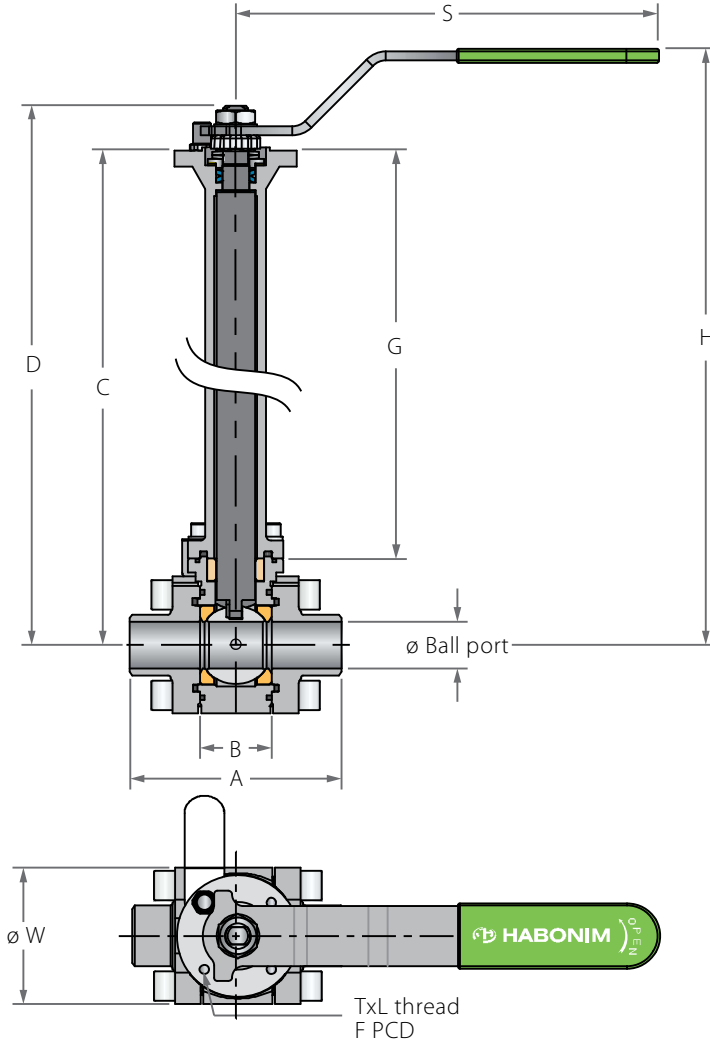


Cryogenic Floating Ball 3 Piece; BD - Bidirectional

PATENT PENDING

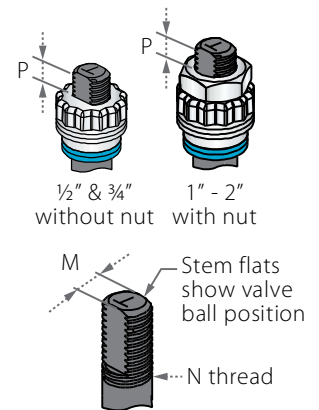
Valve dimensions



Bidirectional Cryogenic floating ball Valve

- Cryogenic floating ball valves with bidirectional sealing capability allows it to be used on a bidirectional loading and offloading single pipeline as well as a shutoff valve for a storage tank, developing back pressure to the downstream side while empty without upstream line pressure.
- This valves are equipped with all the benefits of the standard cryogenic ball valve on top of the simplicity and flow capabilities of a floating ball design.
- Full Δp
- ASME Class 300
- Special "Piston Effect" at seat design to prevent pressure buildup in the cavity.

Preparation for actuation



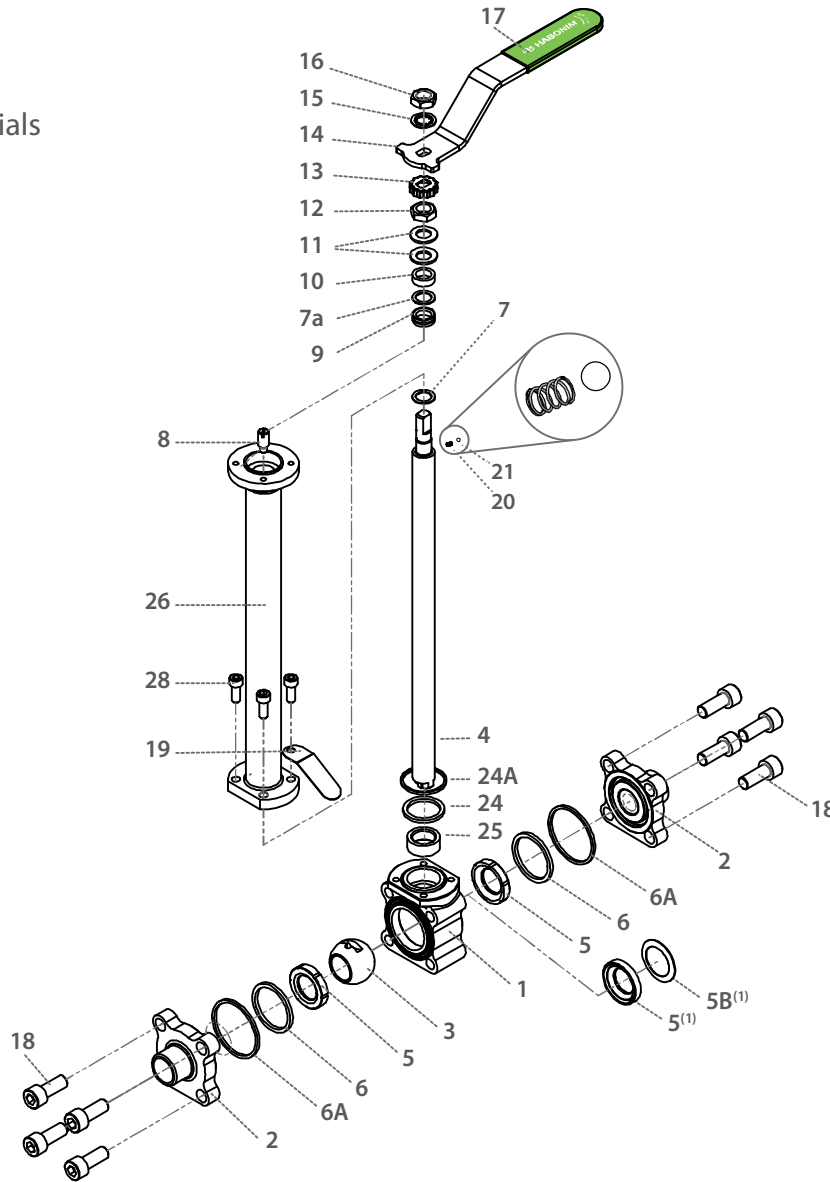
Valve Face To Face sizes are according to Habonim catalog data only, for Extended-weald/Flanged/Tri-clamp end see Face To Face sizes page.

Std. port	Full port	Unit	Ball port	A	B	Standard design				6.0" bonnet				S	W	M	N	P	F	TxL	Weight kg/lb			
						C	D	G	H	C	D	G	H								Std.	6.0"	Cv	
	DN8	mm	11.15	65.8	20.6	333	341.9	304	366	181.40	190.30	152.40	214.40	150.00	4.60	5.50	ε 3"	7.20	(F03)	36.00	MSX7	1.60	1.28	2.6
	1/4"	inch	0.44	2.59	0.81	13.11	13.46	11.97	14.41	7.14	7.49	6.00	8.44	5.91	1.81	0.22	UNF	0.28	1.42			3.53	2.82	3.0
	DN15	mm	11.15	65.80	20.60	333.00	341.90	304.00	366.00	181.40	190.30	152.40	214.40	150.00	46.00	5.50	ε 3"	7.20	(F03)	36.00	MSX7	1.60	1.28	7
	1/2"	3/8"	inch	0.44	2.59	0.81	13.11	13.46	11.97	14.41	7.14	7.49	6.00	8.44	5.91	1.81	0.22	UNF	0.28	1.42			3.53	2.82
	DN20	mm	14.30	70.55	24.55	335.40	344.30	304.00	368.00	183.80	192.70	152.40	216.40	150.00	52.00	5.50	ε 3"	7.20	(F03)	36.00	MSX7	1.80	1.48	10
	3/4"	1/2"	inch	0.56	2.78	0.97	13.20	13.56	11.97	14.49	7.24	7.59	6.00	8.52	5.91	2.05	0.22	UNF	0.28	1.42			3.97	3.26
	DN25	mm	20.60	93.65	31.75	342.15	359.65	304.00	383.00	190.55	208.05	152.40	231.40	187.00	60.50	7.54	ε 16"	7.20	(F04)	42.00	MSX7	3.00	2.65	28
	1"	3/4"	inch	0.81	3.69	1.25	13.47	14.16	11.97	15.08	7.50	8.19	6.00	9.11	7.32	2.38	0.30	UNF	0.28	1.65			6.61	5.84
	DN32	mm	25.40	108.25	41.25	346.65	364.15	304.00	388.00	195.05	212.55	152.40	236.40	187.00	69.00	7.54	ε 16"	7.20	(F04)	42.00	MSX10	3.70	3.35	37
	1 1/4"	1"	inch	1.00	4.25	1.62	13.65	14.34	11.97	15.28	7.68	8.37	6.00	9.31	7.32	2.72	0.30	UNF	0.28	1.65			8.16	7.39
	DN40	mm	31.80	115.45	48.25	347.55	377.05	304.00	400.00	195.95	225.45	152.40	248.40	237.00	79.20	8.71	ε 16"	8.00	(F05)	50.00	M6X8	5.20	4.65	70
	1 1/2"	1 1/4"	inch	1.25	4.55	1.90	13.68	14.84	11.97	15.75	7.71	8.88	6.00	9.78	9.29	3.12	0.34	UNF	0.31	1.97			11.46	10.25
	DN50	mm	38.10	127.10	56.30	352.25	381.75	304.00	405.00	200.65	230.15	152.40	253.40	237.00	90.70	8.71	ε 16"	8.50	(F05)	50.00	M6X8	6.10	5.53	103
	2"	1 1/2"	inch	1.50	5.00	2.22	13.87	15.03	11.97	15.94	7.90	9.06	6.00	9.98	9.29	3.57	0.34	UNF	0.33	1.97			13.45	12.19



Components & materials

Note: for C47



Item	Description	Material specifications	Qty.
1	Body	Acc. Ordering Code	1
2	End	Acc. Ordering Code	2
3	Ball	Acc. Ordering Code	1
4	Stem	Acc. Ordering Code	1
5*	Seat	Acc. Ordering Code	2
5B	Upstream seat spring	Inconel 718	1
6*	Inner seal	TFM	2
6A*	Outer seal	Acc. Ordering Code	2
7*	Stem thrust seal	PCTFE	1
7a*	Anti-abrasion ring	PCTFE	1
8	Stop pin	S. Steel	1
9*	Stem seal	TFM	1
10	Follower	S. Steel	1
10A	Slide bearing	S. Steel	1
11	Disc spring	S. Steel	2
12	Stem nut	S. Steel	1
13	Locking clip	S. Steel	1

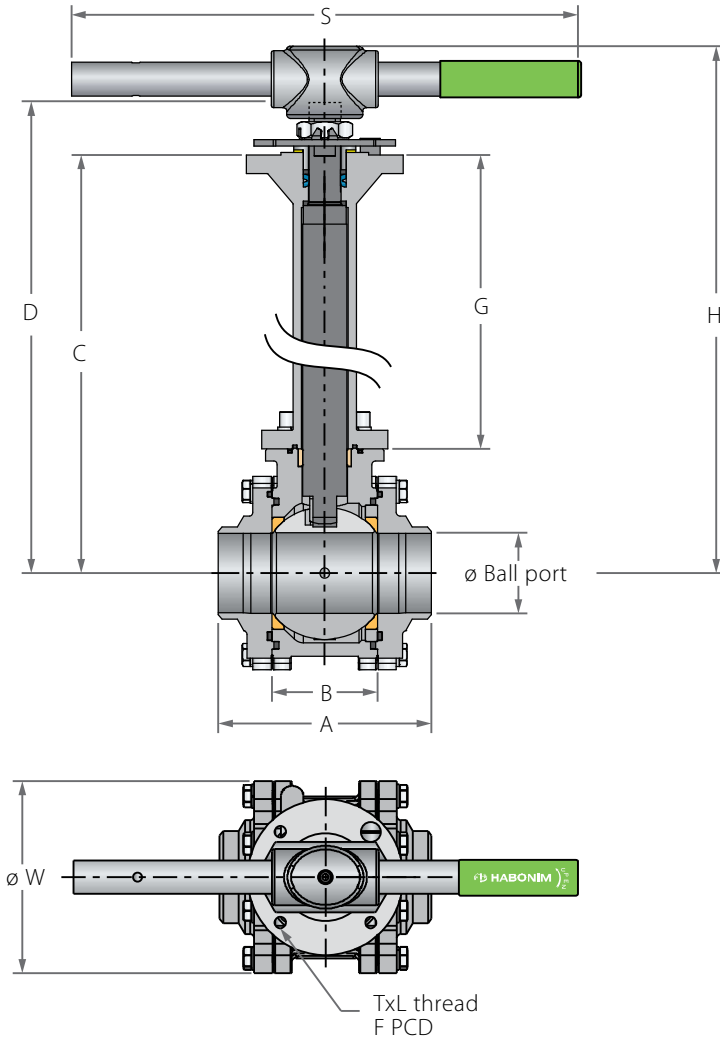
Item	Description	Material specifications	Qty.
14	Handle	S. Steel	1
15	Serrated washer	S. Steel	1
16	Handle nut	S. Steel	1
17	Sleeve	PVC	1
18	Body bolt	S. Steel	8
20	Anti-static spring	S. Steel	1
21	Anti-static plunger	S. Steel	1
22		S. Steel	2
23	Tag (not shown)	S. Steel	1
24*	Bonnet inner seal	TFM	1
24A*	Bonnet outer seal	Acc. Ordering Code	1
25*	Stem bearing	PTFE	1
26	Bonnet	S. Steel	1
28	Bolt	S. Steel	4
30	Dog tag	S. Steel	1

\* Repair kit components

<sup>(1)</sup> Optional Dynamic seat design

## Cryogenic Floating Ball 3 Piece ; BD - Bidirectional

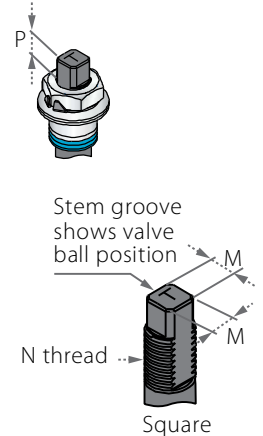
### Valve dimensions



### Bidirectional Cryogenic floating ball Valve

- Cryogenic floating ball valves with bidirectional full  $\Delta p$  sealing capability allows it to be used on a bidirectional loading and offloading single pipeline as well as a shutoff valve for a storage tank, developing back pressure to the downstream side while empty without upstream line pressure.
- This valves are equipped with all the benefits of the standard cryogenic ball valve on top of the simplicity and flow capabilities of a floating ball design.
- Full  $\Delta p$
- ASME Class 150
- Special "Piston Effect" at seat design to prevent pressure buildup in the cavity.

### Preparation for actuation



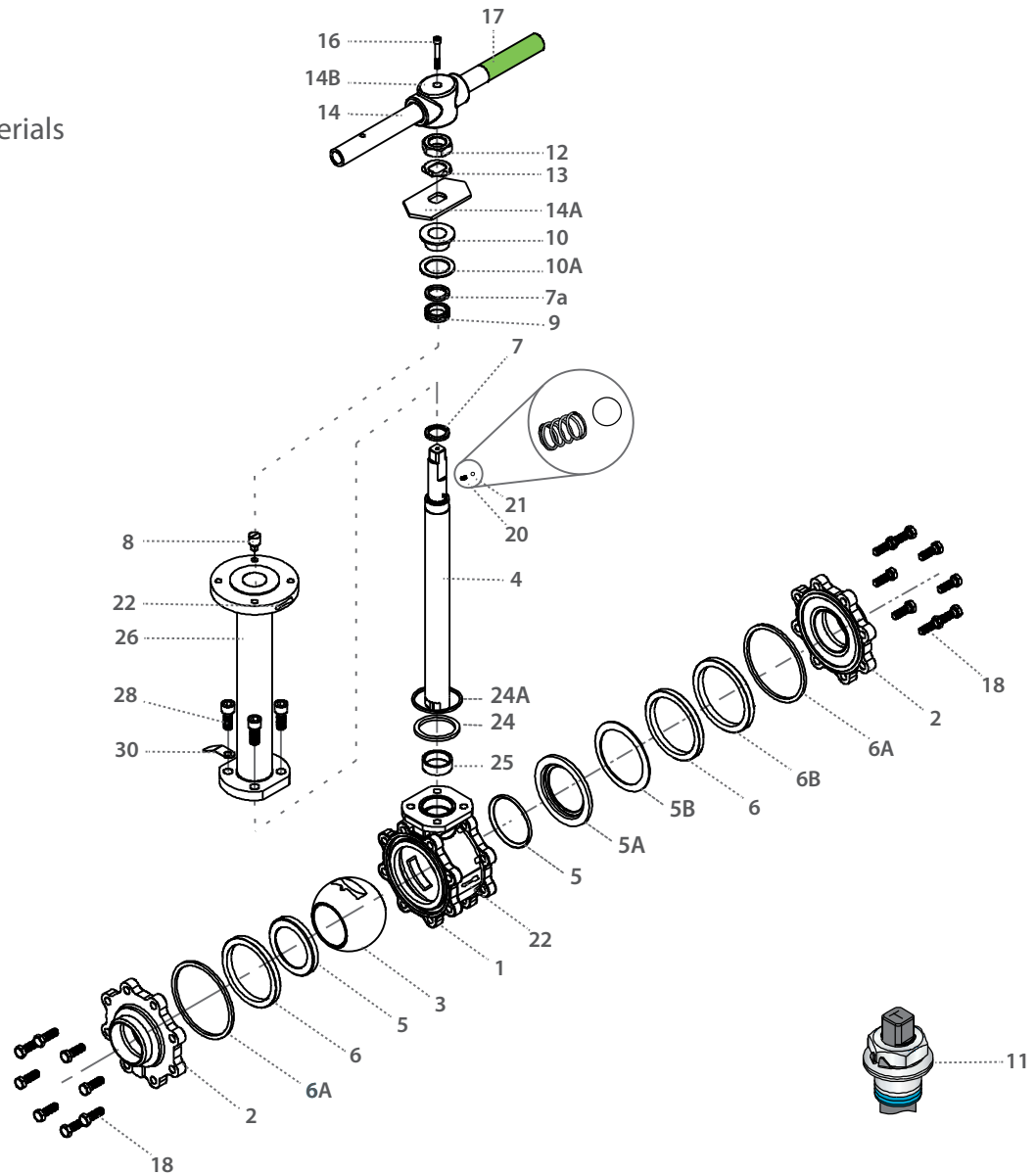
Valve Face To Face sizes are according to Habonim catalog data only, for Extended-weald/Flanged/Tri-clamp end see Face To Face sizes page.

Std. port	Full port	Unit	Ball port	A	B	Standard design				6.0" bonnet				S	W	M	MDD	N	P	F	TxL	Weight kg/lb		Kv
						C	D	G	H	C	D	G	H									Std.	6.0"	
DN65	DN50	mm	50.80	157.95	72.55	397.5	439.1	327.5	464	222.4	264	152.4	288.9	401	108	13.9	13.9	M20x2.5	13.15 (F07)	70	M8x8	12	10.6	205
2 1/2"	2"	inch	2	6.22	2.86	15.65	17.29	12.89	18.27	8.76	10.39	6	11.37	15.79	4.25	0.55	0.55		0.52	2.76		26.46	23.37	240
DN80	DN65	mm	63.5	169.35	83.25	441.8	488.4	343.5	528	250.7	297.3	152.4	336.9	401	153	18.9	15.9	1"-14	16.7 (F10)	102	M10x15	20	18.8	385
3"	2 1/2"	inch	2.5	6.67	3.28	17.39	19.23	13.52	20.79	9.87	11.7	6	13.26	15.79	6.02	0.74	0.63	UNS-2A	0.66	4.02		44.09	41.45	450
DN100	DN80	mm	82.6	213.6	108.8	457.6	504.2	343.5	544	266.5	313.1	152.4	352.9	610	191.5	18.9	15.9	1"-14	16.7 (F10)	102	M10x15	30.5	29.3	615
4"	3"	inch	3.25	8.41	4.28	18.02	19.85	13.52	21.42	10.49	12.33	6	13.89	24.02	7.54	0.74	0.63	UNS-2A	0.66	4.02		67.24	64.6	720
	DN100	mm	100	239	123	466.8	513.4	343.5	555	275.7	322.3	152.4	363.9	610	217	18.9	15.9	1"-14	16.7 (F10)	102	M10x15	37.3	36.1	744
	4"	Inch	3.94	9.41	4.84	18.38	20.21	13.52	21.85	10.85	12.69	6	14.33	24.02	8.54	0.74	0.63	UNS-2A	0.66	4.02		82.23	79.59	870
DN150		mm	111.1	346.1	146.1	542.4	611.9	385	665	309.8	379.3	152.4	432.4	916	266	28.45	23.75	1 1/2"-12	26.2 (F12)	125	M12x15	75	71	872
6"		inch	4.37	13.63	5.75	21.35	24.09	15.16	26.18	12.2	14.93	6	17.02	36.06	10.47	1.12	0.94	UNS-1A	1.03	4.92		165.35	156.53	1020



Components & materials

Note: for C47



Item	Description	Material specifications	Qty.
1	Body	Acc. Ordering Code	1
2	End	Acc. Ordering Code	2
3	Ball	Acc. Ordering Code	1
4	Stem	Acc. Ordering Code	1
5*	Seat	Acc. Ordering Code	2
5A	Seat housing	S. Steel	1
5B	Upstream seat spring	Inconel 718	1
6*	Inner seal	TFM	2
6A*	Outer seal	Acc. Ordering Code	2
6B	Support ring	S. Steel	1
7*	Stem thrust seal	TFM, PCTFE	1
7a*	Anti-abrasion ring	TFM, PCTFE	1
8	Stop pin	S. Steel	1
9*	Stem seal	TFM, Graphite	1
10	Follower	S. Steel	1
10A	Slide bearing	S. Steel	1
11	Disc spring	S. Steel	2
12	Stem nut	S. Steel	1
13	Tab lock washer	S. Steel	1

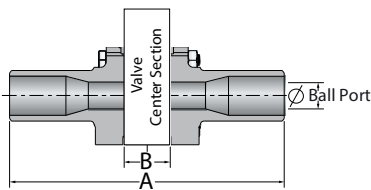
Item	Description	Material specifications	Qty.
14	Handle	S. Steel	1
14A	Stop plate	S. Steel	1
14B	Wrench head	S. Steel	1
16	Wrench bolt	S. Steel	1
17	Sleeve	PVC	1
18	Body bolt	S. Steel	8
20	Anti-static spring	S. Steel	2
21	Anti-static plunger	S. Steel	2
22	Arrow/Icon	S. Steel	2
23	Tag (not shown)	S. Steel	1
24*	Bonnet inner seal	TFM	1
24A*	Bonnet outer seal	Acc. Ordering Code	1
25*	Stem bearing	PTFE	1
26	Bonnet	S. Steel	1
28	Bolt	S. Steel	4
30	Dog tag	S. Steel	1

\* Repair kit components

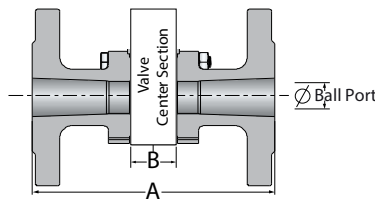
## Face To Face Sizes

Valve Size	Unit	B		A-XBW		A-ETO	A-Flanged		A-TC
		Std. port	Full port	Std. port	Full port	Std. port	Std. port	Full port	Full port
DN10	mm	20.6	20.6	140.6	143.0	108.6			
3/8"	inch	0.8	0.8	5.5	5.6	4.3			
DN15	mm	20.6	24.6	140.6	147.0	137.0	140.0	152.0	88.8
1/2"	inch	0.8	1.0	5.5	5.8	5.4	5.5	6.0	3.5
DN20	mm	24.6	31.7	147.0	168.7	147.0	152.0	165.1	101.6
3/4"	inch	1.0	1.2	5.8	6.6	5.8	6.0	6.5	4.0
DN25	mm	31.7	41.3	168.7	179.3	164.1	165.1	178.1	114.3
1"	inch	1.2	1.6	6.6	7.1	6.5	6.5	7.0	4.5
DN32	mm	41.3	48.4	179.3	189.4	179.3	178.1	190.0	
1 1/4"	inch	1.6	1.9	7.1	7.5	7.1	7.0	7.5	
DN40	mm	48.4	56.3	189.4	200.3	184.0	190.0	216.1	139.8
1 1/2"	inch	1.9	2.2	7.5	7.9	7.2	7.5	8.5	5.5
DN50	mm	56.3	72.6	200.3	232.6	193.5	216.1	241.0	158.9
2"	inch	2.2	2.9	7.9	9.2	7.6	8.5	9.5	6.3
DN65	mm	72.6	83.4	232.6	283.4	222.6	241.0	282.0	213.0
2 1/2"	inch	2.9	3.3	9.2	11.2	8.8	9.5	11.1	8.4
DN80	mm	83.4	108.8	283.4	348.8	250.4	282.0	282.0	215.8
3"	inch	3.3	4.3	11.2	13.7	9.9	11.1	11.1	8.5
DN100	mm	108.8	123.0	348.8	390.0	348.8	305.0	305.0	245.4
4"	inch	4.3	4.8	13.7	15.4	13.7	12.0	12.0	9.7
DN200	mm	146.1	180.0	444.1	180.0	444.1	403.1	403.0	146.1
6"	inch	5.8	7.1	17.5	7.1	17.5	15.9	15.9	5.8

XBW / ETO



Flanged



TC

