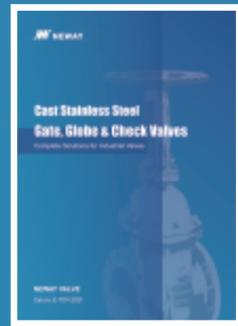


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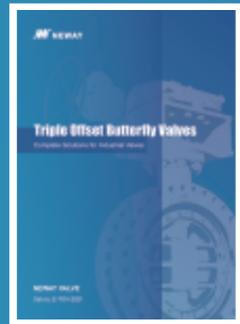
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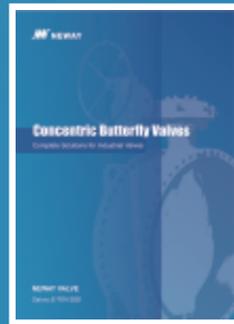
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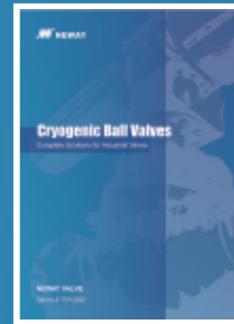
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Cat.no.:E-CBV



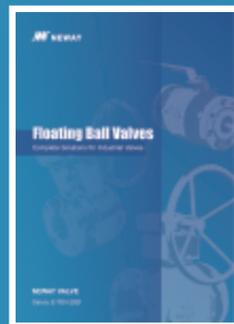
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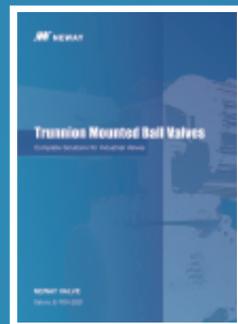
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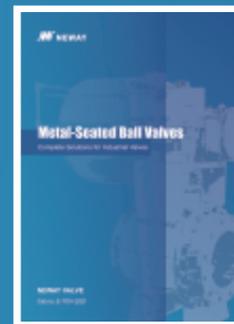
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Cat.no.:E-FBV



Cat.no.:E-TMBV



Cat.no.:E-MSBV

Cryogenic Ball Valves

Complete Solutions for Industrial Valves

Cat.no.:E-CBV-2022

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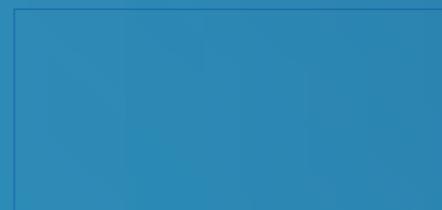


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Complete Solutions for Industrial Valves

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 three R&D center. Our largest assembly plant was expanded in 2013, and it now covers 35,000 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, Dubai, Vietnam and Nigeria along with over 80 agents and distributors worldwide.

Quality Assurance

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 successfully 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



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, designed, manufactured, inspected and tested in accordance with our customers specifications and complying with all international standards.

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 environments in which they operate. Therefore we request that our customers communicate with our engineering department. Our valve optimization program continuously strives to provide valves that withstand deterioration in service, and ensure safety over the valves expected lifetime.



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 Floating Ball Valve	
BDG	Top Entry Cryogenic Floating Ball Valve	

Cryogenic TM Ball Valve Series

Item	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 Valve Code

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

⑥ Body Material

Code	S00	S00	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

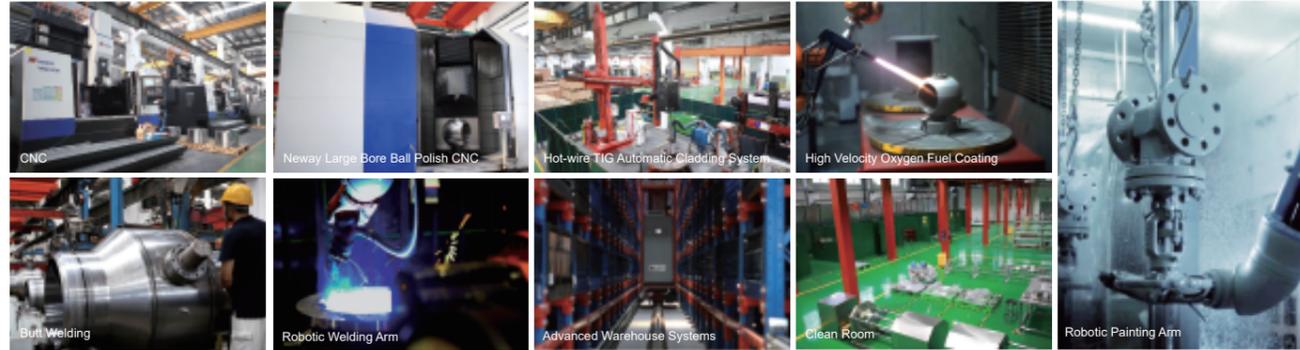
⑦ Trim Code

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		

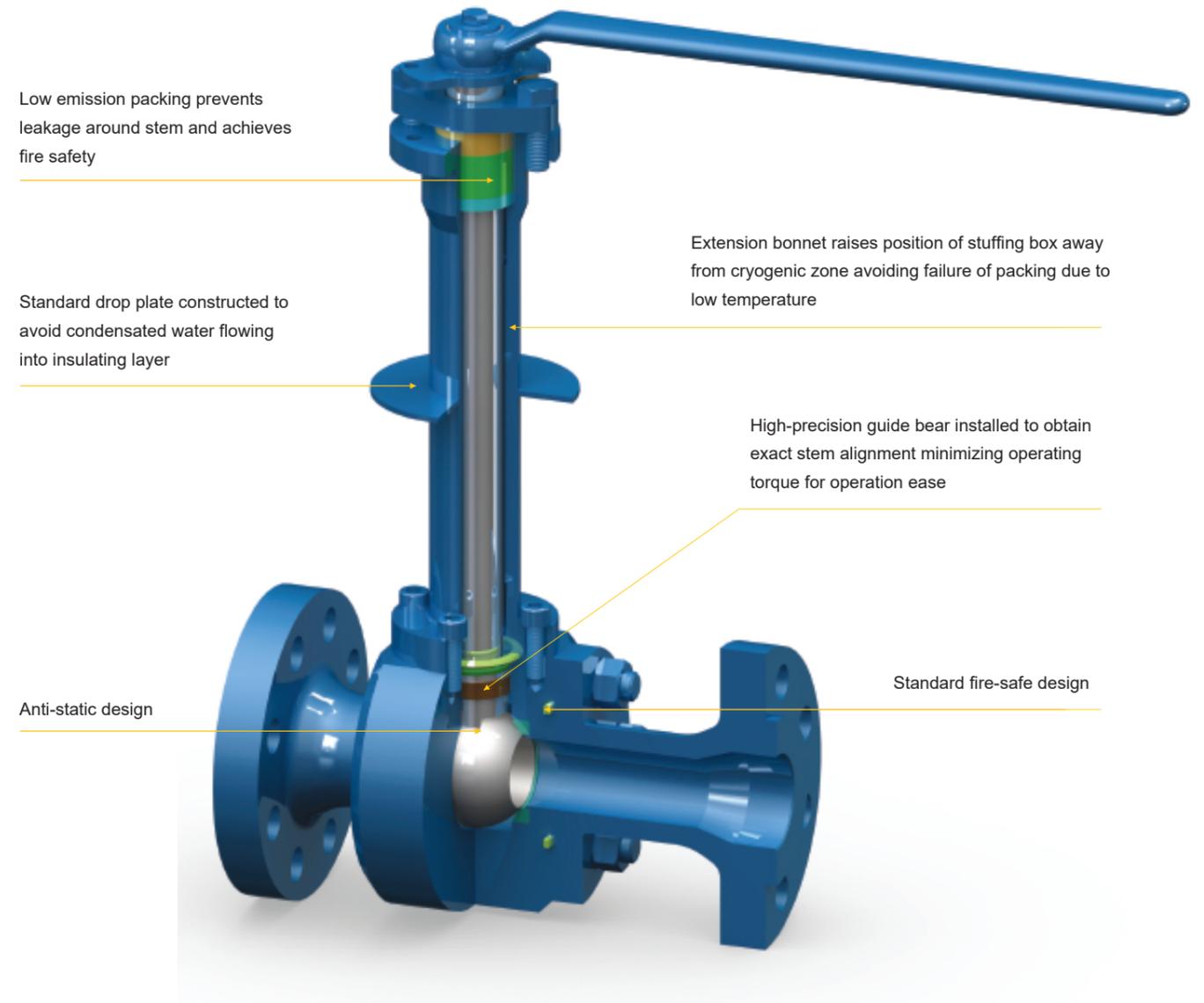
Seat		Seal Ring		Stem		Ball		Packing	
Code	Material	Code	Material	Code	Material	Code	Material	Code	Material
8	PCTFE	L	Spring seal structure	2	F304	2	F304	X	F304
3	PEEK			6	F316	6	F316		F316
I	RPTFE			7	F304L	7	F304L		F304L
				8	F316L	8	F316L		F316L
				X	XM-19	X	XM-19		

Note: other materials upon request

The latest computer technology has been extensively applied in NEWAY manufacturing, which includes a large number of numeric control machines (machining center, CNC horizontal and vertical lathe, and CNC drilling machine) and ERP management system. Additionally, the data through all factories has been connected and shared. These facilitate resource integration, boost productivity, evidently enhancing machining quality and tightening process control.



NEWAY developed comprehensive and advanced inspection and test facilities to control the quality from rough castings or forgings to final products, which enable us to perform ultrasonic testing, radiographic test, liquid penetrant test, magnetic-particle test, spectrum analysis, Material Positive Identification (MPI), impact test, tensile test, hardness test, fire safe test, cryogenic test, vacuum test, low fugitive emission test, high pressure gas test and hydrostatic test.



Low emission packing prevents leakage around stem and achieves fire safety

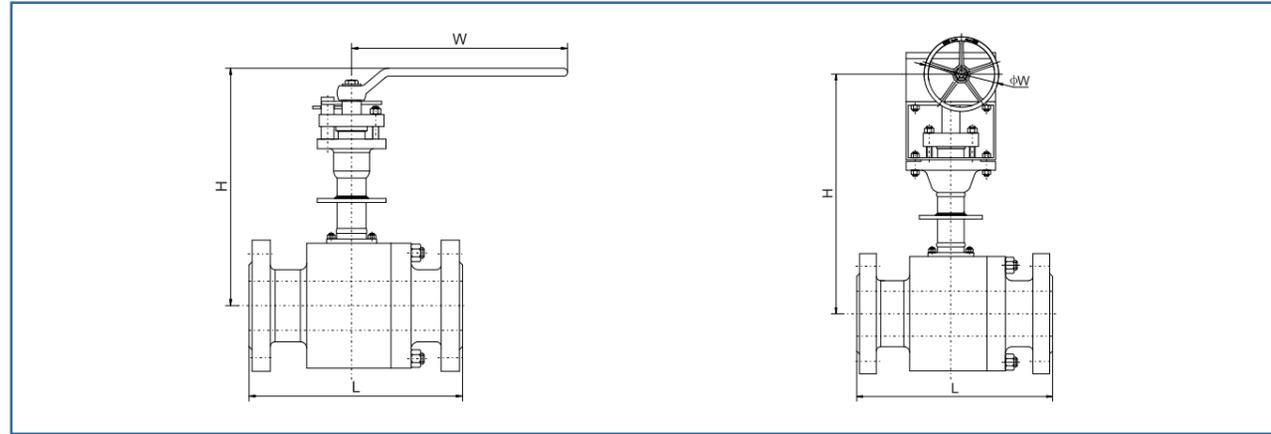
Standard drop plate constructed to avoid condensated water flowing into insulating layer

Anti-static design

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

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

Standard fire-safe design

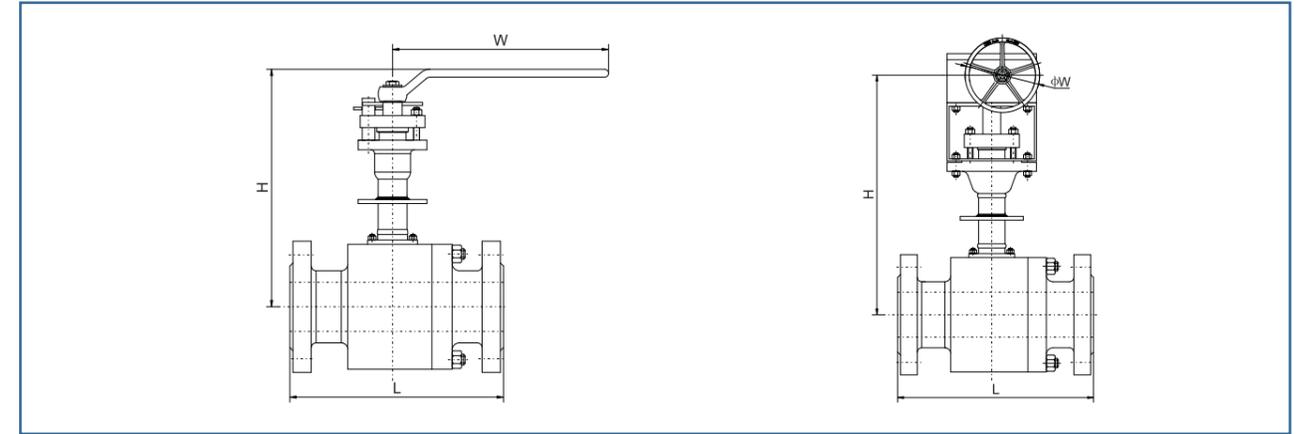


Class 150

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"
DN	mm	15	20	25	40	50	80	100	150	200
L(RF)	mm	108	117	127	165	178	203	229	394	457
H	mm	326	336	343	416	432	508	602	739	783
W	mm	165	215	215	350	430	815(T)	815(T)	500(G)	500(G)
WT(RF)	KG	4	5	7	16	22	43	62	180	289

Class 300

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"
DN	mm	15	20	25	40	50	80	100	150	200
L(RF)	mm	140	152	165	191	216	283	305	403	502
H	mm	328	340	347	420	439	516	615	789	843
W	mm	165	215	215	350	430	815(T)	815(T)	500(G)	500(G)
WT(RF)	KG	5	6	8	18	24	51	79	212	386

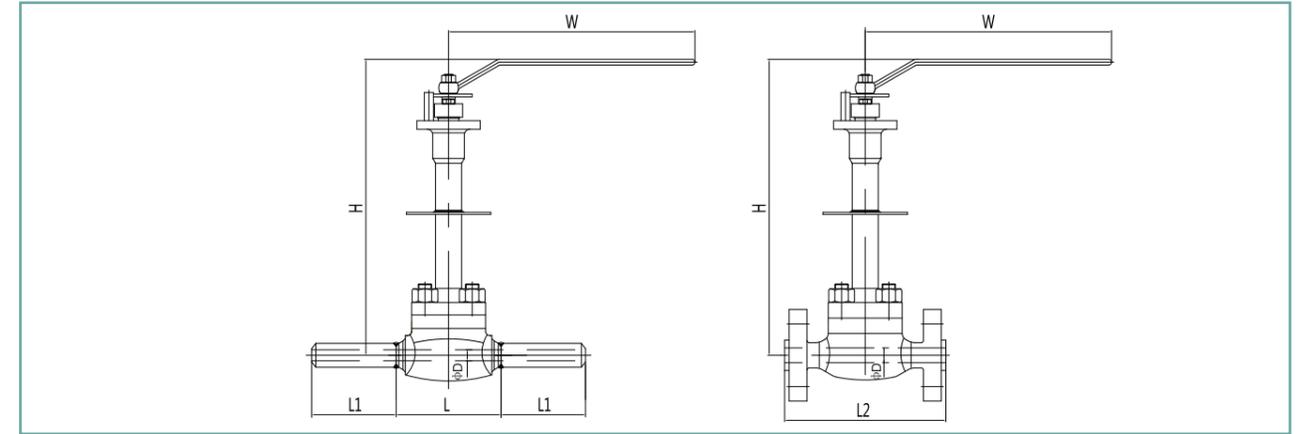
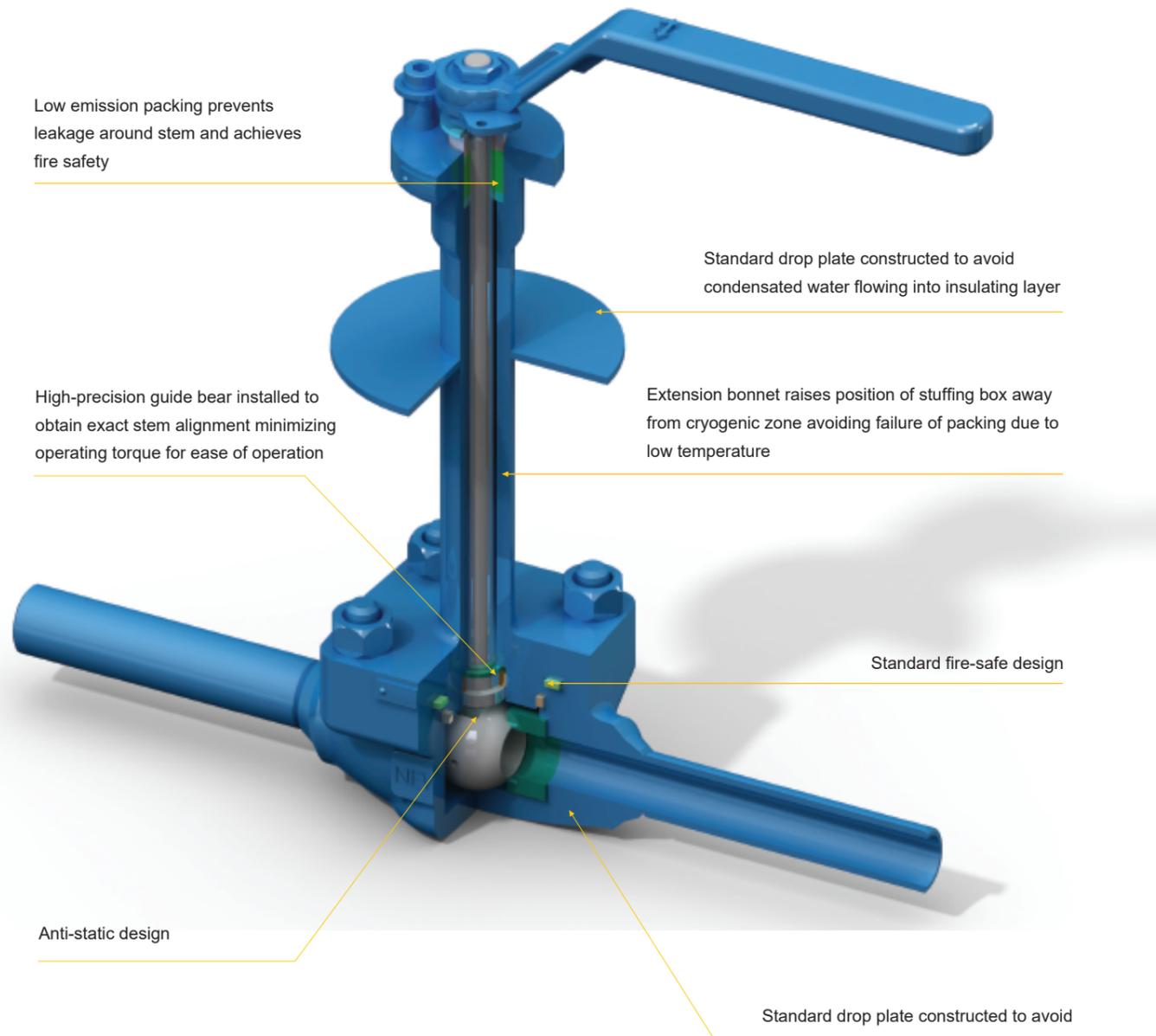


Class 600

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"
DN	mm	15	20	25	40	50	80
L(RF)	mm	165	191	216	241	292	356
H	mm	337	347	361	423	510	652
W	mm	215	215	350	600	300(G)	400(G)
WT(RF)	KG	8	9	15	27	52	82

Class 900 / 1500

NPS	in	1/2"	3/4"	1"	1-1/2"	2"
DN	mm	15	20	25	40	50
L(RF)	mm	216	229	254	305	368
H	mm	354	369	400	482	579
W	mm	215	150(G)	203(G)	300(G)	400(G)
WT(RTJ)	KG	15	22	33	63	96



Class 150 / 300 / 600

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"
DN	mm	15	20	25	40	50	80
L	mm	140	140	152	161	216	283
L1	mm	100	100	100	100	100	100
L2(RF)	mm	165	191	216	241	292	356
H	mm	330	330	350	430	440	550
W	mm	215	215	350	350	430	430*
WT(RF)	KG	8.5	8.5	12	28	43	96
WT(BW)	KG	8	8	11	25	40	87

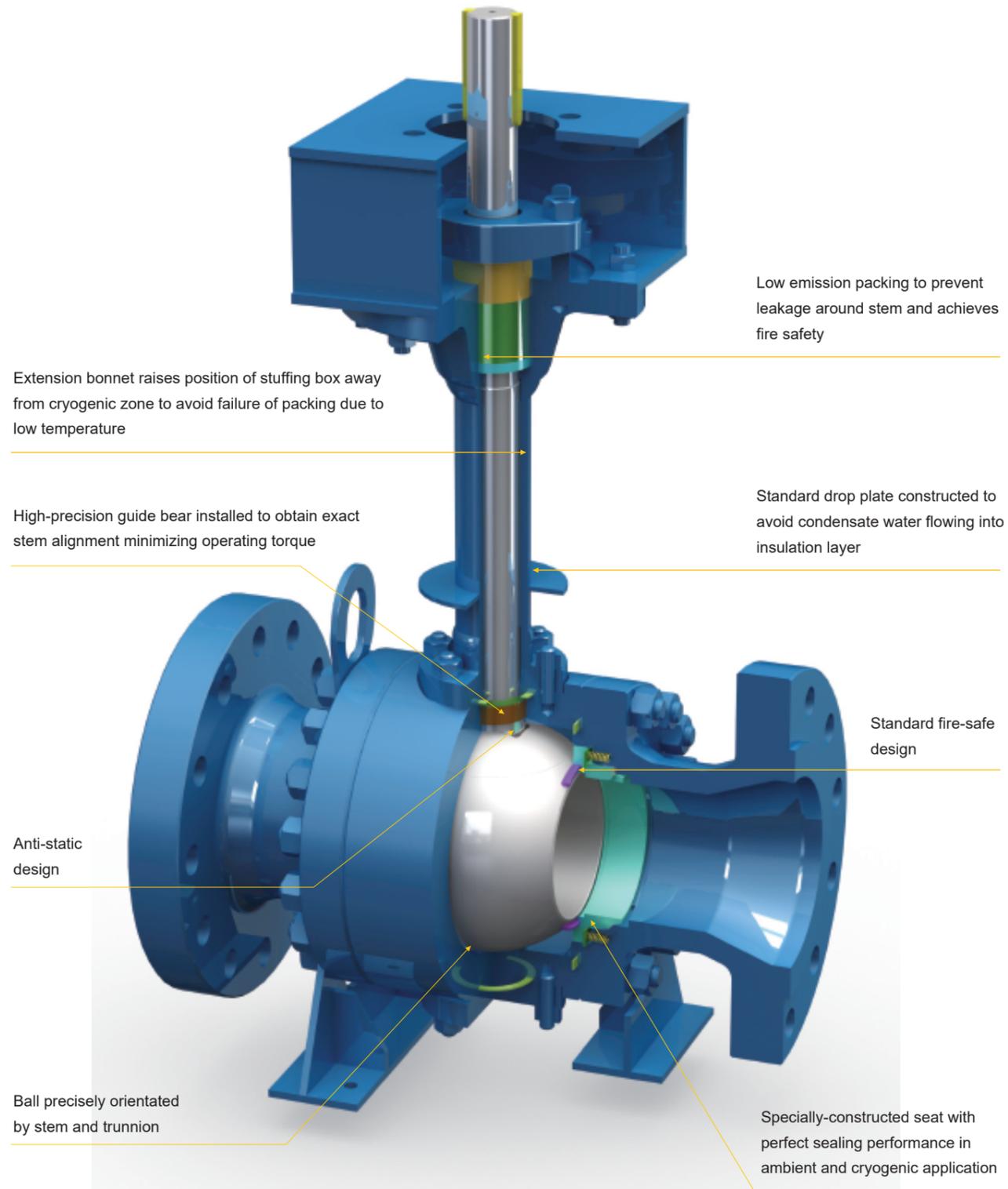
Class 900 / 1500

NPS	in	1/2"	3/4"	1"	1-1/2"	2"
DN	mm	15	20	25	40	50
L	mm	216	229	254	305	368
L1	mm	100	100	100	100	100
L2(RTJ)	mm	216	229	254	305	368
H	mm	435	435	480	510	550
W	mm	350	350	430	500	600
WT(RTJ)	KG	17	17	28	46	100
WT(BW)	KG	15	15	24	41	90

BSG series Cryogenic Ball Valve

Pivot structure

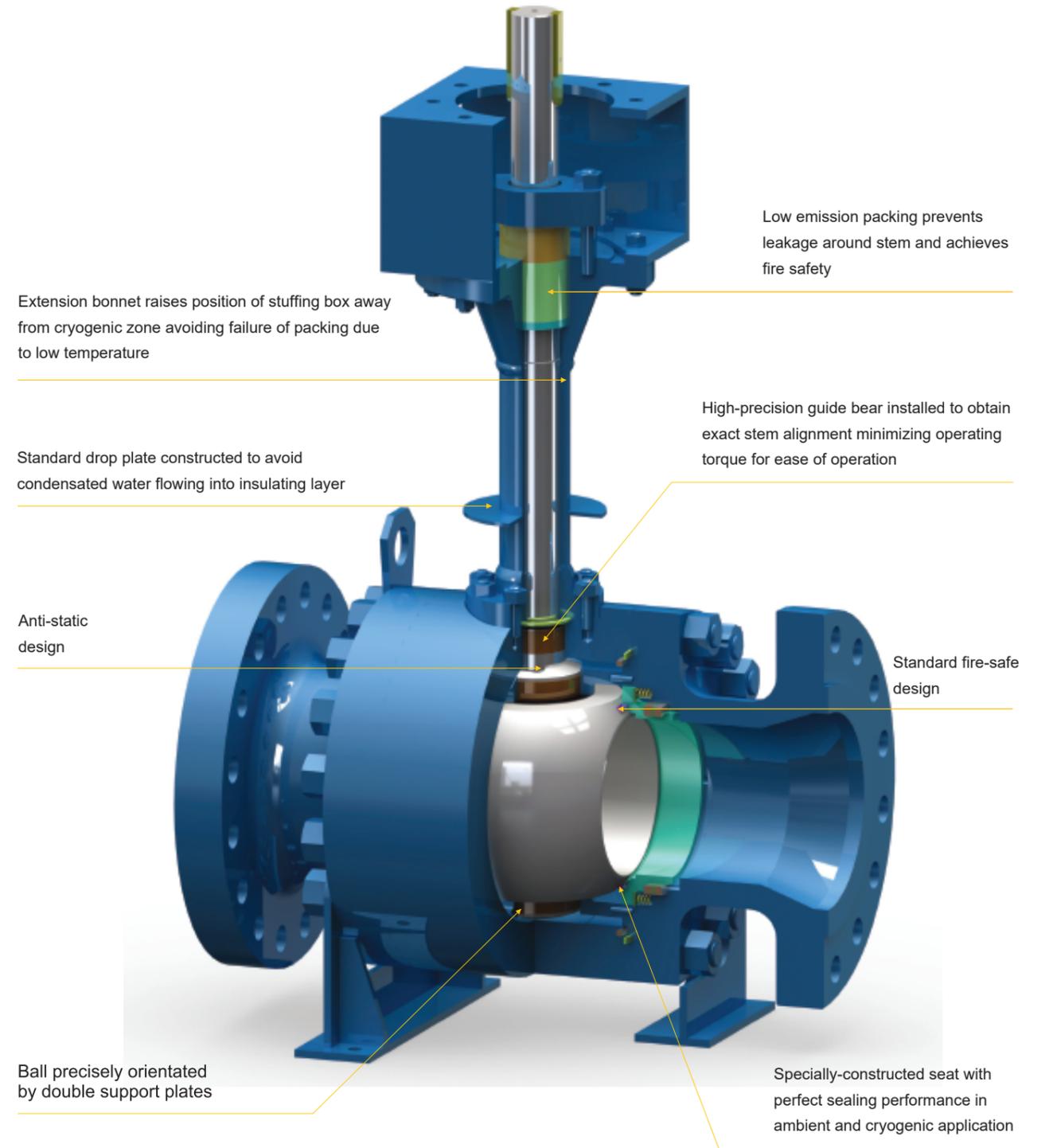
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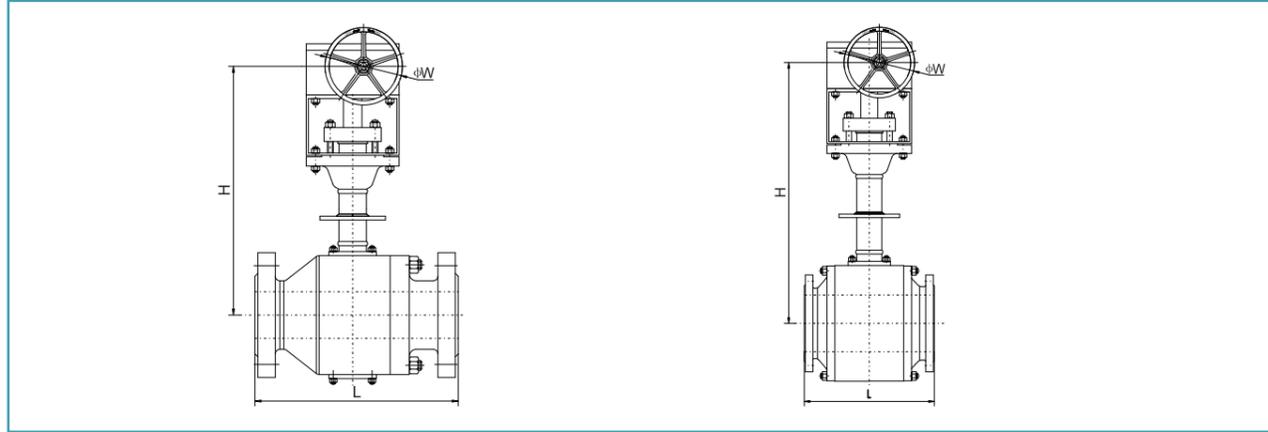


Design Feature

BSG series Cryogenic Ball Valve

Pivot structure



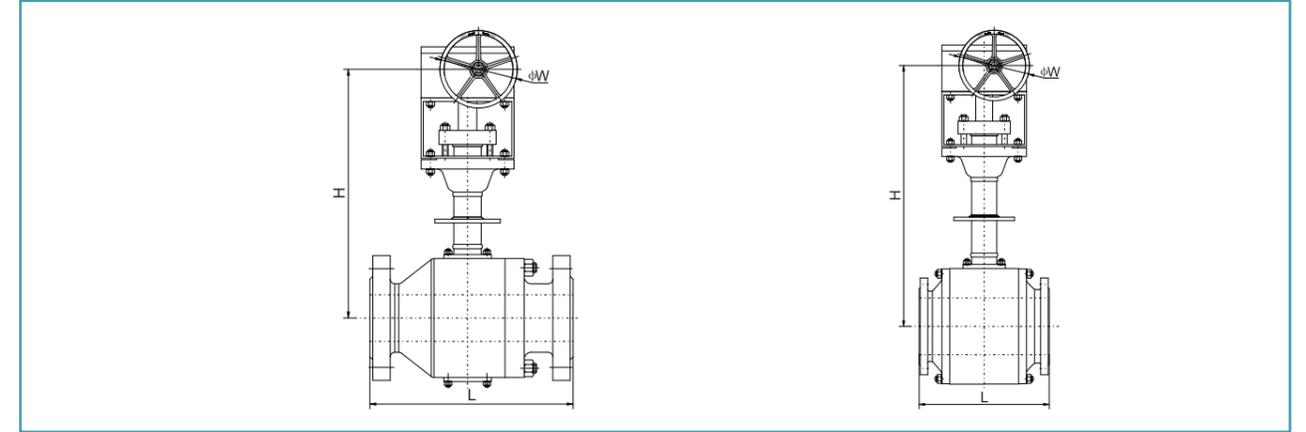


Class 150

NPS	in	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RF)	mm	178	203	229	394	457	533	610	686	762	864	914	991	1067
L(BW)	mm	216	283	305	457	521	559	635	762	838	914	991	1067	1143
H	mm	472	591	669	847	948	1034	1068	1154	1186	1810	2020	2170	2470
W	mm	300	300	500	600	600	600	600	700	760	800	900	900	900
WT(RF)	KG	45	105	130	260	398	570	923	1380	1935	2295	3570	5040	6240
WT(BW)	KG	42	100	122	248	378	540	879	1320	1857	2200	3446	4880	6051

Class 300

NPS	in	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RF)	mm	216	283	305	403	502	568	648	762	838	914	991	1092	1143
L(BW)	mm	216	283	305	403	502	568	648	762	838	914	991	1092	1143
H	mm	472	591	669	847	948	1034	1068	1154	1186	1810	2020	2170	2470
W	mm	300	300	500	600	600	600	600	700	760	800	900	900	900
WT(RF)	KG	50	111	144	286	613	719	1096	1385	1940	2300	3575	5045	6245
WT(BW)	KG	49	109	141	280	604	706	1077	1359	1906	2258	3525	4985	6174



Class 600

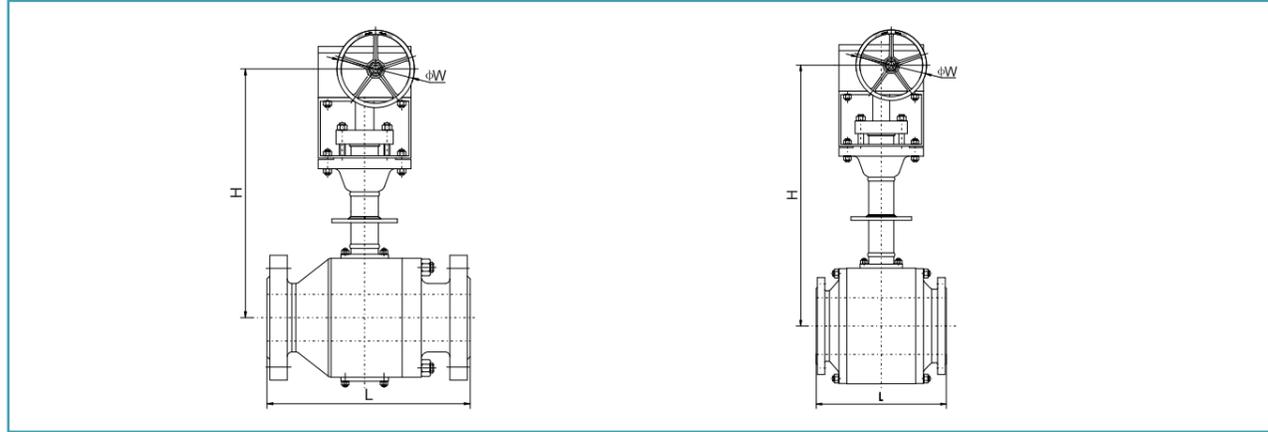
NPS	in	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RF)	mm	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
L(BW)	mm	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
H	mm	472	591	669	853	977	1046	1108	1184	1226	1840	2050	2200	2500
W	mm	300	500	500	600	600	760	760	760	760	800	900	900	900
WT(RF)	KG	60	116	196	359	719	987	1370	1674	1950	2310	3585	5055	6255
WT(BW)	KG	55	106	175	319	669	900	1260	1343	1760	2080	3305	4745	5883

Class 900

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RTJ)	mm	216	229	254	305	368	381	457	610	737	838	965	1029	1130	1219	1321	1435*	1549
L(BW)	mm	216	229	254	305	368	381	457	610	737	838	965	1029	1130	1219	1321	1435*	1549
H	mm	460	460	460	500	500	630	687	890	1084	1144	1300	1550	1800	2060	2400	2650	2940
W	mm	200	200	200	300	500	500	600	600	760	760	800	800	800	900	900	900	900
WT(RTJ)	KG	18	25	35	63	165	277	618	745	1045	1562	1760	2266	2965	3380	5470	6750	7940
WT(BW)	KG	16	21	31	58	154	262	595	715	960	1425	1580	1960	2720	3070	5080	6180	7265

BSG series Cryogenic Ball Valve

Dimension & Weight

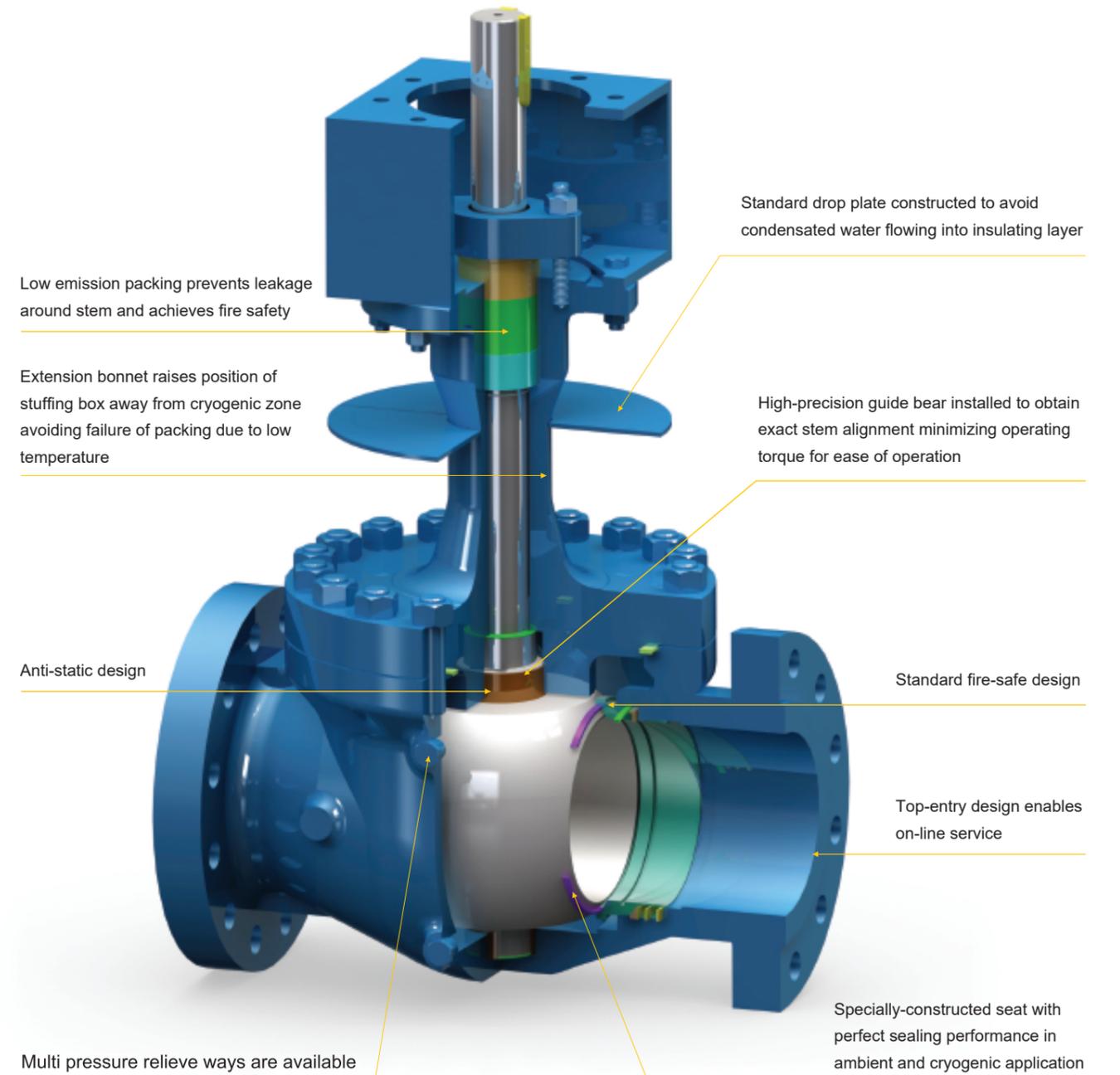


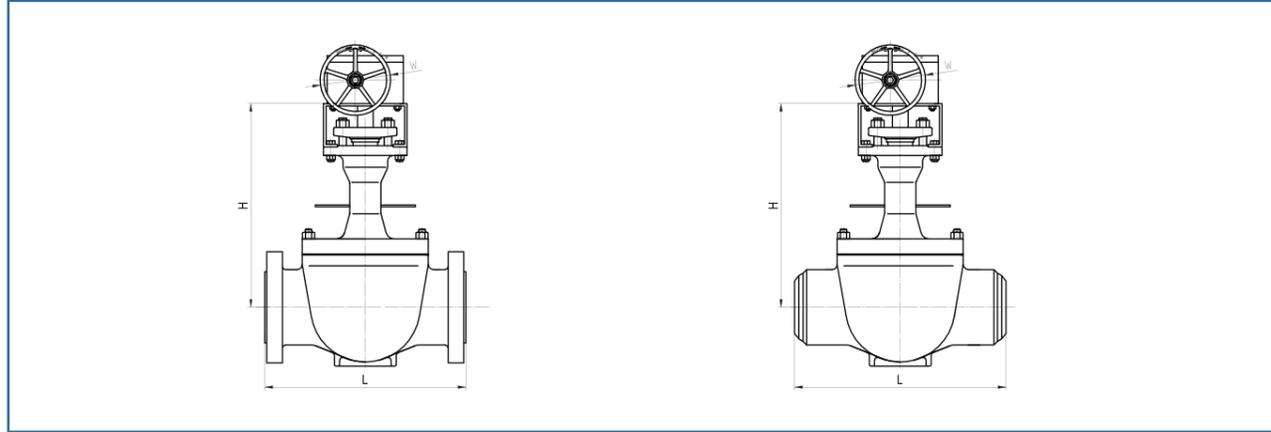
Class 1500

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RTJ)	mm	216	229	254	305	368	470	546	705	832	991	1130	1257	1384	1537	1664	1803	1943
L(BW)	mm	216	229	254	305	371	473	549	711	841	1000	1146	1276	1407	1537	1664	1803	1943
H	mm	500	500	500	520	650	700	730	860	1020	1500	1590	1680	1890	1925	2175	2425	2680
W	mm	300	300	300	500	600	500	600	600	760	760	900	900	900	1000	1000	1000	1000
WT(RTJ)	KG	18	25	35	63	70	140	220	790	1120	1620	2950	3185	3850	5135	6180	7986	9675
WT(BW)	KG	16	22	31	57	50	105	178	660	912	1264	2415	2470	2921	3880	4662	6010	7181

Dimension & Weight

Cast Steel Cryogenic Globe Valve



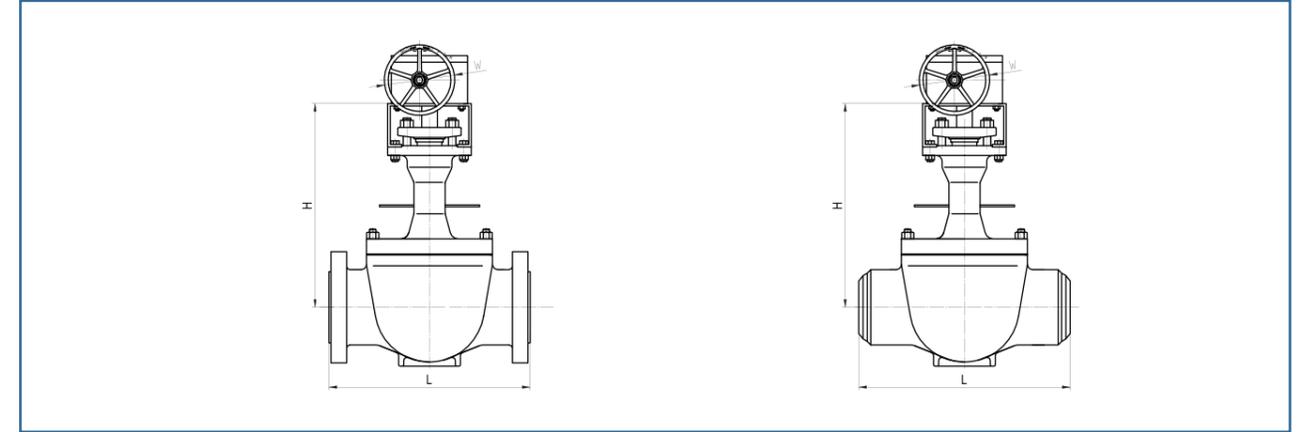


Class 150

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RF)	mm	165	191	216	241	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
L(BW)	mm	165	191	216	241	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
H	mm	420	420	420	450	454	580	650	797	1004	1050	1100	1190	1230	1870	2100	2240	2550
W	mm	350*	350*	350*	300	300	300	500	600	600	600	600	700	760	800	900	900	900
WT(RF)	KG	31	32	36	45	49	95	160	292	584	801	1030	1535	2150	2550	3970	5600	6940
WT(BW)	KG	30	30	34	42	46	89	152	280	566	776	990	1483	2085	2475	3880	5495	6820

Class 300

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RF)	mm	165	191	216	241	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
L(BW)	mm	165	191	216	241	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
H	mm	420	420	420	450	454	580	650	797	1004	1050	1100	1190	1230	1870	2100	2240	2550
W	mm	350*	350*	350*	300	300	300	500	600	600	600	600	700	760	800	900	900	900
WT(RF)	KG	31	32	37	48	52	98	168.5	308	616	845	1220	1540	2160	2560	3980	5610	6940
WT(BW)	KG	30	30	34	42	48	90	156.5	288	585	801	1155	1451	2047	2420	3812	5408	6704



Class 600

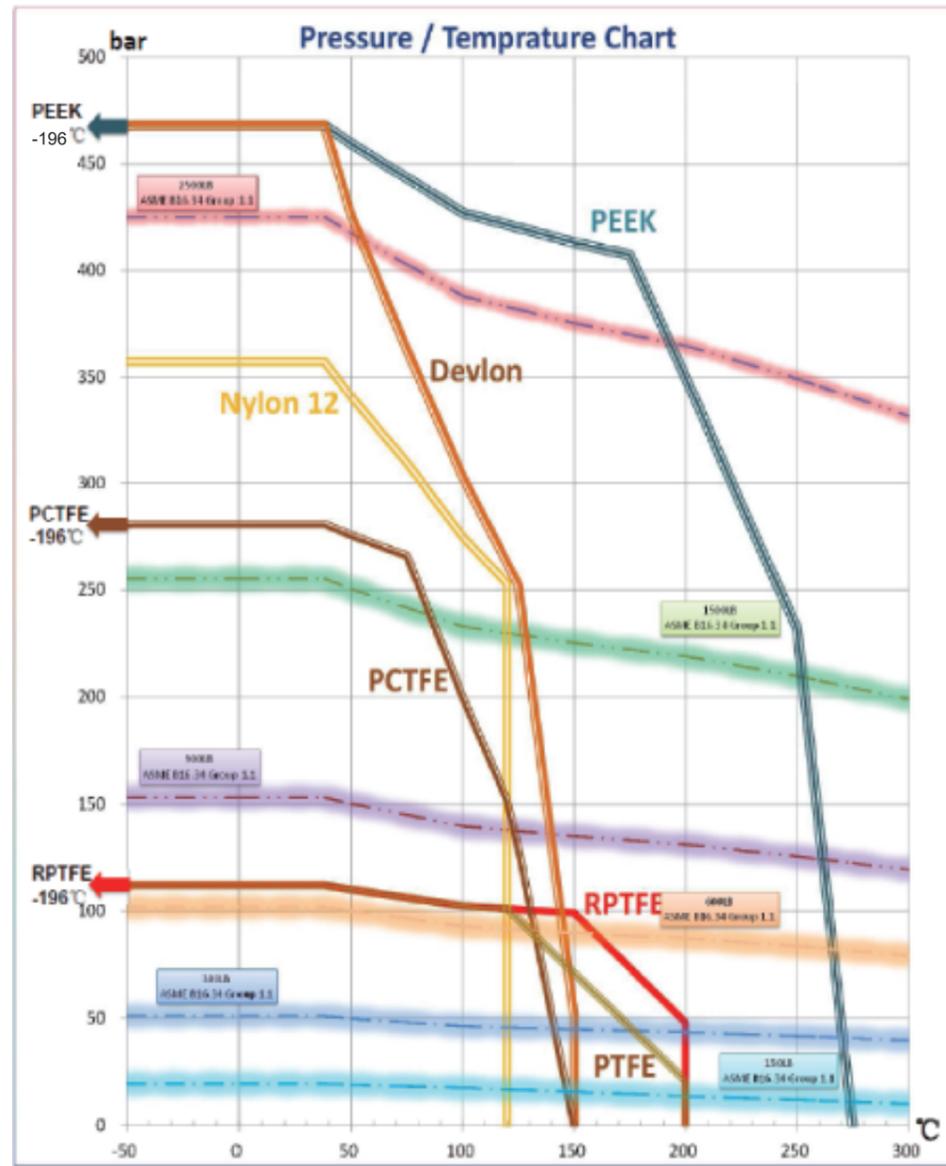
NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RF)	mm	165	191	216	241	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
L(BW)	mm	165	191	216	241	292	356	432	559	660	787	838	889	991	1092	1194	1295	1397
H	mm	420	420	420	450	454	580	650	801	1034	1100	1150	1220	1265	1900	2120	2270	2580
W	mm	350*	350*	350*	300	300	500	500	600	600	760	760	760	760	800	900	900	900
WT(RF)	KG	31	34	38	45	54	105	177	324	648	889	1525	1860	2170	2570	3985	5620	5950
WT(BW)	KG	30	30	34	40	49	95	160	286	597	801	1420	1735	1990	2350	3715	5300	5578

Class 900

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RTJ)	mm	216	229	254	305	368	381	457	610	737	838	965	1029	1130	1219	1321	1435	1549
L(BW)	mm	216	229	254	305	368	381	457	610	737	838	965	1029	1130	1219	1321	1435	1549
H	mm	440	440	440	480	520	580	650	730	810	910	1000	1130	1260	1980	2220	2370	2680
W	mm	200	200	200	300	500	500	600	600	760	760	800	800	800	900	900	900	900
WT(RTJ)	KG	40	45	46	55	68	135	220	450	690	950	1720	2113	2458	3614	4259	5835	7608
WT(BW)	KG	38	42	42	50	63	125	203	412	639	870	1615	1990	2283	3395	3980	5315	7238

Class 1500

NPS	in	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
DN	mm	15	20	25	40	50	80	100	150	200	250	300	350	400	450	500	550	600
L(RTJ)	mm	216	229	254	305	368	470	546	705	832	991	1130	1257	1384	1537	1664	1800	1950
L(BW)	mm	216	229	254	305	371	473	549	711	841	1000	1146	1276	1407	1559	1686	1829	1972
H	mm	500	500	500	550	600	650	700	850	1000	1290	1350	1500	1690	2180	2430	2610	2810
W	mm	300	300	300	500	600	500	600	600	760	760	900	900	900	1000	1000	1000	1000
WT(RTJ)	KG	43	48	50	55	68	150	250	580	850	1395	2070	2850	3670	5686	6637	8565	11530
WT(BW)	KG	40	45	45	50	48	114	195	150	638	1040	1535	2138	3745	4450	5120	6590	9040



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	-328~302	-320.8~500
Temperature Range °C	-200~150	-200~150	-196~260
Pressure Rating--LB	150~1500	150~1500	150~2500
Mechanical Property	Hardness (D)	75~85	≥82
	Tensile Strength(MPa)	31.4~37.2	31.4~37.2
	Tensile Elongation(Break, %)	50~200	50~200
Physical Property	Specific Gravity (g/cm3)	2.11~2.16	2.11~2.16
	Water Absorption 24hrs(%)	0.00	0.00
	Water Absorption Saturation	<0.01	<0.01
Service Application	Cryogenic & Low Temperature	Cryogenic & 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.MDMT as per ASME B31.3.
 4.Part of design standard refer to SPE 77/200,BS 6364, ASME B16.34 and relevant API/ ASME/ ISO standard.
 5.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:

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

QL = Flow rate of liquid (gal. /min.)

P= differential pressure across the valve

G = specific gravity of liquid (for water, G=1)

Gas Flow:

$$Q_g = 61C_v (P_2 P/g)^{1/2}$$

(For non-critical flow, P/P<1.0)

Qg = Flow rate of gas (CFH at STP)

P₂ = outlet pressure (psia)

g = specific gravity of gas (for air, g=1.0)

Neway has supplied cryogenic gate valves, cryogenic globe valves, cryogenic check valves, cryogenic ball valves, cryogenic butterfly valve, cryogenic control valves, SIS on off valves, molecular sieve switching valves for LNG industry since 2013. The valves meet BS6364, SHELL77/200、GB/T24925 standard. Until now, Neway has supplied some high end valves to customers including 56" cryogenic butterfly valve, 52" cryogenic gate valve, 24" Class 1500 cryogenic top entry on off valve, and hydrogen valve applied in -253°C,etc.



1

- 1 24" Class 1500 Top Entry Cryogenic Ball Valve
- 2 16" Class 150 Cryogenic ball valve for emergency release system(LNG)
- 3 12" Class 1500 Cryogenic Ball Valve
- 4 Top Entry Cryogenic Ball Valve
- 5 Pneumatic Emergency Shut Off Valve



2



3



4



5

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 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.