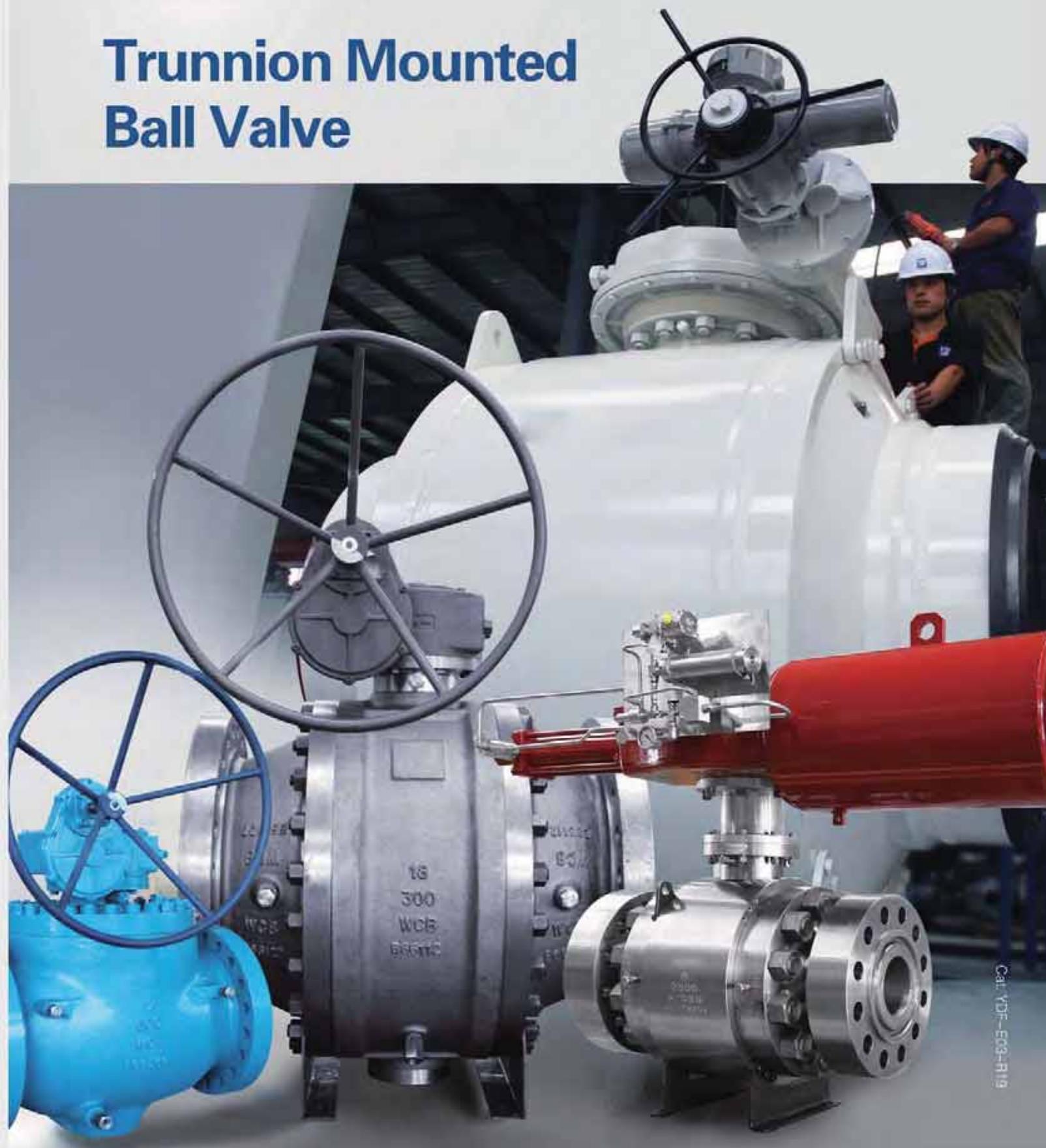


# NUTORK®

Your Partner of Flow Control System

## Trunnion Mounted Ball Valve



[www.nutork.com](http://www.nutork.com)

Your Partner of Flow Control System

**NUTORK Corp.**

### SALES OPERATION CENTER

ADD.: NO.10, Lane 889, Zhu-Guang Road Qing-Pu Dist.,  
Shanghai, China 201702  
TEL: +86-21-59887103  
FAX: +86-21-59887203  
EMAIL: nutork@nutork.com

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.

### FACTORY

ADD.: 5th Floor, Building 4, Zhao Jiajing Road No 530, Songjiang District, Shanghai, China 201611

Example:

12 TF 9 R G A105N / 43111

12

TF

9

R

G

A105N

43111

**VALVE SIZE ( inch )**

Example, for full port design 3 inch means NPS 3 inch, and for reduced port design 3\*2 means connection NPS 3 inch and reduced port 2 inch.

**VALVE TYPE**

Symbol	Valve type	Symbol	Valve type	Symbol	Valve type
TC	Trunnion mounted type, 2PCS Split body, cast steel	TD	Trunnion mounted type, 3PCS Split body, cast steel	TT	Trunnion mounted type, top entry, cast steel
TF	Trunnion mounted type, Split body, forged steel	TM	Trunnion mounted type, 3PCS Split body, metal seated	TFW	Trunnion mounted full welded ball valve

**VALVE CLASS**

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

**END CONNECTIONS**

End	Raised face flanged	RTJ flanged	Flat face flanged	Butt-weld	Grayloc End
Symbol	R	J	F	B	G

**OPERATOR**

Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
I	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	A995 4A

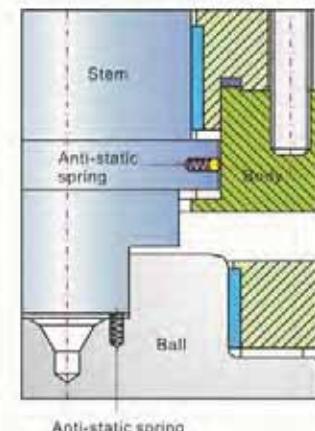
**TRIM MATERIALS**

Seat Insert	O Ring	Stem			Ball	Seat Ring	
Symbol	Material	Symbol	Material	Symbol	Material	Symbol	Material
1	PTFE	1	NBR	1	A105N/ENP	1	A105N/ENP
2	PTFE(25% 玻璃纤维)	2	VITON	2	LF2/ENP	2	LF2/ENP
3	PTFE(25% 玻璃纤维)	3	VITON AED	3	LF2/HARD CR	3	LF2/HARD CR
4	NYLON 12	4	VITON-B	4	410	4	410
5	MOLON	5	HSN(H-NBR)	5	410/ENP	5	410/ENP
6	DEVLON 5	6	ELAST-O-LION 101	6	410/N	6	410/HARD CR
7	DELRIN	7	PTFE Coated VITON	7	410/HARD CR	7	17-4PH
8	PEEK	8	VITON GLT+AED	8	17-4PH	8	17-4PH/ENP
9	VITON	9	LIPSEAL	9	17-4PH/ENP	9	4130/ENP
a	HNBR	a	FKM	a	F53	a	F53

Note: Other materials are available upon customer request.

**BLOW-OUT PROOF STEM DESIGN**

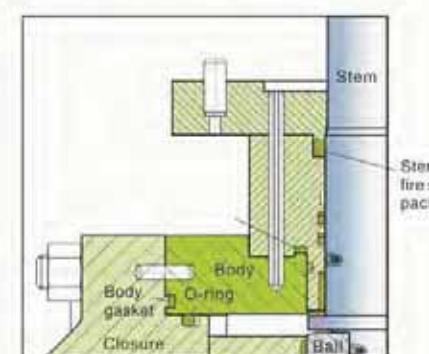
The stem is designed separated from ball, and designed as T slot shape at the bottom side, and gland flange will prevent the stem blow out in case of any abnormal cavity pressure increase.

**ANTI-STATIC DEVICE**

The electrical conductance continuity connect the ball, stem and body, it can avoid the any fire or explosion caused by the static that might be produced and accumulated by friction between the ball and seat ring during valve open or close.

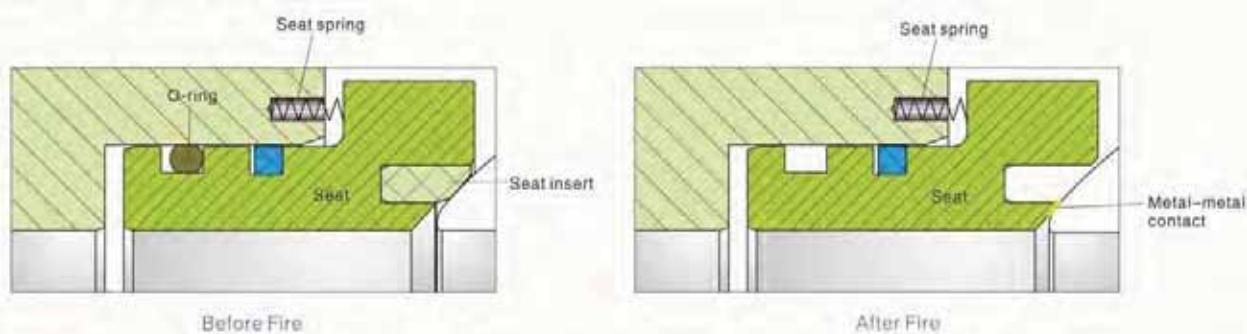
**FIRE SAFE DESIGN****External leakage prevention**

In normal condition, leakage through the valve stem area is prevented by two O-ring seals and a gland packing. Leakage through the valve body and bonnet connection is also blocked by an O-ring seal and a body gasket. In the event of a fire, O-rings will be melted or decomposed under higher temperature in the fire, then the fire safe body gasket, stem packing will prevent external leakage.

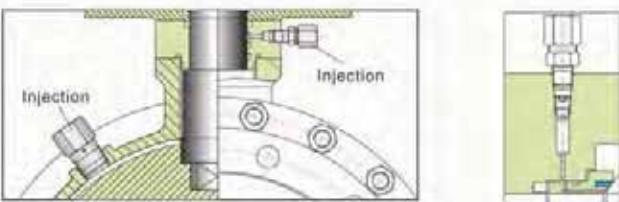
**Internal leakage prevention**

In the event of a fire, all none metal materials, like O-rings, soft seats and back rings, will be melted or decomposed under high temperature in the fire, the edge of metal seat energized by the seat spring will contact with the ball to block the pipeline medium and minimize internal leakage. Also the fire safe graphite packing is compressed into the seat ring groove to prevent process media leakage through the gap between the valve body and seat.

Fire safe certificate : API 607和API6FA

**EMERGENCY SEALANT INJECTION DEVICE**

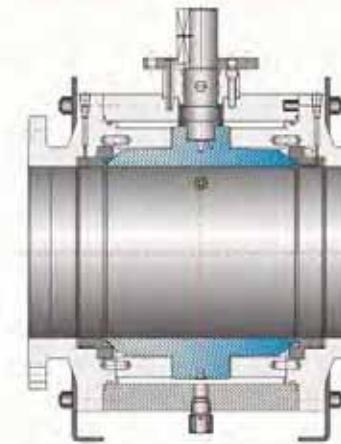
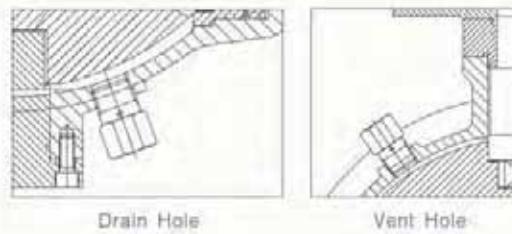
For 6 inch and large size trunnion mounted ball valves will be equipped with emergency sealant injection device on both stem and seat ring area, when the seat ring and stem soft seals are damaged or decomposed in the accident, leakage can be prevented by injection the sealant into the valve through injection valve. The injection valve is internally equipped with a check valve to stop the medium or sealant leaking out.



## DOUBLE BLOCK &amp; BLEED (DBB)

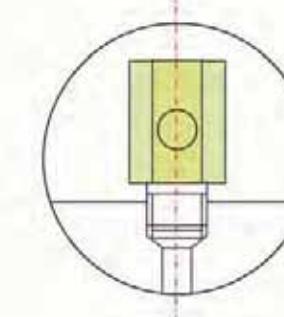
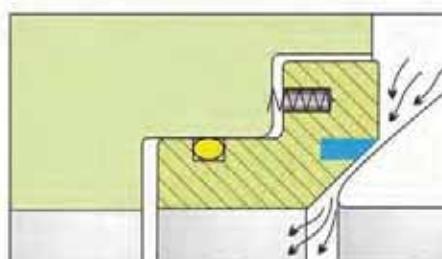
Nutork trunnion mounted ball valve seat ring can cut the medium service from upper stream to achieve double block function.

When the ball is fully open or closed position, even the valve is under medium pressure from both side, the body cavity and the pressure is blocked, and the remaining medium service in the cavity can bleed out through the drain hole or vent hole.



## CAVITY PRESSURE RELIEF

When the pressure in cavity is increasing abnormally, the single piston effective seat can release the overloaded pressure automatically, while for the double piston effective seat designed ball valves, the overloaded pressure will be released through the automatic pressure relief device installed on the valve body.

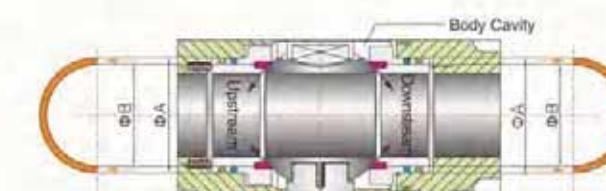


## SELF-RELIEVING SEATS(SINGLE PISTON EFFECT)

The pressure from the upstream and downstream will push the seats to the ball in function. Under fully open or closed position, when the internal force created by the body cavity pressure is greater than the energized spring force plus the force created by the pressure from upstream or downstream side, the seats are pushed away from the ball. Then the overloaded pressure in the body cavity is released automatically.



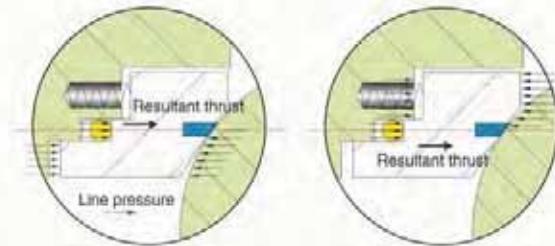
When the medium in the upstream or downstream of the valve, since  $\Phi A > \Phi B$ , the pressure differential makes the medium push the seats to the ball, to achieve a reliable seal.



When the pressure in the cavity is too high, because  $\Phi A > \Phi B$ , the pressure differential makes the cavity medium will push the seats away from the ball, and automatically relieve the overload pressure in the cavity.

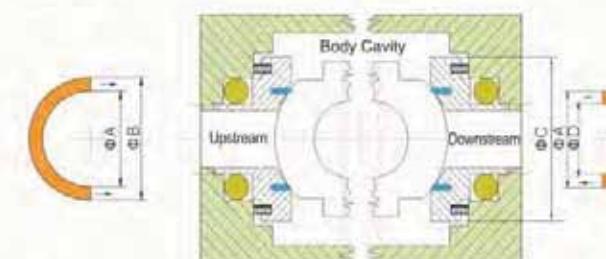
## DOUBLE PISTON EFFECT

Double piston effective seat also known as bi-directional sealing seat, the feature is regardless of the differential medium pressure from upstream or downstream of the ball valve, the valve each seat or the valve cavity can independently withstand rated pressure, and keep both two seats at sealed status, to ensure no leakage continuously. Double piston effective seat does not have the function of automatic pressure relief function, so it requires to install automatic pressure relief device on the body. When the cavity pressure is increasing abnormally, the overloaded pressure can be released through the automatic pressure relief device to ensure the safety operation. The ball valve with double piston effective seat have bi-directional sealing function.



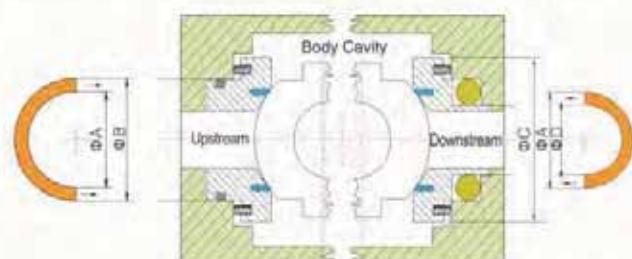
## DOUBLE PISTON EFFECT SEATS(DIB-1)

DIB-1 valve design both seats are double piston effective seats (DPE seat). Each seat can independently withstand the medium pressure from upstream or downstream. The seat of DIB-1 Ball Valve does not have the automatic pressure relief function. So the DIB-1 ball valve requires to install automatic pressure relief device on the body, when the cavity pressure is higher than 1.25 to 1.33 times NPS, overloaded pressure can be released through the automatic pressure relief device to ensure the safety operation.

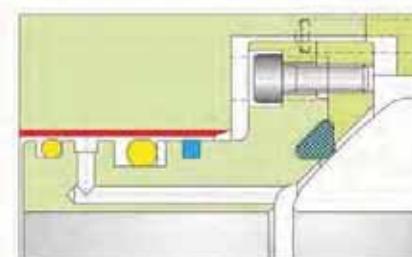


## ONE SELF-RELIEVING SEAT AND ONE DOUBLE PISTON EFFECT SEAT(DIB-2)

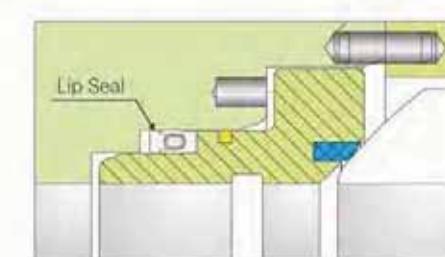
DIB-2 Valve design, one seat is double piston effective Seat, the other seat has self-relieving function. The self-relieving function seat only can withstand the medium pressure from the upstream to realize sealing function. Double piston effective seat can withstand the medium pressure from both direction. When the cavity pressure is increasing abnormally, the double piston effective seat will be pushed toward to ball by the medium pressure. The self-relieving function seat will be pushed away from the ball to realize the pressure self-relief function.



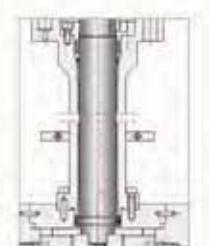
## SPECIAL STRUCTURE DESIGN



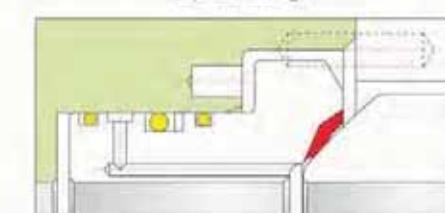
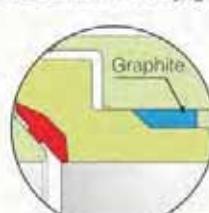
Delta Rubber Seat Ring



Lip Seal Design



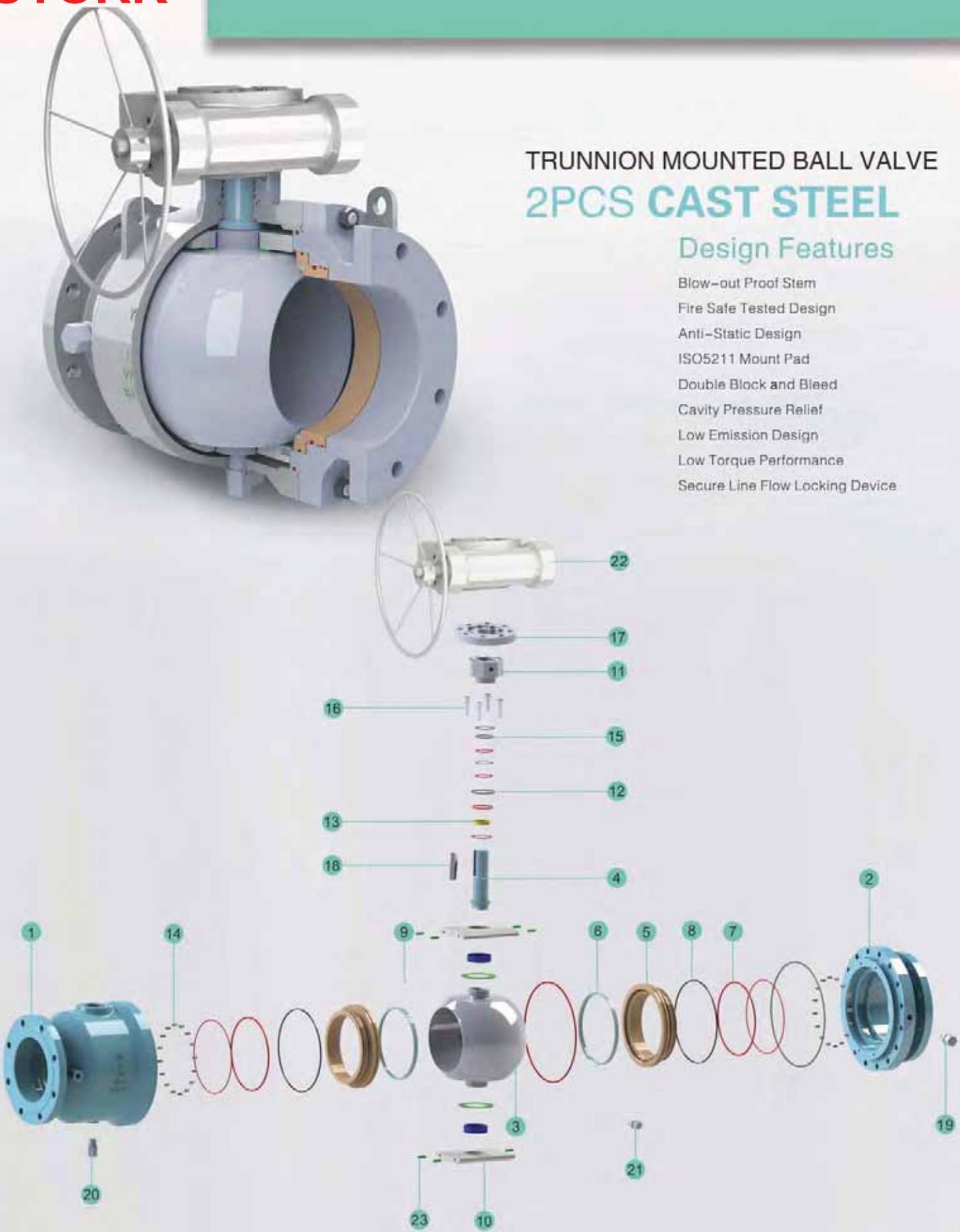
Bonnet Extension for Cryogenic Valve

Top Entry Seat Ring Design  
(Capable for on Line Maintenance)Metal Seat  
(Ball/Seat Surface With Tungsten Carbide Coating Or Ni Alloy Overlay)



## TRUNNION MOUNTED BALL VALVE **CAST STEEL**

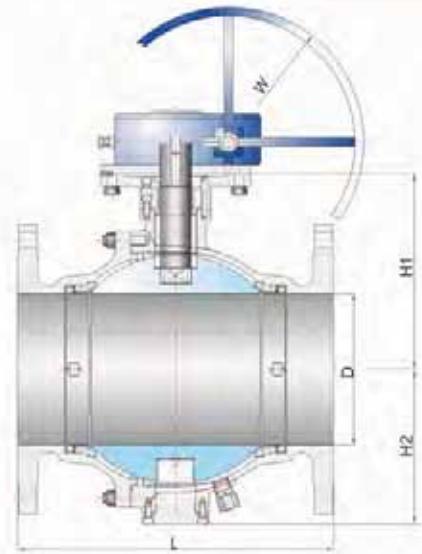
Cast steel trunnion mounted ball valves are designed, manufactured and tested in accordance with API 6D, ASEM B16.34, and certified to API 607 sixth edition, API 6FA 3rd edition fires safe tested design. Nutork cast steel trunnion mounted ball valves has two optional structure design \* two piece side entry\*and "three piece side entry ", and the size range is from 2 inch up to 48 inch, pressure rating is from 150LB up to 600LB.



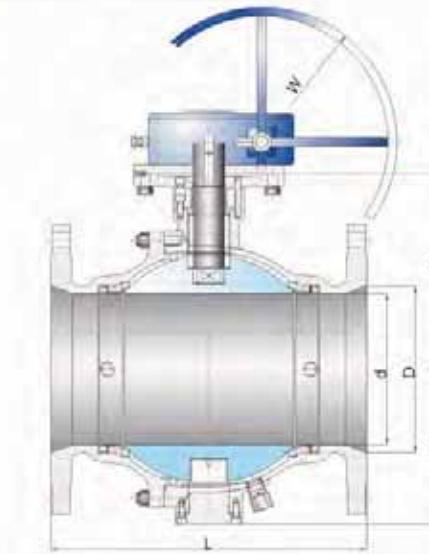
No.	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A352 LCB	ASTM A216 WCB
2	Closure	ASTM A216 WCB	ASTM A351 CF8M	ASTM A352 LCB	ASTM A216 WCB
3	Ball	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
4	Stem	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
5	Seat Ring	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
6	Seat Insert	PTFE	PTFE	PTFE	PTFE
7	O-Ring	VITON A	VITON A	VITON A	VITON A
8	Fire Safe Seal	Graphite	Graphite	Graphite	Graphite
9	Grounding Spring	SS316	SS316	SS316	SS316
10	Lower Trunnion/Trunnion Support	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
11	Gland Cap	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
12	Gasket	SS+Graphite	SS+Graphite	SS+Graphite	SS+Graphite
13	Bearing	SS+PTFE	SS+PTFE	SS+PTFE	SS+PTFE
14	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
15	Fire Safe Gasket	Graphite	Graphite	Graphite	Graphite
16	Screw	ASTM A193 B7	ASTM A193 B8	ASTM A320 L7	ASTM A193 B7M
17	Top Flange	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
18	Key	Carbon Steel	Stainless Steel	Stainless Steel	Carbon Steel
19	Injection	SS 304	SS 316	SS 304	SS 304
20	Drain Valve	SS304	SS316	SS 304	SS 304
21	Vent Valve	SS304	SS316	SS 304	SS 304
22	Operator	Handle or Gear box			
23	Pin	Carbon Steel	Stainless Steel	Stainless Steel	Carbon Steel

TRUNNION MOUNTED BALL VALVE  
2PCS CAST STEEL

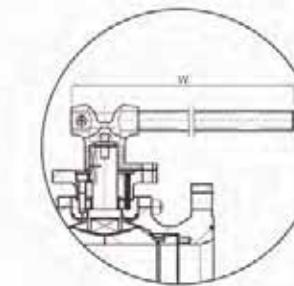
150LB



Full Port



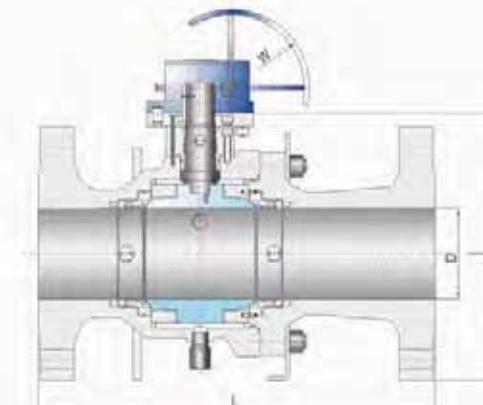
Reduced Port



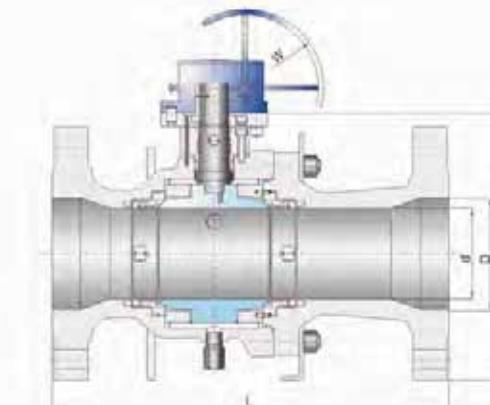
Handle

TRUNNION MOUNTED BALL VALVE  
2PCS CAST STEEL

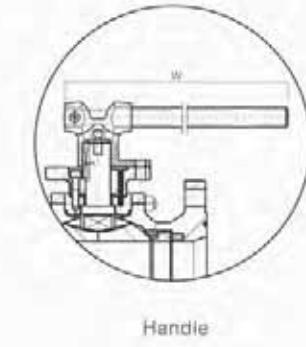
300LB



Full Port



Reduced Port



Handle

Full Port

Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	2.01	51	7.01	178	7.87	200	4.33	110	10.43	265	39.7	18
3	80	2.99	76	7.99	203	11.81	300	4.96	126	11.22	285	70.6	32
4	100	4.02	102	9.02	229	12.40	315	6.50	165	11.22	285	110.2	50
6	150	5.98	152	15.51	394	13.19	335	6.50	165	11.81	*300	295.3	134
8	200	7.99	203	17.99	457	16.94	405	7.87	200	11.81	*300	524.6	238
10	250	10.00	254	21.02	534	16.81	427	8.66	220	11.81	*300	736.1	334
12	300	12.01	305	24.02	610	18.31	465	10.31	262	19.69	*500	1223.2	555
14	350	13.27	337	27.01	686	19.92	506	11.54	293	23.62	*600	1450.2	658
16	400	15.24	387	30.00	762	24.49	622	13.43	341	23.62	*600	1809.8	862

Reduced Port

Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg		
3*2	80*50	2.01	51	2.99	76	7.99	203	7.87	200	4.33	110	10.43	265	58.4	27
4*3	100*80	2.99	76	4.02	102	9.02	229	11.81	300	4.96	126	11.22	285	88.2	40
6*4	150*100	4.02	102	5.98	152	15.51	394	12.40	315	6.50	165	11.22	285	176.3	80
8*6	200*150	5.98	152	7.99	203	17.99	457	13.19	335	6.69	170	11.81	*300	390.2	177
10*8	250*200	7.99	203	10.00	254	21.02	534	15.94	405	7.87	200	11.81	*300	652.4	296
12*10	300*250	10.00	254	12.01	305	24.02	610	16.81	427	8.66	220	11.81	*300	972.0	441
14*10	350*250	12.01	305	13.27	337	27.01	686	16.81	427	8.66	220	11.81	*300	1437.0	652
16*12	400*300	13.27	337	15.24	387	30.00	762	18.31	465	10.31	262	19.69	*500	1664.02	755
18*14	450*350	15.24	387	17.24	438	34.02	864	19.92	506	11.54	293	23.62	*600	2201.8	999

\* Gear box

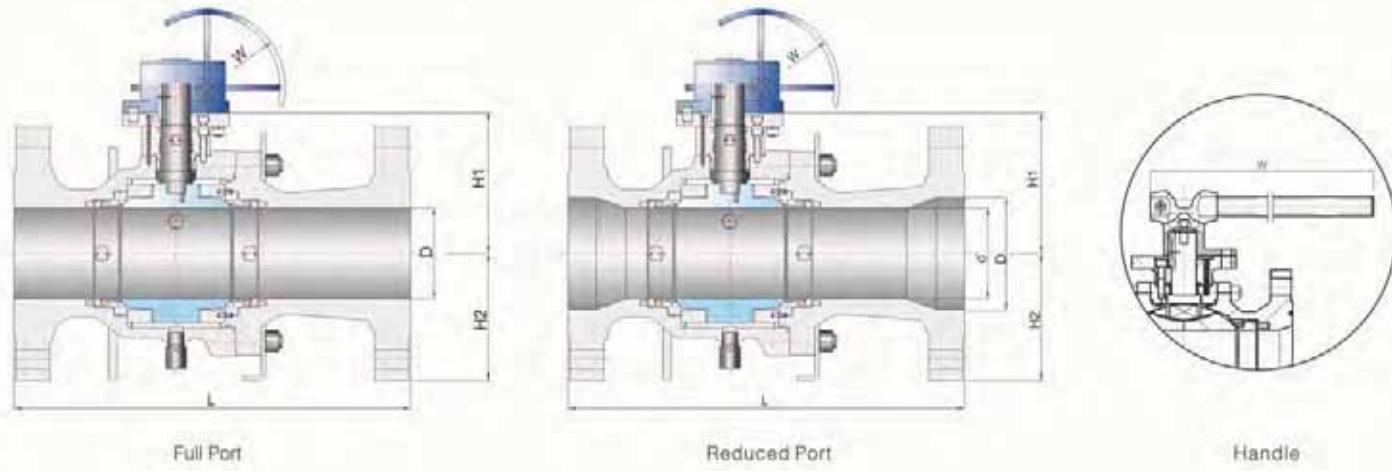
Reduced Port

Size		d		D		L		H1		H2		W		Weight						
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg							
3*2	80*50	2.01	51	2.99	76	7.99	203	7.87	283	8.11	206	4.45	113	10.43	265	79.4	36			
4*3	100*80	2.99	76	4.02	102	9.02	229	11.81	305	12.40	315	5.08	129	15.75	400	125.6	57			
6*4	150*100	4.02	102	5.98	152	15.51	394	12.40	315	6.65	169	29.53	750	271.1	123					
8*6	200*150	5.98	152	7.99	203	17.99	457	13.19	303	19.76	502	13.58	345	5.83	148	11.81	*300	483.8	219.5	
10*8	250*200	7.99	203	10.00	254	21.02	534	15.94	405	7.87	223	568	16.81	427	8.90	226	11.81	*300	727.3	330
12*10	300*250	10.00	254	12.01	305	24.02	610	16.81	427	8.66	220	11.81	*300	972.0	441					
14*10	350*250	12.01	305	13.27	337	27.01	686	16.81	427	8.66	220	11.81	*300	1437.0	652					
16*12	400*300	13.27	337	15.24	387	30.00	762	18.31	465	10.31	262	19.69	*500	1664.02	755					
18*14	450*350	15.24	387	17.24	438	34.02	864	19.92	506	11.54	293	23.62	*600	2201.8	999					

\* Gear box

TRUNNION MOUNTED BALL VALVE  
2PCS CAST STEEL

600LB



Full Port

Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	2.01	51	7.01	178	7.87	200	4.33	110	10.43	265	59.5	27
3	80	2.99	76	7.99	203	11.81	300	4.96	126	11.22	285	119.0	54
4	100	4.02	102	9.02	229	12.40	315	6.50	165	11.22	285	198.4	90
6	150	5.98	152	15.51	394	13.19	335	6.50	165	11.81	*300	656.8	298
8	200	7.99	203	17.99	457	15.94	405	7.87	200	11.81	*300	886.0	402
10	250	10.00	254	21.02	534	16.81	427	8.66	220	11.81	*300	1289.3	585
12	300	12.01	305	24.02	610	18.31	465	10.31	262	19.69	*500	1858.0	843
14	350	13.27	337	27.01	686	19.02	506	11.54	293	23.62	*600	2448.6	1111
16	400	15.24	387	30.00	762	24.49	622	13.43	341	23.62	*800	3306	1500

Reduced Port

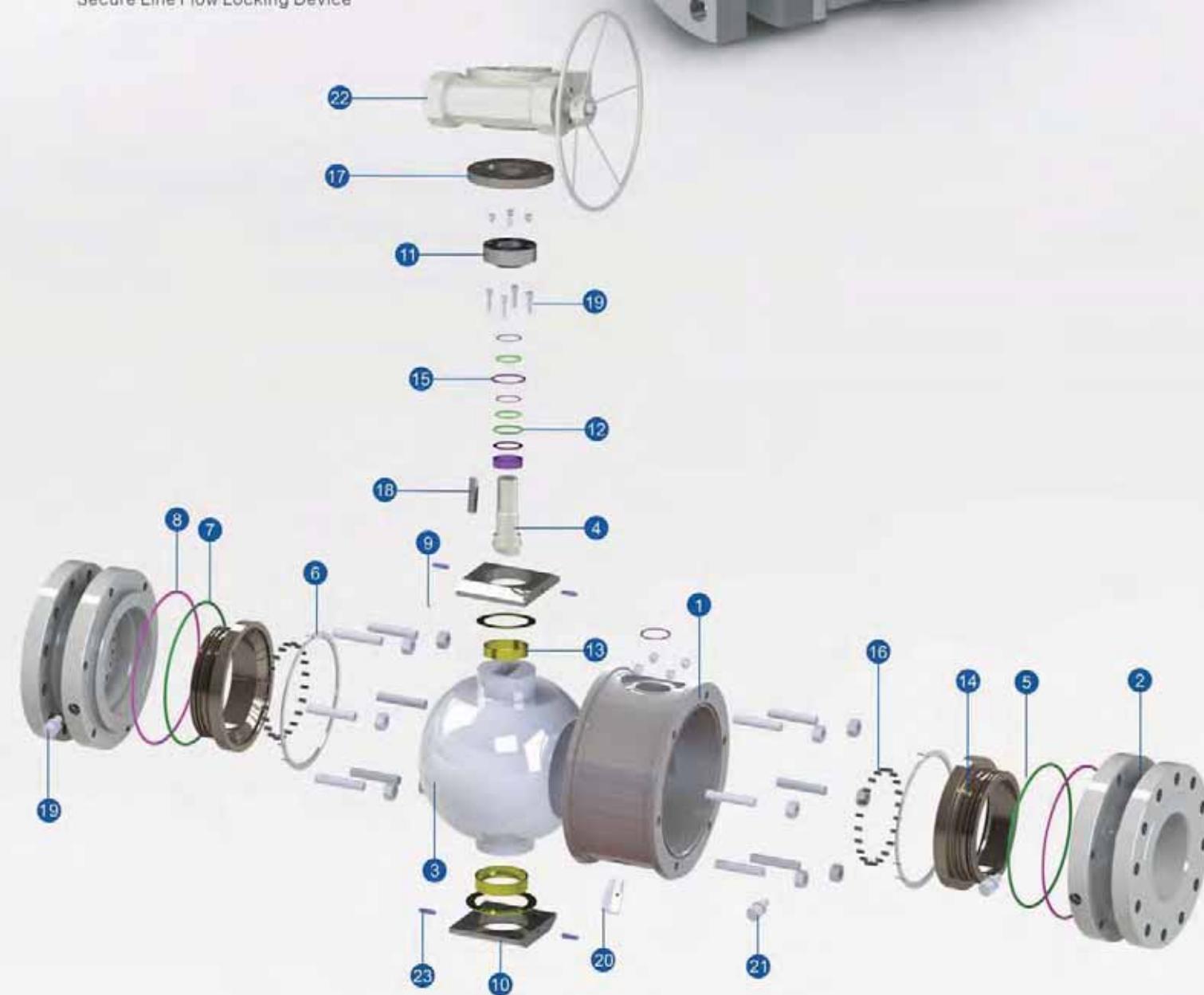
Size		D		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/2	80*50	2.01	51	2.99	76	14.20	356	8.11	206	4.45	113	15.75	400	86.0	39
4*3	100*80	2.99	76	4.02	102	17.01	432	12.40	315	4.45	113	15.75	400	158.7	72
6*4	150*100	4.02	102	5.98	152	22.01	559	12.99	330	5.08	129	29.53	750	299.7	136
8*6	200*150	5.98	152	7.99	203	25.98	660	13.58	345	8.85	169	39.37	1000	599.5	272
10*8	250*200	7.99	203	10.00	254	30.98	787	16.34	415	5.83	148	11.81	*300	1018.2	462
12*10	300*250	10.00	254	12.01	305	32.99	838	16.81	427	7.28	185	11.81	*300	1417.2	643
14*10	350*250	12.01	305	13.27	337	35.00	889	16.81	427	7.28	185	11.81	*300	2403.0	1090
16*12	400*300	13.27	337	15.24	387	39.02	991	18.31	465	8.90	226	19.69	*500	2849.8	1293
18*14	450*350	15.24	387	17.24	438	42.99	1092	20.43	519	10.59	269	23.62	*600	4135.8	1876

\* Gear box

TRUNNION MOUNTED BALL VALVE  
3PCS CAST STEEL

Design Features

- Blow-out Proof Stem
- Fire Safe Tested Design
- Anti-Static Design
- ISO5211 Mount Pad
- Double Block and Bleed
- Cavity Pressure Relief
- Low Emission Design
- Low Torque Performance
- Secure Line Flow Locking Device



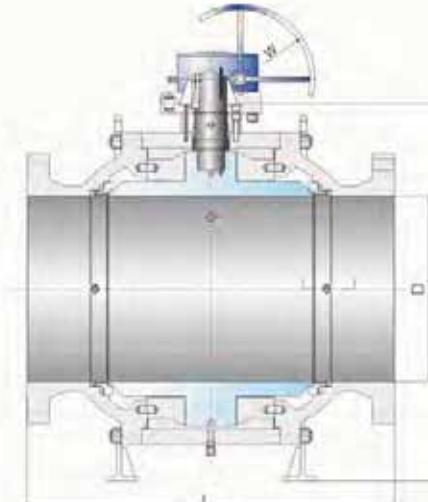
TRUNNION MOUNTED BALL VALVE  
3PCS CAST STEEL

Material List

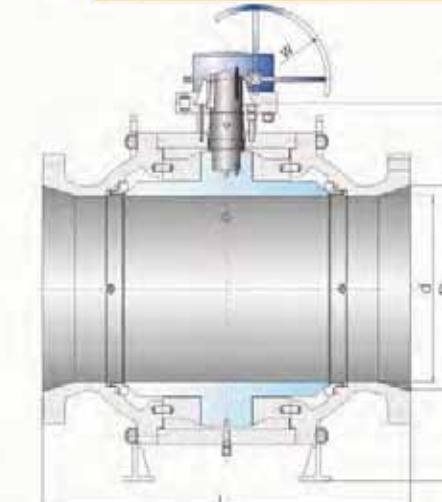
No	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A352 LCB	ASTM A216 WCB
2	Closure	ASTM A216 WCB	ASTM A351 CF8M	ASTM A352 LCB	ASTM A216 WCB
3	Ball	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
4	Stem	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
5	Seat Ring	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
6	Seat Insert	PTFE	PTFE	PTFE	PTFE
7	O-ring	VITON A	VITON A	VITON A	VITON A
8	Fire Safe Seal	Graphite	Graphite	Graphite	Graphite
9	Grounding Spring	SS316	SS316	SS316	SS316
10	Lower Trunnion/ Trunnion Support	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
11	Gland Cap	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
12	Gasket	SS+Graphite	SS+Graphite	SS+Graphite	SS+Graphite
13	Bearing	SS+PTFE	SS+PTFE	SS+PTFE	SS+PTFE
14	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
15	Fire Safe Gasket	Graphite	Graphite	Graphite	Graphite
16	Screw	ASTM A193 B7	ASTM A193 B8	ASTM A320 L7	ASTM A193 B7M
17	Top Flange	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
18	Key	Carbon Steel	Stainless Steel	Stainless Steel	Carbon Steel
19	Injection	SS304	SS316	SS304	SS304
20	Drain Valve	SS304	SS316	SS304	SS304
21	Vent Valve	SS304	SS316	SS304	SS304
22	Operator	Handle or Gear box			
23	Pin	Carbon Steel	Stainless Steel	Stainless Steel	Carbon Steel

TRUNNION MOUNTED BALL VALVE  
3PCS CAST STEEL

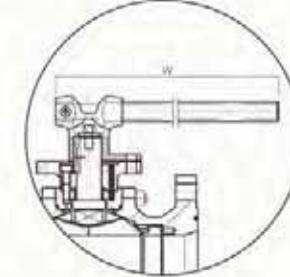
150LB



Full Port



Reduced Port



Handle

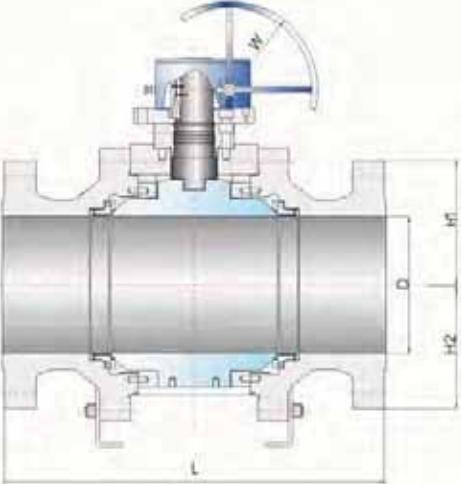
Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
16	400	15.24	387	30.00	762	24.49	622	13.43	341	23.62	*600	2466.3	1119
18	450	17.24	438	34.02	864	26.22	666	16.22	412	23.62	*600	3233.3	1467
20	500	19.25	489	35.98	914	28.74	730	17.13	435	23.62	*600	3984.8	1808
22	550	21.26	540	39.02	991	32.80	833	18.90	480	23.62	*600	6031.7	2283
24	600	23.27	591	42.01	1067	35.24	895	20.39	518	31.50	*800	7160.8	3249
26	650	25.00	635	45.00	1143	35.43	900	21.06	535	31.50	*800	7722.8	3504
28	700	27.01	686	49.02	1245	36.81	935	21.34	542	31.50	*800	9503.6	4312
30	750	29.02	737	50.98	1295	39.76	1010	23.82	605	31.50	*800	11502.7	5219
32	800	30.75	781	54.02	1372	41.73	1060	25.59	650	31.50	*800	13019.0	5907
34	850	32.76	832	57.99	1473	42.40	1077	25.59	650	31.50	*800	15029.1	6819
36	900	34.49	876	60.00	1524	43.90	1115	27.56	700	31.50	*800	18068.4	8198
40	1000	38.50	978	67.99	1727	55.12	1400	34.06	865	31.50	*800	23745.9	10774
42	1050	40.24	1022	78.23	1987	62.91	1598	35.43	900	31.50	*800	27016.6	12258
46	1200	45.98	1168	83.46	2120	67.80	1722	41.02	1042	31.50	*800	41477.1	18819
60	1524	57.40	1458	98.03	2490	55.91	1420	57.46	1460	31.50	*800	114938.7	52150

Reduced Port

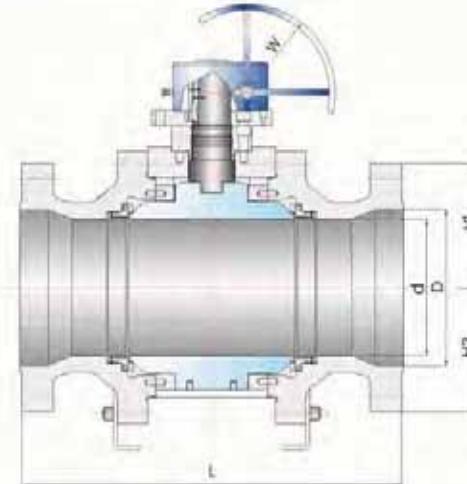
Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
18*14	450*350	13.27	337	17.24	438	34.02	864	19.92	506	11.54	293	23.62	*600	2846.1	1291
20*18	500*400	15.24	387	19.25	489	35.98	914	24.49	622	13.43	341	23.62	*600	3048.9	1383
22*18	550*450	17.24	438	21.26	540	39.02	991	26.22	666	15.43	392	23.62	*600	3366.4	1527
24*20	600*500	19.25	489	23.27	591	42.01	1067	28.74	730	17.13	435	23.62	*600	4548.1	2063
26*22	650*550	21.26	540	25.00	635	45.00	1143	32.80	833	18.90	480	23.62	*600	5165.3	2343
28*24	700*600	23.27	591	27.01	686	49.02	1245	35.24	895	20.39	518	31.50	*800	5952.4	2700
30*24	750*600	23.27	591	29.02	737	50.98	1295	35.24	895	20.39	518	31.50	*800	7226.7	3278
32*26	800*650	25.00	635	30.75	781	54.02	1372	35.43	900	21.06	535	31.50	*800	8829.4	4005
34*28	850*700	27.01	686	32.76	832	57.99	1473	36.81	935	21.34	542	31.50	*800	9799.4	4445
38*30	900*750	29.02	737	34.49	878	60.00	1524	39.78	1010	23.82	605	31.50	*800	12182.8	5526
40*34	1000*850	32.76	832	38.50	978	67.99	1727	42.40	1077	25.59	650	31.50	*800	18077.6	8200
42*36	1050*900	34.49	876	40.24	1022	78.23	1987	43.90	1115	27.56	700	31.50	*800	23966.1	10871
48*40	1200*1000	38.50	978	45.98	1168	83.46	2120	55.12	1400	34.06	865	31.50	*800	29806.0	13520
54*60	1350*1500	51.65	1312	57.40	1458	98.03	2490	50.80	1290	53.95	1370	31.50	*800		

TRUNNION MOUNTED BALL VALVE  
3PCS CAST STEEL

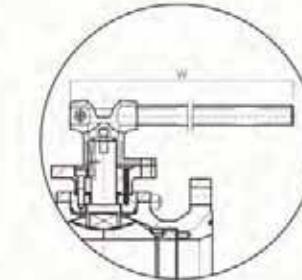
300LB



Full Port



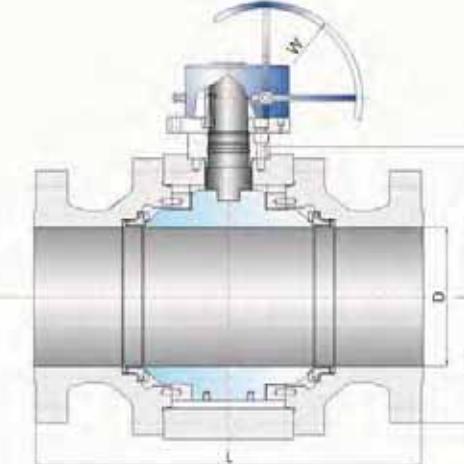
Reduced Port



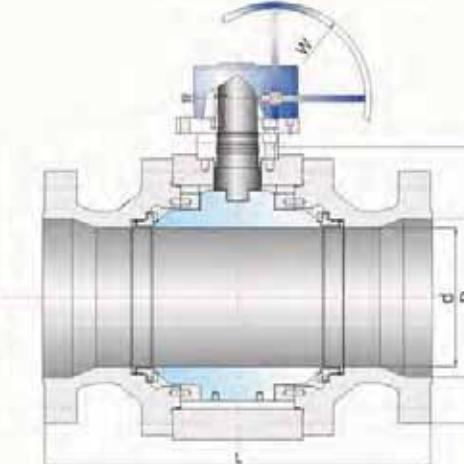
Handle

TRUNNION MOUNTED BALL VALVE  
3PCS CAST STEEL

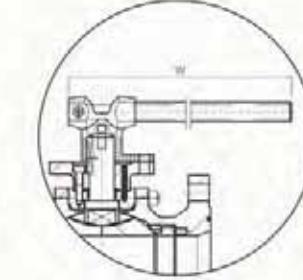
600LB



Full Port



Reduced Port



Handle



RTJ

BW

L2

## Full Port

Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg		
16	400	15.24	387	32.99	838	25.12	638	13.78	350	23.62	*600	2824.1	1281
18	450	17.24	438	35.98	914	26.89	683	15.83	402	23.62	*600	3864.7	1753
20	500	19.25	489	39.02	991	29.45	748	17.56	446	23.62	*600	4724.5	2143
22	550	21.26	540	42.99	1092	33.62	854	19.37	492	23.62	*600	5934.8	2692
24	600	23.27	591	45.00	1143	36.10	917	20.91	531	31.5	*800	7370.0	3343
26	700	27.01	686	52.99	1346	37.72	958	21.89	556	31.5	*800	11333.8	5141
30	750	29.02	737	55.00	1397	40.75	1035	24.41	620	31.5	*800	13445.9	6099
32	800	30.75	781	60.00	1524	42.80	1087	26.22	666	31.5	*800	15304.3	6942
34	850	32.76	832	64.02	1626	43.46	1104	26.22	666	31.5	*800	17423.0	7903
36	900	34.49	876	67.99	1727	45.00	1143	28.27	718	31.5	*800	19056.6	8644
40	1000	38.50	978	75.98	1930	56.50	1435	34.92	887	31.5	*800	26253.7	11455
42	1050	40.24	1022	80.00	2032	64.49	1638	36.34	923	31.5	*800	29651.9	13450
48	1200	45.98	1168	85.43	2170	69.49	1765	42.05	1068	31.5	*800	43981.8	19950
60	1524	57.40	1458	108.07	2745	57.80	1468	59.06	1500	31.5	*800	121528.7	55125

## Reduced Port

Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg		
16*14	400*350	13.27	337	15.24	387	32.99	838	20.43	519	11.81	300	23.62	*600	2160.5	980
18*16	450*400	15.24	387	17.24	438	35.98	914	25.12	638	13.78	350	23.62	*600	2810.9	1275
20*18	500*450	17.24	489	19.25	489	39.02	991	26.89	683	15.83	402	23.62	*600	3428.2	1555
22*18	550*450	17.24	438	21.26	540	42.99	1092	26.89	683	15.83	402	23.62	*600	4914.1	2229
24*20	600*500	19.25	489	23.27	591	45.00	1143	29.45	748	17.56	446	23.62	*600	4539.3	2059
28*24	700*600	23.27	589	27.01	686	52.99	1346	33.62	854	19.37	492	23.62	*800	7054.7	3200
30*24	750*600	23.27	589	29.02	737	55.00	1397	36.10	917	20.91	531	31.5	*800	8981.5	4074
34*28	850*700	27.01	686	32.76	832	64.02	1626	37.72	958	21.89	556	31.5	*800	10681.2	4845
36*30	900*750	29.02	737	34.49	876	67.99	1727	40.75	1035	24.41	620	31.5	*800	13723.6	6225
40*34	1000*850	32.76	832	38.50	978	75.98	1930	43.46	1104	26.22	666	31.5	*800	18077.6	8200
42*36	1050*900	34.49	876	40.24	1022	80.00	2032	45.00	1143	28.27	718	31.5	*800	20282.2	9200
48*40	1200*1000	38.50	978	45.98	1168	85.43	2170	56.50	1435	34.92	887	31.5	*800	33068.8	15000
54*60	1350*1500	51.65	1312	57.40	1458	108.07	2745	52.56	1335	55.52	1410	31.5	*800	80674.0	36670

\* Gear box

## Reduced Port

Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg		
16*14	400*350	13.27	337	15.24	387	39.02	991	20.43	519	11.81	300	23.62	*600	3031.3	1375
18*16	450*400	15.24	387	17.24	438	42.99	1082	25.12	638	13.78	350	23.62	*600	4118.2	1868
20*18	500*450	17.24	489	19.25	489	47.01	1194	26.89	683	15.83	402	23.62	*600	5321.1	2415
22*18	550*450	17.24	438	21.26</											



## TRUNNION MOUNTED BALL VALVE **FORGED STEEL**

Nutork forged steel trunnion mounted ball valves are designed, manufactured and tested in accordance with API 6D, ASME B16.34, and certified to API 607 sixth edition, API 6FA 3rd edition fire safe tested design. It is designed to 3pcs split body side entry and 2pcs split body side entry(2~4 inch), and the valve size range is from 2 inch up to 60 inch, pressure rating is from 150LB up to 2500LB.

## TRUNNION MOUNTED BALL VALVE **FORGED STEEL**

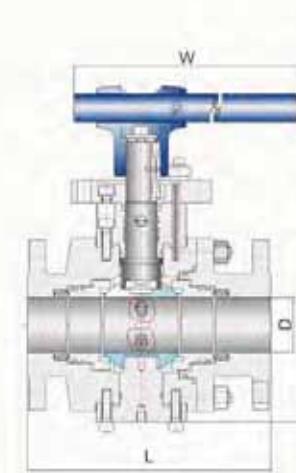
### Design Features

- Blow-out Proof Stem
- Fire Safe Tested Design
- Anti-Static Design
- ISO5211 Mount Pad
- Double Block and Bleed
- Cavity Pressure Relief
- Low Emission Design
- Low Torque Performance
- Secure Line Flow Locking Device

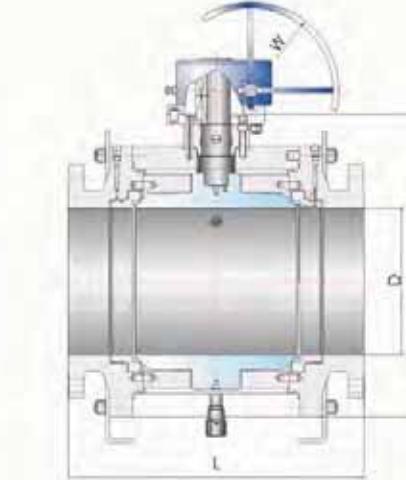
**Note:** 2PCS design for 2~4inch 150~300lb



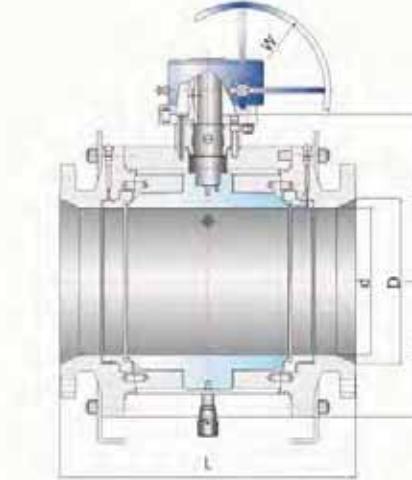
No	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
2	Closure	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
3	Ball	ASTM A105N+ENP	ASTM A182-F316	ASTM A350-LF2+ENP	ASTM A105N+ENP
4	Stem	ASTM A105N+ENP	ASTM A182-F316	ASTM A350-LF2+ENP	ASTM A105N+ENP
5	Seat Ring	ASTM A105N+ENP	ASTM A182-F316	ASTM A350-LF2+ENP	ASTM A105N+ENP
6	Seat Insert	PTFE	PTFE	PTFE	PTFE
7	O-ring	VITON A	VITON A	VITON A	VITON A
8	Fire Safe Seal	Graphite	Graphite	Graphite	Graphite
9	Grounding Spring	SS316	SS316	SS316	SS316
10	Lower Trunnion/ Trunnion Support	ASTM A105N+ENP	ASTM A182-F316	ASTM A350-LF2+ENP	ASTM A105N+ENP
11	Gland Cap	ASTM A105N	ASTM A182-F316	ASTM A350-LF2	ASTM A105N
12	Gasket	SS+Graphite	SS+Graphite	SS+Graphite	SS+Graphite
13	Bearing	SS+PTFE	SS+PTFE	SS+PTFE	SS+PTFE
14	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
15	Fire Safe Gasket	Graphite	Graphite	Graphite	Graphite
16	Screw	ASTM A193 B7	ASTM A193 B8	ASTM A320 L7	ASTM A193 B7M
17	Top Flange	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
18	Key	Carbon Steel	Stainless Steel	Stainless Steel	Carbon Steel
19	Injection	SS304	SS316	SS304	SS304
20	Drain Valve	SS304	SS316	SS304	SS304
21	Vent Valve	SS304	SS316	SS304	SS304
22	Operator	Handle or Gear box			
23	Pin	Carbon Steel	Stainless Steel	Stainless Steel	Carbon Steel



2"-4" Full Port



>6" Full Port



≥6" Reduced Port

#### Full Port

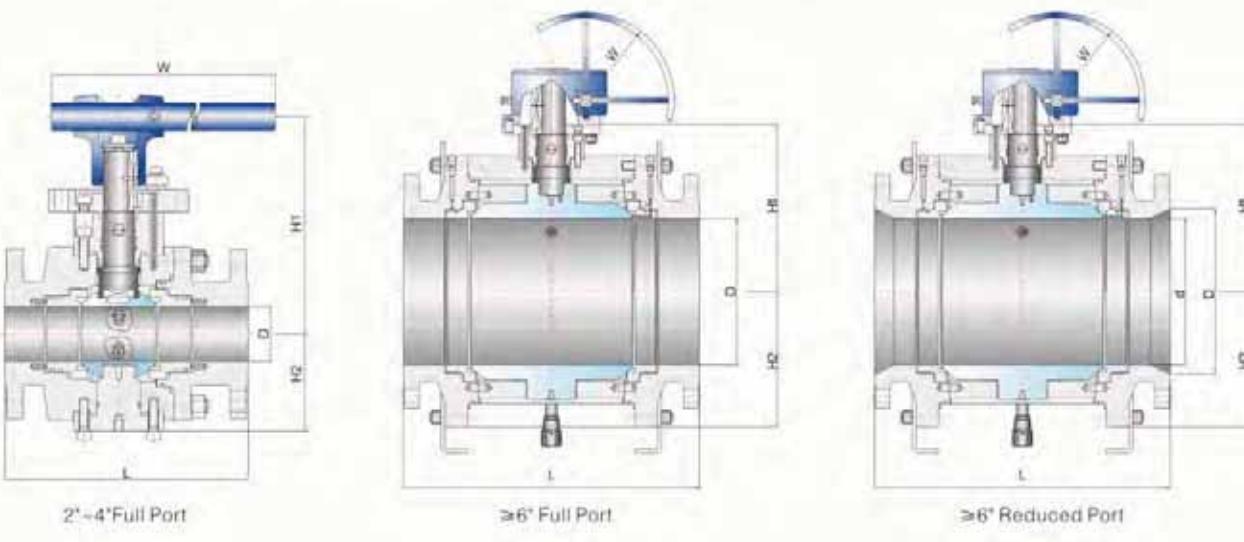
Size		D	L	H1	H2	W	Weight						
in	mm	in	mm	in	mm	in	mm	lb	kg				
2	50	2.01	51	7.01	178	7.87	200	4.33	110	10.43	265	46.3	21
3	80	2.99	76	7.99	203	11.81	300	4.96	126	11.22	285	70.6	32
4	100	4.02	102	9.02	229	12.40	315	6.50	165	11.22	285	110.2	50
6	150	5.98	152	15.51	394	13.19	335	6.50	165	11.81	300	361.6	164
8	200	7.99	203	17.99	457	15.94	405	7.87	200	11.81	300	628.3	285
10	250	10.00	254	21.02	534	16.81	427	8.66	220	11.81	300	925.9	420
12	300	12.01	305	24.02	610	18.31	465	10.31	262	19.69	500	1466.1	665
14	350	13.27	337	27.01	696	19.92	506	11.54	293	23.62	600	1810.0	821
16	400	15.16	387	30.00	762	24.49	622	13.43	341	23.62	600	2466.9	1119
18	450	16.97	438	34.02	804	26.22	666	16.22	412	23.62	600	3234.1	1467
20	500	19.17	489	35.98	914	28.74	730	17.13	435	23.62	600	3988.9	1808
22	550	21.18	540	39.02	991	32.80	833	18.90	480	23.62	600	5141.1	2332
24	600	23.19	591	42.01	1067	35.24	895	20.39	518	31.50	800	7162.7	3249
26	650	24.92	635	45.00	1143	35.43	900	21.06	535	31.50	800	7724.9	3504
28	700	26.93	686	49.02	1245	36.81	935	21.34	542	31.50	800	9506.2	4312
30	750	28.94	737	50.98	1295	39.76	1010	23.82	605	31.50	800	11505.8	5219
32	800	30.67	781	54.02	1372	41.73	1060	25.59	650	31.50	800	13022.6	5907
34	850	32.68	832	57.99	1473	42.40	1077	25.59	650	31.50	800	15033.2	6819
36	900	34.41	878	60.00	1524	43.90	1115	27.56	700	31.50	800	18073.3	8198
40	1000	36.42	978	67.99	1727	55.12	1400	34.06	865	31.50	800	23752.4	10774
42	1050	40.16	1022	78.23	1987	62.91	1598	35.43	900	31.50	800	27024.0	12258
48	1200	45.91	1168	83.46	2120	67.80	1722	41.02	1042	31.50	800	41488.4	18819

#### Reduced Port

Size		D	L	H1	H2	W	Weight								
in	mm	in	mm	in	mm	in	mm	lb	kg						
3 1/2	80.50	2.01	51	2.99	76	7.87	200	4.33	110	10.43	265	58.4	27		
4 1/2	100.80	2.99	76	4.02	102	9.02	229	11.81	300	4.96	126	11.22	285	99.2	45
6 1/4	150.100	4.02	102	5.98	152	15.51	394	12.40	315	6.50	165	11.22	285	176.4	80
6 1/2	200.150	5.98	152	7.99	203	17.99	457	13.19	335	6.50	165	11.81	300	390.2	177
10 1/8	250*200	7.99	203	10.00	254	21.02	534	15.94	405	7.87	200	11.81	300	652.6	296
12 1/10	300*250	10.00	254	12.01	305	24.02	610	16.81	427	8.66	220	11.81	300	972.2	441
14 1/12	350*300	12.01	305	13.27	337	27.01	686	18.31	465	10.31	262	19.69	500	1413.1	641
16 1/14	400*350	13.27	337	15.24	387	30.00	762	19.92	506	11.54	293	23.62	600	1913.6	868
18 1/16	450*400	15.24	387	17.24	438	34.02	804	24.49	622	13.43	341	23.62	600	2416.2	1096
20 1/18	500*450	17.24	438	19.25	489	35.98	914	26.22	666	16.22	412	23.62	600	3086.4	1400
22 1/18	550*450	17.24	438	21.26	540	39.02	991	26.22	666	16.22	412	23.62			

**TRUNNION MOUNTED BALL VALVE  
FORGED STEEL**

300LB



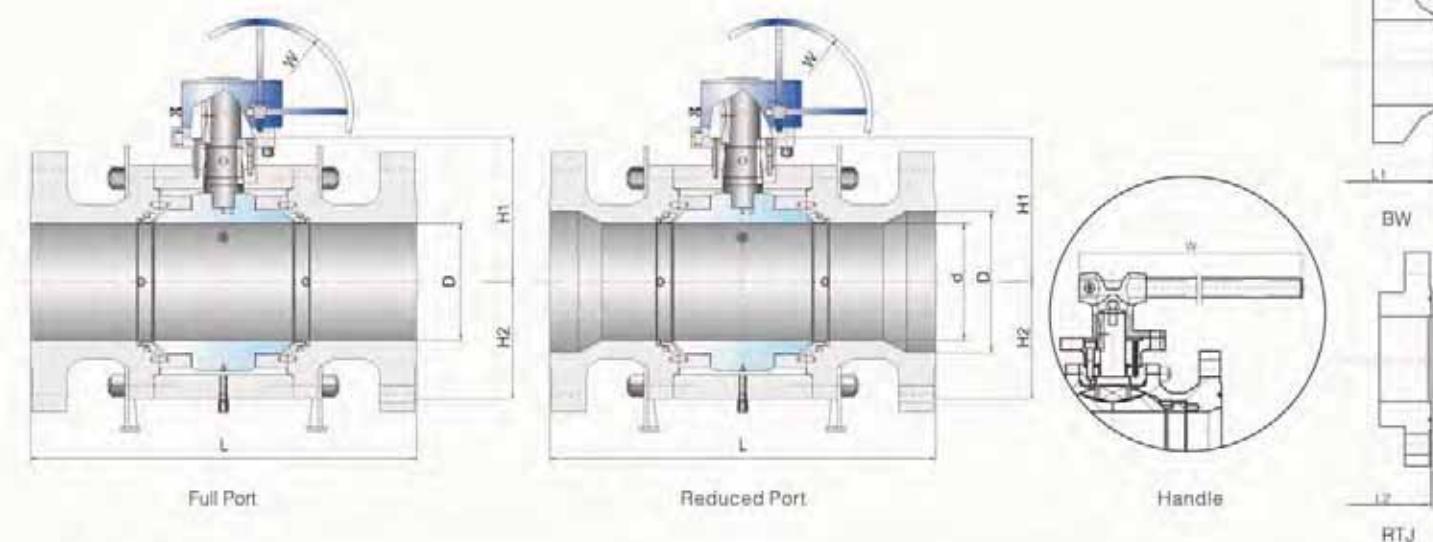
2<sup>4</sup>-4<sup>4</sup> Full Port

≥6° Full Port

≥6° Reduced Pa

Full Po

600L



Handl

四

### Full Port

Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	2.01	51	8.50	216	8.11	206	4.45	113	10.43	265	55.1	25
3	80	2.99	76	11.14	283	12.40	315	5.08	129	15.75	400	108.0	49
4	100	4.02	102	12.01	305	12.99	330	6.65	169	29.53	750	158.7	72
6	150	5.98	152	15.87	403	13.58	345	5.83	148	11.81	*300	423.3	192
8	200	7.99	203	19.76	502	16.34	415	7.28	185	11.81	*300	716.5	325
10	250	10.00	254	22.36	568	16.81	427	8.90	226	15.75	*400	1131.0	513
12	300	12.01	305	25.51	648	18.31	465	10.59	269	19.69	*500	1629.2	739
14	350	13.27	337	30.00	762	20.43	519	11.81	300	23.62	*600	2096.6	951
16	400	15.24	387	32.99	838	25.12	638	13.78	350	23.62	*600	2824.1	1281
18	450	17.24	438	35.98	914	26.89	683	15.83	402	23.62	*600	3864.7	1753
20	500	19.25	480	39.02	991	29.45	748	17.56	446	23.62	*600	4724.5	2143
22	550	21.26	540	42.99	1092	33.62	854	19.37	492	23.62	*600	5937.0	2693
24	600	23.27	591	45.00	1143	36.10	917	20.91	531	31.5	*800	7370.0	3343
28	700	27.01	686	52.99	1346	37.72	958	21.89	556	31.5	*800	11333.8	5141
30	750	29.02	737	55.00	1397	40.75	1035	24.41	620	31.5	*800	13445.9	6099
32	800	30.75	781	60.00	1524	42.80	1087	26.22	666	31.5	*800	15304.3	6942
34	850	32.76	832	64.02	1626	43.46	1104	26.22	666	31.5	*800	17423.0	7903
36	900	34.49	876	67.99	1727	45.00	1143	28.27	718	31.5	*800	19056.6	8644
40	1000	38.50	978	75.98	1930	56.50	1435	34.92	887	31.5	*800	25253.7	11455
42	1050	40.24	1022	80.00	2032	64.49	1638	36.34	923	31.5	*800	29551.9	13450
48	1200	45.98	1168	86.43	2170	69.49	1765	42.05	1068	31.5	*800	41691.8	19310

#### Reduced Port

Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/2	80*50	2.01	51	2.99	76	11.14	283	8.11	206	4.45	113	10.43	265	75	34
4*3	100*80	2.99	76	4.02	102	12.01	305	12.40	315	5.06	129	15.75	400	119	54
6*4	150*100	4.02	102	5.98	152	15.87	403	12.99	330	6.65	169	29.53	750	246.9	112
8*6	200*150	5.98	152	7.99	203	19.76	502	13.58	345	5.83	148	11.81	*300	469.6	213
10*8	250*200	7.99	203	10.00	254	22.38	568	16.34	415	7.28	185	11.81	*300	822.3	373
12*10	300*250	10.00	254	12.01	305	25.51	648	16.81	427	8.90	226	15.75	*400	1239.0	562
14*12	350*300	12.01	305	13.27	337	30.00	762	18.31	465	10.59	269	19.69	*500	2028.2	920
16*14	400*350	13.27	337	15.24	387	32.99	838	20.43	519	11.81	300	23.62	*600	2314.8	1050
18*16	450*400	15.24	387	17.24	438	36.88	914	25.12	638	13.78	350	23.62	*600	3373.0	1530
20*18	500*450	17.24	438	19.25	489	39.02	991	26.89	683	15.83	402	23.62	*600	4034.4	1830
22*18	550*450	17.24	438	21.26	540	42.99	1092	26.89	683	15.83	402	23.62	*600	4431.2	2010
24*20	600*500	19.25	499	23.27	591	45.00	1143	29.45	748	17.56	446	23.62	*600	6159.7	2794
28*24	700*600	23.27	591	27.01	686	52.99	1346	33.62	854	19.37	492	23.62	*600	7054.7	3200
30*24	750*600	23.27	591	29.02	737	55.00	1397	36.10	917	20.91	531	31.5	*600	8981.5	4074
34*28	850*700	27.01	666	32.76	832	64.02	1626	37.72	958	21.89	596	31.5	*800	10681.2	4845
36*30	900*750	29.02	737	34.49	876	67.99	1727	40.75	1035	24.41	620	31.5	*800	13723.6	6225
40*34	1000*850	32.76	832	38.50	978	75.98	1930	43.46	1104	26.22	666	31.5	*800	18077.6	8200
42*36	1050*900	34.49	876	40.24	1022	80.00	2032	45.00	1143	28.27	718	31.5	*800	20282.2	9200
48*40	1200*1000	38.50	978	45.98	1168	85.43	2170	56.50	1435	34.92	887	31.5	*800	33068.8	15000

#### \* Gear box

Full Po

Size	D	L	H1	H2	W	Weight						
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	
2	50	2.01	51	11.50	292	8.11	206	4.45	113	15.75	400	70.5
3	80	2.99	76	14.02	356	12.40	315	5.06	129	29.53	750	147.7
4	100	4.02	102	17.01	452	12.99	330	6.65	169	39.37	1000	240.3
6	150	5.98	152	22.01	558	13.58	345	5.83	148	11.81	*300	573.2
8	200	7.99	203	25.98	660	16.34	415	7.28	185	11.81	*300	983.3
10	250	10.00	254	30.98	787	16.81	427	8.90	226	19.69	*500	1444.0
12	300	12.01	305	32.99	838	16.31	465	10.59	269	23.62	*600	2090.0
14	350	13.27	337	35.00	889	20.43	519	11.81	300	23.62	*600	2687.4
16	400	15.24	387	39.02	991	25.12	638	13.78	350	23.62	*600	3758.8
18	450	17.24	438	42.99	1092	26.89	683	15.83	402	23.62	*600	5216.1
20	500	19.25	489	47.01	1194	29.45	748	17.58	448	23.62	*600	6501.4
22	550	21.26	540	50.98	1295	33.62	854	19.37	492	31.50	*800	7462.9
24	600	23.27	591	55.00	1397	36.10	917	20.91	531	31.50	*800	9314.4
26	700	27.01	688	60.98	1549	37.72	958	21.89	556	31.50	*800	14303.4
30	750	29.02	737	65.00	1651	40.75	1035	24.41	620	31.50	*800	15963.5
32	800	30.75	781	70.00	1778	42.80	1087	26.22	666	31.50	*800	20617.4
34	850	32.76	832	75.98	1930	43.46	1104	26.22	666	31.50	*800	22337.0
36	900	34.49	878	82.01	2063	45.00	1143	28.27	718	31.50	*800	24887.7
40	1000	38.50	978	85.00	2159	56.50	1435	34.92	887	31.50	*800	34352.1
42	1050	40.24	1022	85.63	2175	64.49	1638	36.34	923	31.50	*800	38346.8
45	1200	45.98	1168	95.67	2435	69.49	1765	42.05	1068	31.50	*800	56548.0

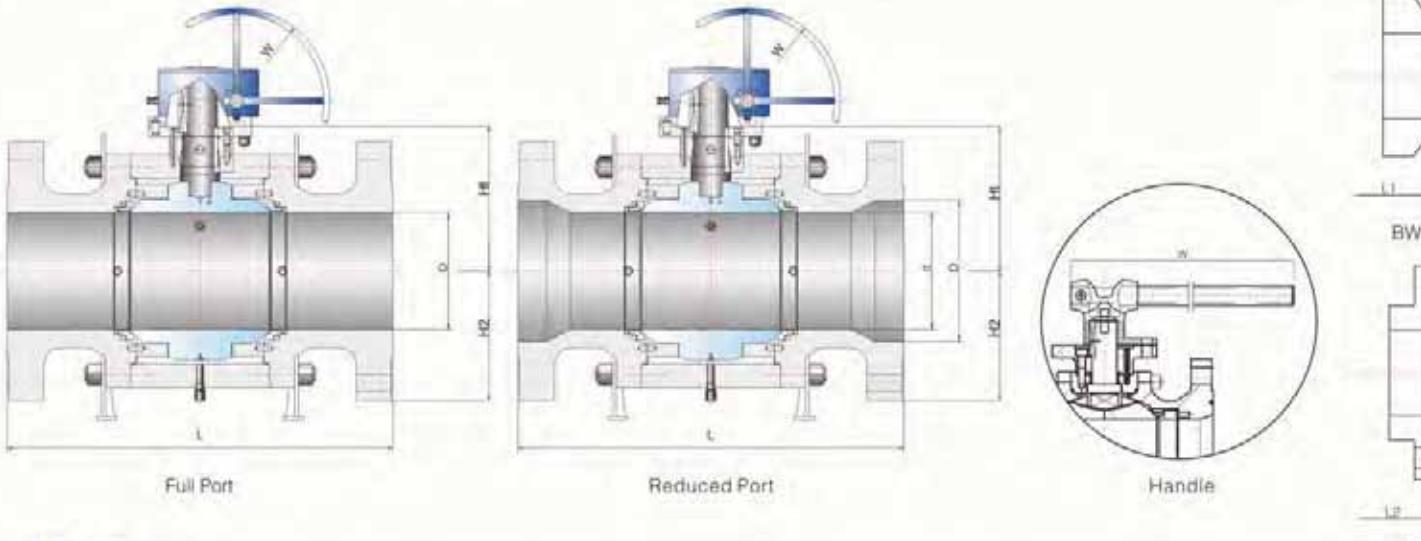
Reduced Port

Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3*2	80*50	2.01	51	2.99	76	14.20	356	8.11	206	4.45	113	15.75	400	92.6	42
4*3	100*80	2.99	76	4.02	102	17.01	432	12.40	315	5.08	129	29.53	750	176.4	80
6*4	150*100	4.02	102	5.98	152	22.01	559	12.99	330	6.65	169	39.37	1000	343.9	156
8*6	200*150	5.98	152	7.99	203	25.98	660	13.58	345	5.83	148	11.81	*300	654.8	297
10*8	250*200	7.99	203	10.00	254	30.98	787	16.34	415	7.28	185	11.81	*300	1124.3	510
12*10	300*250	10.00	254	12.01	305	32.99	838	16.81	427	8.90	226	19.69	*500	1653.5	750
14*12	350*300	12.01	305	13.19	335	35.00	889	18.31	465	10.59	269	23.62	*600	2403.0	1090
16*14	400*350	13.19	335	15.16	385	39.02	991	20.43	519	11.81	300	23.62	*600	2707.2	1226
18*16	450*400	15.16	385	17.17	436	42.99	1092	25.12	638	13.78	350	23.62	*600	4135.8	1876
20*18	500*450	17.17	436	19.17	487	47.01	1194	26.89	683	15.83	402	23.62	*600	5500.5	2495
22*18	550*450	17.17	436	21.18	536	50.98	1295	26.89	683	15.83	402	23.62	*600	5564.4	2524
24*20	600*500	19.17	487	23.19	589	55.00	1397	29.45	748	17.56	446	23.62	*600	7151.7	3244
28*24	700*600	23.19	589	26.93	684	60.98	1549	36.10	917	20.91	531	31.50	*800	9386.5	4250
30*24	750*600	23.19	589	28.94	735	65.00	1651	38.10	917	20.91	531	31.50	*800	10670.3	4840
34*28	850*700	26.93	684	32.68	830	75.98	1930	37.72	968	21.89	556	31.50	*800	15673.0	7200
36*30	900*750	28.94	735	34.41	874	82.01	2083	40.75	1035	24.41	620	31.50	*800	19499.7	8845
40*34	1000*850	32.68	830	38.43	976	85.00	2159	43.46	1104	26.22	666	31.50	*800	22089.9	10020
42*36	1050*900	34.41	874	40.16	1020	85.63	2175	45.00	1143	28.27	718	31.50	*800	24470.9	11100
48*40	1200*1000	38.43	976	45.91	1166	95.87	2435	58.50	1435	34.92	887	31.50	*800	37918.9	17200

#### \* Gear box

TRUNNION MOUNTED BALL VALVE  
FORGED STEEL

900LB



Full Port

Size		D	L		H1		H2		W		Weight		
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg		
2	50	2.01	51	14.49	368	4.69	119	4.69	119	25.95	460	132.3	60
3	80	2.99	76	15.00	381	5.24	133	5.24	133	39.37	1000	189.6	86
4	100	4.02	102	17.99	457	6.93	176	6.93	176	59.06	1500	326.3	148
6	150	5.98	152	24.02	610	6.02	153	6.02	153	11.81	300	825.9	420
8	200	7.99	203	29.02	737	7.80	193	7.80	193	15.75	400	1258.8	571
10	250	10.00	254	32.99	838	9.25	235	9.25	235	19.69	500	1959.9	889
12	300	12.01	305	37.99	965	11.02	280	11.02	280	23.62	600	2698.4	1224
14	350	12.76	324	40.51	1029	12.28	312	12.28	312	23.62	600	3697.1	1677
16	400	14.76	375	44.49	1130	14.37	365	14.37	365	23.62	600	4614.2	2093
18	450	16.73	425	47.99	1219	16.30	414	16.30	414	23.62	600	6492.5	2945
20	500	18.62	473	52.01	1321	18.07	459	18.07	459	23.62	600	8282.7	3757
22	550	20.63	524	55.98	1422	19.96	507	19.96	507	31.50	800	10068.4	4567
24	600	22.52	572	60.08	1549	21.54	547	21.54	547	31.50	800	14554.8	6602
26	700	26.26	667	69.02	1753	22.56	573	22.56	573	31.50	800	22908.0	10391
30	750	28.11	714	74.02	1880	25.12	638	25.12	638	31.50	800	26704.3	12113
32	800	30.00	762	80.00	2032	27.01	686	27.01	686	31.50	800	29347.6	13312
34	850	31.89	810	85.00	2159	27.09	688	27.09	688	31.50	800	42346.0	19208
36	900	33.74	857	90.00	2286	29.09	739	29.09	739	31.50	800	48876.0	22170

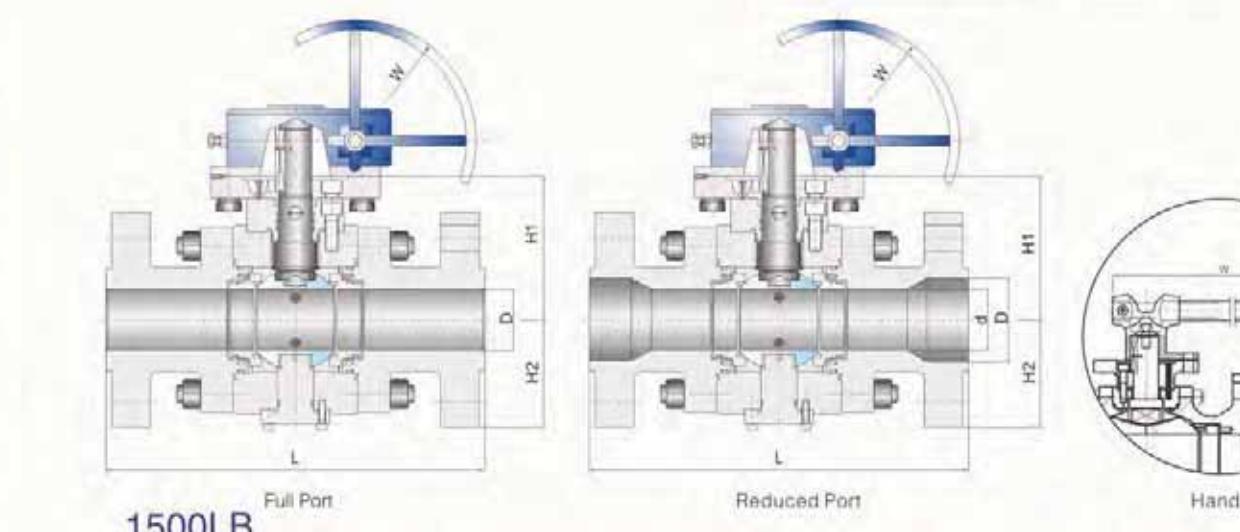
Reduced Port

Size		d	D	L		H1		H2		W		Weight			
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg				
3 <sup>1</sup> / <sub>2</sub>	80 <sup>1</sup> / <sub>2</sub> 0	2.01	51	2.99	76	15.00	381	4.69	119	4.69	119	18.11	460	147.7	67
4 <sup>1</sup> / <sub>2</sub>	100 <sup>1</sup> / <sub>2</sub> 0	2.99	78	4.02	102	17.99	457	5.24	133	5.24	133	39.37	1000	231.5	105
6 <sup>1</sup> / <sub>4</sub>	150 <sup>1</sup> / <sub>2</sub> 0	4.02	102	5.98	152	24.02	610	6.93	176	6.93	176	59.08	1500	449.7	204
8 <sup>1</sup> / <sub>2</sub>	200 <sup>1</sup> / <sub>2</sub> 0	7.99	203	29.02	737	6.02	153	6.02	153	11.81	300	828.9	376		
10 <sup>1</sup> / <sub>2</sub>	250 <sup>1</sup> / <sub>2</sub> 0	7.99	203	30.00	264	32.99	838	7.60	193	7.60	193	15.75	400	1261.0	572
12 <sup>1</sup> / <sub>2</sub>	300 <sup>1</sup> / <sub>2</sub> 0	10.00	254	37.99	965	9.25	235	9.25	235	19.69	500	2017.2	915		
14 <sup>1</sup> / <sub>2</sub>	350 <sup>1</sup> / <sub>2</sub> 0	12.01	305	40.51	1029	11.02	280	11.02	280	23.62	600	2656.5	1205		
16 <sup>1</sup> / <sub>2</sub>	400 <sup>1</sup> / <sub>2</sub> 0	12.76	324	44.49	1130	12.28	312	12.28	312	23.62	600	3362.0	1525		
18 <sup>1</sup> / <sub>2</sub>	450 <sup>1</sup> / <sub>2</sub> 0	14.76	375	16.73	425	47.99	1219	14.37	365	23.62	600	4554.7	2066		
20 <sup>1</sup> / <sub>2</sub>	500 <sup>1</sup> / <sub>2</sub> 0	16.73	425	18.62	473	52.01	1321	16.30	414	23.62	600	6137.6	2784		
22 <sup>1</sup> / <sub>2</sub>	550 <sup>1</sup> / <sub>2</sub> 0	16.73	425	20.63	524	55.98	1422	16.30	414	23.62	600	7248.7	3288		
24 <sup>1</sup> / <sub>2</sub>	600 <sup>1</sup> / <sub>2</sub> 0	18.62	473	22.52	572	60.98	1549	18.07	459	18.07	459	23.62	8573.7	3849	
26 <sup>1</sup> / <sub>2</sub>	700 <sup>1</sup> / <sub>2</sub> 0	22.52	667	69.02	1753	21.54	547	21.54	547	31.50	800	16710.8	7580		
30 <sup>1</sup> / <sub>2</sub>	750 <sup>1</sup> / <sub>2</sub> 0	22.52	714	28.11	1880	21.54	547	21.54	547	31.50	800	17594.8	7981		
34 <sup>1</sup> / <sub>2</sub>	850 <sup>1</sup> / <sub>2</sub> 0	26.26	667	31.89	810	25.00	2159	22.56	573	22.56	573	31.50	24695.8	11202	
36 <sup>1</sup> / <sub>2</sub>	900 <sup>1</sup> / <sub>2</sub> 0	28.11	714	33.74	857	30.00	2286	25.12	638	25.12	638	31.50	34508.4	15653	

\* Gear box

TRUNNION MOUNTED BALL VALVE  
FORGED STEEL

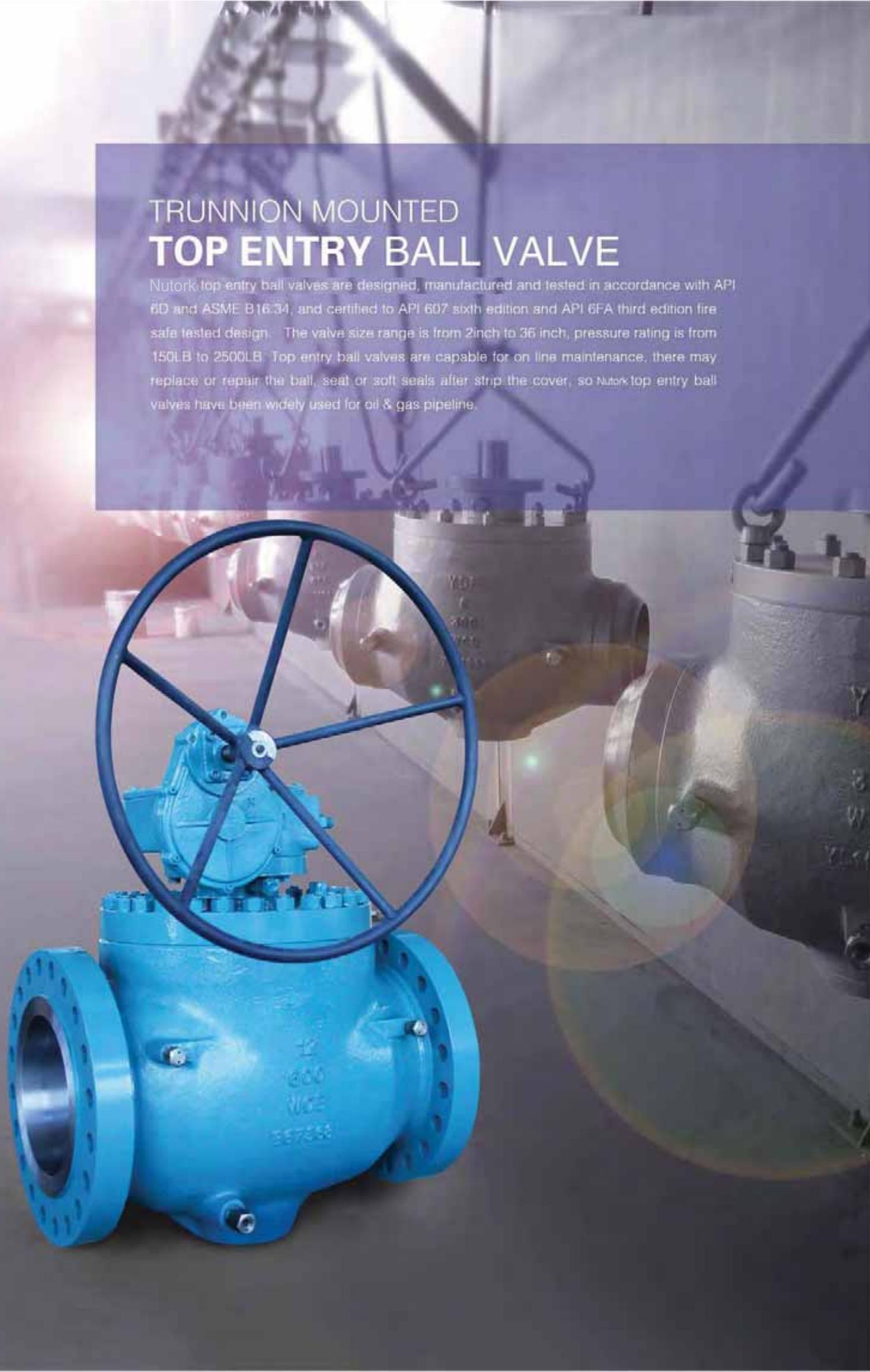
1500LB 2500LB



Full Port

1500LB  
Full Port

Size		D	L		H1		H2		W		Weight		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	1.93	49	14.49	368	5.31	135	5.31	135	25.69	650	57.3	26
3	75	2.91	74	18.50	470	5.71	145	5.71	145	39.37	1000	189.6	86
4	100	4.02	102	21.50	546	6.54	166	6.54	166	11.81	1300	454.1	206
6	150	5.75	146	27.76	705	7.56	192	7.5					



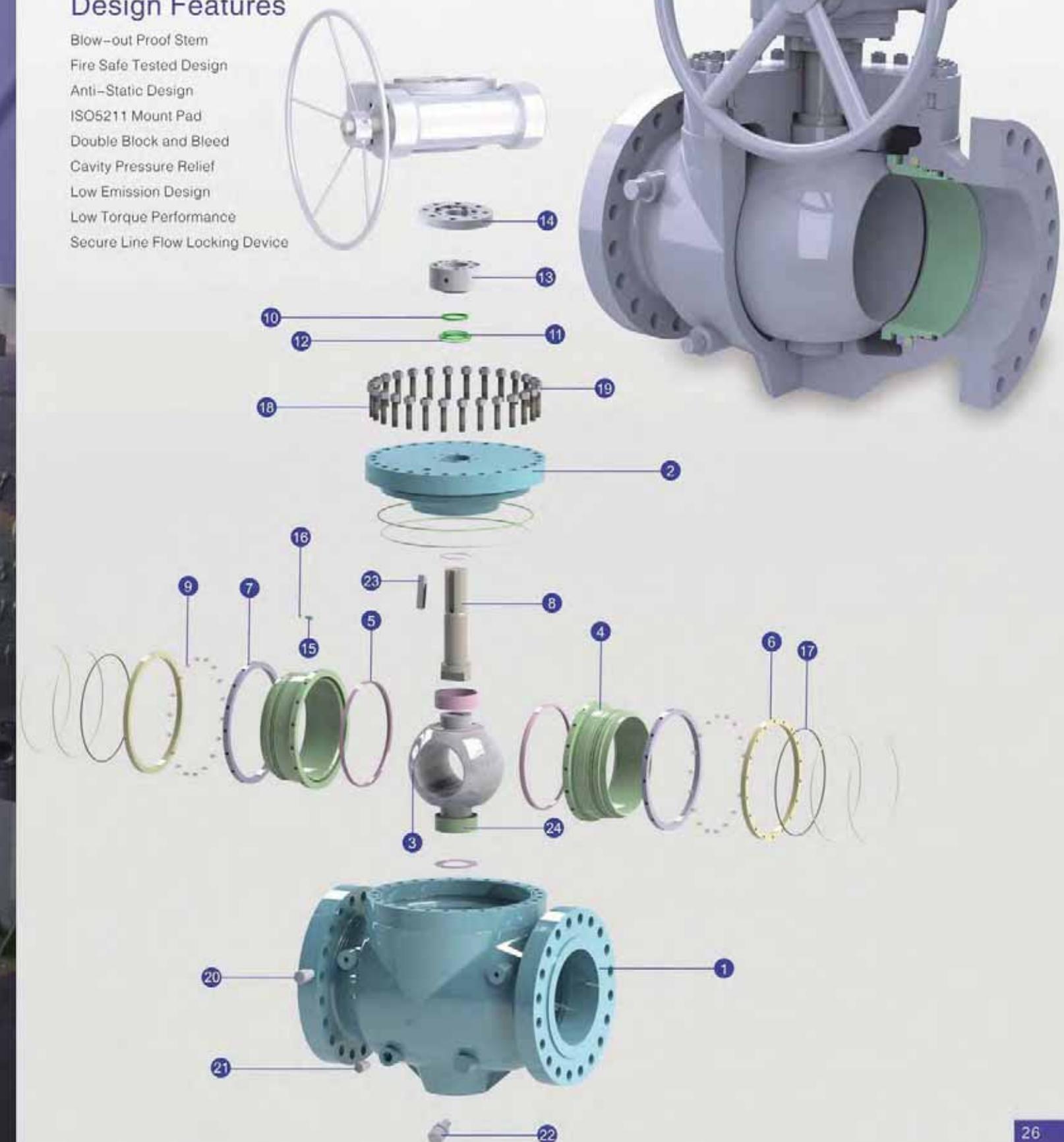
## TRUNNION MOUNTED TOP ENTRY BALL VALVE

Nutork top entry ball valves are designed, manufactured and tested in accordance with API 6D and ASME B16.34, and certified to API 607 sixth edition and API 6FA third edition fire safe tested design. The valve size range is from 2inch to 36 inch, pressure rating is from 150LB to 2500LB. Top entry ball valves are capable for on line maintenance, there may replace or repair the ball, seat or soft seals after strip the cover, so Nutork top entry ball valves have been widely used for oil & gas pipeline.

## TRUNNION MOUNTED BALL VALVE TOP ENTRY BALL VALVE

### Design Features

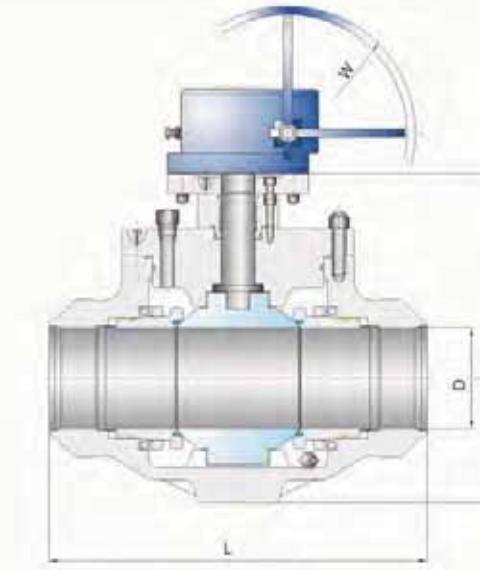
- Blow-out Proof Stem
- Fire Safe Tested Design
- Anti-Static Design
- ISO5211 Mount Pad
- Double Block and Bleed
- Cavity Pressure Relief
- Low Emission Design
- Low Torque Performance
- Secure Line Flow Locking Device



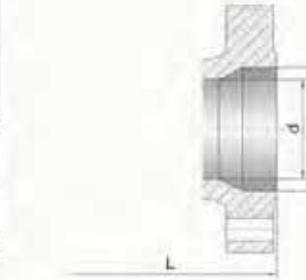
## Material List

No	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A352 LCB	ASTM A216 WCB
2	Closure	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
3	Ball	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
4	Seal Ring	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
5	Seat Insert	RPTFE	RPTFE	RPTFE	RPTFE
6	Spring Seat	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
7	Adjusting Pad	ASTM A276 410	ASTM A276 316	ASTM A276 304	ASTM A276 410-NC
8	Stem	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
9	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
10	Fire Safe Seal	Graphite	Graphite	Graphite	Graphite
11	O-Ring	VITON A	VITON A	VITON A	VITON A
12	Back Up Ring	RPTFE	RPTFE	RPTFE	RPTFE
13	Gland Cap	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
14	Top Flange	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
15	Grounding Spring	SS316	SS316	SS316	SS316
16	Steel Ball	SS316	SS316	SS316	SS316
17	Gasket	SS+Graphite	SS+Graphite	SS+Graphite	SS+Graphite
18	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A320 L7	ASTM A193 B7M
19	Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 4	ASTM A194 2HM
20	Injection	SS304	SS316	SS304	SS304
21	Drain valve	SS304	SS316	SS304	SS304
22	Vent valve	SS304	SS316	SS304	SS304
23	Key	Carbon Steel	Stainless steel	Stainless steel	Carbon Steel
24	Bearing	SS+PTFE	SS+PTFE	SS+PTFE	SS+PTFE
25	Nameplate	SS304	SS304	SS304	SS304

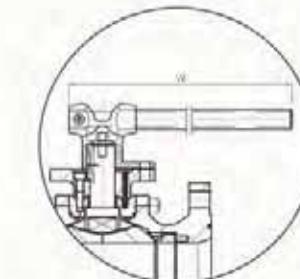
150LB



Full Port



Reduced Port



Handle

## Full Port

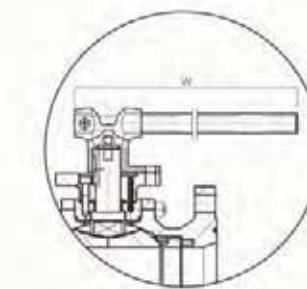
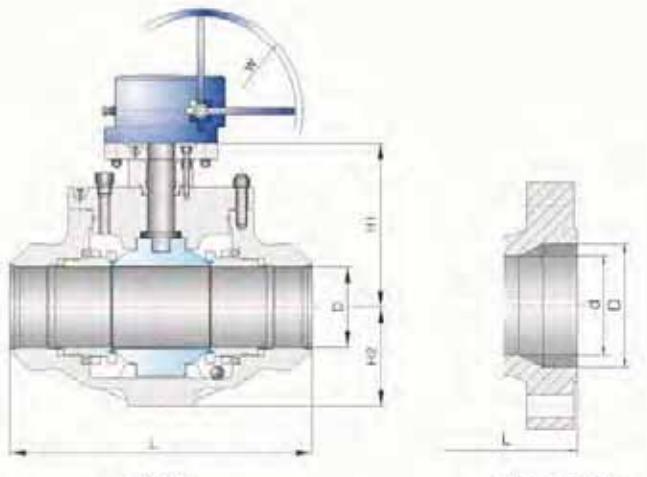
Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	2.01	51	11.50	292	7.87	200	4.33	110	10.43	265	46.3	21
3	80	2.99	76	14.02	356	11.81	300	4.96	126	11.22	285	70.6	32
4	100	4.02	102	17.01	432	12.40	315	6.50	165	11.22	285	110.2	50
6	150	5.98	152	22.01	569	13.19	335	6.50	165	11.81	300	361.6	164
8	200	7.99	203	25.98	660	15.94	405	7.87	200	11.81	300	760.6	345
10	250	10.00	254	30.98	787	16.81	427	8.66	220	11.81	300	970.0	440
12	300	12.01	305	32.99	838	18.31	465	10.31	262	19.69	300	1272.1	577
14	350	15.27	337	35.00	889	19.92	506	11.54	293	23.62	300	1893.7	859
16	400	15.24	387	39.02	991	24.49	622	13.43	341	23.62	300	2522.1	1144
18	450	17.24	438	42.99	1062	26.22	666	16.22	412	23.62	300	3174.6	1440
20	500	19.25	489	47.01	1194	28.74	730	17.13	435	23.62	300	4285.7	1944
22	550	21.26	540	50.98	1295	32.80	833	18.90	480	23.62	300	5185.2	2352
24	600	23.27	591	55.00	1397	35.24	895	20.39	518	31.50	300	6179.5	2803
26	650	25.00	635	57.01	1448	35.43	900	21.06	535	31.50	300	7054.7	3200
28	700	27.01	686	60.98	1549	36.81	935	21.34	542	31.50	300	8924.2	4048
30	750	29.02	737	65.00	1651	39.76	1010	23.82	605	31.50	300	13668.4	6200
32	800	30.75	781	70.00	1778	41.73	1060	25.59	650	31.50	300	12103.2	5490
34	850	32.76	832	75.98	1930	42.40	1077	26.59	660	31.50	300	14779.5	6704
36	900	34.49	876	82.01	2083	42.40	1115	27.56	700	31.50	300	21164.0	9600

## Reduced Port

Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/2	80*50	2.01	51	2.99	76	14.02	356	7.87	200	4.33	110	10.43	265	58.4	27
4*3	100*80	2.98	76	4.02	102	17.01	432	11.81	300	4.96	126	11.22	285	88.2	40
6*4	150*100	4.02	102	5.98	152	22.01	569	12.40	315	6.50	165	11.22	285	149.9	68
8*6	200*150	5.98	152	7.99	203	25.98	660	13.19	335	6.50	165	11.81	300	390.2	177
10*8	250*200	7.99	203	10.00	254	30.98	787	15.94	405	7.87	200	11.81	300	676.8	307
12*10	300*250	10.00	254	12.01	305	32.99	838	16.81	427	8.66	220	11.81	300	1122.1	509
14*10	350*250	10.00	254	13.27	337	35.00	889	16.81	427	8.66	220	11.81	300	1591.7	722
16*12	400*300	12.01	305	15.24	387	39.02	991	18.31	485	10.31	262	19.69	300	2138.5	970
18*14	450*350	13.27	337	17.24	438	42.99	1092	19.92	506	11.54	293	23.62	300	2846.1	1291
20*16	500*400	15.24	387	19.25	489	47.01	1194	24.49	622	13.43	341	23.62	300	3681.7	1670
22*18	550*450	17.24	438	21.26	540	50.98	1295	26.22	666	16.22	412	23.62	300	4241.6	1924
24*20	600*500	19.25	489	23.27	591	55.00	1397	28.74	730	17.13	435	23.62	300	4883.	

## TRUNNION MOUNTED TOP ENTRY BALL VALVE

300LB



Full Port

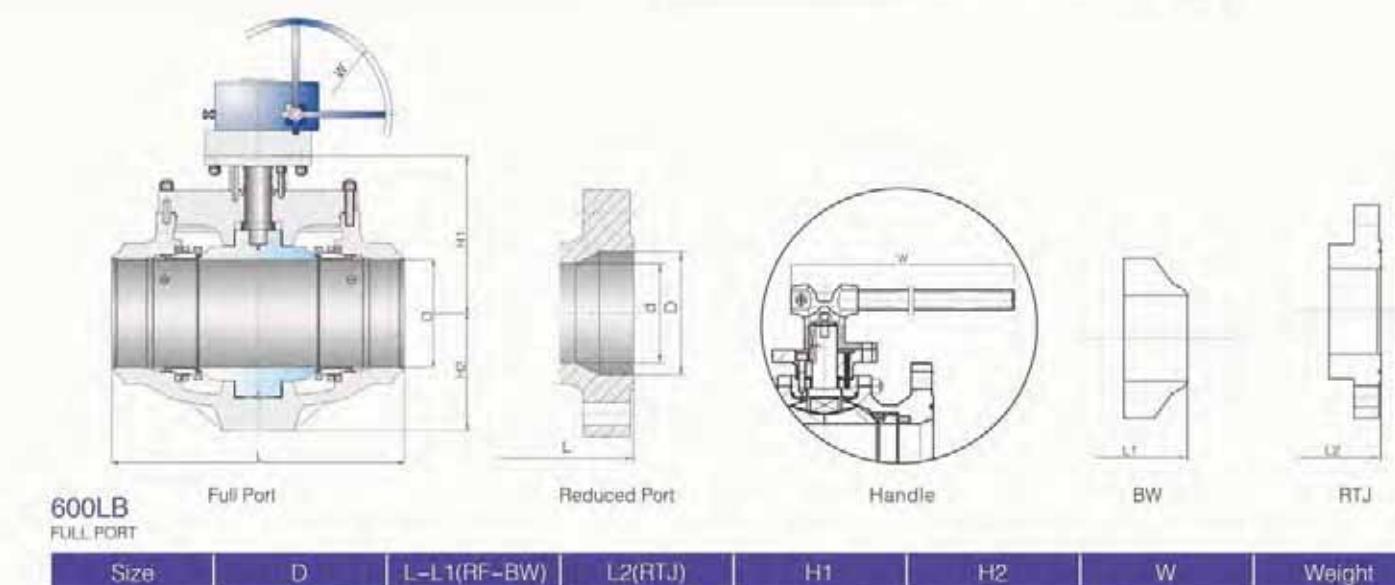
Reduced Port

Handle

Full Port		Size	D	L	H1		H2		W		Weight		
in	mm				in	mm	in	mm	lb	kg	lb	kg	
2	50	2.01	51	11.50	292	8.11	206	4.45	113	10.43	265	55.1	25
3	80	2.99	76	14.02	356	12.40	315	5.08	129	15.75	400	101.4	46
4	100	4.02	102	17.01	432	12.99	390	6.65	169	29.53	750	169.8	77
6	150	5.98	152	22.01	559	13.58	345	5.83	148	11.81	300	377.0	171
8	200	7.99	203	26.98	660	16.34	415	7.28	185	11.81	300	709.9	322
10	250	10.00	254	30.98	787	16.81	427	8.90	226	15.75	400	1190.5	540
12	300	12.01	305	32.99	838	18.31	465	10.59	269	19.69	500	1682.1	763
14	350	13.27	337	36.00	889	20.43	519	11.81	300	23.62	600	2149.5	975
16	400	15.24	387	39.02	991	25.12	638	13.78	350	23.62	600	3086.4	1400
18	450	17.24	438	42.98	1092	26.89	683	15.83	402	23.62	600	3780.9	1715
20	500	19.25	489	47.01	1194	29.45	748	17.56	446	23.62	600	5465.2	2479
22	550	21.26	540	50.98	1295	33.62	854	19.37	492	23.62	600	4894.2	2220
24	600	23.27	591	55.00	1397	36.10	917	20.81	531	31.5	800	6371.3	2890
28	700	27.01	686	60.98	1549	37.72	958	21.89	556	31.5	800	10086.0	4575
30	750	29.02	737	65.00	1651	40.75	1035	24.41	620	31.5	800	12323.6	5590
32	800	30.75	781	70.00	1778	42.80	1087	26.22	666	31.5	800	13756.6	6240
34	850	32.76	832	75.98	1930	43.46	1104	26.22	666	31.5	800	16247.8	7370
36	900	34.49	876	82.01	2083	45.00	1143	28.27	718	31.5	800	18595.7	8435

Reduced Port		Size	d	D	L	H1		H2		W		Weight	
in	mm					in	mm	in	mm	lb	kg	lb	kg
3 <sup>1</sup> / <sub>2</sub>	80 <sup>1</sup> / <sub>2</sub>	2.01	51	2.99	76	14.02	356	8.11	206	4.45	113	79.4	36
4 <sup>1</sup> / <sub>2</sub>	100 <sup>1</sup> / <sub>2</sub>	2.99	76	4.02	102	17.01	432	12.40	315	5.08	129	121.3	55
6 <sup>1</sup> / <sub>4</sub>	150 <sup>1</sup> / <sub>2</sub>	4.02	102	5.98	152	22.01	559	12.99	330	6.65	169	246.9	112
8 <sup>1</sup> / <sub>2</sub>	200 <sup>1</sup> / <sub>2</sub>	5.98	152	7.99	203	25.98	660	13.58	345	5.83	148	489.4	222
10 <sup>5</sup> / <sub>8</sub>	250 <sup>1</sup> / <sub>2</sub>	7.99	203	10.00	254	30.98	787	16.34	415	7.28	185	839.4	381
12 <sup>5</sup> / <sub>8</sub>	300 <sup>1</sup> / <sub>2</sub>	10.00	254	12.01	305	32.99	838	16.81	427	8.90	226	1278.7	580
14 <sup>5</sup> / <sub>8</sub>	350 <sup>1</sup> / <sub>2</sub>	10.00	254	13.27	337	35.00	889	16.81	427	8.90	226	15.75	400
16 <sup>9</sup> / <sub>16</sub>	400 <sup>1</sup> / <sub>2</sub>	12.01	305	15.24	387	39.02	991	18.31	465	10.59	269	2314.8	1050
18 <sup>11</sup> / <sub>16</sub>	450 <sup>1</sup> / <sub>2</sub>	13.27	337	17.24	438	42.98	1087	20.43	519	11.81	300	3373.0	1530
20 <sup>13</sup> / <sub>16</sub>	500 <sup>1</sup> / <sub>2</sub>	15.24	387	19.25	489	47.01	1194	25.12	638	13.78	350	4034.4	1830
22 <sup>17</sup> / <sub>16</sub>	550 <sup>1</sup> / <sub>2</sub>	17.24	438	21.26	540	50.98	1295	26.89	683	15.83	402	4431.2	2010
24 <sup>20</sup> / <sub>16</sub>	600 <sup>1</sup> / <sub>2</sub>	19.25	489	23.27	591	55.00	1397	29.45	748	17.56	446	4894.2	2220
28 <sup>24</sup> / <sub>16</sub>	700 <sup>1</sup> / <sub>2</sub>	23.27	591	27.01	686	60.98	1549	33.62	864	19.37	492	23.62	600
30 <sup>24</sup> / <sub>16</sub>	750 <sup>1</sup> / <sub>2</sub>	23.27	591	29.02	737	65.00	1651	36.10	917	20.91	531	31.5	800
34 <sup>28</sup> / <sub>16</sub>	850 <sup>1</sup> / <sub>2</sub>	27.01	686	32.76	832	75.98	1930	37.72	958	21.89	556	31.5	800
36 <sup>30</sup> / <sub>16</sub>	900 <sup>1</sup> / <sub>2</sub>	29.02	737	34.49	876	82.01	2083	40.75	1035	24.41	620	31.5	800

\* Gear box



600LB  
FULL PORT

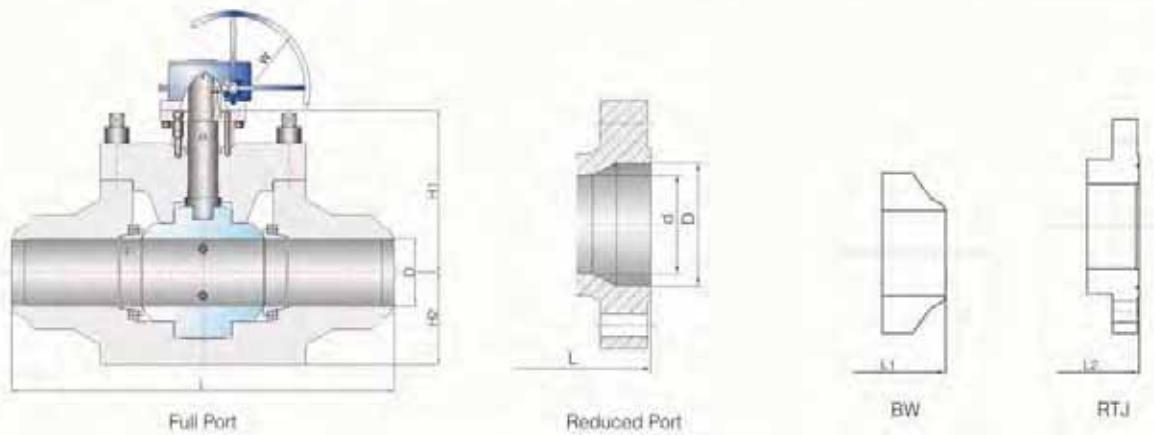
Reduced Port

Handle

BW

RTJ

Size		D	L-L1(RF-BW)		L2(RTJ)		H1		H2		W		Weight
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2 <sup>1</sup> / <sub>2</sub>	50 <sup>40</sup>	1.50	38	2.01	51	14.49	368	14.61	371	8.46	215	3.15	80
3 <sup>1</sup> / <sub>2</sub>	80 <sup>40</sup>	2.01	51	2.99	76	15.00	381	15.12	384	7.87	200	4.72	120
4 <sup>3</sup>	100 <sup>80</sup>	2.99	76	4.02	102	17.99	457	18.11</td					

**TRUNNION MOUNTED  
TOP ENTRY BALL VALVE**
**1500LB 2500LB**

**1500LB  
FULL PORT**

Size		D		L-L1(RF-BW)		L2(RTJ)		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	2.01	51	14.49	368	14.61	371	8.07	205	4.72	120	29.53	750	132.28	60
3	80	2.99	76	18.5	470	18.62	473	8.27	210	4.92	125	39.37	1000	253.53	115
4	100	4.02	102	21.5	546	21.61	549	9.65	245	6.30	160	39.37	1000	427.70	194
6	150	5.75	146	27.76	705	27.99	711	13.18	335	10.04	255	15.75	400	1278.69	580
8	200	7.64	194	32.76	832	33.15	842	19.81	427	13.39	340	19.69	500	1657.88	752
10	250	9.49	241	39.02	991	39.41	1001	19.76	502	15.00	381	23.62	600	2634.54	1195
12	300	11.38	280	44.49	1130	45.12	1148	20.98	533	17.24	438	23.62	600	4784.06	2170

**REDUCED PORT**

Size		d		D		L-L1(RF-BW)		L2(RTJ)		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3½	80 <sup>40</sup>	2.01	51	2.99	76	18.5	470	18.62	473	8.07	205	4.72	120	29.53	750	180.78	82
4¾	100 <sup>80</sup>	2.99	76	4.02	102	21.5	546	21.61	549	8.27	210	4.92	125	39.37	1000	330.70	150
6¼	150 <sup>100</sup>	4.02	102	5.75	146	27.76	705	27.99	711	9.65	245	6.30	160	39.37	1000	650.37	295
8¾	200 <sup>150</sup>	5.75	146	7.64	194	32.76	832	33.11	842	13.19	335	10.04	255	15.75	400	1521.20	690
10⅞	250 <sup>200</sup>	7.64	194	9.49	241	39.02	991	39.41	1001	16.81	427	13.39	340	19.69	500	2050.31	930

**2500LB**
**FULL PORT**

Size		D		L-L1(RF-BW)		L2(RTJ)		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	1.77	45	17.76	451	17.87	454	9.84	250	5.51	140	15.75	400	54.45	120
3	80	2.52	64	22.76	578	22.99	584	11.81	300	5.91	150	19.69	500	81.67	180
4	100	3.50	89	26.5	673	26.89	683	13.78	350	7.09	180	23.62	600	190.58	420
6	150	5.24	133	35.88	914	36.5	927	27.58	700	18.31	465	23.62	600	555.81	1225
8	200	7.13	181	40.24	1022	40.87	1038	30.71	780	20.87	530	23.62	600	934.66	2060
10	250	8.90	226	50	1270	50.87	1292	40.75	1035	29.33	745	23.62	600	1842.11	4060
12	300	10.47	266	55.98	1422	56.85	1444	44.29	1125	32.48	825	23.62	600	4092.56	9020

**REDUCED PORT**

Size		d		D		L-L1(RF-BW)		L2(RTJ)		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3½	80 <sup>50</sup>	1.77	45	2.52	64	22.76	578	22.99	584	9.84	250	5.51	140	11.81	300	63.52	140
4¾	100 <sup>80</sup>	2.52	64	3.50	89	26.50	673	26.89	683	11.81	300	5.91	150	15.75	400	99.82	220
6¼	150 <sup>100</sup>	3.50	89	5.24	133	35.98	914	36.5	927	13.78	350	7.09	180	19.69	500	226.86	500
8¾	200 <sup>150</sup>	5.24	133	7.13	181	40.24	1022	40.87	1038	27.58	700	18.31	465	23.62	600	666.97	1470
10⅞	250 <sup>200</sup>	7.13	181	8.90	226	50.00	1270	50.87	1292	30.71	780	20.87	530	23.62	600	1120.69	2470
12Ⅹ	300 <sup>250</sup>	8.90	226	10.47	266	55.98	1422	56.85	1444	40.75	1035	29.33	745	23.62	600	2209.62	4870

\* Gear box

**TRUNNION MOUNTED  
FULL WELDED BALL VALVE**

Nutork Fully welded ball valve combines the strength of forged components with a compact structure design, are compiled to per API 6D, ASME B16.34 standard, engineered for heavy duty, limited-maintenance performance and made of forged steel to assure uniform fine grain structure and toughness, and the size range is from 2 inch upto 60 inch, pressure rating is from 150LB upto 2500LB. This valve is commonly selected for gas transmission, gas pipeline, gas plants etc a number of applications.



TRUNNION MOUNTED  
FULL WELDED BALL VALVE

## Design Features

Fully Welded Body Structure

Blow-out Proof Stem

Fire Safe Tested Design

Anti-Static Design

ISO5211 Mount Pad

Double Block and Bleed

Cavity Pressure Relief

Low Emission Design

Low Torque Performance

Secure Line Flow Locking Device

VITON AED Delta Ring Seat Seal

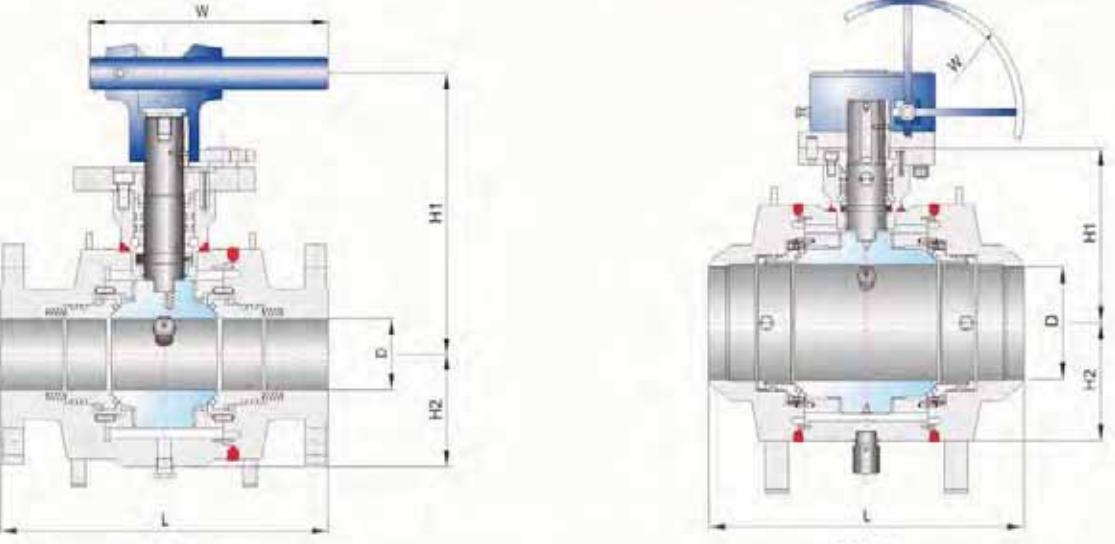
Buried Design, Extended Stem(Optional)



No	Part	Standard	Stainless Steel	Low Temperature	Sour Service
1	Body	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
2	Closure	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
3	Ball	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
4	Seat Ring	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
5	Sealing Ring(O-Ring)	Viton AED	Viton AED	Viton AED	Viton AED
6	Support Ring	RPTFE	RPTFE	RPTFE	RPTFE
7	Back Up Ring	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
8	Stem	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
9	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
10	Fire Safe Seal	Graphite	Graphite	Graphite	Graphite
11	O-Ring	VITON A	VITON A	VITON A	VITON A
12	Back Up Ring	RPTFE	RPTFE	RPTFE	RPTFE
13	Gland Cap	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
14	Top Flange	ASTM A105N	ASTM A182 F316	ASTM A350 LF2	ASTM A105N
15	Trunnion Support	ASTM A105N+ENP	ASTM A182 F316	ASTM A350 LF2+ENP	ASTM A105N+ENP
16	Grounding Spring	SS316	SS316	SS316	SS316
17	Steel Ball	SS316	SS316	SS316	SS316
18	Gasket	SS+Graphite	SS+Graphite	SS+Graphite	SS+Graphite
19	Injection	SS304	SS316	SS304	SS304
20	Drain valve	SS304	SS316	SS304	SS304
21	Vent valve	SS304	SS316	SS304	SS304
22	Pin	Carbon Steel	Stainless steel	Stainless steel	Carbon Steel
23	Key	Carbon Steel	Stainless steel	Stainless steel	Carbon Steel
24	Bearing	SS+PTFE	SS+PTFE	SS+PTFE	SS+PTFE
25	Nameplate	SS304	SS304	SS304	SS304

**TRUNNION MOUNTED  
FULL WELDED BALL VALVE**

150LB 300LB



150LB

150LB

300LB

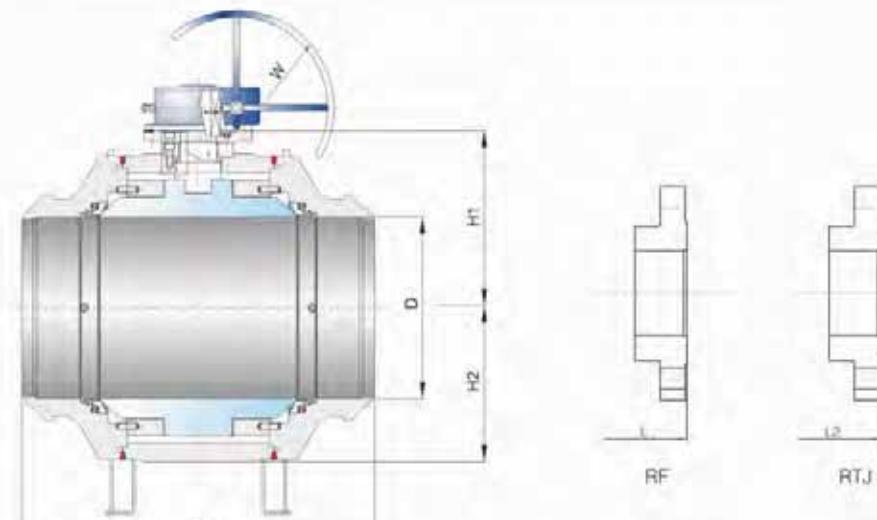
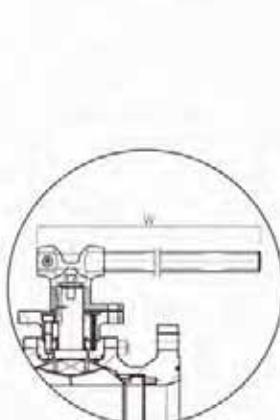
Size	D		RF	L		BW	H1		H2		W		Weight		
	in	mm		in	mm		in	mm	in	mm	in	mm	lb	kg	
2	50	1.93	51	7.01	178	8.50	216	7.87	200	4.33	110	10.49	265	55.1	25
3	80	2.91	74	7.99	203	11.14	283	11.81	300	4.96	120	11.22	285	105.8	48
4	100	4.02	102	9.02	229	12.01	305	12.40	315	6.50	165	11.22	285	169.8	77
6	150	5.98	152	15.51	394	17.99	457	13.19	335	6.50	165	11.81	300	429.8	195
8	200	7.99	203	17.99	457	20.51	521	15.94	405	7.87	200	11.81	300	610.7	277
10	250	10.00	254	20.98	533	22.01	559	16.61	427	8.66	220	11.81	300	864.2	392
12	300	12.01	305	24.02	610	25.00	635	18.31	465	10.31	262	19.69	300	1283.1	582
14	350	13.27	337	27.01	686	30.00	782	19.92	506	11.54	293	19.69	300	1662.3	754
16	400	15.24	387	30.00	762	32.99	838	24.49	622	13.43	341	23.62	300	2204.6	1000
18	450	17.24	438	34.02	864	35.98	914	26.22	666	16.22	412	23.62	300	3020.3	1370
20	500	19.25	489	35.98	914	39.02	991	28.74	730	17.13	435	23.62	300	3986.1	1809
22	550	21.26	540	40.00	1016	40.00	1016	32.80	839	18.90	480	23.62	300	5105.9	2316
24	600	23.27	591	42.01	1067	45.00	1143	35.24	895	20.39	518	31.50	300	6285.3	2851
26	650	25.00	635	45.00	1143	48.02	1245	35.43	900	21.06	535	31.50	300	7517.7	3410
28	700	27.01	686	49.02	1245	52.99	1346	36.81	935	21.34	542	31.50	300	9285.8	4212
30	750	29.02	737	50.98	1295	55.00	1397	39.76	1010	23.82	605	31.50	300	10823.6	4910
32	800	30.75	781	54.02	1372	60.00	1524	41.73	1060	25.59	650	31.50	300	13745.7	6235
34	850	32.76	832	57.98	1473	64.02	1626	42.40	1077	26.58	650	31.50	300	14665.0	6652
36	900	34.49	876	60.00	1524	67.99	1727	43.90	1115	27.56	700	31.50	300	17365.6	7877
40	1000	38.50	978	69.02	1753	77.01	1956	55.12	1400	34.06	865	31.50	300	24136.0	10948
42	1050	40.24	1022	73.03	1855	82.01	2083	62.91	1598	35.43	900	31.50	300	27237.8	12355
48	1200	45.98	1168	84.02	2134	84.02	2134	67.80	1722	41.02	1042	31.50	300	37784.8	17130
54	1350	51.73	1314	97.99	2489	97.99	2489	70.71	1769	45.87	1165	31.50	300	71869.5	32600
56	1400	53.62	1362	101.30	2573	101.30	2573	71.65	1820	50.39	1280	31.50	300	68893.8	31250
60	1500	57.52	1461					73.43	1865	58.90	1496	31.50	300	78296.4	35515

300LB

Size	D		RF	L		BW	H1		H2		W		Weight		
	in	mm		in	mm		in	mm	in	mm	in	mm	lb	kg	
2	50	2.01	51	8.50	216	8.50	216	8.11	206	4.45	113	10.43	265	61.7	28
3	80	2.99	76	11.14	283	11.14	293	12.40	315	5.08	129	15.76	400	119.0	54
4	100	4.02	102	12.01	305	12.01	305	12.99	330	6.66	169	29.53	750	191.8	87
6	150	5.98	152	15.87	403	17.99	457	13.58	345	5.83	148	11.81	300	465.2	211
8	200	7.99	203	19.76	502	20.51	521	16.34	415	7.28	185	11.81	300	657.0	298
10	250	10.00	254	22.36	568	22.01	559	16.81	427	8.90	226	15.75	400	937.0	425
12	300	12.01	305	25.51	648	25.00	635	18.31	465	10.58	269	19.69	500	1369.1	621
14	350	13.27	337	30.00	762	30.00	762	20.43	519	11.81	300	19.89	600	1741.6	790
16	400	15.24	387	32.99	838	32.99	838	25.12	638	13.78	350	23.62	600	2588.4	1185
18	450	17.24	438	35.98	914	35.98	914	26.99	683	15.83	402	23.62	600	3410.5	1547
20	500	19.25	489	39.02	991	38.02	991	28.45	748	17.56	446	23.62	600	4205.9	1935
22	550	21.26	540	42.99	1092	42.99	1092	33.62	854	19.37	492	23.62	600	5081.6	2305
24	600	23.27	591	45.00	1143	45.00	1143	36.10	917	20.91	531	31.50	600	6536.6	2965
28	700	27.01	686	52.99	1346	52.99	1346	37.72	958	21.89	558	31.50	600	10090.5	4577
30	750	29.02	737	56.00	1397	56.00	1397	40.75	1035	24.41	620	31.50	600	11902.6	5399
32	800	30.75	781	60.00	1524	60.00	1524	42.80	1087	26.22	686	31.50	600	14825.9	6725

**TRUNNION MOUNTED  
FULL WELDED BALL VALVE**

1500LB 2500LB



1500LB

Size		D		L-L1(RF-BW)		L2(RTJ)		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg		
2	50	2.01	51	14.49	368	14.61	371	8.70	221	5.12	130	29.53	750	127.9	58
3	80	2.99	76	18.50	470	18.62	473	11.69	297	5.98	152	39.37	1000	246.8	112
4	100	4.02	102	21.50	546	21.61	549	13.58	345	6.54	166	11.81	*300	423.3	192
6	150	5.75	146	27.76	705	27.99	711	14.37	365	7.56	192	15.75	*400	1091.3	495
8	200	7.64	194	32.76	832	33.15	842	16.65	423	9.37	238	19.69	*500	1313.9	596
10	250	9.49	241	39.02	991	39.41	1001	22.05	580	10.79	274	23.62	*600	1922.4	872
12	300	11.38	289	44.49	1130	45.12	1146	23.94	608	12.52	318	23.62	*600	3284.9	1490
14	350	12.52	318	49.49	1257	50.24	1276	26.06	662	19.02	483	23.62	*600	3851.4	1747
16	400	14.25	362	54.49	1384	55.35	1406	31.34	796	21.02	534	23.62	*600	5092.6	2310
18	450	16.02	407	60.51	1537	61.38	1559	33.43	849	23.88	606	23.62	*600	6851.9	3108
20	500	17.99	457	65.51	1664	66.38	1686	37.95	964	27.01	686	31.50	*800	8483.3	3848
22	550	19.49	495	71.50	1816	/	/	40.35	1025	26.78	731	31.50	*800	11056.1	5015
24	600	21.02	534	80.43	2043	81.54	1972	41.93	1065	30.51	775	31.50	*800	13933.1	6320

2500LB

Size		D		L-L1(RF-BW)		L2(RTJ)		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg		
2	50	1.73	44	17.76	451	17.87	454	9.06	230	4.76	121	15.75	*400	229.3	104
3	80	2.52	64	22.76	578	22.99	584	11.18	284	5.75	146	19.69	*500	460.3	209
4	100	3.50	89	26.50	673	26.89	683	11.93	303	6.46	164	19.69	*500	822.3	373
6	150	5.24	133	35.98	914	36.50	927	15.51	394	8.66	220	23.62	*600	1684.3	764
8	200	7.13	181	40.24	1022	40.87	1038	19.21	488	12.28	312	27.56	*700	3661.8	1661
10	250	8.86	225	50.00	1270	50.87	1292	23.62	600	16.73	425	27.56	*700	5650.4	2583
12	300	10.51	267	55.98	1422	56.89	1445	34.33	872	24.76	629	29.92	*700	8152.6	3696

## ENGINEERING DATA

 Flow Coefficient (CV Value) Specification  
 Pressure Temperature Chart

## Flow Coefficient (CV Value)

SIZE(inch)	150LB	300LB	600LB	900LB	1500LB	2500LB
1/2	25	25	25	25	25	25
3/4	53	53	53	53	53	53
1	92	92	92	92	92	92
1-1/2	213	213	213	213	213	213
2	500	430	370	320	320	260
3	1360	1100	1020	920	820	567
4	2500	2000	1850	1760	1600	1117
6	5300	5250	4400	4300	4150	2532
8	10750	10100	8450	8475	8010	4728
10	17500	16820	14250	14160	13220	7338
12	26750	25950	22550	21200	18800	10363
14	31850	30900	28500	26700	24180	12582
16	44000	42600	38150	36600	33150	16363
18	58000	55870	51150	4900	45703	20641
20	75500	72500	68500	64600	60750	25906
22	91770	86850	80150			
24	113400	109340	98860			

\*Other elastomer materials are available upon request.

## Notes

1. All the sizes are in full port.
2. 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:

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

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:

$$Q_g = 61Cv (P_2/P_1)^{1/2}$$

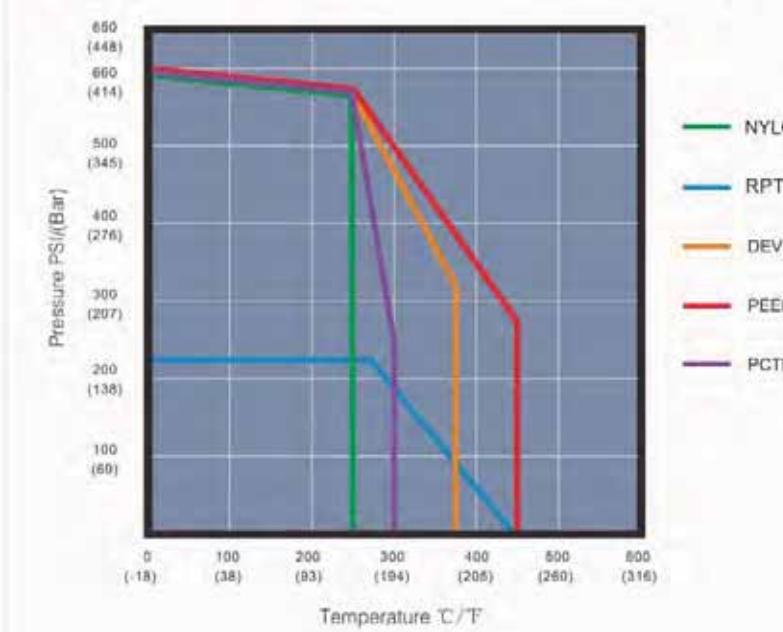
(For non-critical flow, P/P &lt; 1.0)

Q\_L = Flow rate of gas (CFH at STP)

P\_2 = Outlet pressure (psia)

G = Specific gravity of gas (for air, G=1.0)

## Pressure Temperature Chart



## Operating Torque

Size	150LB(2.0MPa)			300LB(5.0MPa)			600LB(10.0MPa)			
	in	N.m	Flange No.	Stem Diamete	N.m	Flange No.	Stem Diamete	N.m	Flange No.	Stem Diamete
1 1/2"	50	F10	22		130	F10	22	90	F10	22
2"	80	F10	27		160	F12	36	150	F10	27
3"	110	F12	36		240	F12	36	250	F12	36
4"	160	F12	36		450	F14	48	480	F14	40
5"	300	F14	48		1200	F14	48	800	F14	48
8"	800	F14	48					2000	F16	58
10"	1000	F16	58		1700	F16	58	3000	F25	75
12"	1800	F16	58		2700	F16	58	3800	F25	75
14"	2500	F25	75		3700	F25	75	5800	F30	98
16"	3500	F25	75		4500	F25	75	9500	F30	98
18"	4500	F30	98		5350	F30	98	14000	F30	105
20"	5500	F30	98		8500	F30	98	18000	F30	115
22"	7150	F30	98		10500	F30	98	20000	F30	115
24"	9500	F30	98		15500	F30	115	25000	F35	130
26"	10800	F30	115		18500	F30	115	30000	F35	130
28"	12800	F30	120		27300	F30	120	35000	F35	130
30"	16500	F30	120		30500	F30	120	41500	F40	160
32"	20500	F30	120		36000	F30	120	48000	F40	160
34"	24000	F30	120		42000	F30	120	53000	F40	160
36"	36000	F30	120		51000	F40	160	58000	F40	160
40"								67000	F48	180

Size	900LB(16.0MPa)			1500LB(25.0MPa)			2500LB(42.0MPa)			
	in	N.m	Flange No.	Stem Diamete	N.m	Flange No.	Stem Diamete	N.m	Flange No.	Stem Diamete
2"	200	F10	27		220	F10	27	400	F12	36
3"	450	F12	36		550	F12	36	1000	F14	40
4"	850	F14	40		1000	F14	40	1900	F16	48
5"	1500	F18	48		2500	F18	48	4800	F18	58
8"	3500	F16	58		5000	F16	58	5500	F25	75
10"	5200	F25	75		8000	F25	75	9200	F25	85
12"	7000	F25	75		12000	F25	85	20000	F30	98
14"	11000	F30	98		18000	F30	105			
16"	15500	F30	105		22000	F30	115			
18"	22500	F30	115		31500	F35	130			
20"	27000	F30	115		40000	F35	130			
22"	31000	F35	130		48000	F40	150			
24"	38000	F35	130		65000	F40	155			

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.

## Standard

API 6D	Specification for pipeline valve	BSI-BS 4504	Circular flange for pipe valve and fittings
API 6FA	Fire test for valve	BSI-BS 5146	Inspection and test of valve
API 598	Valve inspection and testing	BSI-BS EN 558	Industrial valves
API 608	Metal ball valve flanged threaded and welding end	MSS-SP-6	Standard finishes for contact face of pipe flanges
ASME B16.5	Pipe flanged and flanged fittings	MSS-SP-55	Quality standard for steel casting for valves flange and fitting and other piping components
ASME B16.25	Butt Welding Ends	NACE-MR0175	Sulfide stress cracking resistant material for Oilfield Equipment
ASME B16.10	Face to face and end to end dimension of valve	ISO-14313	Petroleum and natural gas industries-pipeline transportation systems-pipe valves
ASME B16.34	valve-flanged threaded and welding end	ISO-5208	Industrial valves-pressure testing of valve
ASME Section VIII,Div.1	Rules for construction of pressure vessels	ISO-5211	Industrial valves-part turn actuator attachment
ASME Section VIII,Div.2	Alternativ rules for construction of pressure vessels	ISO-7172	Flanged steel ball valve
ASME Section V	Nondestructive examination	ISO-15848	Industrial valves low emission measurement

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.