



Cryogenic ball valves

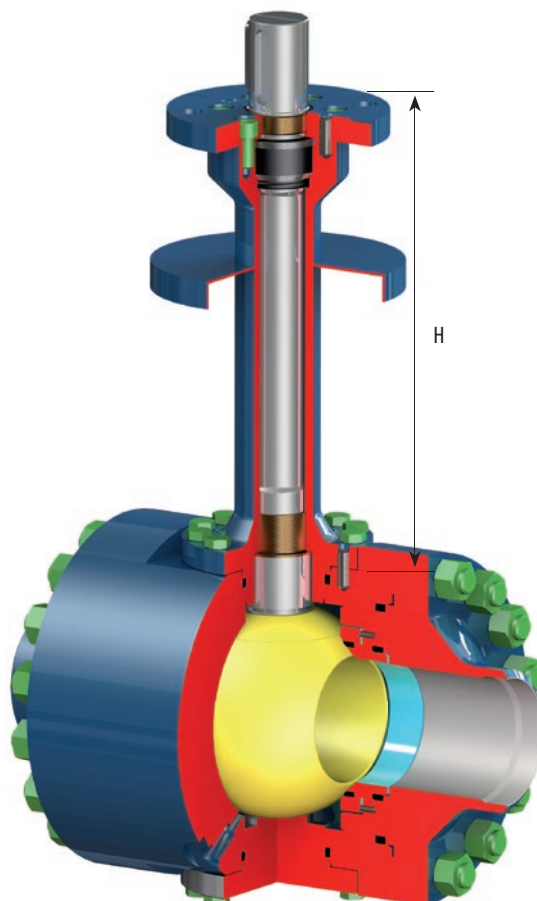
- DN 50 (2") - DN 500 (20")
- PN16 (class 150) - PN 160 (class 900)
- Temperature range of transported medium is from -47 °C to -196 °C (liquid nitrogen -196 °C, LNG -162 °C)
- The design of the ball valves is acc. to EN 1626, EN 12567, EN 12300, API 6D
- Extension length is acc. to BS 6364, Shell MESC SPE 77/200

Cryogenic ball valves meet:

- Full Bore and Reduced Bore design
- Anti blow-out design
- Anti-static device
- Double Block and Bleed design
- Fire safe design



Cryogenic testing – ball valve NPS 4 CLASS 600



Materials

Component	Standard materials		Other materials
	Stainless steel		
	For temperatures from -60°C to -101°C	For temperatures from -102°C to -196°C	
Body	A182 F316	A182 F316	1.4301, A182 F304, A 351 CF8M
Bonnet			
Ball	A182 F316		A 351 CF8M
Stem, bottom stem	A182 F316	A182 F316	1.4301, A182 F304
Seat – basic material	A182 F316		-
Bolt	A193 B8M Cl.2		-
Nut	A194 8M		-
Stem extension	A182 F316		1.4301, A182 F304
Seat inserts	RPTFE	PCTFE (KEL-F)	-
Seals	LIP-SEAL(PTFE+Elgiloy), Graphite	LIP-SEAL(PTFE+Elgiloy), Graphite	LIP-SEAL (PTFE+F316), (PTFE+17/7-PH) Graphite



Class 150 • PN 16-25

NPS / DN	Dimensions [mm]											ISO 5211	kg (without extension)	
	øD	L _{RF}	L _{BW}	L _{RTJ}	øA	B	C	E	H (-109°C)	H (-196°C)	ød ₇		RF	BW
2" / 50	49	178	216	191	185	113	384	25	150	300	19	F10	32	26
3" / 80	74	203	283	216	230	135	428	35	160	325	24	F12	56	51
4" / 100	100	229	305	241	275	210	475	35	175	350	30	F12	84	71
6" / 150	150	394	457	406	340	270	535	50	200	375	35	F14	200	165
8" / 200	201	457	521	470	440	340	609	65	210	400	50	F16	295	260
10" / 250	252	533	559	546	490	365	660	65	225	425	50	F16	381	345
12" / 300	303	610	635	662	575	410	725	75	250	450	60	F25	652	580
14" / 350	334	686	762	699	630	435	774	85	275	475	70	F25	965	903
16" / 400	385	762	838	775	720	480	846	85	300	500	70	F25	1 325	1 130
18" / 450	436	864	914	876	790	515	907	85	325	525	70	F25	1 665	1 420
20" / 500	487	914	991	927	880	610	975	100	350	550	80	F30	2 050	1 900

Class 300 • PN 40

NPS / DN	Dimensions [mm]											ISO 5211	kg (without extension)	
	øD	L _{RF}	L _{BW}	L _{RTJ}	øA	B	C	E	H (-109°C)	H (-196°C)	ød ₇		RF	BW
2" / 50	49	216	216	232	185	113	407	25	150	300	19	F10	36	30
3" / 80	74	283	283	298	230	135	428	35	160	325	30	F12	63	56
4" / 100	100	305	305	321	275	210	475	35	175	350	30	F12	92	78
6" / 150	150	457	457	419	340	270	535	50	200	375	40	F14	212	172
8" / 200	201	502	521	518	460	350	618	65	210	400	50	F16	310	269
10" / 250	252	568	559	584	500	370	663	75	225	425	60	F25	395	355
12" / 300	303	648	635	664	595	420	735	85	250	450	70	F25	665	590
14" / 350	334	762	762	778	660	450	790	85	275	475	70	F25	980	920
16" / 400	385	838	838	854	745	495	858	100	300	500	80	F25	1 350	1 161
18" / 450	436	914	914	930	815	530	918	100	325	525	80	F25	1 750	1 500
20" / 500	487	991	991	1010	910	625	988	130	350	550	100	F30	2 160	1 990

Class 400-600 • PN 63-100

NPS / DN	Dimensions [mm]											ISO 5211	kg (without extension)	
	øD	L _{RF}	L _{BW}	L _{RTJ}	øA	B	C	E	H (-109°C)	H (-196°C)	ød ₇		RF	BW
2" / 50	49	292	292	m	190	115	386	35	150	300	24	F10	48	43
3" / 80	74	356	356	359	235	255	430	40	160	325	30	F12	92	88
4" / 100	100	432	432	435	280	215	477	50	175	350	35	F14	141	120
6" / 150	150	559	559	562	360	280	542	65	200	375	50	F16	286	230
8" / 200	201	660	660	664	480	360	625	75	210	400	60	F16	487	383
10" / 250	252	787	787	791	530	385	678	90	225	425	70	F25	727	592
12" / 300	303	838	838	841	605	425	737	95	250	450	75	F25	920	780
14" / 350	334	889	889	892	680	460	797	100	275	475	80	F30	1 315	1 215
16" / 400	385	991	991	994	770	505	865	130	300	500	100	F30	1 850	1 670
18" / 450	436	1092	1092	1095	850	545	930	130	325	525	100	F30	2 250	2 230
20" / 500	487	1194	1194	1200	930	635	994	150	350	550	120	F30	3 115	2 690

Class 900 • PN160

NPS / DN	Dimensions [mm]											ISO 5211	kg (without extension)	
	øD	L _{RF}	L _{BW}	L _{RTJ}	øA	B	C	E	H (-109°C)	H (-196°C)	ød ₇		RF	BW
2" / 50	49	368	368	371	200	120	386	35	150	300	30	F12	78	60
3" / 80	74	381	381	384	250	145	437	45	160	325	35	F14	115	102
4" / 100	100	457	457	460	310	230	500	50	175	350	38	F14	200	180
6" / 150	150	610	610	613	390	295	552	70	200	375	55	F16	335	290
8" / 200	201	737	737	740	510	375	635	85	210	400	70	F25	515	430
10" / 250	252	838	838	841	560	400	682	100	225	425	80	F25	785	625
12" / 300	303	965	965	968	640	440	753	100	250	450	80	F30	1 140	880
14" / 350	322	1029	1029	1038	710	475	809	130	275	475	100	F30	1 440	1 105
16" / 400	373	1130	1130	1140	800	520	875	150	300	500	120	F30	1 950	1 435
18" / 450	423	1219	1219	1232	890	565	944	180	325	525	140	F35	2 830	2 360
20" / 500	471	1321	1321	1334	950	645	998	180	350	550	140	F35	3 805	3 115

B and C dimensions are informative only and may vary depending on the accessories and the temperature of the working medium of the ball valves.
 ° weights are informative only because of potential technological deviations