

NUTORK[®]

Your Partner of Flow Control System

FLOATING BALL VALVE

Cast Steel
Forged Steel



www.nutork.com

Your Partner of Flow Control System

NUTORK Corp.

SALES OPERATION CENTER

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NUTORK Reserves the right to change design, materials
or specifications without prior notice and free of
obligation to provide or install such changes on products
sold previously.

Example:

1 FA 9 S / A105N 1N662

1 VALVE SIZE

FA VALVE TYPE

Symbol	Valve Type	Symbol	Valve Type	Symbol	Valve Type
FA	1pcs Cast Steel Floating Ball Valve	FE	2pcs Forged Steel Floating Ball Valve	FW	Full Welding Forged Steel Floating Ball Valve
FC	2pcs Cast Steel Floating Ball Valve	FF	3pcs Forged Steel Floating Ball Valve		

VALVE CLASS

Class	150	300	600	800	900	1500	2500
Symbol	1	3	6	8	9	15	25

END CONNECTION

End Connection	Socket Welding End	NPT Screwed End	Butt Welding End	Screwed x Socket	Raised Flange	RTJ Flange	Flat Face Flanged End	Taper Screwed End (150")
Symbol	S	N	B	SN	R	J	F	NB

OPERATOR

Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
/	Lever	M	Electric actuator	BS	Bare shaft	L	Gas over oil actuator
G	Gear operator	P	Pneumatic actuator	H	Hydraulic actuator		

BODY MATERIALS

Body Materials	A105N	LF2	F316	F304	F316L	F304L	ALLOY20	F51
ASTM Ref.	A105N	A350 LF2	A182 F316	A182 F304	A182 F316L	A182 F304L	ALLOY20	A182 F51
Body Materials	WCB	LCB	CF8M	CF8	CF3M	CF3	CN7M	4A
ASTM Ref.	A216 WCB	A352 LCB	A351 CF8M	A351 CF8	A351 CF3M	A351 CF3	A351 CN7M	A890 4A

1N662 TRIM MATERIALS

Seat Insert		"O" Ring		Stem		Ball		Packing	
Symbol	Material	Symbol	Material	Symbol	Material	Symbol	Material	Symbol	Material
1	PTFE	1	NBR	1	A105N+ENP	1	A105N+ENP	1	PTFE
2	RPTFE (15% Glass)	2	VITON A	2	LF2+ENP	2	LF2+ENP	2	Graphite
3	RPTFE (25% Carbon)	3	VITON AED	3	F6a	3	F6a		
4	NYLON PA12	4	VITON B	4	17-4PH	4	17-4PH		
5	NYLON 1010	5	HNBR	5	F304	5	F304		
6	DEVLON 5	6	EPDM	6	F304L	6	F304L		
7	DELFIN	7	PTFE Coated VITON	7	F316	7	F316		
8	PEEK	8	VITON GLT	8	F316L	8	F316L		
9	VITON	N	/	9	F51	9	F51		

Note: Other materials are available upon request.

Blow-out Proof Stem

Stem is designed with collar, which will prevent stem from being blow out, when medium passes through the valve or the valve is disassembled to repair. (Fig.1)

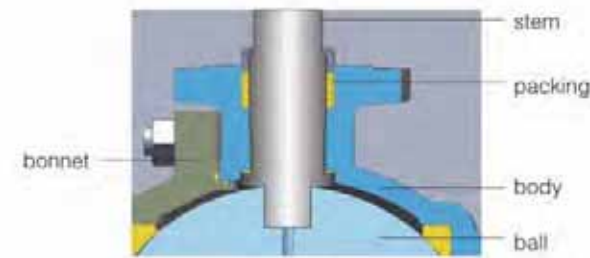


Fig.1

Anti-static Device

When open and close the valve, the friction between the ball and the non-metal seat will generate static charges. To avoid static sparkle, an antistatic device is designed on the valve to derive the accumulated static from the ball. (Fig.2)

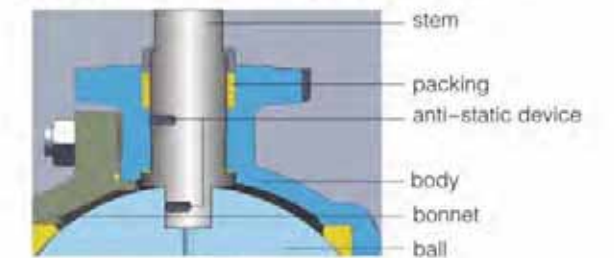
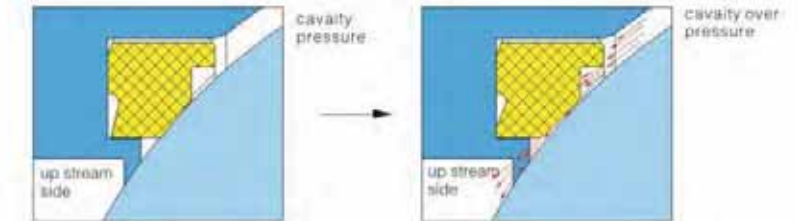


Fig.2

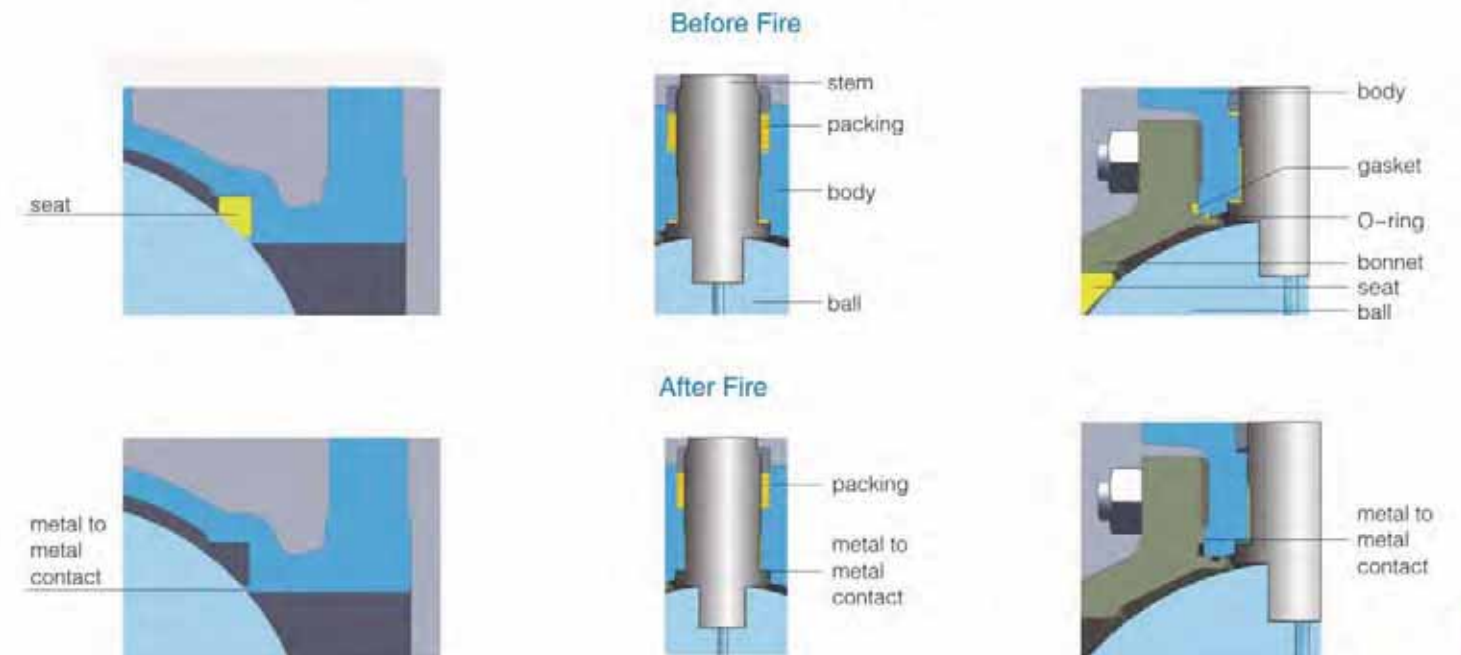
Over Pressure Self Relieving Seat Design

Under close position, when the cavity pressure increased abnormally, the cavity medium will elastic squeeze-out through the up stream side seat ring, and it will prevent cavity pressure over exceeding.



Fire Safe Design

The seat, stem and body joint of ball valve are with fire safe design. When non-metal materials such as O-rings, soft seats etc. And decomposed or deteriorated by fire, ball valve changes to metal to metal auxiliary seal structure, which will prevent/control effectively internal leakage or external leakage.



CAST STEEL FLOATING BALL VALVE SERIES

Cast steel floating ball valve has two type designs,

including:

FA Series -1PC

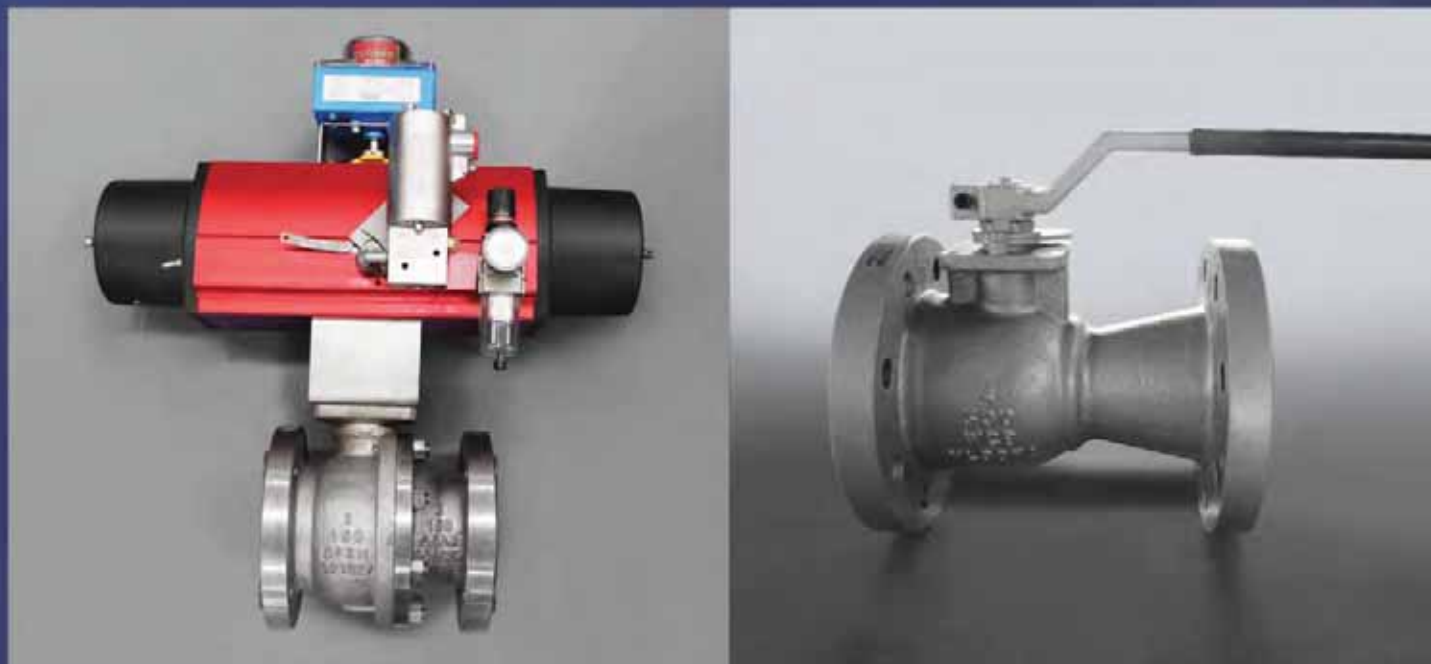
150lb: 1/2" ~10"

300lb: 1/2" ~10"

FC Series -2PCS

150lb: 1/2" ~10"

300lb: 1/2" ~10"



NUTORK® Cast Steel Floating Ball Valves

Designed all to ISO17292, BS5351, ASME B16.34etc.

Fire safe design certification by: API6FA, API 607

Can meet NACE MR 01-75 MR 01-03 specification requirements.

The applied temperature range: soft seated -46°C-200°C

metal seated up to 450°C

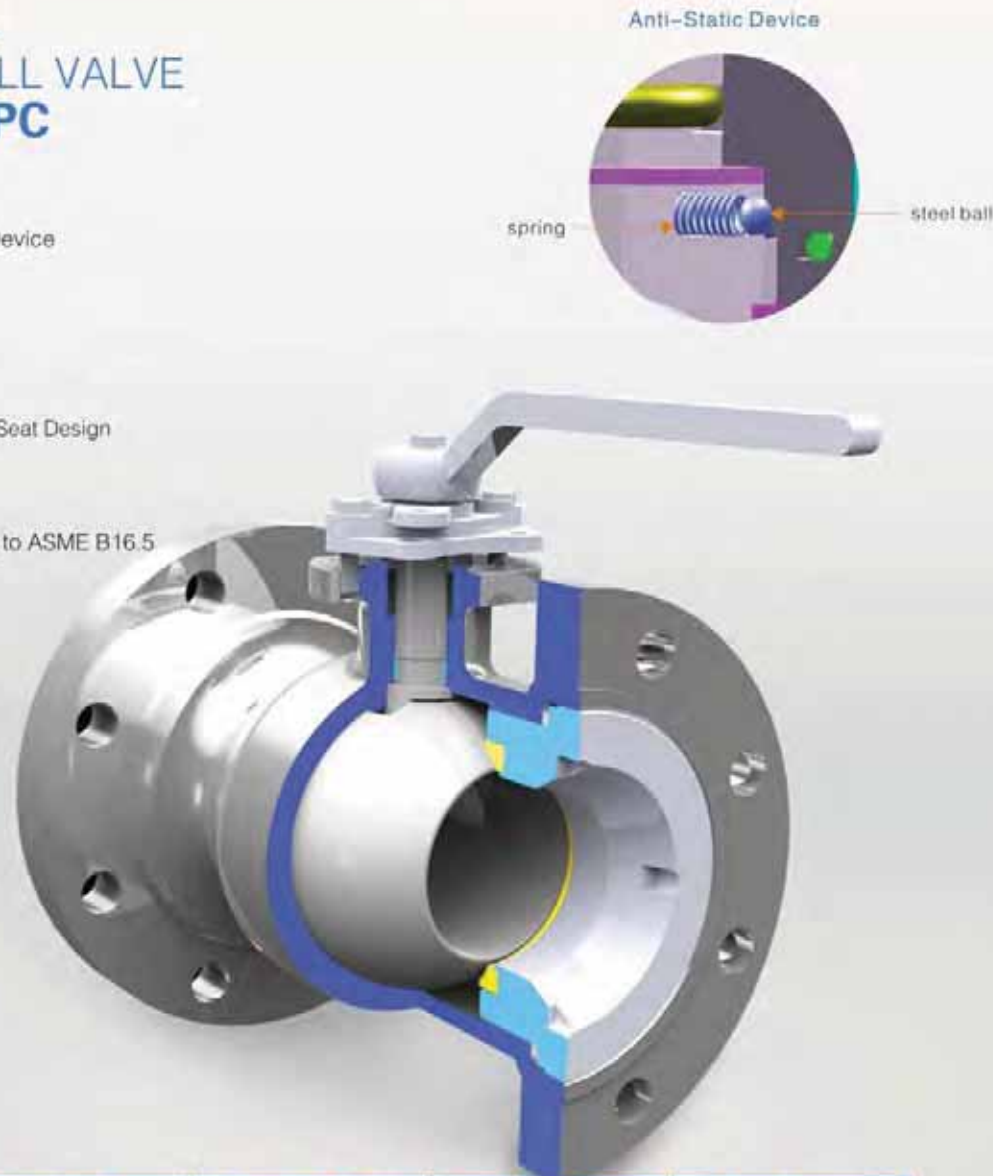


CAST STEEL FLOATING BALL VALVE FA Series-1PC

Design Features

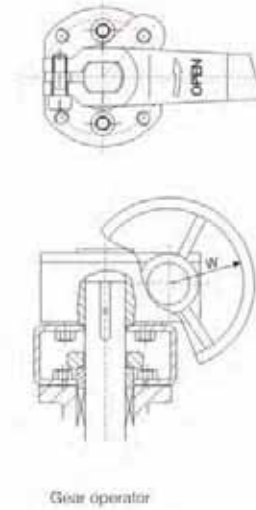
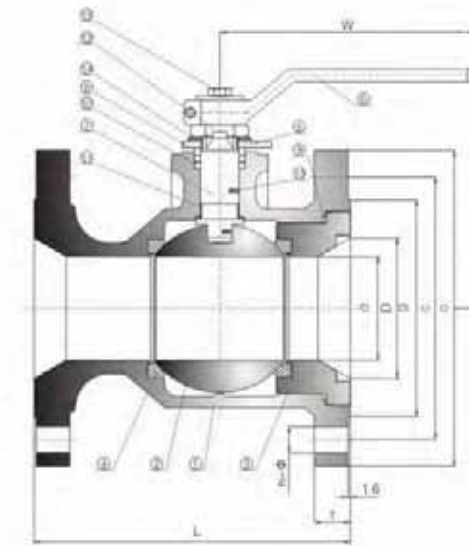
- Secure Line Flow Locking Device
- Blow-out Proof Stem
- Fire Safe Design
- Anti-Static Design
- Low Emission Design
- Over Pressure Self Relieving Seat Design
- ISO5211 Mount Pad

Flanges(RF/RTJ) according to ASME B16.5



NO.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A352 LCB	ASTM A216 WCB
2	Ball	ASTM A105+ENP	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316
3	Bonnet	ASTM A216 WCB	ASTM A351 CF8M	ASTM A352 LCB	ASTM A216 WCB
4	Seat Ring	PTFE	PTFE	PTFE	PTFE
5	Gland Flange	ASTM A216 WCB	ASTM A351 CF8	ASTM A352-LCB	ASTM A216 WCB
6	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
7	Stem	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316
8	Gland	ASTM A276 420	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316
9	Gasket	SPW.304SS+Graphite	SPW.316SS+Graphite	SPW.316SS+Graphite	SPW.304SS+Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	Thrust Washer	PTFE	PTFE	PTFE	PTFE
12	Retaining Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 7M	ASTM A194 2HM
13	Anti-Static Device	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
14	Stop Plate	Carbon Steel	Stainless Steel	Carbon Steel	Carbon Steel
15	Bolt	Carbon Steel	Stainless Steel	Stainless Steel	Stainless Steel

Note: Other materials are available upon request.



150LB Dimension and Weight

Size	d		g		c		o		t		n-φ		H		L		W		Weight		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	15	0.37	9.5	1.38	35	2.37	60.3	3.50	89	0.38	9.6	0.16-0.63	4-16	3.58	91	4.25	108	6.30	160	3.53	2
3/4"	20	0.59	15	1.69	43	2.76	70	3.88	98.5	0.41	10.5	0.16-0.63	4-16	3.86	98	4.61	117	6.30	160	4.63	2
1"	25	0.79	20	2.00	50.8	3.13	79.4	4.25	108	0.44	11.2	0.16-0.63	4-16	3.98	101	5.00	127	6.30	160	5.95	3
1 1/2"	40	1.26	32	2.87	73	3.87	98.4	5.00	127	0.56	14.3	0.16-0.63	4-16	4.61	117	6.50	165	8.27	210	11.24	5
2"	50	1.57	40	3.62	92	4.75	120.7	5.98	152	0.63	15.9	0.16-0.75	4-19	5.28	134	7.01	178	9.84	250	17.42	8
3"	80	2.28	58	5.00	127	6.00	152.4	7.48	190	0.75	19.1	0.16-0.75	4-19	5.87	149	7.99	203	13.78	350	31.53	14
4"	100	3.15	80	6.18	157	7.50	190.5	9.02	229	0.94	24	0.31-0.75	8-19	7.44	189	9.02	229	17.72	450	57.10	26
6"	150	4.37	111	8.50	216	9.50	241.3	10.98	279	1.00	25.4	0.31-0.87	8-22	8.94	227	10.51	267	15.75	*400	96.56	44
8"	200	5.67	144	10.63	270	11.75	298.5	13.58	345	1.13	28.6	0.31-0.87	8-22	10.39	264	11.50	292	19.69	*500	169.76	77
10"	250	10	254	12.75	323.9	14.25	362	16.19	406.4	1.19	30.2	0.47-1	12-25	15.58	395	12.99	330	19.69	*500	440.93	200

300LB Dimension and Weight

Size	d		g		c		o		t		n-φ		H		L		W		Weight		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	15	0.37	9.5	1.38	35	2.63	66.7	3.74	95	0.56	14.3	0.16-0.63	4-16	3.58	91	5.51	140	6.30	160	3.53	2
3/4"	20	0.59	15	1.69	43	3.25	82.6	4.63	117.5	0.63	15.9	0.16-0.75	4-19	3.86	98	5.98	152	6.30	160	4.63	2
1"	25	0.79	20	2.00	50.8	3.50	88.9	4.88	124	0.69	17.5	0.16-0.75	4-19	3.98	101	6.50	165	6.30	160	9.04	4
1 1/2"	40	1.26	32	2.87	73	4.50	114.3	6.12	155.5	0.81	20.7	0.16-0.87	4-22	4.61	117	7.48	190	8.27	210	18.08	8
2"	50	1.57	40	3.62	92	5.00	127	6.50	165	0.88	22.3	0.31-0.75	8-19	5.28	134	8.50	216	9.84	250	24.25	11
3"	80	2.28	58	5.00	127	6.63	168.3	8.27	210	1.13	28.6	0.31-0.87	8-22	5.87	149	11.14	283	13.78	350	47.40	22
4"	100	3.15	80	6.18	157	7.87	200	10.00	254	1.25	31.8	0.31-0.87	8-22	7.44	189	12.01	305	17.72	450	63.90	29
6"	150	4.37	111	8.50	216	10.63	270	12.52	318	1.44	36.6	0.47-0.87	12-22	8.94	227	15.87	403	15.75	*400	154.32	70
8"	200	5.67	144	10.63	270	13.00	330.2	15.00	381	1.63	41.3	0.47-1	12-25	10.39	264	16.50	419	19.69	*500	243.61	111
10"	250	10	254	12.75	323.9	15.25	387.4	17.50	444.5	1.88	47.8	0.63-1.13	16-28.6	15.58	395	17.99	457	23.82	*600	617.30	280

* Gear operator

CAST STEEL FLOATING BALL VALVE FC Series-2PCS

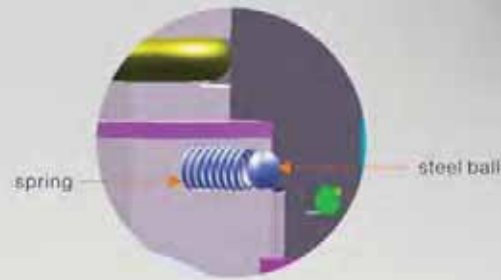
Design Features

- Secure Line Flow Locking Device
- Blow-out Proof Stem
- Fire Safe Design
- Anti-Static Design
- Low Emission Design
- Over Pressure Self Relieving Seat Design
- ISO5211 Mount Pad

Flanges(RF/RTJ) according to ASME B16.5

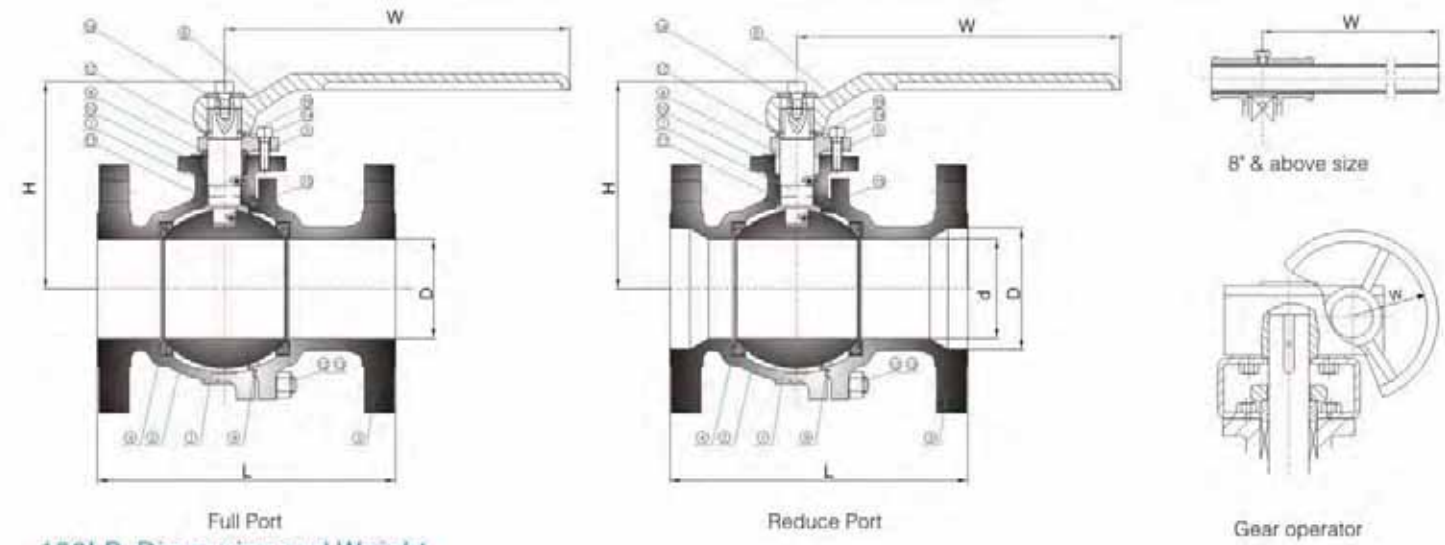


Anti-Static Device



NO.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	ASTM A216-WCB	ASTM A351-CF8M	ASTM A352-LCB	ASTM A216-WCB
2	Ball	ASTM A105+ENP	ASTM A182-F316	ASTM A182-F316	ASTM A182-F316
3	Bonnet	ASTM A216-WCB	ASTM A351-CF8M	ASTM A352-LCB	ASTM A216-WCB
4	Seat Ring	PTFE	PTFE	PTFE	PTFE
5	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A352-LCB	ASTM A216-WCB
6	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
7	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F316	ASTM A182-F316
8	Gland	ASTM A276-420	ASTM A182-F316	ASTM A182-F316	ASTM A182-F316
9	Gasket	SPW.304SS+ Graphite	SPW.316SS+ Graphite	SPW.316SS+ Graphite	SPW.304SS+ Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	Bearing	PTFE	PTFE	PTFE	PTFE
12	Stud	ASTM A193-B7	ASTM A193-B8	ASTM A320-L7M	ASTM A193-B7M
13	Nut	ASTM A194-2H	ASTM A193-8	ASTM A194-7M	ASTM A194-2HM
14	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A320-L7M	ASTM A193-B7M
15	Anti-Static Device	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
16	Stop Plate	Carbon Steel	Stainless Steel	Carbon Steel	Carbon Steel
17	Retainer	Carbon Steel	Stainless Steel	Stainless Steel	Stainless Steel

Note: Other materials are available upon request.



150LB Dimension and Weight

Full Port

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	15	/	/	0.50	13	4.25	108	3.27	80	5.91	150	5.60	2.5
3/4"	20	/	/	0.75	19	4.61	117	3.67	90	5.91	150	6.70	3
1"	25	/	/	1.00	25	5.00	127	4.29	105	7.09	180	10.00	4.5
1-1/2"	40	/	/	1.50	38	6.50	165	5.71	140	11.02	280	15.80	7
2"	50	/	/	2.00	51	7.01	178	6.12	150	11.02	280	21.10	9.5
2-1/2"	65	/	/	2.50	64	7.48	190	6.20	152	15.75	400	33.30	15
3"	80	/	/	3.00	76	7.99	203	7.55	185	15.75	400	42.20	19
4"	100	/	/	4.00	102	9.02	229	10.82	265	25.59	650	66.70	30
5"	125	/	/	5.00	127	14.02	356	11.22	275	41.34	1050	123.90	58
6"	150	/	/	6.00	152	15.50	394	14.49	355	15.75	*400	166.70	90
8"	200	/	/	7.99	203	17.99	457	18.61	456	19.69	*500	288.70	160
10"	250	/	/	10.00	254	20.98	533	20.82	510	23.62	*800	533.30	280

Reduced Port

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2'-1/2"	50*40	1.5	38	2.00	51	7.01	178	6.12	150	11.20	280	18.90	8.5
3'-2"	80*50	2	51	3.00	76	7.99	203	7.55	185	11.20	280	37.80	17
4'-3"	100*80	3	76	4.00	102	9.02	229	10.82	265	15.75	400	67.80	28
6'-4"	150*100	4	102	6.00	152	15.51	394	14.49	355	25.59	650	144.40	65
8'-6"	200*150	6	152	8.00	203	17.99	457	18.61	456	41.34	1050	257.70	116
10'-8"	250*200	8	203	10.00	254	20.98	533	20.82	510	15.75	*400	484.40	218

300LB Dimension and Weight

Full Port

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	15	/	/	0.50	13	5.51	140	3.11	79	5.91	150	7.78	3.5
3/4"	20	/	/	0.75	19	5.98	152	3.78	96	7.35	180	8.89	4
1"	25	/	/	1.00	25	6.50	165	3.78	96	9.39	230	12.22	5.5
1-1/2"	40	/	/	1.50	38	7.48	190	4.72	120	12.24	300	14.95	11
2"	50	/	/	2.00	51	8.50	216	5.79	147	12.24	300	28.89	13
2-1/2"	65	/	/	2.50	64	9.49	241	6.22	158	15.75	400	46.67	21
3"	80	/	/	3.00	76	11.14	283	6.69	170	15.75	400	66.67	30
4"	100	/	/	4.00	102	12.01	305	8.27	210	25.59	650	100.00	45
5"	125	/	/	5.00	127	15.00	381	9.92	252	41.34	1050	144.43	75
6"	150	/	/	6.00	152	15.87	403	9.92	272	41.34	1050	211.09	105
8"	200	/	/	8.00	203	19.76	502	13.46	342	19.69	*500	333.33	200
10"	250	/	/	10.00	254	22.36	568	17.32	440	19.69	*500	716.49	325

Reduced Port

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2'-1/2"	50*40	1.5	38	2.00	51	8.50	216	4.72	120	11.20	280	26.66	12
3'-2"	80*50	2.5	64	3.00	76	11.14	283	5.79	147	15.75	400	53.33	24
4'-3"	100*80	3	76	4.00	102	12.01	305	6.69	170	25.59	650	91.10	41
6'-4"	150*100	4	102	6.00	152	15.87	403	8.27	210	41.34	1050	188.87	85
8'-6"	200*150	6	152	8.00	203	19.76	502	10.71	272	15.75	*400	302.19	136
10'-8"	250*200	8	203	10.00	254	22.36	568	13.46	342	19.69	*500	551.06	290

* Gear operator

FORGED STEEL FLOATING BALL VALVE

Designed all to ISO17292, BS5351, ASME B16.34 etc.

Fire safe design certification by: API6FA, API 607.

Can meet NACE MR 01-75 MR 01-03 specification requirements.

The applied temperature range: soft seated -46°C-200°C
metal seated up to 450°C



800lb: 1/2" ~2"
900lb: 1/2" ~2"
1500lb: 1/2" ~2"
2500lb: 1/2" ~2"

FF Series-3PCS

FE Series-2PCS

150lb: 1/2" ~12"
300lb: 1/2" ~12"
600lb: 1/2" ~6"
900lb: 1/2" ~4"
1500lb: 1/2" ~3"
2500lb: 1/2" ~1"

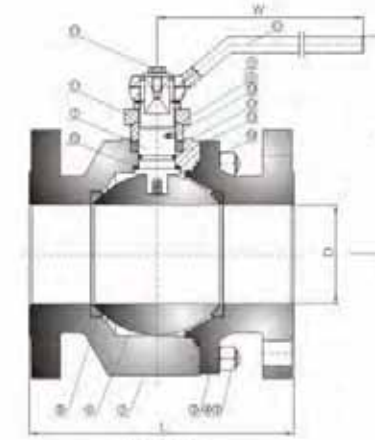
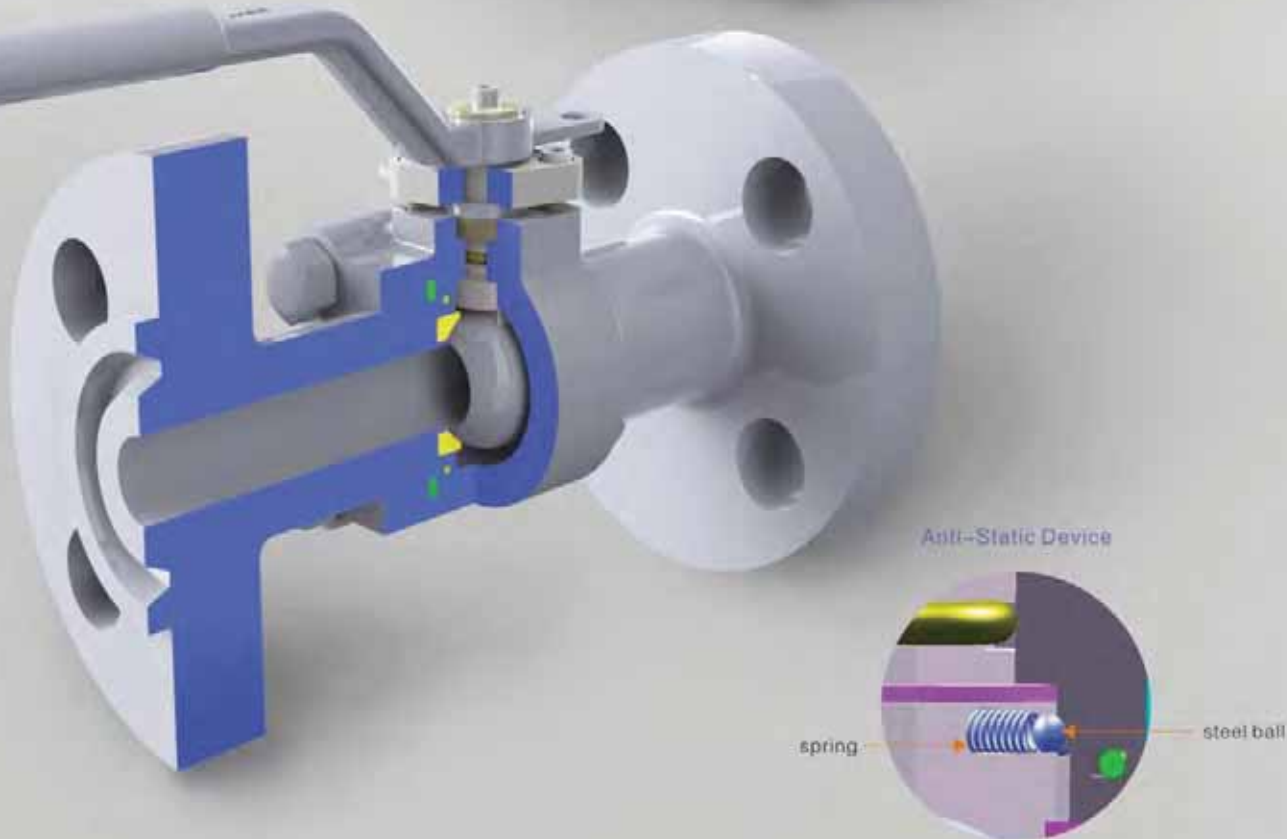
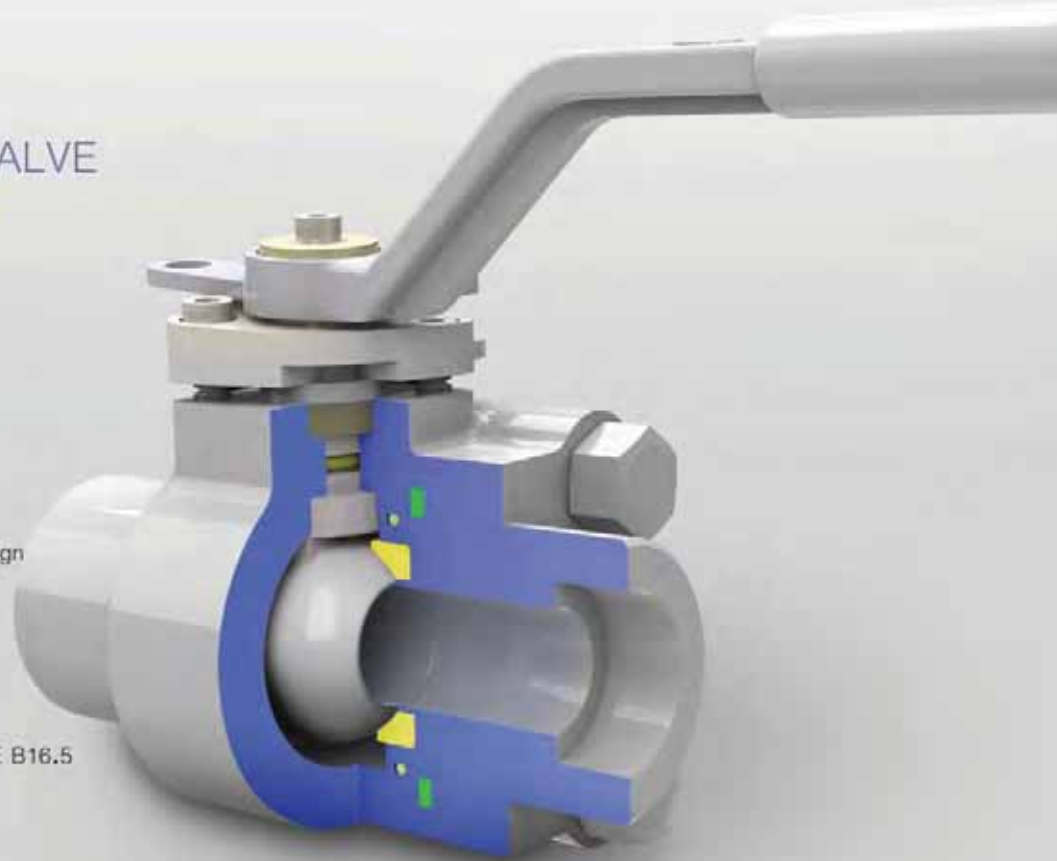


FORGED STEEL FLOATING BALL VALVE FE Series-2PCS

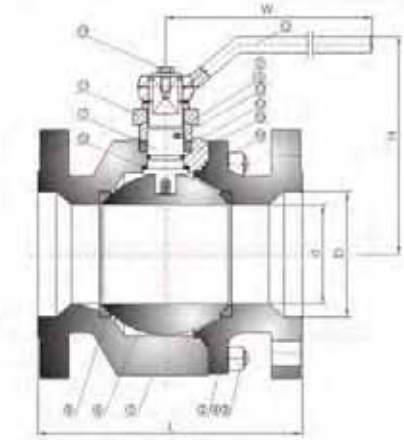
Design Features

- Full port or reduced port
- Fire safe tested design
- Anti-static design
- Anti blow out stem
- Over Pressure Self Relieving Seat Design
- ISO5211 Mount Pad

Flanges(RF/RTJ) according to ASME B16.5
BW ends to ASME B16.25



Full Port



Reduced Port

Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 8	A194 7	A194 2HM
5	Seal	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A182 F6a	A276 410
14	Screwed	CS	SS	CS	CS
15	'O' Ring	VITON	VITON	VITON	VITON
16	Gasket	SPW.SS304+Graphite	SPW.SS316+Graphite	SPW.SS304+Graphite	SPW.SS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request.

Dimension and Weight

Full Port

Size	D		L		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	0.50	13	4.25	108	3.15	80	5.91	150	5.52	3
3/4"	0.75	19	4.61	117	3.54	90	7.09	180	9.49	4
1"	1.00	25	5.00	127	4.13	105	9.06	230	15.23	7
1 1/2"	1.50	38	6.50	165	5.51	140	11.81	300	28.02	13
2"	2.01	51	7.01	178	5.91	150	11.81	300	35.30	16
3"	2.99	76	7.99	203	6.30	160	15.75	400	50.31	23
4"	4.02	102	9.02	229	6.93	176	25.59	650	79.44	36
6"	5.98	152	10.51	267	9.25	235	15.75	*400	238.31	108
8"	7.99	203	11.50	292	12.40	315	19.69	*500	423.65	192
10"	10.00	254	12.99	330	17.95	456	23.62	*600	741.39	336

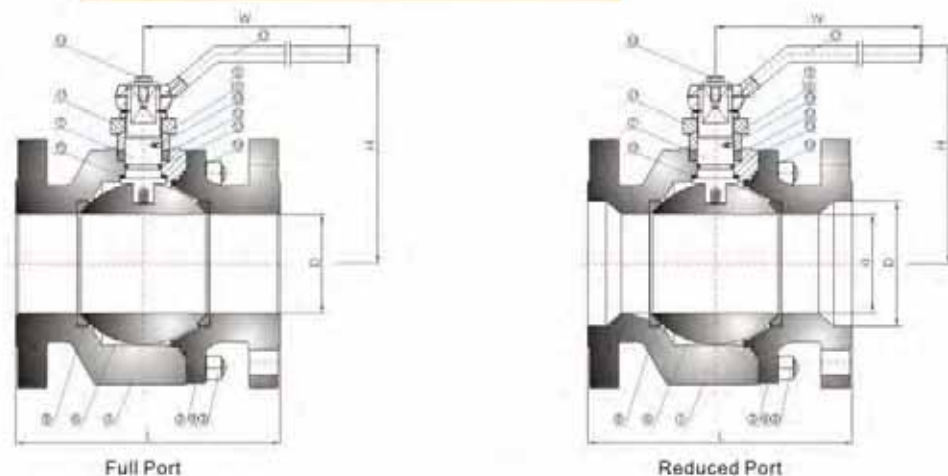
Reduced Port

Size	d		D		L		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4" 1/2"	0.50	13	0.75	19	4.61	117	3.15	80	5.91	150	9.01	4
1" 3/4"	0.75	19	1.00	25	5.00	127	3.54	90	7.09	180	14.46	7
1 1/2" 1"	1.00	25	1.50	38	6.50	165	4.13	105	9.06	230	26.62	12
2" 1 1/2"	1.50	38	2.01	51	7.01	178	5.51	140	11.81	300	33.54	15
3" 2"	2.01	51	2.99	76	7.99	203	5.91	150	11.81	300	47.79	22
4" 3"	2.99	76	4.02	102	9.02	229	6.30	160	15.75	400	75.46	34
6" 4"	4.02	102	5.98	152	10.51	267	6.93	176	25.59	650	226.39	103
8" 6"	5.98	152	7.99	203	11.50	292	9.25	235	15.75	*400	402.47	182
10" 8"	7.99	203	10.00	254	12.99	330	12.40	315	19.69	*500	704.32	319
12" 10"	10.00	254	11.93	303	14.02	356	17.95	456	23.62	*800	763.46	346

* Gear operator

FORGED STEEL FLOATING BALL VALVE FE Series-2PCS

300LB



Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 8	A194 7	A194 2HM
5	Seat	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A182 F6a	A276 410
14	Screwed	CS	SS	CS	CS
15	'O' Ring	VITON	VITON	VITON	VITON
16	Gasket	SPW.SS304+Graphite	SPW.SS316+Graphite	SPW.SS304+Graphite	SPW.SS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request.

Dimension and Weight

Full Port

Size	D		L		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	0.50	13	5.51	140	3.15	80	5.91	150	5.52	3
3/4"	0.75	19	5.98	152	3.54	90	7.09	180	9.49	4
1"	1.00	25	6.50	165	4.13	105	9.06	230	15.23	7
1 1/2"	1.50	38	7.48	190	5.51	140	11.81	300	28.02	13
2"	2.01	51	8.50	216	5.91	150	11.81	300	35.30	16
3"	2.99	76	11.10	282	6.69	170	15.75	400	79.44	36
4"	4.02	102	12.01	305	8.27	210	25.59	650	119.15	54
6"	5.98	152	15.87	403	10.71	272	15.75	*400	278.02	126
8"	7.99	203	16.50	419	13.46	342	19.69	*500	529.57	240
10"	10.00	254	22.36	568	17.32	440	23.62	*600	772.29	350

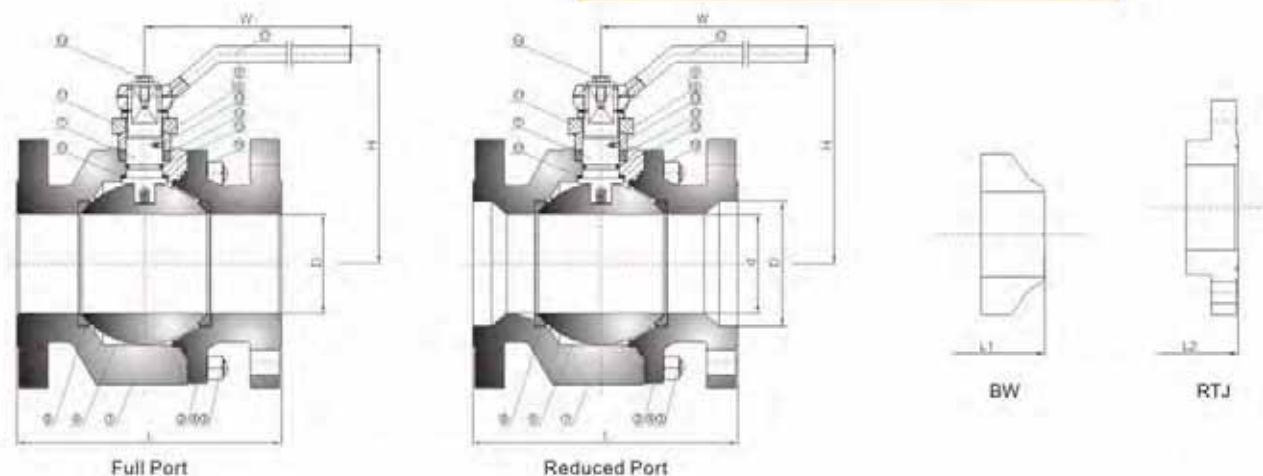
Reduced Port

Size	d		D		L		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4" 1/2"	0.50	13	0.75	19	5.51	140	3.15	80	5.91	150	9.01	4
1" 3/4"	0.75	19	1.00	25	5.98	152	3.54	90	7.09	180	14.46	7
1 1/2" 1"	1.00	25	1.50	38	6.50	165	4.13	105	9.06	230	26.62	12
2" 1 1/2"	1.50	38	2.01	51	7.48	190	5.51	140	11.81	300	33.54	15
3" 2"	2.01	51	2.99	76	8.50	216	5.91	150	11.81	300	75.46	34
4" 3"	2.99	76	4.02	102	11.10	282	6.69	170	15.75	400	113.20	51
6" 4"	4.02	102	5.98	152	12.01	305	8.27	210	25.59	650	264.12	120
8" 6"	5.98	152	7.99	203	15.87	403	10.71	272	15.75	*400	503.09	228
10" 8"	7.99	203	10.00	254	16.50	419	13.46	342	19.69	*500	733.67	333
12" 10"	10.00	254	11.93	303	25.51	648	17.32	440	19.69	*500	964.25	437

* Gear operator

FORGED STEEL FLOATING BALL VALVE FE Series-2PCS

600LB



Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 8	A194 7	A194 2HM
5	Seat	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A182 F6a	A276 410
14	Screwed	CS	SS	CS	CS
15	'O' Ring	VITON	VITON	VITON	VITON
16	Gasket	SPW.SS304+Graphite	SPW.SS316+Graphite	SPW.SS304+Graphite	SPW.SS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request.

Dimension and Weight

Full Port

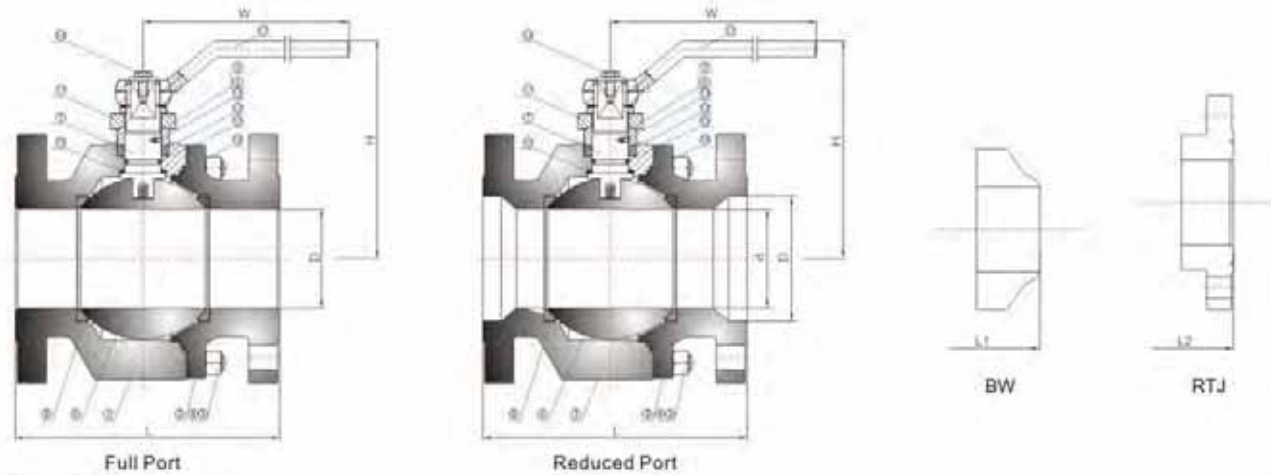
Size	D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	0.50	13	6.50	165	6.42	163	3.15	80	5.91	150	5.52	3
3/4"	0.75	19	7.48	190	7.48	190	3.54	90	7.09	180	9.49	4
1"	1.00	25	8.50	216	8.50	216	4.13	105	9.06	230	15.23	7
1 1/2"	1.50	38	9.49	241	9.49	241	5.51	140	11.81	300	28.02	13
2"	2.01	51	11.50	292	11.61	295	5.91	150	11.81	300	35.30	16
3"	2.99	76	14.02	356	14.13	359	8.27	210	27.56	700	112.53	51
4"	4.02	102	17.01	432	17.13	435	9.33	237	41.34	1050	220.65	100

Reduced Port

Size	d		D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4" 1/2"	0.50	13	0.75	19	7.48	190	7.48	190	3.15	80	5.91	150	9.01	4
1" 3/4"	0.75	19	1.00	25	8.50	216	8.50	216	3.54	90	7.09	180	14.46	7
1 1/2" 1"	1.00	25	1.50	38	9.49	241	9.49	241	4.13	105	9.06	230	26.62	12
2" 1 1/2"	1.50	38	2.01	51	11.50	292	11.61	295	5.51	140	11.81	300	33.54	15
3" 2"	2.01	51	2.99	76	14.02	356	14.13	359	5.91	150	11.81	300	106.91	48
4" 3"	2.99	76	4.02	102	17.01	432	17.13	435	8.27	210	27.56	700	154.46	70
6" 4"	4.02	102	5.91	150	22.01	559	22.13	562	9.33	237	41.34	1050	264.76	120

FORGED STEEL FLOATING BALL VALVE FE Series-2PCS

900LB



Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 8	A194 7	A194 2HM
5	Seat	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A182 F6a	A276 410
14	Screwed	CS	SS	CS	CS
15	'O' Ring	VITON	VITON	VITON	VITON
16	Gasket	SPW.SS304+Graphite	SPW.SS316+Graphite	SPW.SS304+Graphite	SPW.SS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request.

Dimension and Weight

Full Port

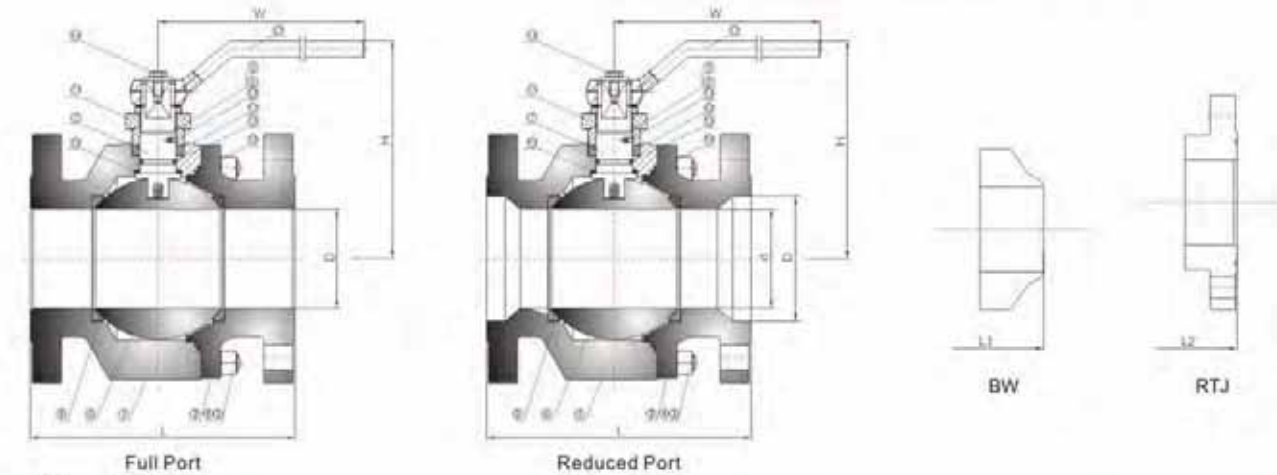
Size	D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb.	kg
1/2"	0.50	13	8.50	216	8.50	216	2.95	75	5.91	150	6.40	3
3/4"	0.75	19	9.02	229	9.02	229	3.54	90	7.09	180	11.03	5
1"	1.00	25	10.00	254	10.00	254	3.94	100	9.06	230	18.09	8
1 1/2"	1.50	38	12.01	305	12.01	305	5.31	135	11.81	300	33.32	15
2"	2.01	51	14.49	368	14.61	371	5.71	145	11.81	300	42.14	19
3"	2.99	76	15.00	381	15.12	384	9.80	249	31.50	800	141.22	64

Reduced Port

Size	d		D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb.	kg
3/4" 1/2"	0.50	13	0.75	19	9.02	229	9.02	229	2.95	75	5.91	150	10.48	5
1" 3/4"	0.75	19	1.00	25	10.00	254	10.00	254	3.54	90	7.09	180	17.19	8
1 1/2" 1"	1.00	25	1.50	38	12.01	305	12.01	305	3.94	100	9.06	230	31.65	14
2" 1 1/2"	1.50	38	2.01	51	14.49	368	14.61	371	5.31	135	11.81	300	40.04	18
3" 2"	2.01	51	2.99	76	15.00	381	15.12	384	5.71	145	11.81	300	134.16	61
4" 3"	2.99	76	4.02	102	17.99	457	18.11	460	9.80	249	31.50	800	194.17	88

FORGED STEEL FLOATING BALL VALVE FE Series-2PCS

1500LB



Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 8	A194 7	A194 2HM
5	Seat	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A182 F6a	A276 410
14	Screwed	CS	SS	CS	CS
15	'O' Ring	VITON	VITON	VITON	VITON
16	Gasket	SPW.SS304+Graphite	SPW.SS316+Graphite	SPW.SS304+Graphite	SPW.SS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request.

Dimension and Weight

Full Port

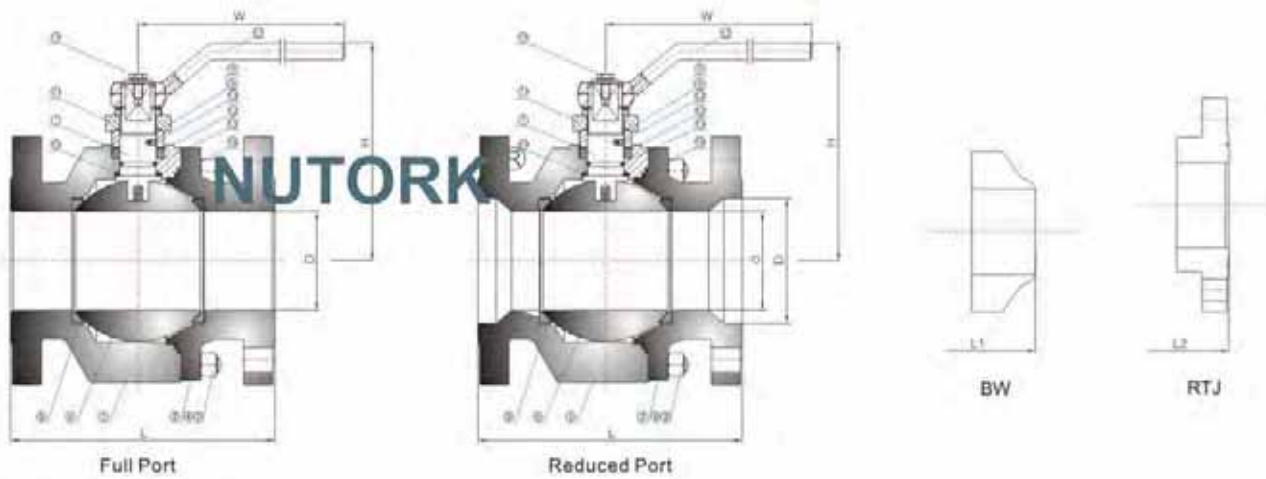
Size	D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb.	kg
1/2"	0.50	13	8.50	216	8.50	216	2.95	75	5.91	150	15.00	7
3/4"	0.75	19	9.02	229	9.02	229	3.54	90	7.09	180	24.27	11
1"	1.00	25	10.00	254	10.00	254	3.94	100	9.06	230	35.30	16
1 1/2"	1.50	38	12.01	305	12.01	305	5.31	135	11.81	300	71.93	33
2"	2.01	51	14.49	368	14.61	371	5.71	145	14.57	370	141.22	64

Reduced Port

Size	d		D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb.	kg
3/4" 1/2"	0.50	13	0.75	19	9.02	229	9.02	229	2.95	75	5.91	150	22.07	10
1" 3/4"	0.75	19	1.00	25	10.00	254	10.00	254	3.54	90	7.09	180	33.10	15
1 1/2" 1"	1.00	25	1.50	38	12.01	305	12.01	305	3.94	100	9.06	230	61.78	28
2" 1 1/2"	1.50	38	2.01	51	14.49	368	14.61	371	5.31	135	11.81	300	90.47	41
3" 2"	2.01	51	2.99	76	15.50	470	16.62	473	5.71	145	14.57	370	187.56	85

FORGED STEEL FLOATING BALL VALVE FE Series-2PCS

2500LB



Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 8	A194 7	A194 2HM
5	Seat	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A276 410	A276 410
14	Screwed	CS	SS	CS	CS
15	*O' Ring	VITON	VITON	VITON	VITON
16	Gasket	SPWSS304+Graphite	SPWSS316+Graphite	SPW.SS304+Graphite	SPWSS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request

Dimension and Weight

Full Port

Size	D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2"	0.50	13	10.39	264	10.39	264	6.02	153	8.50	216	18.76	9
3/4"	0.75	19	10.75	273	10.75	273	6.65	169	10.43	265	29.79	14
1"	1.00	25.4	12.13	308	12.13	308	7.20	183	16.93	430	44.13	20

Reduced Port

Size	d		D		L-L1(RF-BW)		L2(RTJ)		H		W		Weights	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4" x 1/2"	0.50	13	0.75	19	10.75	273	10.75	273	6.02	153	8.50	216	28.30	13
1" x 3/4"	0.75	19	1.00	25	12.13	308	12.13	308	6.65	169	10.43	265	41.92	19

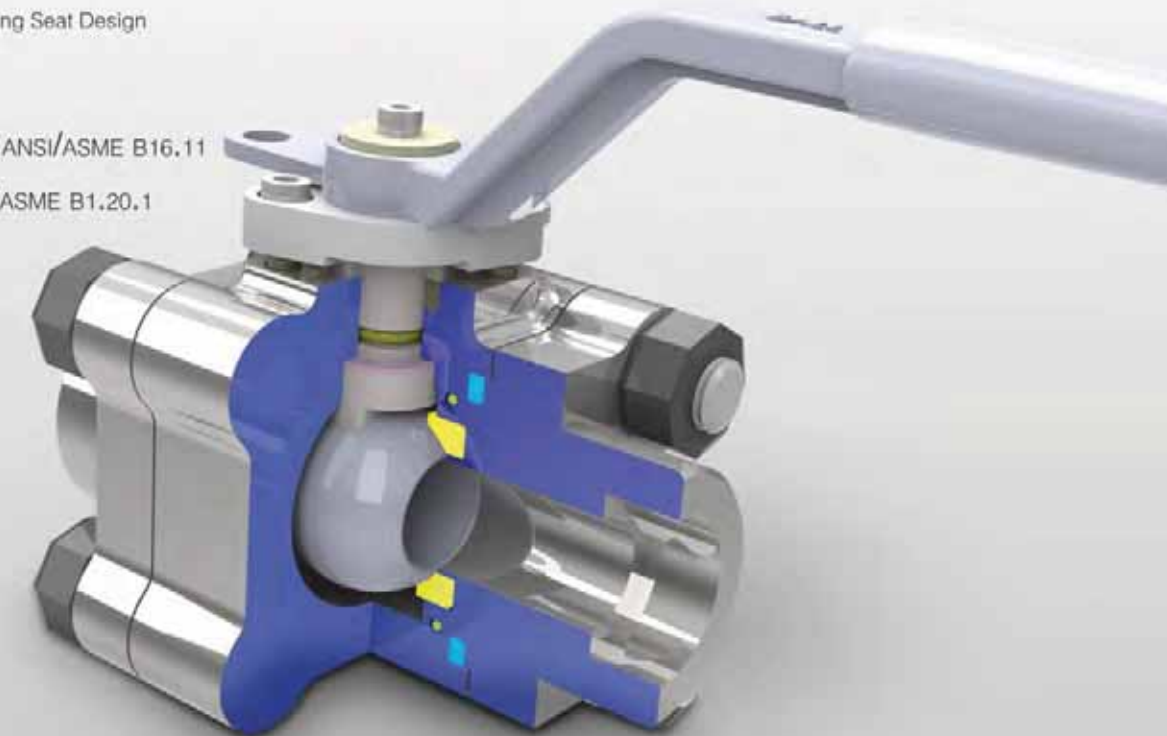
FORGED STEEL FLOATING BALL VALVE FF Series-3PCS

Design Features

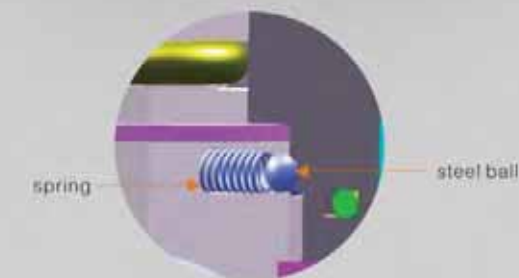
- Full port or reduced port
- Fire safe tested design
- Anti-static design
- Anti blow out stem
- Over Pressure Self Relieving Seat Design
- Integral locking device

Socket welded ends to ANSI/ASME B16.11

Screwed ends to ANSI/ASME B1.20.1

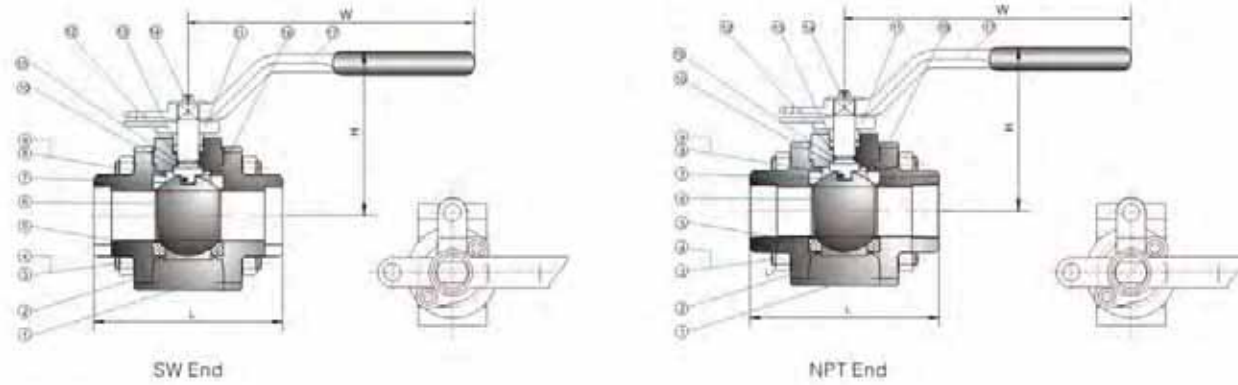


Anti-Static Device



FORGED STEEL FLOATING BALL VALVE FF Series-3PCS

800LB
SW/NPT Ends



Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 B	A194 7	A194 2HM
5	Seat	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A276 410	A276 410
14	Screwed	CS	SS	CS	CS
15	"O" Ring	VITON	VITON	VITON	VITON
16	Gasket	SPWSS304+Graphite	SPWSS316+Graphite	SPWSS304+Graphite	SPWSS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request.

Dimension and Weight Full Port

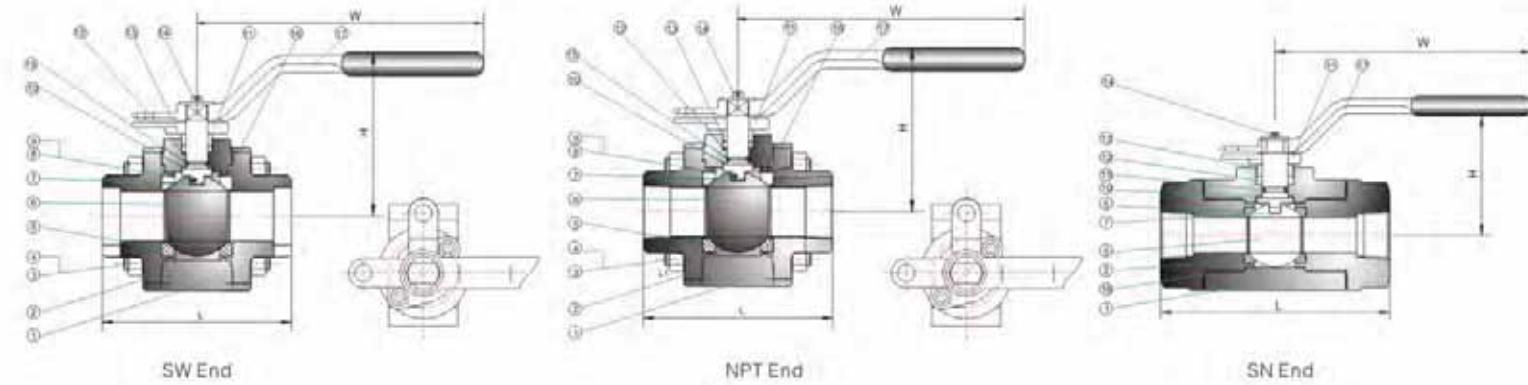
Size	L		H		W		Weights	
	in	mm	in	mm	in	mm	lb	kg
1/4"	3.94	100	3.15	80	5.91	150	4.41	2
1/2"	3.94	100	3.15	80	5.91	150	5.52	3
3/4"	4.45	113	3.54	90	7.09	180	9.49	4
1"	5.04	128	4.13	105	9.06	230	15.23	7
1 1/4"	5.31	135	4.33	110	9.06	230	19.86	9
1 1/2"	6.14	156	5.51	140	11.81	300	28.02	13
2"	6.77	172	5.91	150	11.81	300	35.30	16

Reduced Port

Size	L		H		W		Weights	
	in	mm	in	mm	in	mm	lb	kg
1/2" 1/4"	3.94	100	3.15	80	5.91	150	5.24	2
3/4" 1/2"	4.45	113	3.15	80	5.91	150	9.01	4
1" 3/4"	5.04	128	3.54	90	7.09	180	14.46	7
1 1/2" 1"	6.14	156	4.13	105	9.06	230	26.62	12
2" 1 1/2"	6.77	172	5.51	140	11.81	300	33.54	15

FORGED STEEL FLOATING BALL VALVE FF Series-3PCS

900LB 1500LB 2500LB
SW/NPT Ends



Material Specifications

No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	A105N	A182 F316(L)	A350 LF2	A105N
2	Bonnet	A105N	A182 F316(L)	A350 LF2	A105N
3	Bolt	A193 B7	A193 B8	A320 L7	A193 B7M
4	Nut	A194 2H	A194 B	A194 7	A194 2HM
5	Seat	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	F316	A182 F316(L)	A182 F6a	F316
7	Stem	F316	A182 F316(L)	A182 F6a	F316
8	Spring	SS304	SS304	SS304	SS304
9	Steel Ball	SS304	SS304	SS304	SS304
10	Thrust Collar	PTFE	PTFE	PTFE	PTFE
11	Holding Plate	WCB	SS316	WCB	WCB
12	Packing	Graphite	Graphite	Graphite	Graphite
13	Gland	A276 410	A182 F316(L)	A276 410	A276 410
14	Screwed	CS	SS	CS	CS
15	"O" Ring	VITON	VITON	VITON	VITON
16	Gasket	SPWSS304+Graphite	SPWSS316+Graphite	SPWSS304+Graphite	SPWSS304+Graphite
17	Handle	WCB	WCB	WCB	WCB

Note: Other materials are available upon request.

Dimension and Weight Full Port

Size	L		H		W		Weights	
	in	mm	in	mm	in	mm	lb	kg
1/4"	3.94	100	3.15	80	5.91	150	4.41	2
1/2"	3.94	100	3.15	80	5.91	150	5.52	3
3/4"	4.45	113	3.54	90	7.09	180	9.49	4
1"	5.04	128	4.13	105	9.06	230	15.23	7
1 1/4"	5.31	135	4.33	110	9.06	230	19.86	9
1 1/2"	6.14	156	5.51	140	11.81	300	28.02	13
2"	6.77	172	5.91	150	11.81	300	35.30	16

Reduced Port

Size	L		H		W		Weights	
	in	mm	in	mm	in	mm	lb	kg
1/2" 1/4"	3.94	100	3.15	80	5.91	150	5.24	2
3/4" 1/2"	4.45	113	3.15	80	5.91	150	9.01	4
1" 3/4"	5.04	128	3.54	90	7.09	180	14.46	7
1 1/2" 1"	6.14	156	4.13	105	9.06	230	26.62	12
2" 1 1/2"	6.77	172	5.51	140	11.81	300	33.54	15

Seat

Properties		PTFE	NYLON	PEEK	PCTFE	DEVLON V
Temperature Range ° F		-328 ~ 428	-58 ~ 248	-148 ~ 500	-328 ~ 302	-148 ~ 302
Temperature Range ° C		-200 ~ 220	-50 ~ 120	-100 ~ 260	-200 ~ 150	-100 ~ 150
Pressure rating		150 ~ 600	150 ~ 1500	150 ~ 2500	150 ~ 1500	150 ~ 1500
Mechanical Property	Hardness(D)	58	72	88	85	78
	Tensile Strength(Mpa)	14 ~ 34	55.2	134	35.9	79.9
	Tensile Elongation(break, %)	350	250	2.2	150	5.4
Physical Property	Specific Gravity(g/cm3)	2.17	1.02	1.44	2.12	1.14
	Water Absorption 24hrs(%)	0.00	1	0.06	0.00	0.1
	Water Absorption saturation	<0.01	1.6	0.2	<0.01	3
Service Application		Chemical&low temperature	High pressure & Hydrocarbon	High pressure & temperature	Cryogenic	High pressure & Hydrocarbon

O-Ring

Type	NBR	HNBR	VITON	FFKM	EPDM
Temperature Range ° F	-22 ~ 230	-40 ~ 302	-4 ~ 392	-4 ~ 620	-58 ~ 302
Temperature Range ° C	-30 ~ 110	-40 ~ 150	-20 ~ 200	-20 ~ 327	-50 ~ 150
Specific Gravity(g/cm3)	1.31	1.34	1.85	2	0.87
Hardness(D)	75	75	75	75	75

Flow Coefficient(Cv value)

Size (inch)	150LB	300LB	600LB	900LB	1500LB
1/2	25	25	20	16	16
3/4	56	56	48	34	34
1	95	95	64	55	55
1-1/2	308	308	308	165	165
2	500	430	370	320	320
3	1360	1100	1020	920	
4	2500	2000	1850		
6	5300	5250			
8	10750	10100			
10	17500	16820			

*Other elastomer materials available upon request.

Notes

- All the sizes are in full port.
- Pressure Ratings are according to B 16.34.

Method of Calculating Flow

The Flow Coefficient Cv of a valve is the flow rate of water (gallons/minute) through a fully opened valve, with a pressure drop of 1 psi across the valve. To find the flow of liquid through the valve from the Cv, use the following formulas:

Liquid Flow:

$$Q_L = C_v(P/G)^{1/2}$$

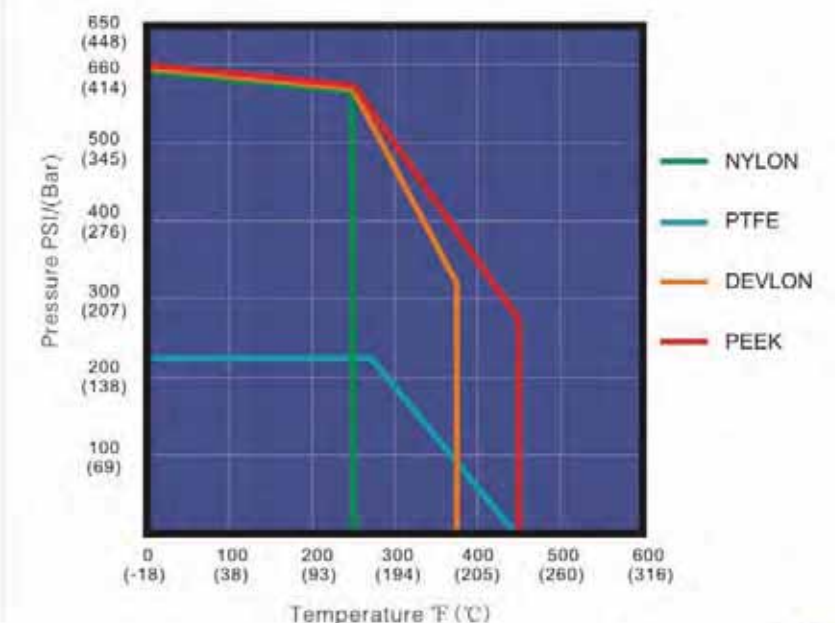
Q_L = Flow rate of liquid (gal./min)
 P = Differential pressure across the valve
 G = Specific gravity of liquid (for water, G = 1)

Gas Flow:

$$Q_g = 61C_v(P_2P/g)^{1/2}$$

(For non-critical flow, P₂/P < 1.0)
 Q_g = Flow rate of gas (CFH at STP)
 P₂ = Outlet pressure (psia)
 G = specific gravity of gas (for air, g = 1.0)

Pressure Temperature Chart



Size	150LB		300LB		400LB		600LB	
	N.M	Ft/Lbs	N.M	Ft/Lbs	N.M	Ft/Lbs	N.M	Ft/Lbs
1/4	5	3.69	6	4.43	8	5.90	12	8.86
3/8	5	3.69	6	4.43	8	5.90	12	8.86
1/2	6	4.43	9	6.64	11	8.12	16	11.81
3/4	10	7.38	12	8.86	14	10.33	20	14.76
1	40	11.07	40	14.76	29	21.40	60	31.00
1-1/4	32	23.62	48	35.42	45	33.21	60	44.28
1-1/2	50	29.52	50	44.28	62	45.76	70	66.42
2	80	36.90	80	51.86	90	66.42	140	95.94
2-1/2	90	59.04	90	66.42	104	76.75	200	110.70
3	120	66.42	120	88.56	138	101.84	320	147.60
4	180	132.84	170	169.74	255	188.19	400	273.06
5	340	250.92	420	309.96				
6	550	619.92	650	686.34				
8	1100	811.80	1850	1424.34				
10	1850	1476.00	4500	3321.00				

Size	800LB		900LB		1500LB		2500LB	
	N.M	Ft/Lbs	N.M	Ft/Lbs	N.M	Ft/Lbs	N.M	Ft/Lbs
1/4	15	11.07	15	11.07	22	16.24	32	23.62
3/8	15	11.07	15	11.07	22	16.24	32	23.62
1/2	19	14.02	20	14.76	32	23.62	56	41.33
3/4	33	24.35	35	25.83	45	33.21	100	73.80
1	65	47.97	70	51.86	120	88.56	190	140.22
1-1/4	90	66.42	100	73.80	170	125.46	310	228.78
1-1/2	130	95.94	140	103.32	189	139.48	360	265.68
2	187	138.01	200	147.60	420	309.96		
2-1/2	280	206.64	320	236.16				
3	403	297.41	431	318.08				

Note: 1. Above torque value are calculated based on room temperature, if other size torque required, please contact with Nutork Valves.
 2. When sizing the actuator, please consider safety fact 1.2~1.5;
 3. For more details, the valve torque will be changed under different working temperature, and the torque will be changed for different seat materials, please contact with Nutork Valves.

Your Partner of Flow Control System

Product Warranty

Seller will replace without charge or refund the purchase price of products provided by seller which prove to be defective in mater or workmanship, provided in each case that the product is proper installed and is used in the service for which Seller recommends it and that written claim, specifying the alleged defect, is presented to the seller within 18 months from the date of shipment or 12 months after installation, whichever occurs first. Seller shall in no event bear any labor, equipment, engineering or other costs incurred in connection with repair or replacement.

The warranty stated in this paragraph is in lieu of all other warranties, either expressed or implied. With respect to warranties, this paragraph states Buyer's exclusive remedy and seller's exclusive liability.