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FLOATING BALL VALVES



ZHEJIANG BOTELI TECHNOLOGY CO.,LTD.

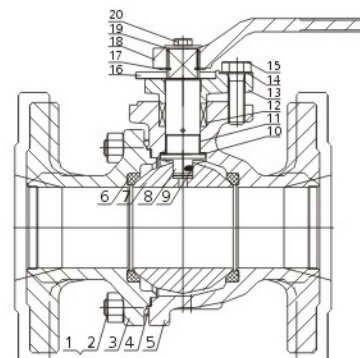
Ball Valves (Overall Dimensions)



Casting steel floating ball valve

Main part materials list

NO.	Part name	Material
1	Nut	A194-2H
2	Bolt	A193-B7
3	Bonnet	A216-WCB
4	Gasket	PTFE/Graphite
5	Body	A216-WCB
6	Seat	RPTFE
7	Ball	A182-F304
8	Stem	A182-F6a
9	Sping	304
	Ball	304
10	Gasket	PTFE
11	Stem bearing	PTFE
12	Packing	PTFE/Graphite
13	Packing glang	A216-WCB
14	Sping washer	60Si2Mn
15	Screw	A193 B7
16	Stopper plate	1025+Zn
17	Back stop	65Mn
18	lever	A216 WCB
19	washer	304
20	screw	A193 B7

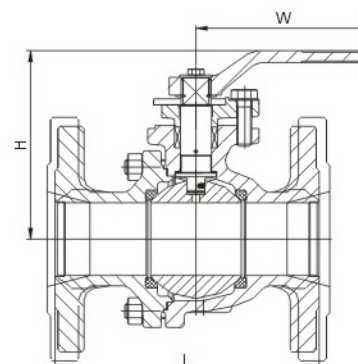


150Lb

SIZE	DN	L	H	W
1/2	13	108	85	130
3/4X1/2	19	117	85	130
3/4	19	117	90	130
1X3/4	25	127	90	130
1	25	127	100	185
1 1/2X1	32	140	100	185
1 1/4	32	140	105	185
1 1/2X1 1/4	38	165	105	185
1 1/2	38	165	120	250
2X1 1/2	49	178	120	250
2	49	178	130	250
2 1/2X2	62	190	130	250
2 1/2	62	190	155	365
3X2 1/2	74	203	155	365
3	74	203	165	365
4X3	100	229	165	365
4	100	229	185	400
5	127	356	300	1050
6X4	150	267	185	400
6	150	394	320	1050
8X6	201	292	320	1050
8	201	457	370	1050

300Lb

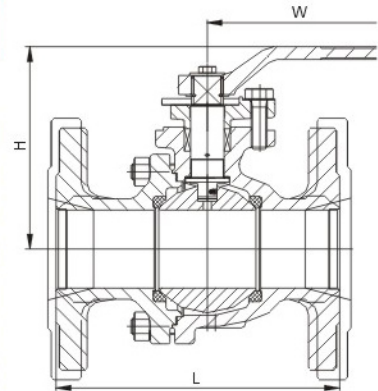
SIZE	DN	L	H	W
1/2	13	140	85	130
3/4X1/2	19	152	85	130
3/4	19	152	90	130
1X3/4	25	165	90	130
1	25	165	100	185
1 1/2X1	32	178	100	185
1 1/4	32	178	105	185
1 1/2X1 1/4	38	190	105	185
1 1/2	38	190	120	250
2X1 1/2	49	216	120	250
2	49	216	130	250
2 1/2X2	62	241	130	250
2 1/2	62	241	155	365
3X2 1/2	74	283	155	365
3	74	283	165	365
4X3	100	305	165	365
4	100	305	185	400
5	127	381	300	1050
6X4	150	403	185	400
6	150	403	320	1050
8X6	201	419	320	1050
8	201	502	370	1050



Ball Valves (Overall Dimensions)



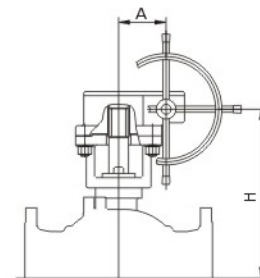
600Lb				
SIZE	DN	L	H	W
1/2	13	165	85	130
3/4	19	190	85	130
1	25	216	90	130
1 1/4	32	229	100	185
1 1/2	38	241	105	185
2	49	292	120	250
2 1/2	62	330	130	250
3	74	356	155	365
4	100	432	165	400



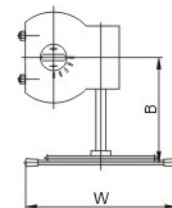
900Lb				
SIZE	DN	L	H	W
1/2	13	216	100	185
3/4	19	229	105	185
1	25	254	115	250
1 1/4	32	279	125	250
1 1/2	38	305	130	250
2	49	368	160	365



1500Lb				
SIZE	DN	L	H	W
1/2	13	216	100	185
3/4	19	229	105	250
1	25	254	115	250
1 1/4	32	279	125	365
1 1/2	38	305	130	365
2	49	368	160	500



Gear operation dimension chart		Unit(mm)				
Class	150	300	Gear operator			
			H	W	B	A
inch	6	6	350	320	214	100
	8	8	415	350	234	120



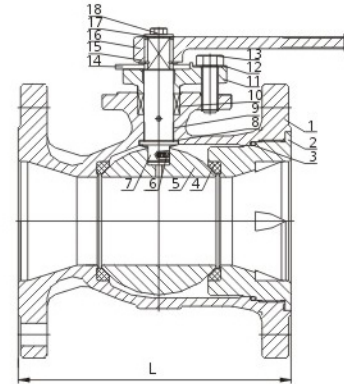
Ball Valves (Overall Dimensions)



Single Piece ball valve

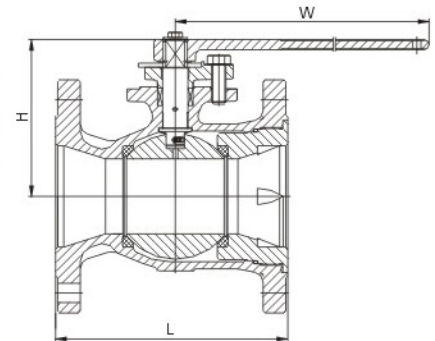
Main part materials list

NO	Part name	Material
1	Body	A216 WCB
2	Bonnet	A216 WCB
3	Gasket	PTFE/Graphite
4	Seat	RPTFE
5	Ball	A182 F304
6	Spring	304
	Ball	304
7	Stem	A182 F304
8	Gasket	PTFE
9	Stem bearing	PTFE
10	Gasket	PTFE/Graphite
11	Pocking	A216 WCB
12	washer	60Si2Mn
13	Screw	A193 B7
14	Stopper plate	1025+Zn
15	Back stop	65Mn
16	Lever	A216 WCB
17	Washer	304
18	Screw	A193 B7



150lb

SIZE	DN	L	H	W
1/2	13	108	85	130
3/4	19	117	85	130
1/4	19	117	90	130
1X1/4	25	127	90	130
1	25	127	100	185
1 1/2 X1	32	140	100	185
1 1/4	32	140	105	185
1 1/2 X1 1/4	38	165	105	185
1 1/2	38	165	120	250
2X1 1/2	49	178	120	250
2 1/2 X2	62	190	130	250
3X2 1/2	74	203	155	365
4X3	100	229	165	365
6X4	150	267	185	400
8X6	201	292	320	1050



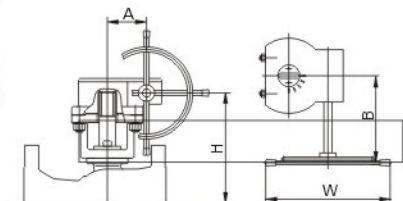
300lb

SIZE	DN	L	H	W
1/2	13	140	85	130
3/4	19	152	85	130
1/4	19	152	90	130
1X1/4	25	165	90	130
1	25	165	100	185
1 1/4 X1	32	178	100	185
1 1/4	32	178	105	185
1 1/2 X1 1/4	38	190	105	185
1 1/2	38	190	120	250
2X1 1/2	49	216	120	250
2 1/2 X2	62	241	130	250
3X2 1/2	74	283	155	365
4X3	100	305	165	365
6X4	150	403	185	400
8X6	201	419	320	1050



Gear operation dimension chart Unit(mm)

Class	150	300	Gear operator			
			H	W	B	A
inch	6	6	257	350	205	125
	8	8	305	355	320	185



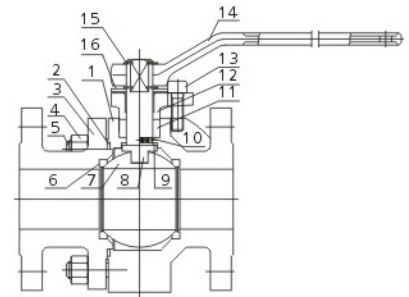
Ball Valves (Overall Dimensions)



Forged steel floating ball valve

Main part materials list

No	Part name	Carbon steel	Low Temp. steel	Stainless steel
1	Body	ASTM A105	ASTM A350 LF2	ASTM A182 F316
2	Gasket	304+Graphite	304+Graphite	316+Graphite
3	Bonnet	ASTM A105	ASTM A350 LF2	ASTM A182 F316
4	Nut	ASTM A194-2H/2HM	ASTM A194 7M	ASTM A194-2HM/8
5	Stud	ASTM A193-B7/B7M	ASTM A320 7M	ASTM A193-B7M/B8
6	Seat	RPTFE	RPTFE	RPTFE
7	Ball	ASTM A105+ENP	ASTM A350 LF2+ENP	ASTM A182 F316
8	Stem	ASTM A182-F6a	ASTM A182-F6a	ASTM A182 F316
9	Gasket	304+PTFE	304+PTFE	316+PTFE
10	Antistatic device	ASTM A182-F304	ASTM A182-F304	ASMT A182-F304/F316
11	Packing	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite
12	Packing gland	Carbon steel	Carbon steel	Stainless steel
13	Screw	ASTM A193-B7/B7M	ASTM A193-7M	ASTM A193-B8
14	Lever	ASTM A216-WCB	ASTM A216-WCB	ASTM A216-WCB
15	Back stop	Carbon steel	Carbon steel	Carbon steel
16	Stopper plate	Carbon steel	Carbon steel	Stainless steel



CLASS150 Dimention chart

Unit(mm)

Nom. Dia	in	1/2	3/4	1	1½	2	2½	3	4	5	6	8
	mm	15	20	25	40	50	65	80	100	125	150	200
Bore	15	20	25	40	50	65	80	100	100	125	150	200
L	108	117	127	165	178	190	203	229	229	356	394	457
H	84	88	95	120	140	160	180	208	208	220	335	-
W	130	130	140	250	250	400	400	450	450	450	1050	-

1/2"~4": Lever operation
6"~8": Optional gear operation
Test pressure
Shell(Hydrostatic): 3.10MPa(450psi)
Seat(Air): 0.55MPa(80psi)

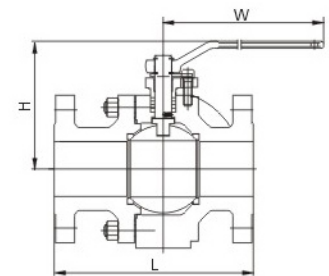


CLASS300 Dimention chart

Unit(mm)

Nom. Dia	in	1/2	3/4	1	1½	2	2½	3	4	5	6	8
	mm	15	20	25	40	50	65	80	100	125	150	200
Bore	15	20	25	40	50	65	80	100	100	125	150	200
L	140	150	165	191	216	241	283	305	381	381	403	502
H	84	88	95	120	140	160	180	208	208	220	335	-
W	130	130	140	250	250	400	400	450	450	450	1050	-

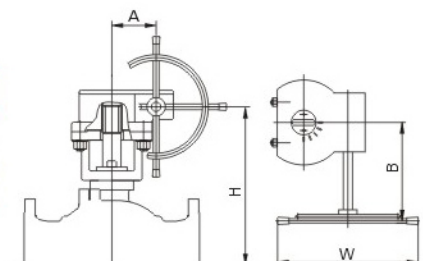
1/2"~4": Lever operation
6"~8": Optional gear operation
Test pressure
Shell(Hydrostatic): 7.5MPa(1080psi)
Seat(Air): 0.55MPa(80psi)



Gear operation dimention chart

Unit(mm)

CLASS	150	300	Gear operator			
			H	W	B	A
Size (inch)	6	6	257	350	205	125
	8	8	306	355	320	185



Technica specification:

- Temp. & Pressure: ASME B16.34, BS5351
- Wall thicknedd: ASME B16.34, BS5351
- Bore dimention: API 6D, ASME B16.34, BS5351
- Face to Face: ASME B16.10, API 6D
- Flangs dimentions: ASME B16.5, BS1560
- Test & inspection: API 598, API 6D, BS5146
- Body material: A105N, LF2, F304, F316, F304L, F316L, F51, F53

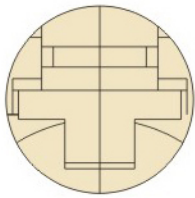
Forged Steel Ball Valves (Smaller than 2")



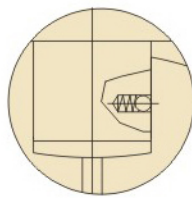
BTL forged steel ball valves (smaller than 2") have two structures. One is of 2-PCS body structure, threaded bonnet, RPTFE or PEEK seal. The another is of 3-PCS body structure. bolted tailpieces. Different materials for seats, gaskets and packing may be chosen acc. To different using conditions.

Construction is as follows

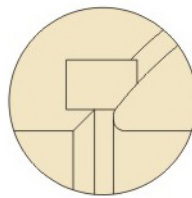
Full port or conventional port; 90° locating and lock structure; Special Y type handle; Fire proof and anti static; Mounted flange as per ISO 5211; Blow out Proof stem; Double sealing for the stem; Bolted bonnet; Socket welded ends to ASME B16.11; Screwed ends (NPT) to ANSI/ASME B1.20.1.



Blow-out proof stem



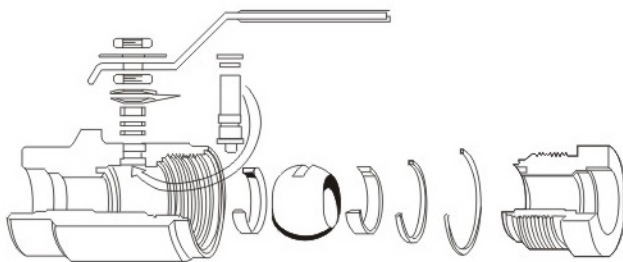
Anti-static



Firesafe

Design structure

Seat is made of PTFE reinforced with 25% glass fibre or PEEK. PTFE with 25% glass fibre can gain better performances normally used for class 800 ball valves. PEEK can gain better performances under high pressure and high temperature normally used for class 1500 ball valves. Anti-static/ Firesafe/ Blow-out proof stem



BTL compact ball valves are trusted by many customers because of its reasonable structures small space-occupation and good sealing performance



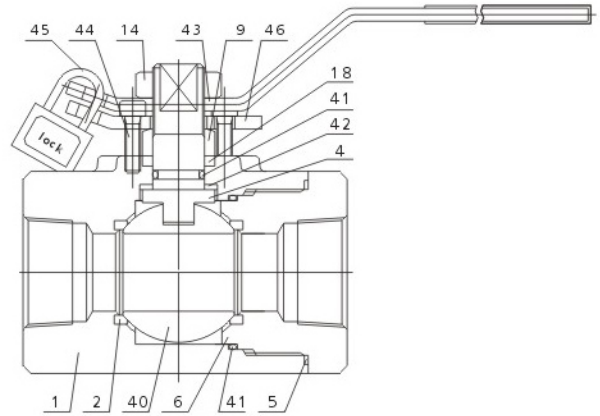
Flow coefficient Cv		
NPS	Full port	Reduced port
1/4	8	
3/8	8	
1/2	12	8
3/4	33	12
1	48	33
1 1/4	83	48
1 1/2	120	83
2	250	120

2-PCS Body Forged steel ball valves (Smaller than 2")



Application standards

- Design and manufacture conform to BS 5351, MSS SP-118;
- Connection ends conform to :
 - Socket welded ends conform to ANSIB16.11
 - Screw ends conform to ANSI B1.20.1
 - Butt-welded ends conform to ANSI B16.25
 - Flanged ends conform to ANSI B16.5
- Test and inspection conform to : API 598
- Structure features : Bolted bonnet ; 2-PCS Body ;
- Main materials : A105 ; LF2 ; 304(L) ; 316(L) ; F347 ; F321 ; F51 ; Monel ; 20Alloy.

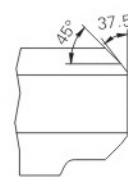
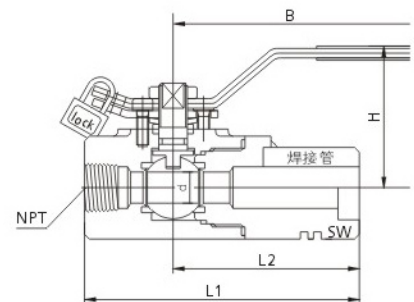
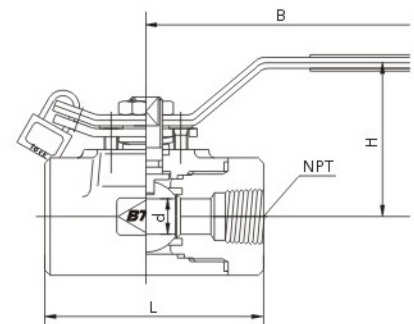


Main part materials list

NO.	Part name	A105 /F6a	LF2 /304	F304(L) /304(L)	F316(L) /316(L)	F51 /F51
1	Body	A105	LF2	F304(L)	F316(L)	F51
2	Seat	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK
4	Stem	410	304	F304(L)	F316(L)	F51
5	Gasket	PTFE	PTFE	PTFE	PTFE	PTFE
6	Bonnet	A105	LF2	F304(L)	F316(L)	F51
9	Gland	410	304	F304(L)	F316(L)	F51
14	Flat nut	8	8	8	8M	8M
18	Packing	PTFE	PTFE	PTFE	PTFE	PTFE
40	Ball	F6	F304	F304(L)	F316(L)	F51
41	O-ring	VITON	VITON	VITON	VITON	VITON
42	Back seat gasket	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK
43	Wrench	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025
44	Screw	B8	B8	B8	B8M	B8M
45	Lock	Finished product	Finished product	Finished product	Finished product	Finished product
46	Locator	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025

Carbon steel temperature-pressure rate

CL150-285 P.S.I @ 100° F
 CL300-740 P.S.I @ 100° F
 CL600-1480 P.S.I @ 100° F
 CL800-1975 P.S.I @ 100° F
 CL1500-3705 P.S.I @ 100° F



BW
整体管

CL800

Specification(NPS)	R.P FP	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L1	70	70	80	95	115	125	135	155	155
Coupling pipe end to center	L2	121	121	121	130	136	140	148	160	160
Center to handle end	B	160	160	160	160	170	230	230	280	280
Height	H	60	60	60	65	85	105	105	125	125
Height (inside bore)	d	6	9	12.5	17	24	37	37	49	49
Weight(Kg)		1.2	0.9	1.3	2.2	3.5	6.5	6.5	11	11

CL1500-CL2500

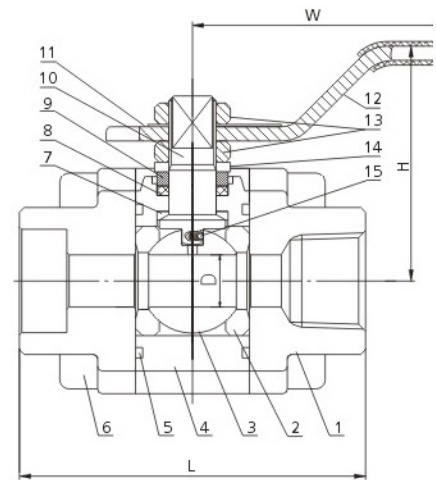
Specification(NPS)	FP		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L1	CL1500	80	80	95	115	125	135	155	155
		CL2500			125	135	155	155	155	
Coupling pipe end to center	L2	CL1500	121	121	130	136	140	148	160	175
		CL2500			136	140	148	175		
Center to handle end	B	CL1500	160	160	160	170	230	230	280	280
		CL2500			230	230	280	280	280	
Height	H	CL1500	60	60	65	85	105	105	125	125
Weight(Kg)		CL2500			90	110	125			
Height (inside bore)	d	CL1500	6	9	13	19	25	32	38	49
		CL2500			13	19	25	32	38	
Weight(Kg)		CL1500	1.2	1.5	2.5	3.7	5.8	8.7	11.5	13.7
		CL2500			2.7	4.1	6.3		12	

3PCS Forged steel ball valves



Application standards

- 1、 Design and manufacture conform to BS-5351 MSS SP-118;
- 2、 Connection ends conform to :
 - 1)Socket welded ends conform to ANSI B16.11
 - 2)Screw ends conform to ANSI B1.20.1
 - 3)Butt-welded ends conform to ANSI B-16.25
 - 4)Flanged ends conform to ANSI B16.5
- 3、 Test and inspection conform to : API 598 ; GB/T13927 ; JB/T9092
- 4、 Structure features: Bolted bonnet ; 3-PCS Body ;
- 5、 Materials conform to ANSI/ASTM.
- 6、 Main materials :
 - A105 ; LF2 ; F5 ; F11 ; F22 ; 304(L) ; 316(L) ; F347 ;
 - F321 ; F51 ; Monel ; 20 Alloy.



Carbon steel temperature–pressure rate

- CL150-285 P.S.I @ 100° F
- CL300-740 P.S.I @ 100° F
- CL600-1480 P.S.I @ 100° F
- CL800-1975 P.S.I @ 100° F
- CL1500-3705 P.S.I @ 100° F

Main part materials list

No.	Part name	A105/F6a	LF2/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Bonnet	A105	LF2	F304	F316	F51
2	Seat	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK
3	Ball	F6	F304	F304(L)	F316(L)	F51
4	Body	A105	LF2	F304(L)	F316(L)	F51
5	O-ring	VITON	VITON	VITON	VITON	VITON
6	Bolt		B8	B8	B8M	B8M
7	Gasket	PTFE	PTFE	PTFE	PTFE	PTFE
8	Packing	PTFE	PTFE	PTFE	PTFE	PTFE
9	Gland	410	304	304(L)	316(L)	F51
10	Stem	410	304	304(L)	316(L)	F51
11	Nameplate	Al	Al	Al	Al	Al
12	Lever	1045+Zn	1045+Zn	1045+Zn	1045+Zn	1045+Zn
13	Nut	2H	8	8	8M	8M
14	Elastic washer	65Mn	65Mn	304	304	304
15	Anti-static spring	304	304	304	316L	316L

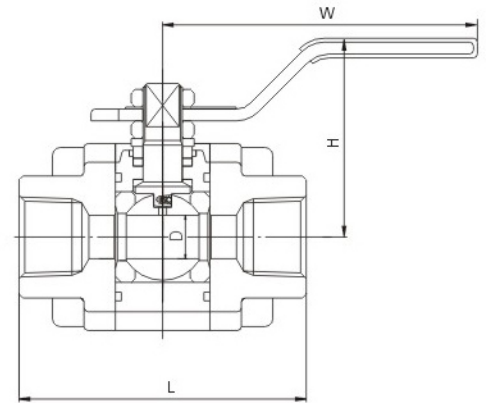


3PCS Forged steel ball valves



CL800-CL1500

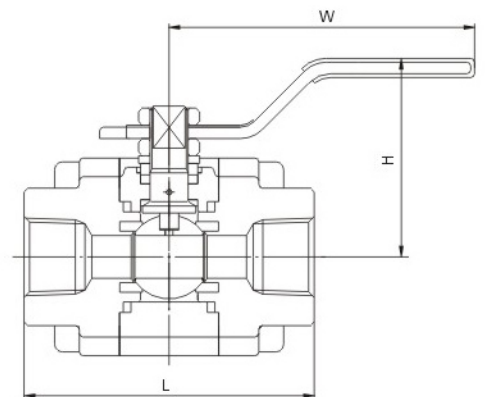
FULL PORT	Mom Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
			mm	mm	mm	mm	mm	mm	mm	mm
End to End	CLASS 800	L	67	67	73	88	105	116	128	146
	CLASS 1500	L	73	73	88	105	116	128	146	-
Lever	CLASS 800	W	120	120	120	145	145	175	175	260
	CLASS1500	W	120	120	145	145	175	175	260	-
Center of Top	CLASS 800	H	50	50	52	60	65	86	93	110
	CLASS 1500	H	52	52	60	60	86	93	110	-
Inside Bore	CLASS 800	D	11	11	14	20.5	25	31.6	38	49
	CLASS 1500	D	11	11	14	20.5	25	31.6	38	-
Weight	CLASS 800	Kg	0.75	0.75	0.95	1.7	2.4	3.7	4.9	8.7
	CLASS 1500	Kg		1.2	2.2	3.4	4.7	6.7	10.5	-



CLASS 800

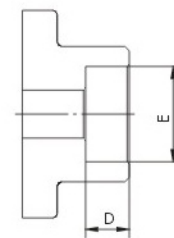
CL800-CL1500

REG.PORT	Mom Size	inch	1/2	3/4	1	1 1/4	1 1/2	2
			mm	mm	mm	mm	mm	mm
End to End	CLASS 800	L	67	73	88	105	116	128
	CLASS 1500	L	73	88	105	116	128	146
Lever	CLASS 800	W	120	120	145	145	175	175
	CLASS1500	W	120	145	145	175	175	260
Center of Top	CLASS 800	H	50	52	60	65	86	93
	CLASS 1500	H	52	60	60	86	93	110
Inside Bore	CLASS 800	D	11	14	20.5	25	31.6	38
	CLASS 1500	D	11	14	20.5	25	31.6	38
Weight	CLASS 800	Kg	0.75	0.95	1.7	2.4	3.7	4.9
	CLASS 1500	Kg	1.2	2.2	3.4	4.7	6.7	10.5



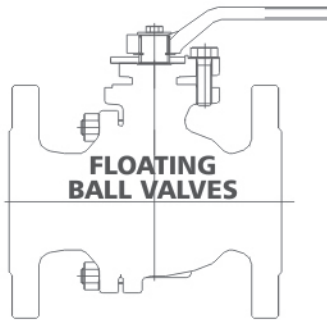
CLASS 1500

SOCKET WELD DIMENSIONS	Mom Size	inch	1/4	3/8	1/2	3/4	1	1 1/2	1 1/4	2
			mm	mm	mm	mm	mm	mm	mm	mm
	ANSI B16.11	E	14.1	17.6	21.9	27.4	34.2	42.7	48.8	61.1
		D	9.6	9.6	9.6	12.7	12.7	12.7	12.7	15.9



Engineering Examples





BTL

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