M	Alloy 20 ASTM A351 Type CN7M	Monel ASTM A494 M35-1
102	Stud	ASTM A193 GR. B7, ASTM A193 GR. B8, B8C, B8T or B8M, Monel			
103	Spacer/Lantern Ring	316 Stainless Steel, Monel, Alloy 20			
104	Stem Seal	PTFE (w/ PTFE seats), TFM (w/ <i>Xtreme</i> & PFA seats), UHMWPE (w/ UHMWPE seats), Graphite (w/ PEEK seats)			
105	Inner Stem Retainer Seal	TFM, PFA (w/ PFA Seats), UHMWPE (w/ UHMWPE seats)			
106	Outer Stem Retainer Seal	Graphite			
107	Pipe Plug	Plastic			
109	Bearing Strip	PTFE			
110	Compression Ring	316 Stainless Steel, Monel			
111	Hex Nut	ASTM A194 GR. 2H, ASTM A194 GR. 8B, 8CB, 8MB, 8TB, 8FB, Monel			
112	Warning Tag	Polyethylene			

EMISSION-PAK VALVE TORQUE DATA

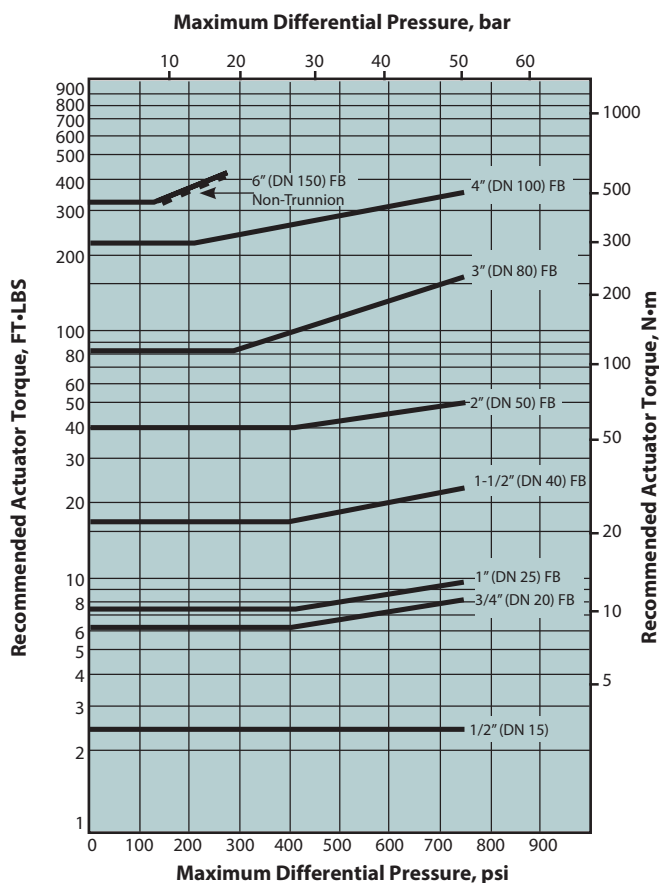
Use these torque charts as a guide for actuator selection. Additional requirements may be imposed by media characteristics, trim, and frequency of valve operation. For clean lubricating fluid service, required torque for PTFE (T) and *Xtreme* (X) seated valves only may be reduced 20% when the valve is equipped with corrosion resistant trim. For difficult services such as slurries and semi-solids, and for oxygen, increase values by 50%. If in doubt, err on the side of safety by using a larger actuator than would normally be selected.

Torque output values and actuator selection tables for the different types of *Jamesbury* actuators are contained in the bulletins listed below.

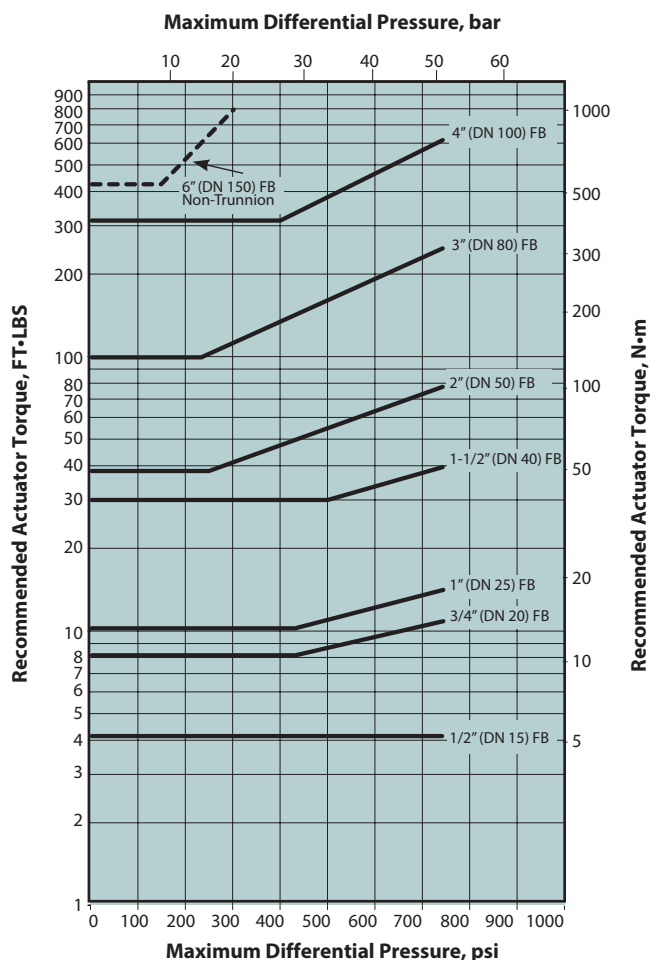
Manual Gear Actuators	A100-1
B-Series Piston Actuators	6B20
<i>Quadra-Powr</i> X Spring Diaphragm	
Rotary Actuators	A110-4
<i>Valv-Powr</i> Series VPVL	A111-3
VPVL Stainless Steel	A111-4
V-Series Electric Actuators	A200-1
ADC-Series Electric Actuators	A201-1
LC Series' Electric Actuators	A202-1 & A203-1
ESR-Series Electric Actuators	A204-1
Q6-Series Electric Actuators	A205-1
QX-Series Electric Actuators	A207-1

ASME Class 150 and 300 Valve Torque Data

PTFE (T) Seated Valves



Xtreme (X) and TFM (Z) Seated Valves

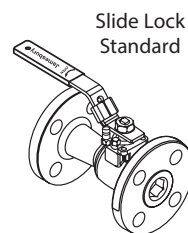


FB = Full Bore

ACCESSORIES

Locking Devices

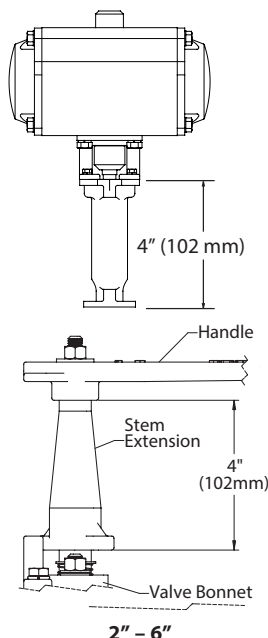
When safety measures are necessary, a reliable locking feature is standard to allow the valve to be padlocked in either the open or closed position.



1/2" – 1-1/2" (DN 15 – 40)
Series 9000

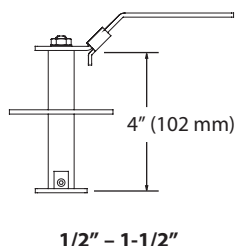
Bonnet/Stem Extensions

4" (102 mm) bonnet/stem extensions are available for applications and are particularly useful for automated and manual products. Extensions can also be used to prevent interference between actuators and companion pipelines and equipment. They are ideal as extension that require locking lever or locking oval handle capability. Stainless steel construction is also available.



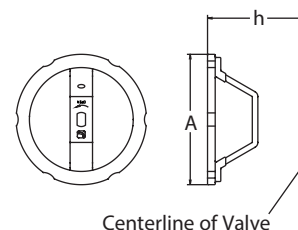
Stem Extensions

4" (102 mm) non-lockable stem extensions are available for manual valves. Extensions can also be used to prevent interference between companion pipelines and equipment. Compatible with all handle options. Stainless steel construction is also available.



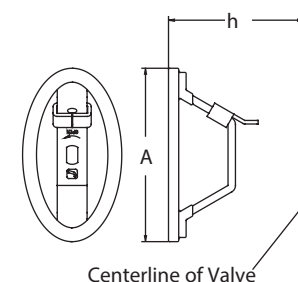
Round Handles

Series 9000 ball valves have optional round handles (non lockable) available. To order handles separately, specify the part number shown in the accessories table below.



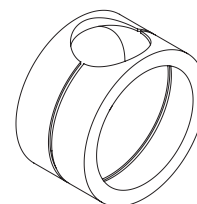
Oval handles with slide-lock

Optional oval handle saves space and may be padlocked to retain the valve in the open or closed position. To order handles separately, specify the part number shown in the accessories table below.



Cavity Fillers

Cavity fillers are available in non-trunnion 9000 series full bore valves. The fillers are PTFE or Xtreme and used for sanitary applications and in processes where cross contamination is a concern. Food processing, pharmaceuticals, cosmetics, paints, solvents, finishes and dyes are typical applications where fillers are employed.



Accessory Table – inches (DN)

Valve Size	Lever Handle	Locking Device	Stem Ext.	Bonnet/Stem Ext.	Locking Oval	Round	Round/Oval Handle		Allowable Max. Torque FT-LBS (N·m)	
							Dimension A	Dimension H	Round	Oval
1/2" (15)	Standard Equipment	Standard Equipment	SE-093	SE-096	112-0108-30	112-0105-30	4.00 (101.6)	2.96 (75.2)	9 (12)	9 (12)
3/4" (20)			SE-094	SE-097	112-0109-30	112-0106-30	4.50 (114.3)	3.70 (94.0)	18 (24)	18 (24)
1" (25)			SE-094	SE-097	112-0109-30	112-0106-30	4.50 (114.3)	3.83 (97.3)	18 (24)	18 (24)
1-1/2" (30)			SE-095	SE-098	112-0110-30	112-0107-30	5.75 (146.0)	4.75 (120.7)	25 (34)	25 (34)
1-1/2" (40)			SE-095	SE-098	112-0110-30	112-0107-30	5.75 (146.0)	4.94 (125.5)	25 (34)	25 (34)
2" (50)	BHK-0070		SE-099	SE-0102	NA					
3" (80) 9150	BHK-0070		SE-99	SE-0102						
3" (80) 9300	BHK-0071		SE-0100	SE-0103						
4" (100) 9150	BHK-0071		SE-0100	SE-0103						
4" (100) 9300	BHK-0072		SE-0101	SE-0104						
6" (150) 9150	BHK-0072		SE-0101	SE-0104						

* For valves with PEEK(L) seats that require stem extensions use bonnet/stem extension SE-096, 097 or 098.

2"- 6" (DN50 - 150) Series 9150 ASME Class 150 and 2"- 4" (DN50 -100) Series 9300 ASME Class 300



Series 9150 ASME Class 150 Approximate Dimensions - inches					
Valve Size Inches	Handle Kit Number	J	K	ISO Pattern	Weight lb
2	BHK-0070	5.84	14.00	F07	7
3	BHK-0070	6.65	14.00	F07	7
4	BHK-0071	8.94	19.94	F10	9
6	BHK-0072	12.57	15.00	F12	34

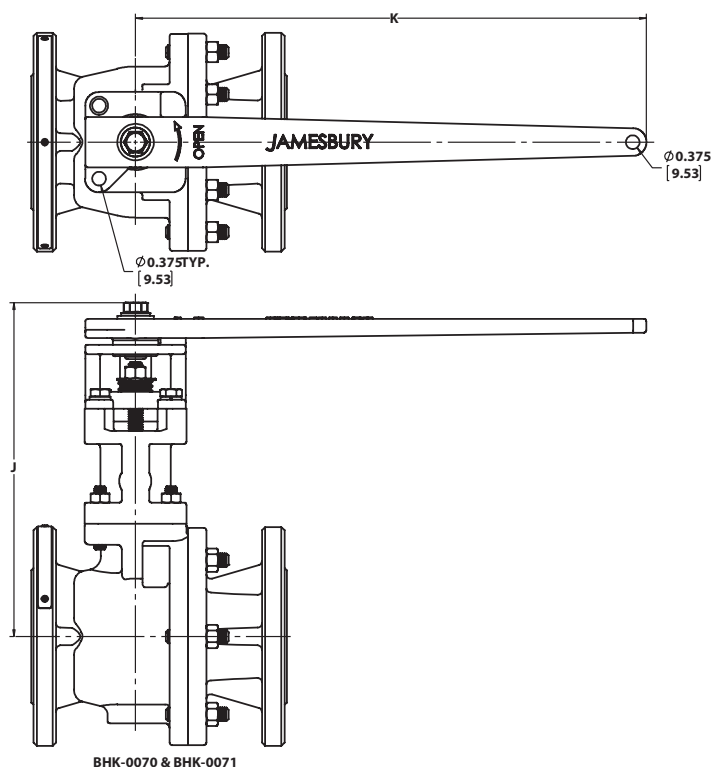
Series 9150 ASME Class 150 Approximate Dimensions - mm					
Valve Size DN	Handle Kit Number	J	K	ISO Pattern	Weight kg
50	BHK-0070	148	356	F07	3
80	BHK-0070	169	356	F07	3
100	BHK-0071	227	506	F10	4
150	BHK-0072	319	381	F12	15

Series 9300 ASME Class 300 Approximate Dimensions - inches					
Valve Size Inches	Handle Kit Number	J	K	ISO Pattern	Weight lb
2	BHK-0070	5.84	14.00	F07	7
3	BHK-0071	8.11	19.94	F10	9
4	BHK-0072	11.00	15.00	F12	34

Series 9300 ASME Class 300 Approximate Dimensions - mm					
Valve Size DN	Handle Kit Number	J	K	ISO Pattern	Weight kg
50	BHK-0070	148	356	F07	3
80	BHK-0071	206	506	F10	4
100	BHK-0072	279	381	F12	15

DIMENSIONS

2" - 6" (DN50 - 150) Series 9150 ASME Class 150 and 2" - 4" (DN 50 - 100) Series 9300 ASME Class 300 with *Emission-Pak*



Series 9150 ASME Class 150 Approximate Dimensions - inches

Valve Size inches	Handle Kit Number	J	K	ISO Pattern	Weight lb
2	BHK-0070	9.00	14.00	F07	7
3	BHK-0070	9.81	14.00	F07	7
4	BHK-0071	12.87	19.94	F10	9
6	BHK-0072	16.69	15.00	F12	34

Series 9150 ASME Class 150 Approximate Dimensions - mm

Valve Size DN	Handle Kit Number	J	K	ISO Pattern	Weight kg
50	BHK-0070	228	356	F07	3
80	BHK-0070	249	356	F07	3
100	BHK-0071	327	506	F10	4
150	BHK-0072	424	381	F12	15

Series 9300 ASME Class 300 Approximate Dimensions - inches

Valve Size inches	Handle Kit Number	J	K	ISO Pattern	Weight lb
2	BHK-0070	9.00	14.00	F07	7
3	BHK-0071	12.05	19.94	F10	9
4	BHK-0072	15.12	15.00	F12	34

Series 9300 ASME Class 300 Approximate Dimensions - mm

Valve Size DN	Handle Kit Number	J	K	ISO Pattern	Weight kg
50	BHK-0070	228	356	F07	3
80	BHK-0071	306	506	F10	4
100	BHK-0072	384	381	F12	15

WARNING:

As the use of the valve is application specific, a number of factors should be taken into account when selecting a valve for a given application. Therefore, some of the situations in which the valves are used are outside the scope of this manual. If you have any questions concerning the use, application or compatibility of the valve with the intended service, contact Metso for more information.

HOW TO ORDER

EXAMPLE: A 2" ASME Class 300 short design valve (9150) in *Fire-Tite* design (3) with raised-face flanges (31), carbon steel body (22), and 316 stainless steel trim (36), with *Xtreme* seats (XTZ) and molecularly enhanced PTFE stem seals is written: 2" 9150-31-2236XTZ1.

1	2	3	4	5	6	7	8
2"	9150	–	31	22	36	XTZ	1

1	Size
1/2" to 24"	1/2" (DN 15) 4" (DN 100) 14" (DN 350)
	3/4" (DN 20) 6" (DN 150) 16" (DN 400)
	1" (DN 25) 8" (DN 200) 18" (DN 450)
	1-1/2" (DN 40) 10" (DN 250) 20" (DN 500)
	2" (DN 50) 12" (DN 300) 24" (DN 600)
	3" (DN 80)

2	Valve Series & Style	Size Range
9150	Full Bore Class 150	1/2" – 24" (DN 15 – 600)
9180	Full Bore Class 150*	1/2" – 24" (DN 15 – 600)
9300	Full Bore Class 300	1/2" – 24" (DN 15 – 600)
9380	Full Bore Class 300*	1/2" – 24" (DN 15 – 600)
930L	Full Bore Class 300 B16.10 long F-F	8" (DN 200)
938L	Full Bore Class 300 B16.10 long F-F	8" (DN 200)

* Metric units on nameplate. Valves larger than 1" (DN 25) are CE marked. Includes static grounding.

3	Special Construction
—	Standard (no entry)
C	Chlorine
DBB	Double Block and Bleed
DT	125 RMS Flange Finish
O	Oxygen
Q	PTFE Cavity Filler
STG	Static Ground (1/2" – 1-1/2" 9000) (Not for <i>Emission-Pak</i>)
ST	Top Ground (1/2" – 1-1/2" 9000) (Not for <i>Emission-Pak</i>)
V	High Vacuum
VC	High Vacuum Certified
<i>Emission-Pak</i> Coding	
LA	Standard w/o leakoff
LL	Standard w/ leakoff
LC	Chlorine w/o leakoff
L1	Chlorine w/ leakoff
L2	Static Ground w/o leakoff (1/2" – 1-1/2" 9000 ONLY)
L3	Static Ground w/ leakoff (1/2" – 1-1/2" 9000 ONLY)
LV	High Vacuum w/o leakoff
LB	High Vacuum w/ leakoff
LW	High Vacuum Certified w/o leakoff
LJ	High Vacuum Certified w/ leakoff
LX	Oxygen w/o leakoff
LG	Oxygen w/ leakoff

4	End Connection	Size Range
11	Raised Face, Non- <i>Fire-Tite</i> , Non-Trunnion	1/2 – 8" (DN 15 – 200)
31	Raised Face, <i>Fire-Tite</i> , Non-Trunnion	1/2 – 8" (DN 15 – 200)
51	Raised Face, Non- <i>Fire-Tite</i> , Non-Trunnion	8 – 24" (DN200 – 600) Class 150 6 – 24" (DN200 – 600) Class 300
71	Raised Face, <i>Fire-Tite</i> , Trunnion	8 – 24" (DN 200 – 600) Class 150 6 – 24" (DN 150 – 600) Class 300

5	Body Material*
22 ⁵	Carbon Steel (WCB)
28	Carbon Steel (LCC)
35	Alloy 20 (CN7M)
36 ⁵	Stainless Steel (CF8M)
71 ⁵	Monel

* Other materials available upon request

6	Ball & Stem Materials*
35	Alloy 20 (CN7M)
36 ⁵	Stainless Steel (CF8M)
71 ⁵	Monel & K Monel
73	Hastelloy C
HB ⁵	316 SS & 17-4PH
00	Same as body

* Other materials available upon request

7	Seat Material*	Available Sizes
XTZ	<i>Xtreme</i>	All
BTT	PFA	1/2 – 6" (DN 15 – 150)
LGG ^{†12}	PEEK	1/2 – 4" (DN 15 – 100)
MBT ¹	Barrier Filled PTFE	3 – 10" (DN 80 – 250)
TTT	PTFE	All
UUU ¹	UHMWPE	1/2 – 8" (DN 15 – 200)
ZTT	TFM	1/2" – 10" (DN 15 – 250)

* Other materials available upon request

† Requires 17-4PH Stem

¹ Non-*Fire-Tite* only

² Not a self relieving seat

8	Valve Body Bolting Materials*		Valve Gland Bolting Materials	
	Studs	Nuts	Bolts/Studs	Nuts
1	ASTM A193 Gr. B7	ASTM A194 Gr. 2H or 2HB	ASTM A193 Gr. B8, B8C, B8M or B8T, Class 2	ASTM A194 Gr. 8B, 8CB, 8MB, 8T8, 8FB
2	ASTM A193 Gr. B8, B8C, B8M or B8T Class 2	ASTM A194 Gr. 8B, 8CB, 8MB, 8T8, 8FB	ASTM A193 Gr. B8, B8C, B8M or B8T, Class 2	ASTM A194 Gr. 8B, 8CB, 8MB, 8T8, 8FB
4**	K-Monel	K-Monel	K-Monel	K-Monel (71)
5**4	ASTM A193 Gr. B7M	ASTM A194 Gr. 2HM	ASTM A193 Gr. B8, B8C, B8M or B8T, Class 2	ASTM A194 Gr. 8B, 8CB, 8MB, 8T8, 8FB
H	Alloy 20	Alloy 20	Alloy 20	Alloy 20

* Other materials available upon request

** Required for compliance to NACE for 2" and larger (if buried or insulated)

4 1-1/2" and smaller NACE compatibility (if buried or insulated)

5 Material meets NACE requirements for sour environments. For valves to be in full compliance with NACE, both the body (sign #5) and trim (sign #6) must meet the NACE requirements.

9	Model Code*
A	1/2" – 1-1/2" (DN 15 – 40) 9000 (<i>Non-Emission-Pak</i>) 6" (DN 150) 9150, 9180 10" – 24" (DN 250 – 600) 9000
B	6" – 8" (DN 150 – 200) 9300, 9380, 930L, 938L
C	1/2" – 1-1/2" (DN 15 – 40) 9000 (<i>Emission-Pak</i>) 2" – 6" 9150, 9180 (<i>Non-Emission-Pak</i>) 2" – 4" 9300, 9380 (<i>Non-Emission-Pak</i>) 2" – 6" 9150, 9180 (<i>Emission-Pak</i>) 2" – 4" 9300, 9380 (<i>Emission-Pak</i>)

* Model Code not required when ordering

Hastelloy is a registered trademark of Haynes International, Inc.
Monel is a registered trademark of Special Materials Corp.
Inconel is a registered trademark of Special Materials Corp.

STANDARDS AND SPECIFICATIONS

The Company

ISO 9001 – 2015

Pressure Equipment Directive 2014/68/EU

Available Standards

API 598	American Petroleum Institute - Valve Inspection and testing
API 607	American Petroleum Institute - Fire Test for Soft Seated Valves
API 608	Metal Ball Valves Used in On-Off Service that have Buttwelded or Flanged Ends
ASME B16.10	American National Standard - Face-to-Face and End-to-End Dimensions of Ferrous Valves
ASME B16.5	American National Standard - Steel Pipe Flanges and Flanged Fittings
ASME B16.34	American National Standard - Steel Valves - Flanged and Buttwelded End
ASME B31.1	American National Standard - Power Piping
ASME B31.3	American National Standard - Chemical Plant and Petroleum Refinery Piping
FCI 70-2	American National Standard - For Control Valve Seat Leakage
ISO 15848-1	Industrial Valves - Fugitive Emissions - Measurement, Test & Qualification Procedures
ISO 17292	Metal Ball Valves for Petroleum, Petrochemical and Allied Industries
ISO 5752	International Standard for Organization Metal Valves for use in Flanged Piping Systems
ISA 75.02	Valve Sizing Coefficient Cv, Piping Geometry Factor Fp and Pressure Drop Limitation XT
ISA 575.19	Hydrostatic Testing of Control Valves
ISO 5211	Dimensions for Attachment of Actuators/Gear Boxes to Valves (ISO Mounting)
MSS SP-25	Manufacturers Standardization Society - Standard Marking System for Valves
MSS-SP-55	Manufacturers Standardization Society - Quality Standards for Steel Castings
MSS-SP-6	Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings
MSS-SP-44	Steel Pipe Line Flanges
MSS-SP-61	Pressure Testing of Steel Valves
MSS SP-72	Flanged or Butt and Weld End Ball Valves Having Full or Reduced Bores for General Liquid and Gas Service
MSS SP-96	Terminology for Valves and Fittings
2014/68/EU	European Pressure Equipment Directive (PED)
MSS SP-53-1995	Quality Standard For Steel Castings and Forgings for Valves, Flanges and Fittings and Other Piping Components-Magnetic Particle Examination Method
MSS SP-93-1987	Quality Standard For Steel Castings and Forgings for Valves, Flanges and Fittings and Other Piping Components-Liquid Penetrant Method
NACE Standard MR0103	National Association of Corrosion Engineers-Engineers - Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments
NACE Standard MR0175	National Association of Corrosion Engineers - Materials For Use In H ₂ S- Containing Environments In Oil And Gas Production
Factory Mutual (FM)	Figure 1052 Gas and Oil Shutoff Valves.
Factory Mutual (FM)	Figure 1051 Supervisory Cock Valves, Electric Interlocking Fuel Gas and Fuel Oil Cocks.
CSA	Figure 1057/1056 Gas Shut-Off and Vent Valves.
Factory Mutual (FM)	Figure 1075 Emergency Shut-Off and Fire-Safe Valves.
CSA	CSA 3.16.
EN 161/264	Automatic Shut-Off Valves for Gas Burners and Gas Appliances
Underwriter Laboratory (UL)	Categories MHKZ, YQAR, YRBX, YRPV, YSDT.
Underwriter's Laboratories of Canada (ULC)	Categories YSDT7 & YRPV7

Subject to change without prior notice.

Metso Flow Control Inc.

Europe, Vanha Porvoontie 229, P.O. Box 304, FI-01301 VANTAA, Finland.
Tel. +358 20 483 150. Fax +358 20 483 151

North America, 44 Bowditch Drive, P.O. Box 8044, Shrewsbury, MA 01545, USA.
Tel. +1 508 852 0200. Fax +1 508 852 8172

South America, Av. Independência, 2500- Iporanga, 18087-101, Sorocaba-São Paulo, Brazil.
Tel. +55 15 2102 9700. Fax +55 15 2102 9748/49

Asia Pacific, 238B Thomson Road, #17-01 Novena Square Tower B, Singapore 307685.
Tel. +65 6511 1011. Fax +65 6250 0830

China, 11/F, China Youth Plaza, No.19 North Rd of East 3rd Ring Rd, Chaoyang District, Beijing 100020, China. Tel. +86 10 6566 6600. Fax +86 10 6566 2583

Middle East, Roundabout 8, Unit AB-07, P.O. Box 17175, Jebel Ali Freezone, Dubai, United Arab Emirates. Tel. +971 4 883 6974. Fax +971 4 883 6836

www.metso.com/valves

