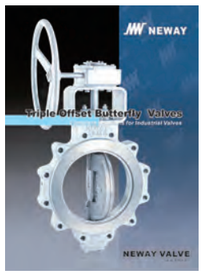
Cat.no.:E-PS

Cat.no.:E-GGC

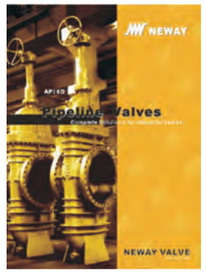
Cat.no.:E-TMBV

Cat.no.:E-FBV

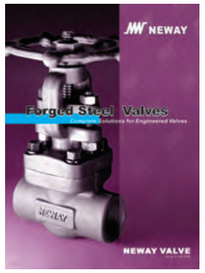
Cat.no.:E-DOV



Cat.no.:E-TOV



Cat.no.:E-PLV



Cat.no.:E-FSV

Cat.no.:E-DAV

Cat.no.:E-CPS

Cat.no.:E-AV

Cat.no.:E-PV

NEWAY
NEWAY VALVE (SUZHOU) CO., LTD.

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http://www.newayvalve.com

Distributed by:

Cat.no.:E-CBV-2019

NEWAY

Cryogenic Ball Valve

Complete Solutions for Industrial Valves

NEWAY VALVE

Cat.no.:E-CBV-2019

Table of Contents

Complete Solutions for Industrial Valves

As a global leader of valve manufacturing, Neway (SSE:603699) is dedicated to the production, research, and development of industrial valves. Neway is committed to providing complete valve solutions to all industries through advanced engineering and innovation.

Neway's product line includes Ball, Butterfly, Gate, Globe, Check, Nuclear, Control, Subsea, Safety valves. Our high quality standards and innovative ability are recognized by many global end users and EPCs. Neway valves are utilized in a wide variety of industries and working conditions such as Refining, Chemical, Coal Chemical, Offshore(including subsea), Air Separation, LNG, Nuclear Power, Power Generation, and Pipeline Transmission applications.

Facilities & Service

Neway has developed a sophisticated multi-plant management system operating one valve assembly plant, one API6A valve plant, three foundries, and one R&D center. Our largest assembly plant was expanded in 2013, and it now covers 230,000 square meters.

Advanced software (ANSYS, FE-Safe, CF-Design, Siemens PLM and NX) is applied here at Neway for the Research & Development of products. We use SAP to control the traceability and status of all products during the manufacturing process. In order to ensure the safety, eco-friendliness, and reliability of our products, we use the most advanced fire-safe, cryogenic, high pressure, and fugitive emission test equipment.

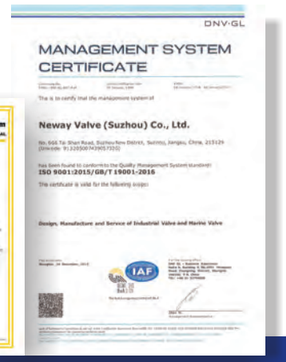
As part of Neway's global strategy, to provide better service to our customers, we have established our overseas subsidiaries in USA, Netherlands, Italy, Singapore and Dubai along with over 80 agents and distributors worldwide.

High Quality, High Value

Neway is dedicated to the pursuit of " Zero Defect ". We maintain a quality management system that encompasses our entire operation from order entry, to final inspection. Through Neway's continuous efforts, our products have achieved industrial certificates including ISO 9001, API 6A, API 6D, CE/PED, ASME N & NPT, TA-Luft, ABS, CU-TR and Fire-Safe approvals.

Quality Commitment

ISO 9001



API 6D

API 6A

CE/PED

TA Luft

ABS

AD2000

Fire Safe Test Certificate

Neway recognizes the importance of valve quality for the safety and protection of personnel health and property. It is our quality commitment to focus our resources to provide our customers with first class products at a competitive price, that are designed, manufactured, inspected and tested in accordance with our customer's specifications and that comply with all international standards.

With respect to the facts that the current industrial standards do not always take into consideration the likelihood and consequences of possible deterioration in service, related to specific service fluids or the external environment in which they operate. Our customers are requested to keep an open line of communication with our engineering department to identify and implement standards, that will provide valves with the possibility of deterioration in service, so as to ensure safety over the valves expected lifetime.

How to order

Example:

8	BSG	6	R	-	G	,	S41	/	8LX66
①	②	③	④		⑤		⑥		⑦

Neway part numbers are designed to cover essential features. When ordering, please show the part numbers and a detailed description to avoid misunderstanding of your requirements.

Following descriptions provide a basic guideline in valve specification:

① Nominal Diameter

Cryogenic Floating Ball Valve Series

Item	Class	Size
1	Class 150, 300	3/8"-8"
2	Class 600	3/8"-3"
3	Class 900, 1500	3/8"-2"

Cryogenic TM Ball Valve Series

Item	Class	Size
1	Class 150, 300	1/2"-40"
2	Class 600, 900	1/2"-24"
3	Class 1500	1/2"-16"

② Valve Types

Cryogenic Floating Ball Valve Series

Code	Type	Remark
BBG	2PC Forging Cryogenic Floating Ball Valve	Class 600 & above or size below 2"
BG	2PC Casting Cryogenic Flaoating Ball Valve	
BDG	Top Entry Cryogenic Floating Ball Valve	

Cryogenic TM Ball Valve Series

Code	Type	Remark
BSG	Forging Side Entry Cryogenic TM Ball Valve	
BEG	Top Entry Cryogenic TM Ball Valve	

③ ASME Class

Code	1	3	6	9	15
Class (LB)	150	300	600	900	1500

④ End Connection

Symbol	End	Symbol	End
R	Raised face flanged end	S	Socket weld end
J	RTJ flanged end	N	Screwed end
B	Butt-weld end		

⑤ Operator

Symbol	Description	Symbol	Description
	Lever	M	Electric actuator
G	Gear operator	P	Pneumatic actuator

⑥ Body Material

Code	S00	S01	S02	S03	S40
Material	CF8	CF8M	CF3	CF3M	F304
ASTM Ref	A351 Gr.CF8	A351 Gr.CF8M	A351 Gr.CF3	A351 Gr.CF3M	A182 Gr.F304

Code	S41	S42	S43	L02	L40
Material	F316	F304L	F316L	LC3	LF3
ASTM Ref	A182 Gr.F316	A182 Gr.F304L	A182 Gr.F316L	A352 Gr.LC3	A350 Gr.LF3

⑦ Trim Code

Cryogenic Floating Ball Valve

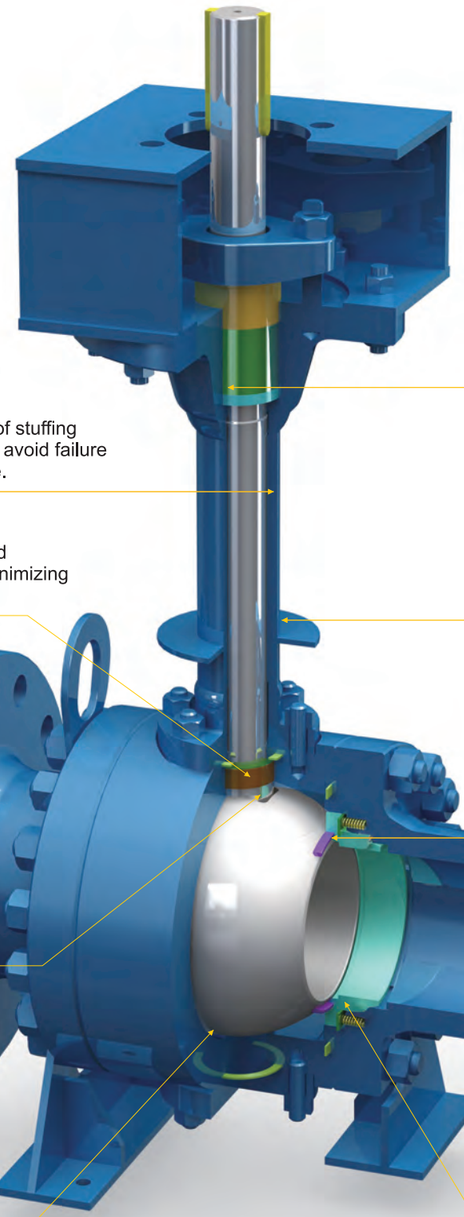
Seat		O-ring		Stem		Ball		Packing	
Code	Material	Code	Material	Code	Material	Code	Material	Code	Material
8	PCTFE	N	No O-rings	2	F304	2	F304	X	Low emission stuffing (GRAPHITE)
I	RPTFE			6	F316	6	F316		
3	PEEK			7	F304L	7	F304L		
G	VESPEL			8	F316L	8	F316L		
K	PAI			X	XM-19	X	XM-19		

Cryogenic TM Ball Valve

Seat		Seal ring		Stem		Ball		Seat retainer	
Code	Material	Code	Material	Code	Material	Code	Material	Code	Material
8	PCTFE	L	Spring seal structure	2	F304	2	F304	2	F304
3	PEEK			6	F316	6	F316	6	F316
I	RPTFE			7	F304L	7	F304L	7	F304L
				8	F316L	8	F316L	8	F316L
				X	XM-19	X	XM-19		

Note: Other materials upon request.

BSG series Cryogenic Ball Valve
Pivot structure



Low emission packing
to prevent leakage around
stem and achieves fire safety.

Extension bonnet raises position of stuffing
box away from cryogenic zone to avoid failure
of packing due to low temperature.

High-precision guide bear installed
to obtain exact stem alignment minimizing
operating torque.

Standard drop plate
constructed to avoid condensate
water flowing into insulation layer

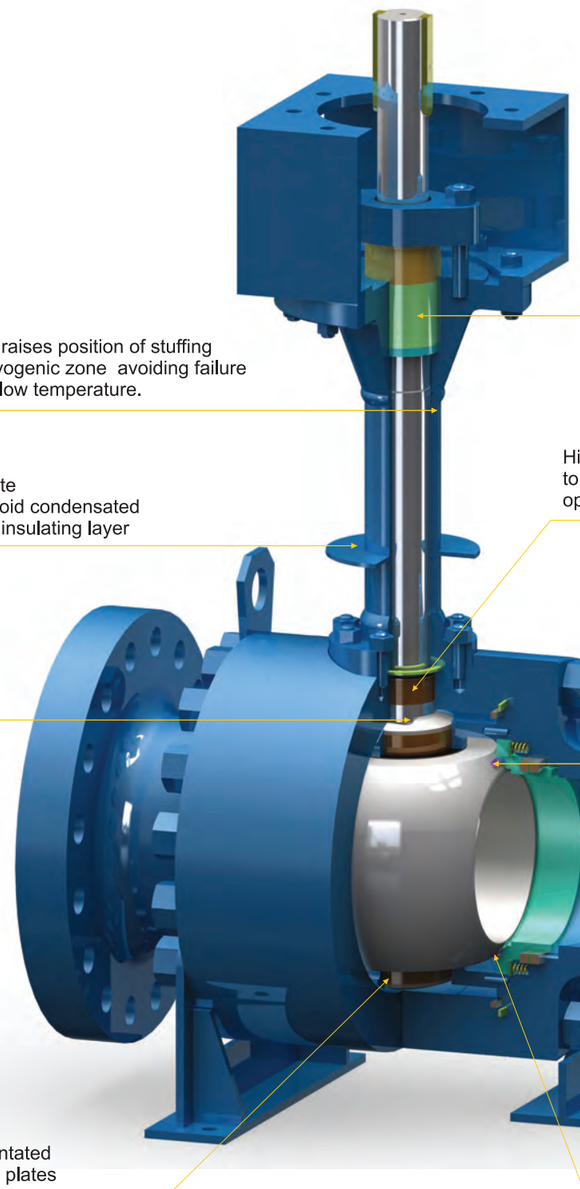
Standard
fire-safe design

Anti-static
design

Ball precisely orientated
by stem and trunnion

Specially-constructed seat
with perfect sealing
performance in ambient and
cryogenic application

BSG series Cryogenic Ball Valve
Supporting plate structure



Low emission packing
prevents leakage around stem
and achieves fire safety.

Extension bonnet raises position of stuffing
box away from cryogenic zone avoiding failure
of packing due to low temperature.

Standard drop plate
constructed to avoid condensated
water flowing into insulating layer

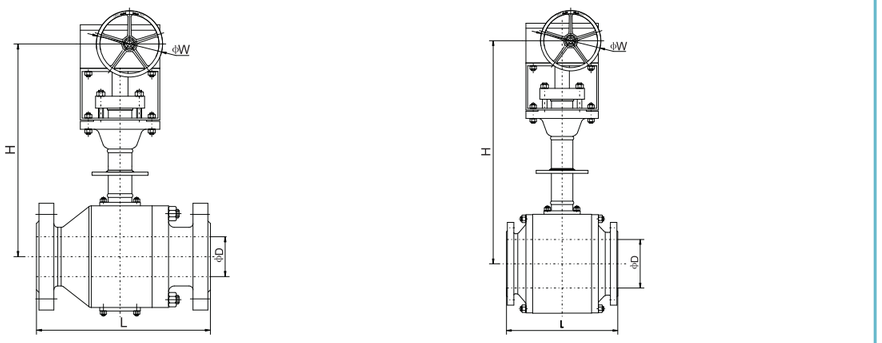
High-precision guide bear installed
to obtain exact stem alignment minimizing
operating torque for ease of operation

Anti-static
design

Standard
fire-safe design

Ball precisely orientated
by double support plates

Specially-constructed seat
with perfect sealing
performance in ambient and
cryogenic application

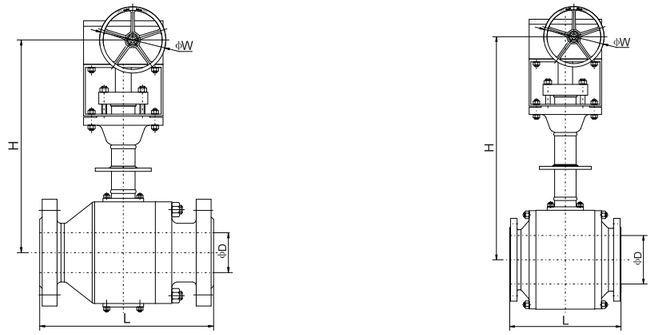


Class 150

Size		D		L		H		W		Weight	
NPS	DN	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	1.93	49	7.01	178	18.58	472	11.81	300	99.21	45
3	80	2.91	74	7.99	203	23.27	591	11.81	300	231.49	105
4	100	3.94	100	9.02	229	26.34	669	19.69	500	286.60	130
6	150	5.91	150	15.51	394	33.35	847	23.62	600	573.20	260
8	200	7.91	201	17.99	457	37.32	948	23.62	600	877.44	398
10	250	9.92	252	20.98	533	40.71	1034	23.62	600	1256.63	570
12	300	11.93	303	24.02	610	42.05	1068	23.62	600	2034.86	923
14	350	13.15	334	27.01	686	45.43	1154	27.56	700	3042.38	1380
16	400	15.16	385	30.00	762	46.69	1186	29.92	760	4265.94	1935
18	450	17.17	436	34.02	864	71.26	1810	31.50	800	5059.60	2295
20	500	19.17	487	35.98	914	79.53	2020	35.43	900	7870.49	3570
22	550	21.18	538	39.02	991	85.43	2170	35.43	900	11111.28	5040
24	600	23.19	589	42.01	1067	97.24	2470	35.43	900	13756.83	6240

Class 300

Size		D		L		H		W		Weight	
NPS	DN	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	1.93	49	8.50	216	18.58	472	11.81	300	110.23	50
3	80	2.91	74	11.14	283	23.27	591	11.81	300	244.71	111
4	100	3.94	100	12.01	305	26.34	669	19.69	500	317.47	144
6	150	5.91	150	15.87	403	33.35	847	23.62	600	630.52	286
8	200	7.91	201	19.76	502	37.32	948	23.62	600	1585.12	719
10	250	9.92	252	22.36	568	40.71	1034	23.62	600	1351.43	613
12	300	11.93	303	25.51	648	42.05	1068	27.56	700	2416.26	1096
14	350	13.15	334	30.00	762	45.53	1154	29.92	760	3053.40	1385
16	400	15.16	385	32.99	838	46.69	1186	29.92	760	4276.96	1940
18	450	17.17	436	35.98	914	71.26	1810	31.50	800	5070.63	2300
20	500	19.17	487	39.02	991	79.53	2020	35.43	900	7881.52	3575
22	550	21.18	538	42.99	1092	85.43	2170	35.43	900	11122.31	5045
24	600	23.19	589	45.00	1143	97.24	2470	35.43	900	13767.85	6245



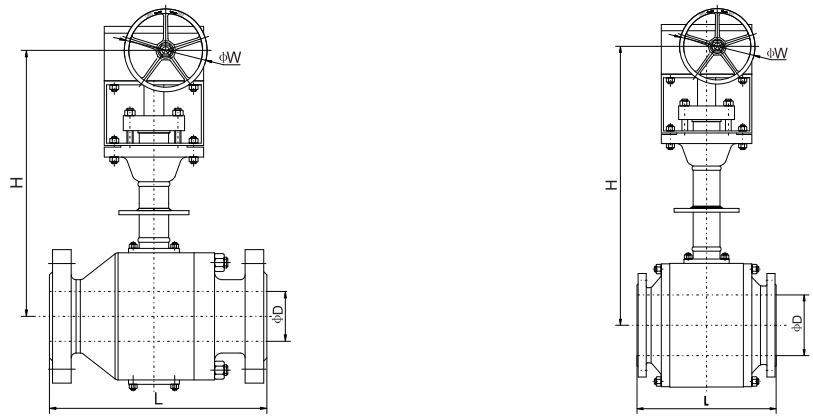
Class 600

Size		D		L		H		W		Weight	
NPS	DN	in	mm	in	mm	in	mm	in	mm	lb	kg
2	50	1.93	49	11.50	292	18.58	472	11.81	300	132.28	60
3	80	2.91	74	14.02	356	23.27	591	19.69	500	255.74	116
4	100	3.94	100	17.01	432	26.34	669	19.69	500	432.11	196
6	150	5.91	150	22.01	559	33.58	853	23.62	600	791.46	359
8	200	7.91	201	25.98	660	38.46	977	23.62	600	1585.12	719
10	250	9.92	252	30.98	787	41.18	1046	29.92	760	2175.96	987
12	300	11.93	303	32.99	838	43.62	1108	29.92	760	3020.33	1370
14	350	13.15	334	35.00	889	46.61	1184	29.92	760	3690.53	1674
16	400	15.16	385	39.02	991	48.27	1226	29.92	760	4299.01	1950
18	450	17.17	436	42.99	1092	72.44	1840	31.50	800	5092.67	2310
20	500	19.17	487	47.01	1194	80.71	2050	35.43	900	7903.56	3585
22	550	21.18	538	50.98	1295	86.61	2200	35.43	900	11144.35	5055
24	600	23.19	589	55.00	1397	98.43	2500	35.43	900	13789.90	6255

Class 900

Size		D		L		H		W		Weight	
NPS	DN	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2	15	0.51	13	8.50	216	18.11	460	7.87	200	—	—
3/4	20	0.79	19	9.02	229	18.11	460	7.87	200	—	—
1	25	0.98	25	10.00	254	18.11	460	7.87	200	—	—
1-1/2	40	1.50	38	12.01	305	19.69	500	11.81	300	—	—
2	50	1.93	49	14.49	368	19.69	500	19.69	500	165.35	75
3	80	2.91	74	15.00	381	24.80	630	19.69	500	277.78	126
4	100	3.94	100	17.99	457	27.05	687	23.62	600	618.40	280.5
6	150	5.91	150	24.02	610	35.04	890	23.62	600	1455.05	660
8	200	7.91	201	29.02	737	42.68	1084	29.92	760	1719.60	780
10	250	9.92	252	32.99	838	45.04	1144	29.92	760	2711.68	1230
12	300	11.93	303	37.99	965	51.18	1300	31.50	800	3721.40	1688
14	350	12.68	322	40.51	1029	61.02	1550	31.50	800	5324.16	2415
16	400	14.69	373	44.49	1130	70.87	1800	31.50	800	6646.93	3015

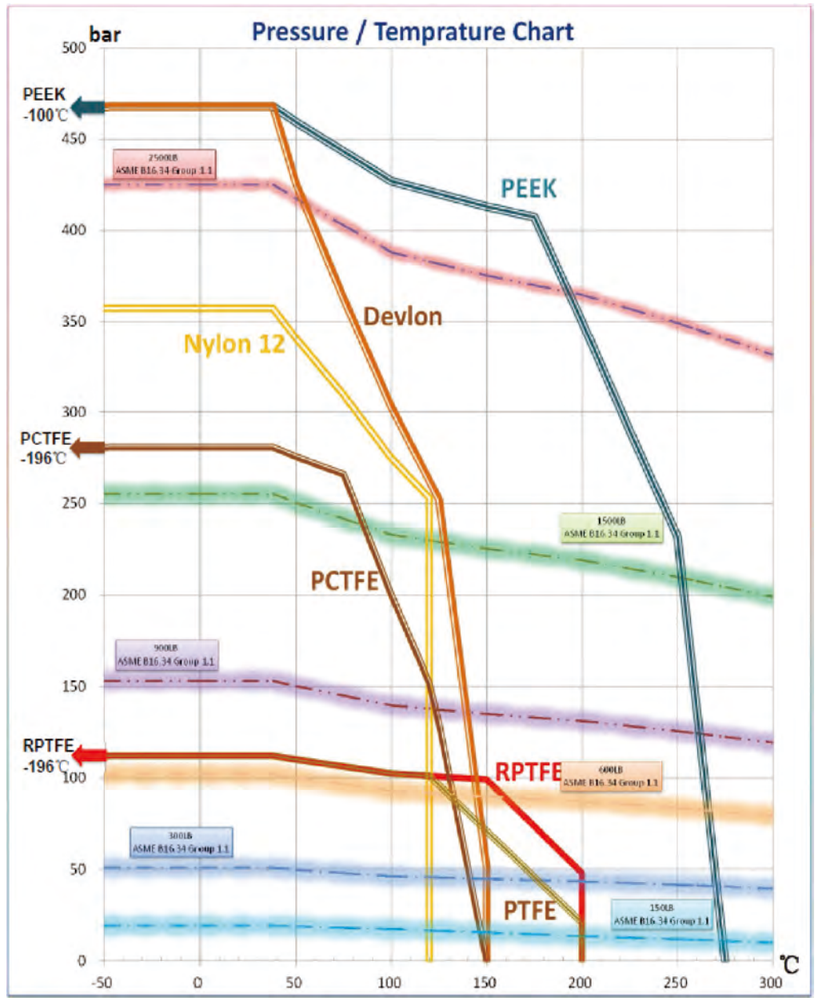
Dimensions and Weights



Class 1500

Size		D		L		H		W		Weight	
NPS	DN	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2	15	0.51	13	8.50	216	19.69	500	11.81	300	—	—
3/4	20	0.79	19	9.02	229	19.69	500	11.81	300	—	—
1	25	0.98	25	10.00	254	19.69	500	11.81	300	—	—
1-1/2	40	1.50	38	12.01	305	20.47	520	19.69	500	—	—
2	50	1.93	49	14.49	368	25.59	650	23.62	600	—	—
3	80	2.91	74	18.50	470	27.56	700	19.69	500	—	—
4	100	3.94	100	21.50	546	28.74	730	23.62	600	—	—
6	150	5.67	144	27.76	705	33.86	860	23.62	600	—	—
8	200	7.56	192	32.76	832	40.16	1020	29.92	760	—	—
10	250	9.41	239	39.02	991	59.06	1500	29.92	760	—	—
12	300	11.30	287	44.49	1130	62.60	1590	35.43	900	—	—
14	350	12.40	315	49.49	1257	66.14	1680	35.43	900	—	—
16	400	14.17	360	54.49	1384	74.41	1890	35.43	900	—	—

Pressure Temperature Chart



PEEk: Devlon: 2500LB ASME B16.34 Group1.1

Nylon 12: PCTFE: 1500LB ASME B16.34 Group1.1

RPTFE: PTFE: 900LB ASME B16.34 Group1.1

600LB ASME B16.34 Group1.1 300LB ASME B16.34 Group1.1 150LB ASME B16.34 Group1.1

Note: Other materials are available upon request.
If the operating condition is beyond the range above, please contact NEWAY's technical team.
NEWAY reserves the right to update without notice.

Seat

Properties		PCTFE	PTFE	PEEK
Temperature Range °F		-328~302	-328~392	-148~500
Temperature Range °C		-200~150	-200~200	-100~260
Pressure Rating--LB		150~1500	150~600	150~2500
Mechanical Property	Hardness (D)	75~85	55~60	≥82
	Tensile Strength(MPa)	31.4~37.2	28~40	≥95
	Tensile Elongation(Break,%)	50~200	>350	≥55
Physical Property	Specific Gravity (g/cm3)	2.11~2.16	2.16~2.18	1.3~1.4
	Water Absorption 24hrs(%)	0.00	0.00	0.2
	Water Absorption Saturation	<0.01	<0.01	0.5
Service Application		Cryogenic & Low Temperature	Chemical & Low Temperature	High Pressure & Temperature

Seal Ring

Type	Spring Seal Structure
Temperature Range °F	-425~600
Temperature Range °C	-254~316
Pressure Rating--LB	150~1500
Size--inch	1/2"~78"

Flow Coefficient (Cv Value)

Size (inch)	Class 150	Class 300	Class 600	Class 900	Class 1500
1/2	17	15	14	12	12
3/4	43	38	34	31	31
1	86	76	66	61	61
1-1/2	227	211	187	167	167
2	423	384	330	294	294
3	1139	965	860	832	749
4	2416	2093	1759	1710	1564
6	5241	5183	4400	4212	3918
8	10471	9991	8713	8245	6921
10	17709	17154	14573	14123	11376
12	26241	25460	22389	20864	16835
14	32857	31176	28863	24483	20967
16	44474	42409	38998	33741	27901
18	57002	55420	50703	44491	35761
20	73076	70180	63936	55915	45445
22	88907	85757	78750	—	—
24	113639	109796	99314	—	—

Notes:
1.All the sizes are of full port.
2.Pressure Ratings are according to B 16.34.
3.Method of Calculating Flow
The Flow Coefficient Cv of a value 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:

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

QL = Flow rate of liquid (gal. /min.)
P = differential pressure across the valve
G = specific gravity of liquid (for water, G=1)

Gas Flow:

$$Qg = 61Cv\ (P_2P/g)^{1/2}$$

(For non-critical flow, P/P<1.0)
Qg = Flow rate of gas (CFH at STP)
P_2 = outlet pressure (psia)
g = specific gravity of gas (for air, g=1.0)

Operating Torque

Floating Ball Operating Torque

inch	Class 150		Class 300		Class 600		Class 900		Class 1500	
	N.m	lbf.ft	N.m	lbf.ft	N.m	lbf.ft	N.m	lbf.ft	N.m	lbf.ft
3/8	20	14.76	30	22.14	40	29.52	50	36.90	65	47.97
1/2	20	14.76	30	22.14	40	29.52	50	36.90	65	47.97
3/4	35	25.82	45	33.21	60	44.26	119	87.83	192	141.71
1	45	33.21	65	47.97	120	88.57	173	127.68	277	204.44
1-1/2	80	59.04	130	95.95	280	206.52	347	256.11	556	410.36
2	120	88.57	225	166.06	490	361.41	581	428.81	928	684.92
3	245	180.83	320	236.02	830	612.18				
4	450	331.91	705	519.99						
6	1350	995.71	2100	1548.88						
8	2240	1652.14	5100	3761.57						

Note:
The seat material is PCTFE
This torque is the max. operating torque in the cryogenic condition.

Trunnion-mounted Ball Valve Operating Torque

inch	Class 150		Class 300		Class 600		Class 900	
	N.m	lbf.ft	N.m	lbf.ft	N.m	lbf.ft	N.m	lbf.ft
2	162	119.57	219	161.64	308	227.32	420	309.99
3	604	445.79	732	540.26	1061	783.08	1355	999.79
4	686	506.31	904	667.21	1379	1017.79	1884	1390.22
6	1466	1082.00	1989	1468.01	3082	2274.71	4269	3150.76
8	2738	2020.81	4257	3141.93	7129	5261.64	10518	7763.28
10	3836	2831.21	6007	4433.54	10438	7703.89	15624	11531.61
12	5800	4280.76	9287	6854.38	15672	11566.91	23612	17426.86
14	6579	4855.71	11120	8207.25	21777	16072.77	32053	23657.44
16	9788	7224.15	15907	11740.35	28411	20969.08	42408	31299.98
18	13185	9731.48	19285	14233.52	33750	24909.59		
20	14481	10688.23	26600	19632.45	40000	29522.47		
22	17037	12574.39	32900	24282.23	43750	32290.21		
24	21000	15499.30	43050	31773.56	48750	35980.52		

Note:
The seat material is PCTFE
This torque is the max. operating torque in the cryogenic condition.

Product Warranty

Seller will replace without charge or refund the purchase price of products provided by Seller which prove to be defective in material or workmanship, provided in each case that the product is properly 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 of 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.