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FORGED STEEL VALVES

CATENA



ZHEJIANG BOTELI TECHNOLOGY CO.,LTD.



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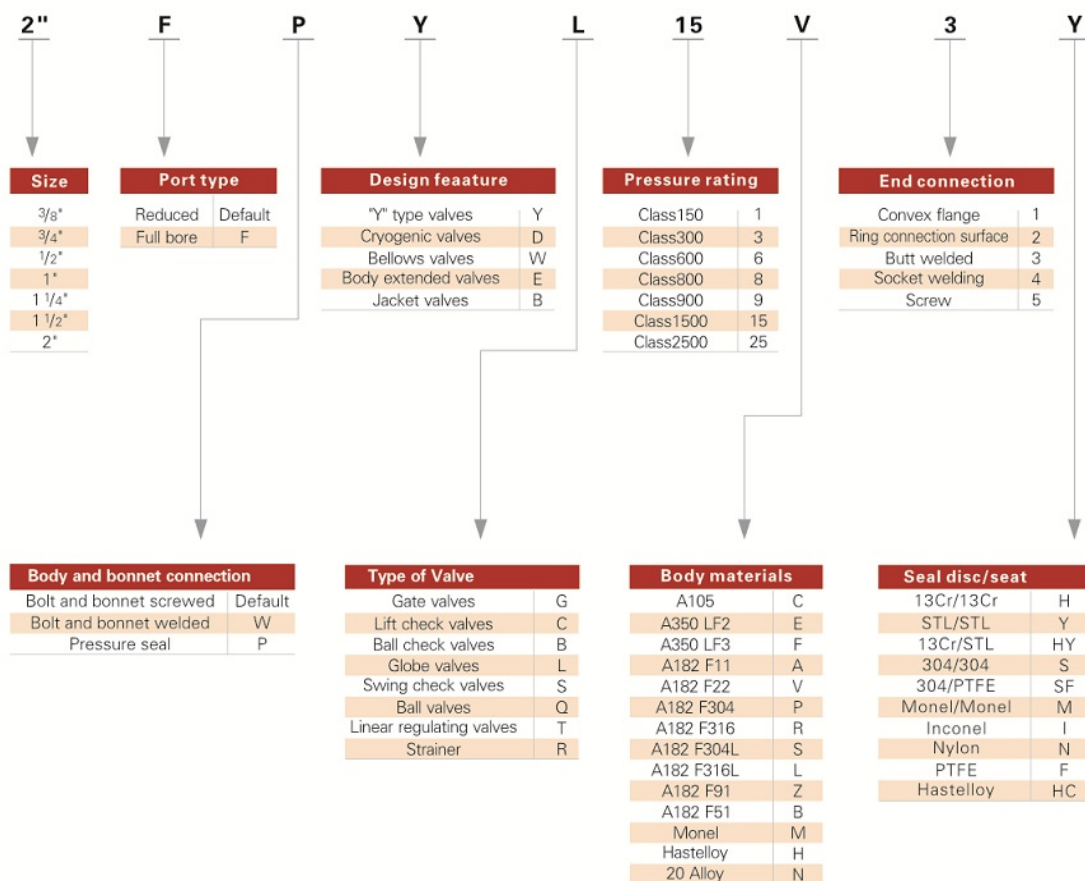
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Figure numbering

Figure numbering

A familiarity with our figure number system is not necessary when specifying or ordering our valves. Providing a full description of the valves is given, our Sales Office will translate this into a figure number. A full description of the valves would begin with the kind of valves, and would then go on to give size, pressure rating, end connection, seat-seal material etc.

We give an example below in order to illustrate a typical figure number, but if a fuller explanation is required, please consult us.



Forged steel gate valves

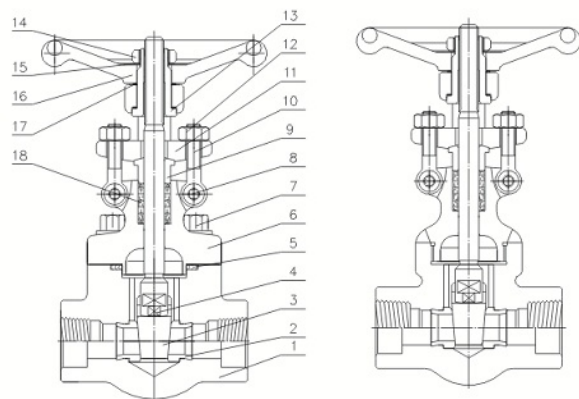
BTL valves are available in three bonnet designs. The first design is the Bolted Bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

Construction is as follows

- ※ Full port or conventional port;
- ※ Outside screw and yoke (OS & Y);
- ※ Two piece self-aligning packing gland;
- ※ Bolted bonnet & spiral wound gasket seal bonnet;
- ※ Bolted bonnet with spiral-wound gasket, threaded and seal welded bonnet or threaded and pressure seal bonnet;
- ※ Integral backseat;
- ※ Socket weld ends to ASME B16.11;
- ※ Screwed ends (NPT) to ANSI/ASME B1.20.1.



Female threaded and socket welded gate valves



Application standards

- Design and manufacture conform to API 602, BS5352, ANSI B16.34;
- Connection ends conform to:
 - Socket welded dimension conform to ANSI B16.11; JB/T1751
 - Screw ends dimension conform to ANSI B1.20.1; JB/T7306
 - Butt-welded conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to: API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANIS/ASTM.
- Main materials:
 - A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

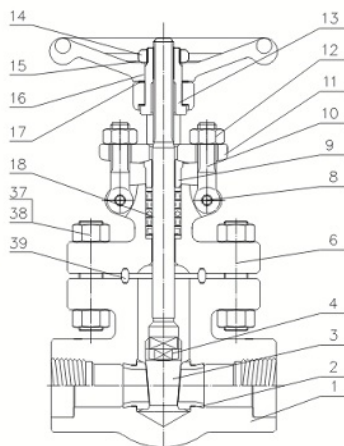
Carbon steel temperature–pressure rate

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	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F51
2	Seat	410	410HF	304	410HF	304(L)	316(L)	F51
3	Wedge	F6a	F6a	F304	F6aHF	F304(L)	F316(L)	F51
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F51
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
8	Pin	410	410	410	410	304	304	304
9	Gland	410	410	304	410	304	316	F51
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304
12	Hex nut	2H	2H	7	4	8(M)	8(M)	8M
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A197
17	Lubricating gasket	410	410	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite

Female threaded and socket welded gate valves



Application standards

- Design and manufacture conform to API 602, BS5352, ANSI B16.34;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to: API 598; GB/T13927; JB/T9092
- Structure features: Bolted bonnet, outside screw and yoke
Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials: A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

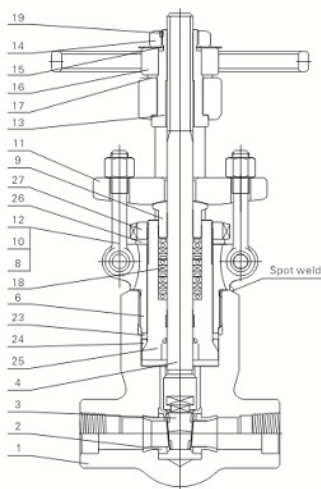
Carbon steel temperature–pressure rate

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	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F51
2	Seat	410	410HF	304	410HF	304(L)	316(L)	F51
3	Wedge	F6a	F6a	F304	F6aHF	F304(L)	F316(L)	F51
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F51
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
8	Pin	410	410	410	410	304	304	304
9	Gland	410	410	304	410	304	316	F51
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304
12	Hex nut	2H	2H	7	4	8(M)	8(M)	8M
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A197
17	Lubricating gasket	410	410	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
37	Screwed stud	B7	B7	L7	B16	B8(M)	B8(M)	B8(M)
38	Nut	2H	2H	7	4	8(M)	8(M)	8(M)
39	Metal ring	304	304	304	304	304(L)	316(L)	F51

Pressure sealing gate valves



Application standards

- Design and manufacture conform to
API 602、BS5352、ANSI B16.34
- Connection ends conform to:
1)Socket welded dimension conform to ANSI B16.11;JB/T1751
2)Screw ends dimension conform to ANSI B1.20.1;JB/T7306
3)Butt-welded conform to ANSI B16.25;JB/T12224
4)Flanged ends conform to ANSI B16.5;JB79
- Test and inspection conform to:
API 598、GB/T13927、JB/T9092
- Structure features:
A threaded and pressure seal bonnet
- Materials conform to ANIS/ASTM.
- Main materials:
A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321;
F91; Monel; 20 Alloy.

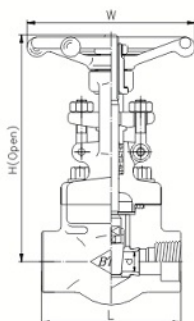
Carbon steel temperature-pressure rate

CL1500-3705 P.S.I @ 100° F
CL2500-6170 P.S.I @ 100° F
CL4500-11110 P.S.I @ 100° F

Main part materials list

NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F91/410 HF
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F91
2	Seat	410	410HF	304	410HF	304(L)	316(L)	F91HF
3	Wedge	F6a	F6a	F304	F6aHF	F304(L)	F316(L)	F91HF
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F91
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F91
8	Pin	410	410	410	410	304	304	410
9	Gland	410	410	304	410	304	316	F91
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8
11	Gland flange	A105	A105	LF2	F11	F304	F304	F91
12	Hex nut	2H	2H	7	4	8(M)	8(M)	8
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A190
17	Lubricating gasket	410	410	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
19	Stop nut	35	35	35	35	35	35	35
23	Seal gasket	420	420	304	304	304(L)	316(L)	420
24	P.S.ring	304	304	304	304	304	316	316
25	P.S.seat	420	420	304	304	304(L)	316(L)	F91
26	Nut pad	410	410	410	410	410	410	410
27	Packing nut	Cast steel	Cast steel	Cast steel	Cast steel	Stainless steel	Stainless steel	Cast steel

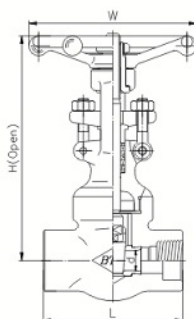
Female threaded and socket welded gate valves



CL800

Bolted bonnet, full port reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to API 602

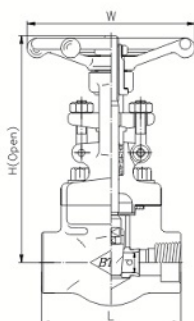
Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	73	73	80	100	114	120	130	145	180
Handwheel diameter	W	100	100	100	125	160	160	180	200	220
Height	H	144	144	150	182	216	235	270	300	370
Flow port dimension	d	9.5	9.5	13	17.5	24	29	36.5	44	51
Weight(Kg)		1.7	1.7	1.9	3.1	4.8	5.9	8.5	12.2	24



CL800

Welded bonnet, full port reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to API 602

Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	73	73	80	100	114	120	130	145	180
Handwheel diameter	W	100	100	100	125	160	160	180	200	220
Height	H	142	142	145	182	212	230	263	300	370
Flow port dimension	d	9.5	9.5	13	17.5	24	29	36.5	44	51
Weight(Kg)		1.4	1.4	1.6	2.6	4.5	5.4	8.4	12.1	22

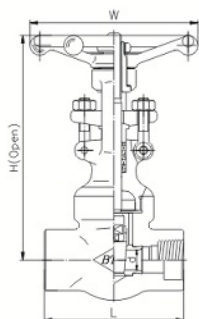


CL900-CL1500

Bolted bonnet, full port reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to API 602

Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	80	100	100	114	120	130	140	180	-
Handwheel diameter	W	100	125	125	160	160	180	180	220	-
Height	H	145	180	180	209	230	250	290	400	-
Flow port dimension	d	9.5	13	13	17.5	24	29	36.5	44	-
Weight(Kg)		2.4	3.4	3.4	5.1	5.4	7.6	11	22	-

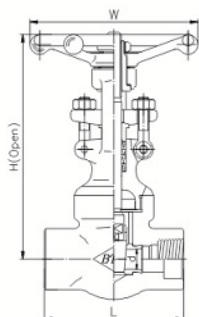
Female threaded and socket welded gate valves



CL900-CL1500

Welded bonnet, full port reducing port outside screw and yoke (OS&Y)
Threaded, butt-welded or socket welded ends; design to API 602

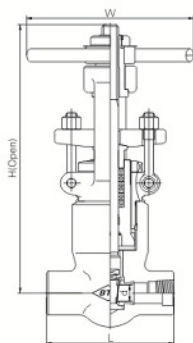
Specification (NPS)	R.P	–	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	80	100	100	114	120	130	140	180	–
Handwheel diameter	W	100	125	125	160	160	180	180	220	–
Height	H	147	182	182	206	225	246	282	370	–
Flow port dimension	d	9.5	13	13	17.5	24	29	36.5	45	–
Weight(Kg)		2.4	3.0	3.0	5.0	5.3	8.7	11	22.8	–



CL2500

Welded bonnet, full port outside screw and yoke (OS & Y)
Socket welded ends, design conform to ASME B16.34

Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	2
Face to face	L	-	114	114	114	120	-	-
Handwheel diameter	W	-	160	160	160	160	-	-
Height	H	-	204	204	204	221	-	-
Flow port dimension	d	-	13	13	13	17.5	-	-
Weight(Kg)		-	8	8.5	8.7	8.8	-	-



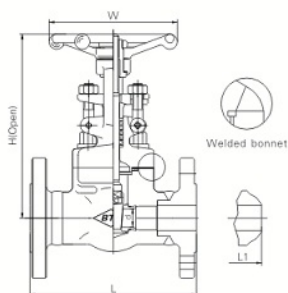
CL1500-CL2500

Pressure seal bonnet, full port outside screw and yoke (OS & Y)
Socket welded ends, design conform to ASME B16.34

Specification(NPS)	F.P		3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	CL900~1500	140	140	140	140	178	178	216
		CL2500	186	186	186	186	216	216	279
Handwheel diameter	W	CL900~1500	200	200	200	200	280	280	300
		CL2500	200	200	200	200	280	280	300
Height	H	CL900~1500	308	308	315	315	446	446	540
		CL2500	321	321	321	330	456	456	550
Flow port dimension		CL900~1500	13.5	13.5	18	18	29	36	40
		CL2500	13.5	13.5	18	18	29	29	36
Weight(Kg)		CL900~1500	11.5	11.5	10.8	10.5	19.6	21.0	55.2
		CL2500	12.0	12.1	11.8	11.0	26.8	21.8	60.0

Forged steel flange gate valves

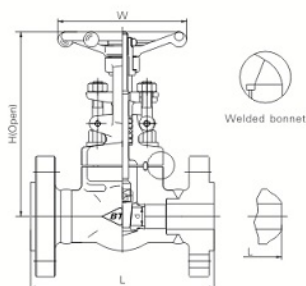
CL150-300-600 Bolted bonnet, reducing port outside screw and yoke(OS & Y) Flange-welded or butt-welded ends; design to API602;BS5352



Specification(NPS)			1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	CL150	L(RF) L1(BW)	-	-	108	117	127	140	165	178	190
	CL300		-	-	140	152	165	178	190	216	241
	CL600		-	-	165	190	216	229	241	292	330
Handwheel diameter		W	-	-	100	100	125	160	160	180	200
Height	CL150	H	-	-	144	150	182	216	235	270	300
	CL300,CL600		-	-	144	150	182	216	235	270	300
Height (angle dinmension)		d	-	-	9.5	13	17.5	24	29	36.5	44
Weight (Kg)	CL150	RF	-	-	2.6	3.3	4.9	8.4	9.0	12.1	24
		BW	-	-	2.0	3.8	4.2	7.8	8.0	12	19.2
	CL300	RF	-	-	3.2	4.7	6.3	9.6	11.4	15.4	26.2
		BW	-	-	2.8	4.1	5.7	8.1	9.2	13.1	23
	CL600	RF	-	-	3.5	4.8	6.3	9.6	10.1	13.9	32
		BW	-	-	2.9	4.0	5.7	8.1	8.9	11.8	28

If you want to order one piece body, please contract with sale department

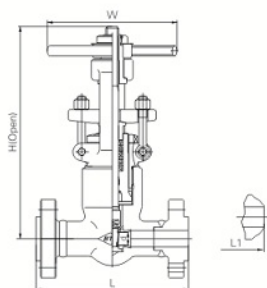
CL900-CL1500 Welded bonnet, full port outside screw and yoke(OS & Y) Flange-welded or butt-welded ends; design to BS 5352



Specification(NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF).L1(BW)	-	-	216	229	254	279	305	368
	L(RTJ)	-	-	216	229	254	279	305	371
Handwheel diameter	W	-	-	125	125	160	160	180	180
Height	H	-	-	180	180	209	230	250	270
Flow port dimension	d	-	-	13	13	17.5	24	29	36.5
Weight(Kg)		-	-	5.1	8.9	10.1	13.7	21.5	28.2

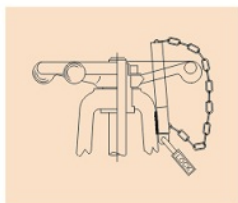
If you want to order one piece body, please contract with sale department

CL2500 Pressure seal gate valves, full port outside screw and yoke(OS & Y) Flange-welded or butt-welded ends; design to ASME B16.34

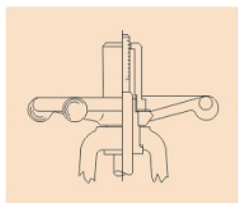


Specification(NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF).L1(BW)	-	-	264	273	308	-	384	451
	L(RTJ)	-	-	264	273	308	-	387	454
Handwheel diameter	W	-	-	200	200	200	-	280	300
Height	H	-	-	321	321	330	-	456	550
Flow port dimension	d	-	-	13.5	18	18	-	29	36
Weight(Kg)		-	-	13.1	13.0	13.7	-	29.7	63.2

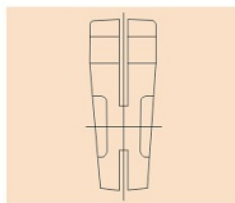
Chosen devices and varieties of gate valves



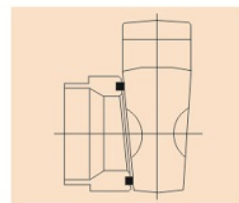
Locking device



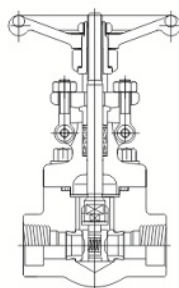
Position indicator



Flexible wedge

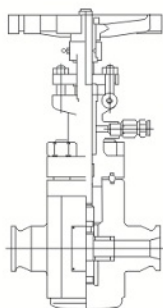


Insert PTFE seat



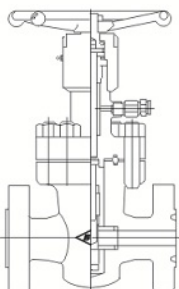
Dynamic double-wedge gate valves

	CLASS	Materials
API 6D Outside screw and yoke	600	Carbon Steel, Cryogenic Carbon Steel/ Alloy Steel, Stainless steel
	900/1500	
	2500	



Flat gate valves

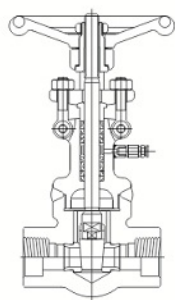
	CLASS	Materials
API 6D Outside screw and yoke	600	Carbon Steel, Cryogenic Carbon Steel/ Alloy Steel, Stainless steel
	900/1500	
	2500	



Flat gate valves

	CLASS	Materials
API 6D Outside screw and yoke	3000	Carbon Steel, Cryogenic Carbon Steel/ Alloy Steel, Stainless steel
	5000	
	10000	

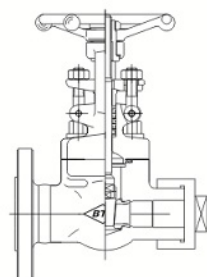
Special purposes gate valves



- ※ Welded bonnet
- ※ OS & Y
- ※ Packing
- ※ Distance ring
- ※ Injector sealing gum valves
- ※ Solid wedge

Vacuum gate valves

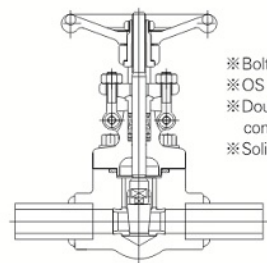
	Temperature- pressure rate	Body/bonnet	Materials Trim	Bolt
CLASS 800 API 602-BS 5352 Reduced port & full port	1975 psi @ 100° F	Cast steel	13Cr	B7



- ※ Bolted
- ※ OS & Y
- ※ Cap fitting connection
- ※ Solid wedge

For venting and/or releasing media

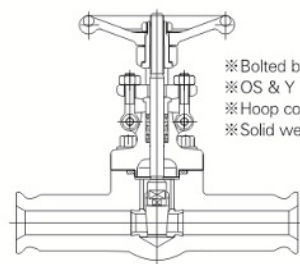
	Temperature- pressure rate	Body/bonnet	Materials Trim	Bolt
CLASS 800 API 602-BS 5352 Reduced port & full port	1975 psi @ 100° F	Cast steel	13Cr	B7



- ※ Bolted bonnet
- ※ OS & Y
- ※ Double end pipe connection
- ※ Solid wedge

Coupling pipe valves

	Temperature- pressure rate	Body/bonnet	Materials Trim	Bolt
CLASS 800 API 602-BS 5352 Reduced port & full port	1975 psi @ 100° F	Cast steel	13Cr	B7



- ※ Bolted bonnet
- ※ OS & Y
- ※ Hoop connection
- ※ Solid wedge

Hoop gate valves

	Temperature- pressure rate	Body/bonnet	Materials Trim	Bolt
CLASS 800 API 602-BS 5352 Reduced port & full port	1975 psi @ 100° F	Cast steel	13Cr	B7

Forged steel globe valves

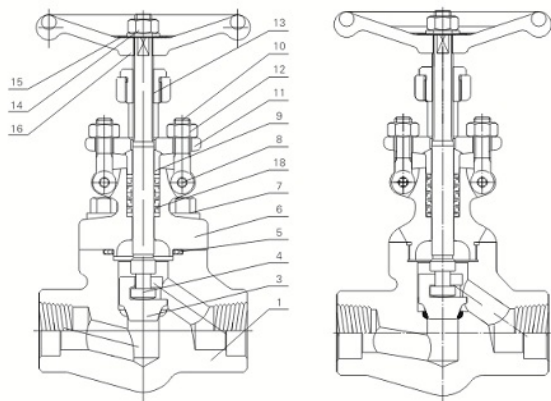
BTL valves are available in Three bonnet designs. The first design is the Bolted Bonnet, with male-Female joint, spiral wound gasket, made in F304L/graphite, Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

Construction is as follows

- ※ Full port or conventional port;
- ※ Outside screw and yoke (OS&Y);
- ※ Two piece self-aligning packing gland;
- ※ Bolted bonnet with spiral-wound gasket, threaded and seal welded bonnet or threaded and pressure seal bonnet;
- ※ Integral backseat;
- ※ Socket weld ends to ASME B16.11;
- ※ Screwed ends(NPT) to ANSI/ASME B1.20.1;
- ※ Disc can change for throttle type、needle type、ball type and check type.



Female threaded and socket welded globe valves



Application standards

- Design and manufacture conform to BS5352 MSS SP-118;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

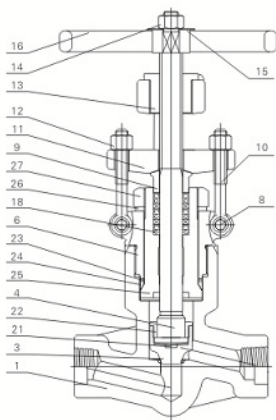
Carbon steel temperature-pressure rate

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	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105HF	LF2	F11HF	F304(L)	F316(L)	F51
3	Disc	410	410	304	410HF	304(L)	316(L)	F51
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F51
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
8	Pin	410	410	410	410	304	304	304
9	Gland	410	410	304	410	304	316	F51
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304
12	Hex nut	2H	2H	7	4	8(M)	8(M)	8M
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A197
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite

Pressure sealing globe valves



Application standards

- Design and manufacture conform to BS5352 MSS SP-118;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to: API 598; GB/T13927; JB/T9092
- Structure features: A threaded and pressure seal bonnet; Y type and T type
- Materials conform to ANSI/ASTM.
- Main materials: A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F91; Monel; 20 Alloy.

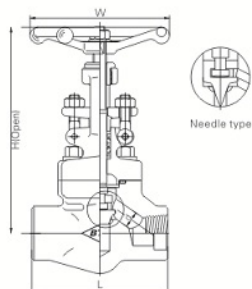
Carbon steel temperature-pressure rate

CL1500-3705 P.S.I @ 100° F
CL2500-6170 P.S.I @ 100° F
CL4500-11110 P.S.I @ 100° F

Main part materials list

NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F91/410HF
1	Body	A105	A105HF	LF2	F11HF	F304(L)	F316(L)	F91HF
3	Disc	410	410	304	410HF	304(L)	316(L)	F91HF
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F91
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F91
8	Pin	410	410	410	410	304	304	410
9	Gland	410	410	304	410	304	316	F91
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8
11	Gland flange	A105	A105	LF2	F11	F304	F304	F91
12	Hex nut	2H	2H	7	4	8(M)	8(M)	8
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A197
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
21	Stem pad	420	420	420	420	316SH	316SH	F91
22	Disc nut	410	410	410	410	304(L)	316(L)	F91
23	Seal ring gasket	420	420	304	304	304(L)	316(L)	316
24	P.S. ring	304	304	304	304	304	316	304
25	P.S. seat	420	420	304	304	304(L)	316(L)	F91
26	Nut pad	410	410	410	410	410	410	410
27	Draw-in stud	Cart steel	Cart steel	Cart steel	Cart steel	Stainless steel	Stainless steel	Cart steel

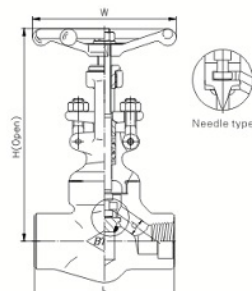
Female threaded and socket welded globe valves



CL800

Bolted bonnet, full port & reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS 5352.

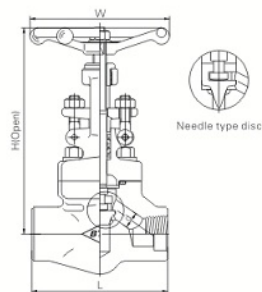
Specification (NPS)		R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Face to face	L	73	73	80	100	114	145	160	220	-	-
Handwheel diameter	W	100	100	100	125	160	160	180	200	-	-
Height	H	155	155	160	198	217	235	273	303	-	-
Flow port dimension	d	7	9	12	17.5	22.5	29	35	44	-	-
Weight(Kg)		1.7	1.7	1.9	3.2	4.9	6.3	9.6	12.5	-	-



CL800

Welded bonnet, full port & reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352

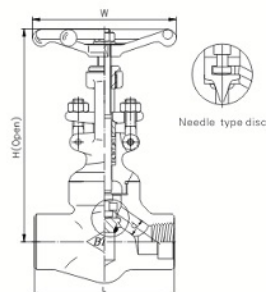
Specification (NPS)		R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Face to face	L	73	73	80	100	114	145	160	220	-	-
Handwheel diameter	W	100	100	100	125	160	160	180	200	-	-
Height	H	160	160	160	188	215	218	253	280	-	-
Flow port dimension	d	7	9	12	17.5	22.5	29	36	44	-	-
Weight(Kg)		1.7	1.7	1.5	3.0	4.7	6.0	9.3	12.0	-	-



CL900-CL1500

Bolted bonnet, full port&reducing port outside screw and yoke(OS&Y)
Threaded, butt-welded or socket welded ends; design to BS 5352

Specification (NPS)		R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Face to face	L	80	100	100	114	145	160	172	-	-	-
Handwheel diameter	W	100	125	125	160	160	180	200	-	-	-
Height	H	160	193	193	212	235	257	300	-	-	-
Flow port dimension	d	7	11	14.5	19	26	29	33	-	-	-
Weight(Kg)		2.4	3.4	3.4	5.1	7.6	10.3	12.5	-	-	-

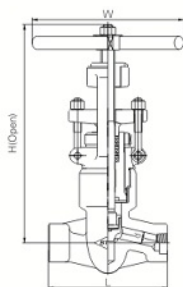


CL900-CL1500

Welded bonnet, full port&reducing port outside screw and yoke(OS&Y)
Threaded, butt-welded or socket welded ends; design to BS5352

Specification (NPS)		R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Face to face	L	80	100	100	114	145	160	172	-	-	-
Handwheel diameter	W	100	125	125	160	160	180	200	-	-	-
Height	H	160	188	188	195	218	253	300	-	-	-
Flow port dimension	d	7	11	14.5	19	26	29	33	-	-	-
Weight(Kg)		2.3	3.1	3.1	5.0	7.2	9.5	11.3	-	-	-

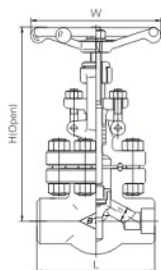
Female threaded and socket welded globe valves



CL900-CL1500

Pressure seal bonnet, full port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352

Specification(NPS)	F.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	140	140	140	178	178	216	-
Handwheel diameter	W	200	200	200	200	200	300	-
Height	H	320	320	320	427	427	490	-
Flow port dimension	d	13	16	19	25	27	36	-
Weight(Kg)		11.5	10.8	10.5	19.6	21.1	55.4	-

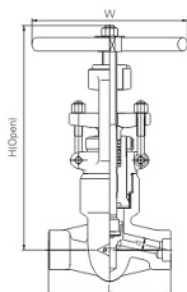


Welded bonnet

CL2500

Bolted bonnet, full port outside screw and yoke (OS & Y)
Socket welded ends, design conform to ASME B16.34

Specification(NPS)	F.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	114	114	145	-	-	-	-
Handwheel diameter	W	160	160	160	-	-	-	-
Height	H	208	208	217	-	-	-	-
Flow port dimension	d	12	14.2	19	-	-	-	-
Weight(Kg)		5.7	7.5	12.5	-	-	-	-

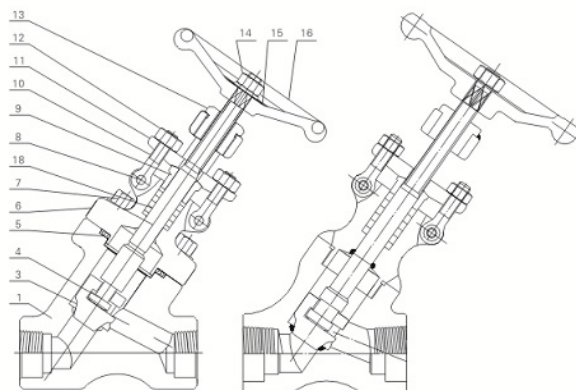


CL2500

Pressure seal bonnet, full port outside screw and yoke(OS & Y)
Socket welded ends, design conform to ASME B16.34

Specification(NPS)	F.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	186	186	186	232	232	279	-
Handwheel diameter	W	200	200	200	270	270	300	-
Height	H	330	330	330	480	480	530	-
Flow port dimension	d	13	16	19	25	28	36	-
Weight(Kg)		12.3	11.6	10.8	26.0	28.4	60	-

Female threaded and socket welded Y type globe valves



Application standards

- Design and manufacture conform to BS5352 MSS SP-118;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy; Hastelloy.

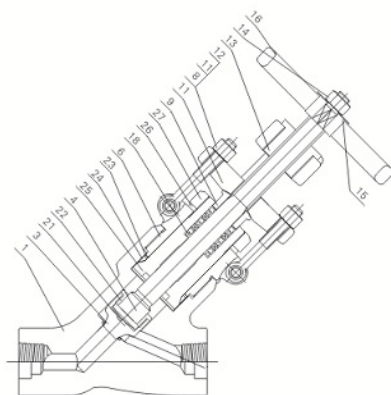
Carbon steel temperature-pressure rate

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	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105HF	LF2	F11HF	F304(L)	F316(L)	F51
3	Disc	410	410	304	410HF	304(L)	316(L)	F51
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F51
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	A105	A105	Lf2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
8	Pin	410	410	410	410	304	304	304
9	Gland	410	410	304	410	304	316	F51
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304
12	Hex nut	2H	2H	7	4	8(M)	8(M)	8M
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A197
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite

Pressure seal Y type globe valves



Application standards

- Design and manufacture conform to BS5352 MSS SP-118;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - A threaded and pressure seal bonnet; Y type and T type
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy; Hastelloy.

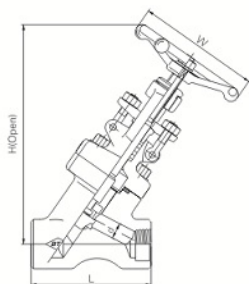
Carbon steel temperature-pressure rate

CL1500-3705 P.S.I @ 100° F
 CL2500-6170 P.S.I @ 100° F
 CL4500-11110 P.S.I @ 100° F

Main part materials list

NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F91/410HF
1	Body	A105	A105HF	LF2	F11HF	F304(L)	F316(L)	F91HF
3	Disc	410	410	304	410HF	304(L)	316(L)	F91HF
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F91
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F91
8	Pin	410	410	410	410	304	304	410
9	Gland	410	410	304	410	304	316	F91
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8
11	Gland flange	A105	A105	LF2	F11	F304	F304	F91
12	Hex nut	2H	2H	2H	2H	8(M)	8(M)	8
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A197
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
21	Stem pad	420	420	420	420	316SH	316SH	F91
22	Disc nut	410	410	410	410	304(L)	316(L)	F91
23	Seal ring gasket	420	420	304	304	304(L)	316(L)	316
24	P.S. ring	304	304	304	304	304	316	304
25	P.S. seat	420	420	304	304	304(L)	316(L)	F91
26	Nut pad	410	410	410	410	410	410	410
27	Draw-in stud	Cart steel	Cart steel	Cart steel	Cart steel	Stainless steel	Stainless steel	Cart steel

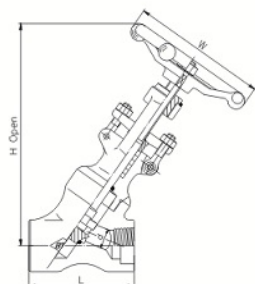
Y type globe valves



CL800

Welded bonnet, full port & reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352

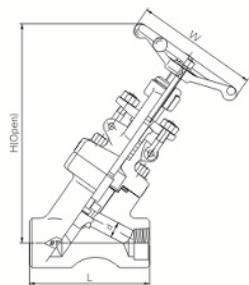
Specification (NPS)		R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
		F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	98	98	98	111	140	140	140	170		
Handwheel diameter	W	100	100	100	125	160	160	180	200		
Height	H	180	180	180	188	280	280	295	350		
Height(angle dinmension)	d	7	10	13	17.5	23	30	36	46		
Weight(Kg)		2.6	2.6	3.8	4.6	9.3	9.3	14	19.6		



CL800

Welded bonnet, full port & reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352

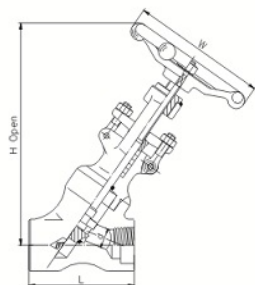
Specification (NPS)		- 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3									
		F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	79	79	79	90	118	155	155	175		
Handwheel diameter	W	100	100	100	125	160	180	180	200		
Height	H	172	172	172	196	235	280	260	345		
Height(angle dinmension)	d	7	9	13	17.5	22.5	29.5	35	44		
Weight(Kg)		1.8	1.8	2.0	3.5	8.0	8.0	12	19.5		



CL900-CL1500

Bolted bonnet, full port & outside screw and yoke (OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	98	111	111	120	140	155	170	
Handwheel diameter	W	100	125	125	160	160	180	200	
Height	H	175	175	215	215	254	305	305	
Height(angle dimension)	d	10	12	14	18	28	30	36.5	
Weight(Kg)		2.6	4.6	4.6	9.3	9.3	14	19.6	

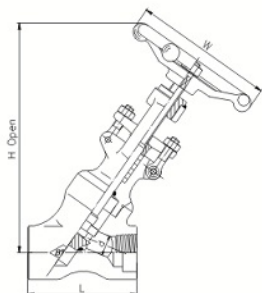


CL900-CL1500

Welded bonnet, full port & outside screw and yoke (OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	79	90	118	155	155	175	200	
Handwheel diameter	W	100	125	160	180	180	200	200	
Height	H	172	196	220	255	257	315	370	
Height(angle dimension)	d	9	13	17.5	22.5	29.5	35	44	
Weight(Kg)		1.8	3.5	3.5	8.0	8.0	12	16	

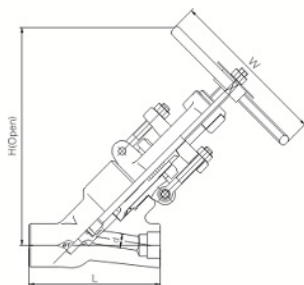
Y type globe valves



CL2500

Welded bonnet, full port outside screw and yoke(OS & Y)
Socket welded, design conform to ASME16.34

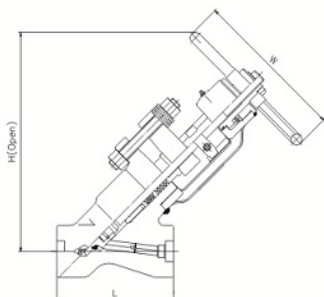
Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	186	186	186	186	232	232	310
Handwheel diameter	W	200	200	200	200	280	280	300
Height	H	329	329	329	329	350	350	383
Height(angle dimension)	d	9	11	14	19	25	28	35
Weight(Kg)		12.3	12.3	11.6	10.8	28.0	26.4	43.8



CL2500

Pressure seal bonnet, full port outside screw and yoke(OS & Y)
Socket welded, design conform to ASME16.34

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	186	186	186	186	232	232	310
Handwheel diameter	W	200	200	200	200	280	280	300
Height	H	333	333	333	333	406	406	524
Height(angle dimension)	d	9	11	14	19	25	28	35
Weight(Kg)		12.3	12.3	11.6	10.8	28.0	26.4	43.8

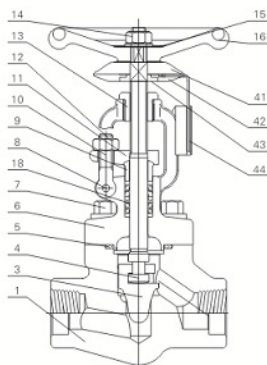


CL4500

Pressure seal bonnet, full port outside screw and yoke(OS & Y)
Socket welded, design conform to ASME16.34

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	190	190	190	190	255	255	255
Handwheel diameter	W	250	250	250	250	450	450	450
Height	H	368	368	368	368	516	516	516
Height(angle dimension)	d	9	11	11	15	20	26	28
Weight(Kg)		30	30	30	30	30	36	58

Linear regulating valves



BTL regulating valves is compose of combination valves and flow control staff guage. because equip with micrometer graduation and finger, whenoperator turn hand wheel around, finger would move ten percent. BTL regulating valves equip with regulating disc to ensure flow,so it can accuracy control.

Seal facing of BTL regulating valves is stellite deposit, so seal facing is more corrosion resistant, anti-abrasive and abrasion resistance.

BTL regulating valves is manual operate, liner fow regulating function, abrasion resistance.

If you want to equip with locking device,please note you BTL requirement.

Application standards

- 1、Design and manufacture conform to BS5352 MSS SP-118;
- 2、Connection ends conform to:
 - 1)Socket welded ends conform to ANSI B16.11;JB/T1751
 - 2)Screw ends conform to ANSI B1.20.1;JB/T7306
 - 3)Butt-welded ends conform to ANSI B16.25;JB/T12224
 - 4)Flanged ends conform to ANSI B16.5;JB79
- 3、Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- 4、Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
 - Disc is one piece or "V" type double or four pieces.
- 5、Materials conform to ANS/ASTM.
- 6、Main materials:
 - A105; LF2; F5; 304(L); 316(L); F347; F321;
 - F51; Monel; 20 Alloy.

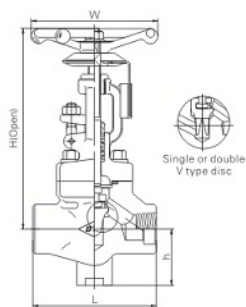
Carbon steel temperature-pressure rate

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

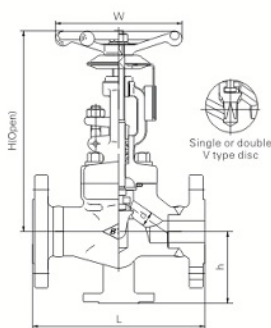
Main part materials list

NO.	Part name	A105/F6a	A105/Fa6HFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105HF	LF2	F11HF	F304(L)	F316(L)	F51
3	Disc	410	410	304	410HF	304(L)	316(L)	F51
4	Stem	F6a	F6a	F304	F6a	F304(L)	F316(L)	F51
5	gasket	304+ flexible graphite	304+ flexible graphite	304+ flexible graphite	304+ flexible graphite	304+ flexible graphite	316+ flexible graphite	316+ flexible graphite
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
8	Pin	410	410	410	410	304	304	304
9	Gland	410	410	304	410	304	316	F51
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304
12	Hex nut	2H	2H	2H	2H	8(M)	8(M)	8M
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197	A197	A197
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
41	Index plate	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel
42	Lower plate	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel
43	Back block	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel
44	Indicative stem	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel	Cast steel

Linear regulating valves

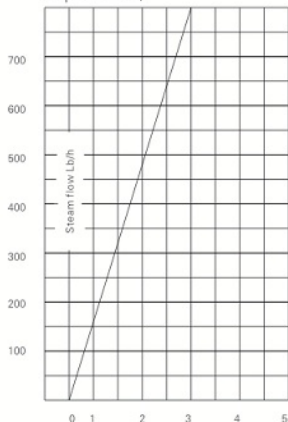


Single or double V type disc



Single or double V type disc

Typical stream flow chart(from experiment)



CL800 Bolted bonnet, full port outside screw and yoke (OS & Y) Threaded, butt-welded or socket welded ends; design to BS5352

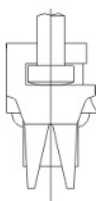
Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	73	73	80	100	114	145	160	220
Handwheel diameter	W	100	100	100	125	160	160	180	200
Height	H	155	155	160	198	217	235	273	303
Height (angle dimension)	SW & NPT (Rc)	40	40	40	45	50	55	60	70
Flow port dimension	d	7.0	9.0	12	17.5	22.5	29	35	44
Weight(Kg)		1.6	1.6	1.9	3.2	4.9	6.3	9.7	12.5
Flow coefficient Cv	Single disc	0.2	0.5	0.5	1.0	2.0	5.2	5.2	7.0
	Four part disc	0.4	1.0	1.0	2.0	4.0	10.4	10.4	14

CL150-300-600 Bolted bonnet, reducing port outside screw and yoke (OS & Y) Threaded, butt-welded or socket welded ends; design to BS5352

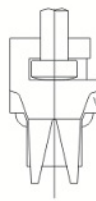
Specification(NPS)			1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF)	CL150	–	–	108	118	127	–	165	203
	L1(BW)	CL300	–	–	153	178	203	–	229	267
		CL600	–	–	165	191	216	–	241	292
		W	–	–	100	100	125	–	160	180
Height		H	–	–	155	160	198	–	235	273
Height (angle dimension)	SW & NPT(Rc)		–	–	40	45	50	–	60	70
Flow port dimension		d	–	–	9.0	12	17.5	–	29	35
		CL150	–	–	2.6	3.3	4.9	–	8.8	14
Weight(Kg)		CL300	–	–	3.25	4.58	6.7	–	12.1	17
		CL600	–	–	3.5	4.8	7.2	–	13.2	18.5
Flow coefficient Cv	Single disc		–	–	0.5	1.0	2.0	–	5.2	7.0
	Four part disc		–	–	1.0	2.0	4.0	–	10.4	14

If you want to order one piece body, please contract with our sale department

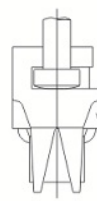
Regulating valves operation



When valves full closed, disc and seat could be shut tightly.



When the disc is opened a little it allows media to flow acc.to a known quota.

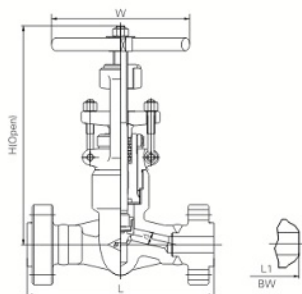
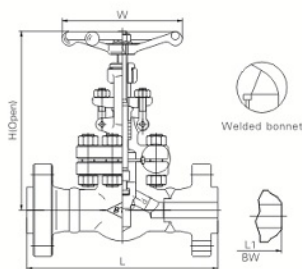
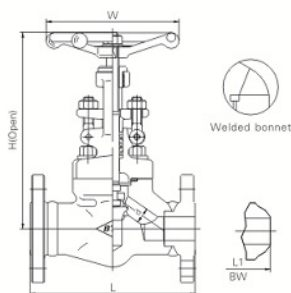
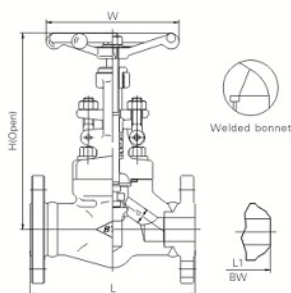


When the disc in the middle of the full lifting height,medium flow can to be reduced or increased according to control scale.



When disc in full open position, valves permit max flow to go through its port, medium flow can be reduced or acc. To control scale.

Flange and butt-welded globe valves



CL150-300-600

Welded bonnet, reducing port outside screw and yoke(OS & Y)
Flange or butt-welding design to BS5352

Specification(NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	CL150			108	117	127	140	165	203
	CL300			152	178	203	216	229	267
	CL600			165	190	216	229	241	292
Handwheel diameter	W			100	100	125	160	160	180
Height CL150/CL300/CL600	H			155	160	198	215	235	273
Height(angle dimension)	d			9	12	17.5	22.5	29	35
Weight (Kg)	CL150	R F		2.6	3.3	5.0	8.4	9.5	14.5
		BW		2.0	2.8	4.2	7.8	8.8	13.0
	CL300	R F		3.3	4.6	6.7	9.6	12.1	17.0
		BW		2.8	4.0	5.7	8.2	9.8	14.7
	CL600	R F		3.5	4.8	7.2	9.6	13.2	18.5
		BW		2.9	4.0	6.2	8.1	11.7	15.1

If you want to order one piece body, please contract with sale department

CL900-CL1500

Welded bonnet, full port outside screw and yoke(OS & Y)
Flange or butt-welding design to BS5352

Specification(NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF), L1(BW)			216	229	254	279	305	368
	L(RTJ)			216	229	254	279	305	371
Handwheel diameter	W			125	125	160	160	180	200
Height	H			193	193	212	235	257	300
Height(angle dimension)	d			11	14.5	19	26	29	33
Weight (Kg)				5.2	8.8	11.2	13.8	21.6	28.3

If you want to order one piece body, please contract with sale department

CL2500

Welded bonnet, full port outside screw and yoke(OS & Y)
Welding flange or butt-welded design conform to ASME B16.34

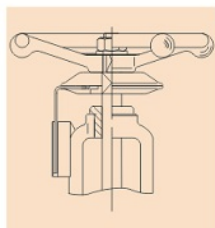
Specification(NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF), L1(BW)			264	273	308			
	L(RTJ)			264	273	308			
Handwheel diameter	W			160	160	160			
Height	H			208	208	217			
Height(angle dimension)	d			12	14.2	19			
Weight (Kg)				19.5	21.5	42			

CL2500

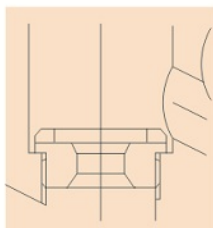
Pressure seal bonnet, full port outside screw and yoke(OS & Y)
Welding flange or butt-welded design conform to ASME B16.34

Specification(NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF), L1(BW)			264	273	308	349	384	451
	L(RTJ)			264	273	308	349	387	454
Handwheel diameter	W			200	200	200	270	270	300
Height	H			330	330	330	480	480	530
Height(angle dimension)	d			13	16	19	25	28	36
Weight(Kg)				21.5	24.7	30.4	48.1	58.1	130

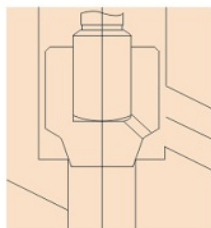
Chosen devices and varieties of globe valves



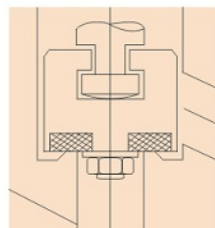
Position indicator



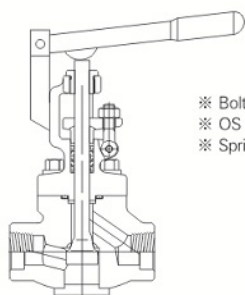
Renewable seat



Globe check valve disc



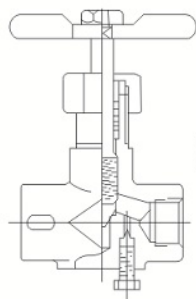
Insert PTFE seat



- ※ Bolted
- ※ OS & Y
- ※ Spring operation

Manual-automatic shut-off valves

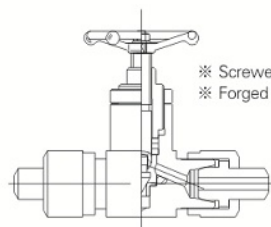
CLASS	Materials
800	Carbon Steel Alloy Steel Stainless steel
1500	
Flange and butt-welded	



- ※ Screwed bonnet
- ※ Forged structure

Instrument valves

CLASS	Materials
3000	Carbon steel Stainless steel
6000	

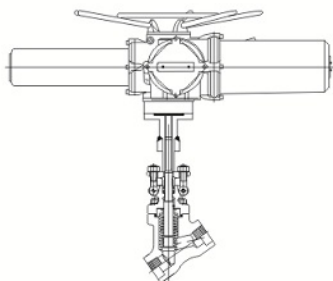


- ※ Screwed bonnet
- ※ Forged structure

Needle valves

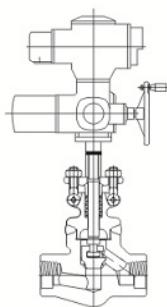
CLASS	Materials
800	Carbon steel Stainless steel
1500	

Available actuation types、Jacketed globe valves



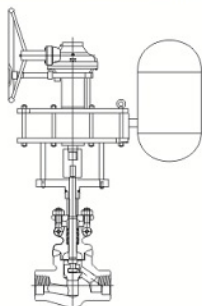
Electric actuator

CLASS	Materials
150~2500	Cart steel, Stainless steel



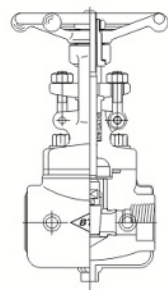
Electric actuator

CLASS	Materials
150~2500	Cart steel, Stainless steel



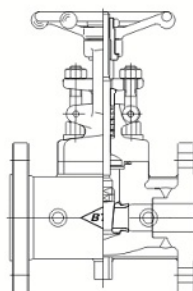
Pneumatic actuator

CLASS	Materials
150~2500	Cart steel, Stainless steel



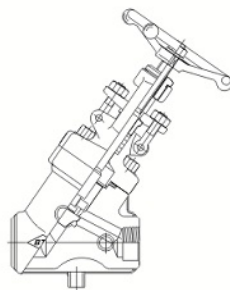
**Jacketed valves
(socket welding/screw/butt-welding)**

CLASS	Materials
150~2500	Cart steel, Stainless steel



Jacketed valves(flange)

CLASS	Materials
150~2500	Cart steel, Stainless steel



**Y type jacketed valves(socket welding/
screw/butt-welding/flange)**

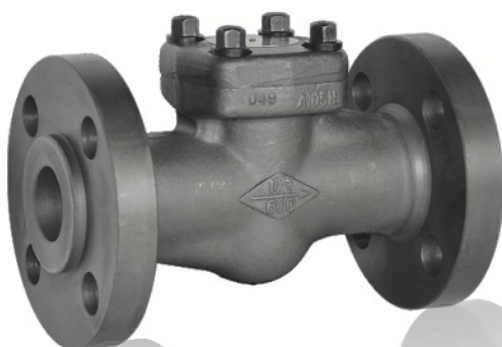
CLASS	Materials
150~2500	Cart steel, Stainless steel

Forged steel check valves

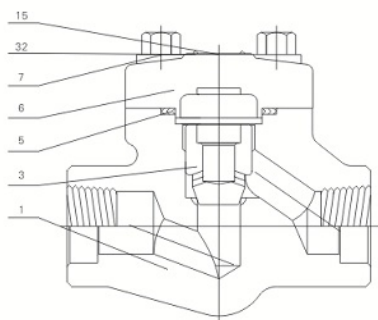
BTL valves are available in Three bonnet designs. The first design is the Bolted Bonnet, with male–female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint. The check valves are also available in three different design configurations. These are piston check, ball check, or swing check designs.

Construction is as follows

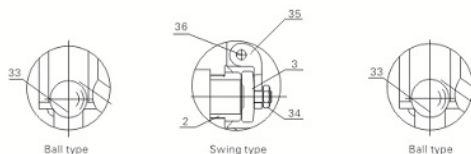
- ※ Full port or conventional port;
- ※ Lift type check valves;
- ※ Ball type check valves;
- ※ Swing type check valves;
- ※ According to requirement equip inside spring;
- ※ Bolted bonnet with spiral–wound gasket, threaded and seal welded bonnet or threaded and pressure seal bonnet;
- ※ Socket weld ends to ASME B16.11;
- ※ Screwed ends (NPT) to ANSI/ASME B1.20.1;
- ※ Disc can change for soft seal disc and ball disc.



Female threaded and socket welded check valves



Please mark in you offer if you need load spring



Application standards

- Design and manufacture conform to BS5352 MSS SP-118;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, Welded bonnet
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

Carbon steel temperature-pressure rate

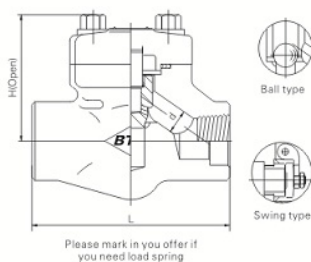
CL150-285 P.S.I @ 100° F
 CL300-740 P.S.I @ 100° F
 CL600-1480 P.S.I @ 100° F
 CL800-1975 P.S.I @ 100° F
 CL1500-3705 P.S.I @ 100° F

Main part materials list

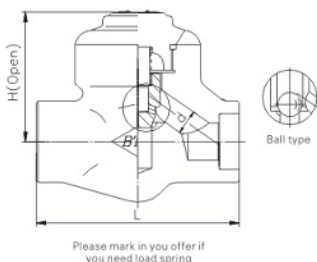
NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105HF	LF2	F11HF	F304(L)	F316(L)	F51
2	Seat ring	410	410HF	304	410HF	304(L)	316(L)	F51
3	Disc	410	410	304	410HF	304(L)	316(L)	F51
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
32	Revit	AL	AL	AL	AL	AL	AL	AL
33	Steel ball	430	430	304	STL	316(L)	316(L)	STL
		304	304	304	304	304(L)	316(L)	F51
34	Disc nut	8	8	8	8	8(M)	8(M)	8M
35	Hinge	410	410	304	410	316(L)	316(L)	F51
36	Pin	410	410	304	410	304(L)	316(L)	F51

Female threaded and socket welded check valves

CL800 Bolted bonnet, full port and reducing port Threaded, butt-welded or socket welded ends; design to BS5352



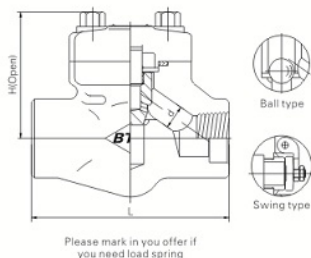
Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	Lift	73	73	80	100	114	145	160
		Swing	73	73	80	100	114	120	130
Height	H	Lift	50	50	53	64	80	84	102
		Swing	50	50	53	64	80	87	105
Height (angle dimension)	d	Lift	7	9	12	17.5	22.5	29	35
		Swing	8	9.5	13	17.5	24	29	36.5
Weight(Kg)		Lift	1.0	1.0	1.3	2.1	3.5	4.7	7.5
		Swing	1.1	1.1	1.2	2.2	3.1	4.2	6.5



CL800 Welded bonnet, full port and reducing port Threaded, butt-welded or socket welded ends; design to BS5352

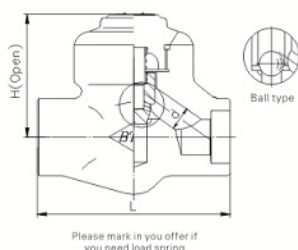
Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	73	73	80	100	114	145	160	-
Height	H	50	50	53	64	80	84	102	-
Height (angle dimension)	d	7	9	12	17.5	22.5	29	35	-
Weight(Kg)		1.0	1.0	1.3	2.1	3.5	4.7	7.5	-

CL900-CL1500 Bolted bonnet, full port and reducing port Threaded, butt-welded or socket welded ends; design to BS5352



Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	Lift	100	100	114	145	160	172	-
		Swing	100	100	114	120	130	140	-
Height	H	Lift	64	64	80	84	102	118	-
		Swing	64	64	80	87	105	120	-
Height (angle dimension)	d	Lift	11	14.5	19	26	29	33	-
		Swing	13	13	17.5	24	29	36.5	-
Weight(Kg)		Lift	1.5	3.4	3.3	4.2	6.3	10.5	-
		Swing	1.5	3.4	3.3	4.2	5.0	8.5	-

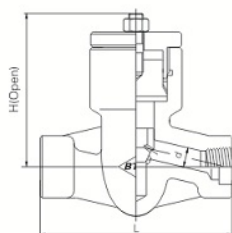
Female threaded and socket welded globe valves



CL900-CL1500

Welded bonnet, full port and reducing port
Threaded, butt-welded or socket welded ends; design to BS5352

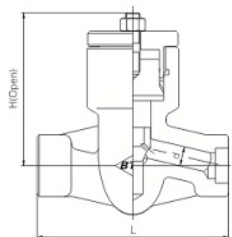
Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2		
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	80	100	100	114	145	160	172	-
Height	H	53	64	64	80	84	102	118	-
Height (angle dimension)	d	7	11	14.5	19	26	29	33	-
Weight(Kg)		1.3	3.1	3.1	3.9	5.8	10.0	11.5	-



CL900-CL1500

Pressure seal bonnet, full port and reducing port
Threaded, butt-welded or socket welded ends; design to BS5352

Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	-	-	140	140	140	178	178	216	-
Height	H	-	-	130	130	130	190	190	213	-
Height (angle dimension)	d	-	-	13	16	19	25	27	36	-
Weight(Kg)		-	-	7.5	7.0	6.8	18.5	10.3	22	-

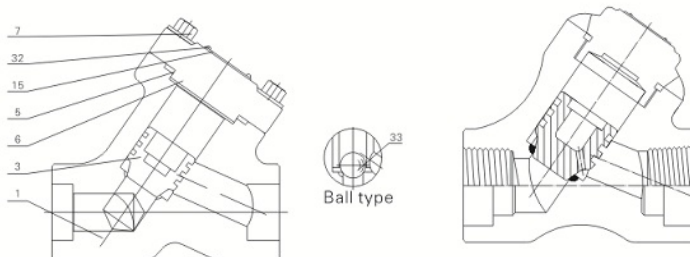


CL2500

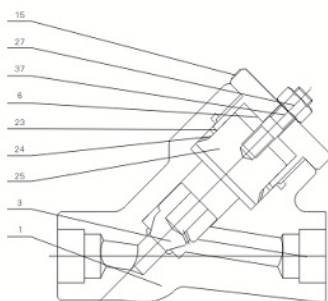
Pressure seal bonnet, full port
Threaded, butt-welded or socket welded ends; design to ASME B16.34

Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	-	-	186	186	186	232	232	279
Height	H	-	-	130	130	130	190	190	213
Height (angle dimension)	d	-	-	13	16	19	25	28	36
Weight(Kg)		-	-	11.8	11	10.5	23	26.4	39

Y type check valves/Y type pressure sealed check valves



Please mark in you offer if you need load spring



Application standards

- Design and manufacture conform to BS5352 MSS SP-118;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11;JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25;JB/T12224
 - Flanged ends conform to ANSI B16.5; Jb79
- Test and inspection conform to: API 598; GB/T13927; JB/T9092
- Structure features: Bolted bonnet, Welded bonnet, A threaded and pressure seal bonnet; Y type and T type.
- Materials conform to ANSI/ASTM.
- Main materials: A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

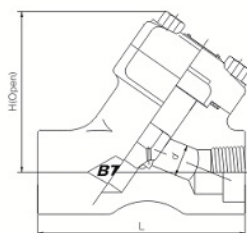
Carbon steel temperature-pressure rate

CL1500-3705 P.S.I @ 100° F
CL2500-6170 P.S.I @ 100° F
CL4500-11110 P.S.I @ 100° F

Main part materials list

NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105HF	LF2	F11HF	F304(L)	F316(L)	F51
3	Disc	410	410	304	410HF	304(L)	316(L)	F51
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
32	Revit	AL	AL	AL	AL	AL	AL	AL
33	Steel ball	430	430	304	STL	316(L)	316(L)	STL
23	Seal ring gasket	420	420	304	304	304(L)	316(L)	410
24	P.S.ring	304	304	304	304	316L	316L	316L
25	P.S.seat	410	410	F304	410	F304	F316	F51
27	Lift nut	2H	2H	7	4	8(M)	8(M)	8M
37	Lift stud	B7	B7	L7	B16	B8(M)	B8(M)	B8M

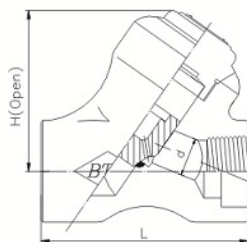
Y type check valves



CL800

Welded bonnet, full port and reducing port
Threaded, butt-welded or socket welded ends; design to BS5352

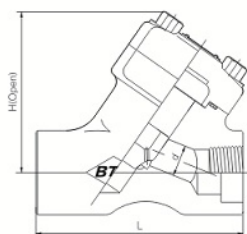
Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L		98	98	98	111	140	140	155	170
Height	H		70	70	70	100	110	120	120	150
Height (angle dimension)	d		7	10	13	17.5	23	30	35	46
Weight(Kg)			2.2	2.2	2.1	4.2	9	8.9	10	18.6



CL800

Welded bonnet, full port and reducing port
Threaded, butt-welded or socket welded ends; design to BS5352

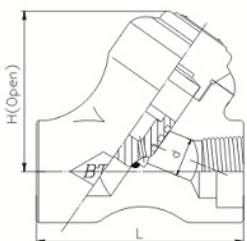
Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	79	79	79	90	118	155	155	175
Height	H	60	60	60	90	100	105	105	135
Height (angle dimension)	d	7	9	13	17.5	22.5	29.5	35	44
Weight(Kg)		1.8	1.8	2.0	3.5	8.0	8.0	12	16



CL900-CL1500

Bolted bonnet, full port
Threaded, butt-welded or socket welded ends; design to BS5352

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	98	111	111	140	140	155	170
Height	H	70	70	100	110	110	120	150
Height (angle dimension)	d	9	12	15	20	28	32	40
Weight(Kg)		2.1	4.2	9	8.9	10	18.6	20

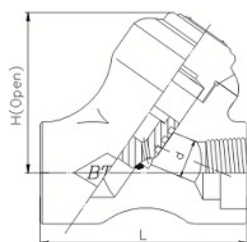


CL900-CL1500

Bolted bonnet, full port
Threaded, butt-welded or socket welded ends; design to BS5352

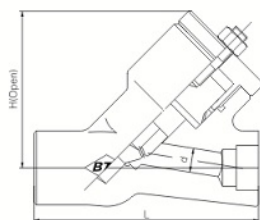
Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	79	90	118	155	155	175	200
Height	H	66	90	100	105	105	135	135
Height (angle dimension)	d	9	13	17.5	22.5	29.5	35	44
Weight(Kg)		2.0	3.5	3.5	8.0	12	12	18

Y type check valves



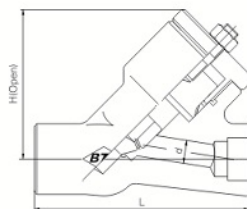
CL2500 Welded bonnet, full port Threaded, butt-welded or socket welded ends; design to ASME B16.34

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	186	186	186	186	232	232	310
Height	H	115	115	120	150	150	150	160
Height (angle dimension)	d	9	11	14	19	25	28	35
Weight(Kg)		11.2	11.5	10.6	10.8	25	22	39



CL2500 Pressure seal, bolted bonnet, full port Threaded, butt-welded or socket welded ends; design to ASME B16.34

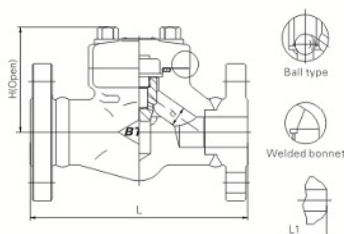
Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	186	186	186	186	232	232	310
Height	H	233	233	233	233	256	256	330
Height (angle dimension)	d	9	11	14	19	25	28	35
Weight(Kg)		11.2	11.5	10.6	10.8	25	22	39



CL4500 Pressure seal, bolted bonnet, full port Threaded, butt-welded or socket welded ends; design to ASME B16.34

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	200	200	200	200	250	250	330
Height	H	140	140	140	140	160	160	180
Height (angle dimension)	d	9	11	11	15	20	26	28
Weight(Kg)		20	20	20	20	28	28	45

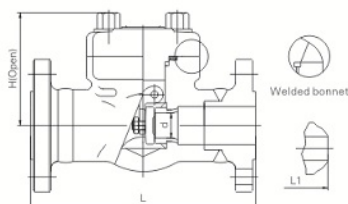
Flange and butt-welded check valves



CL150-300-600

 Bolted bonnet, full port
 Flange-welded or butt-welded ends; design to BS5352

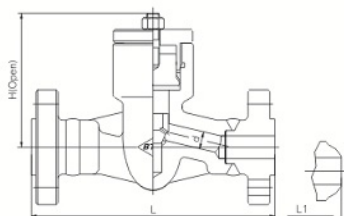
Specification(NPS)			1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	CL150	L(RF) L1(BW)	—	—	108	118	127	140	165	203
	CL300		—	—	153	178	203	216	229	267
	CL600		—	—	165	191	216	229	241	292
Height	CL150	H	—	—	50	53	64	80	84	102
	CL300/600		—	—	50	53	64	80	84	102
Height(angle dimension)		d	—	—	9	12	17.5	22.5	29	35
Weight (Kg)	CL150	RF	—	—	3.3	3.4	4.7	8.2	11.5	12.9
		BW	—	—	2.9	3.0	3.6	7.8	10.2	11.6
	CL300	RF	—	—	3.4	3.5	5.6	8.6	11.7	13.8
		BW	—	—	3.0	3.0	4.8	7.6	10.3	12.0
	CL600	RF	—	—	3.5	3.6	6.1	10.4	15.6	24.5
		BW	—	—	3.0	3.1	5.5	9.2	13.8	21.5



CL150-300-600

 Bolted bonnet, full port
 Flange-welded or butt-welded ends; design to BS5352

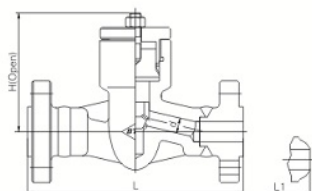
Specification(NPS)			1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	CL150	L(RF) L1(BW)	—	—	108	118	127	140	165	203
	CL300		—	—	153	178	203	216	229	267
	CL600		—	—	165	191	216	229	241	292
Height	CL150	H	—	—	50	53	64	80	84	102
	CL300/600		—	—	50	53	64	80	84	102
Height(angle dimension)		d	—	—	9.5	13	17.5	24	29	36.5
Weight (Kg)	CL150	RF	—	—	3.2	3.6	4.6	9.2	10.2	11.1
		BW	—	—	2.8	3.0	4.0	8.5	8.9	10.0
	CL300	RF	—	—	3.7	4.8	5.5	9.6	11.3	17.8
		BW	—	—	3.2	4.3	4.8	8.6	10.2	16.2
	CL600	RF	—	—	4.0	4.8	6.0	9.5	15.6	24.5
		BW	—	—	3.4	4.0	5.1	8.8	14.8	22.5



CL900-CL1500

 Pressure seal, bolted bonnet, full port and reducing port
 Flange-welded or butt-welded ends; design to BS5352

Specification(NPS)		3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF), L1(BW)	216	229	254	280	305	305	268
	L(RTJ)	216	229	254	280	305	305	371
Height	H	117	117	117	152	152	152	195
Height (angle dimension)	d	13	16	19	25	27	27	36
Weight(Kg)		10.5	11.9	13.9	19.9	26.9	26.9	32.5



CL2500

 Pressure seal, bolted bonnet, full port
 Flange-welded or butt-welded ends; design to ASME B16.34

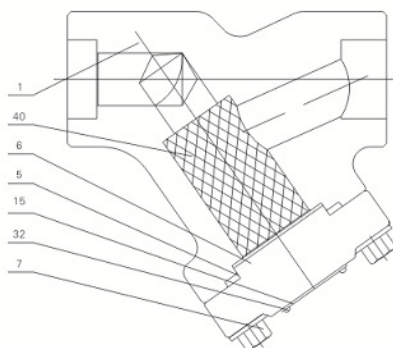
Specification(NPS)		3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF), L1(BW)	264	273	308	349	384	384	450
	L(RTJ)	264	273	308	352	387	387	454
Height	H	117	117	117	152	152	152	195
Height (angle dimension)	d	13	16	19	25	28	28	36
Weight(Kg)		12.6	14.9	16.5	24.8	30	30	35

Forged steel Y-type strainers

BTL Forged steel Y type strainer, bolted bonnet, gasket adopt spiral wound(304+flexible graphite)or metalring seal.

Construction is as follows

- ※ Full port or conventional port;
- ※ Bolted bonnet spiral wound gasket seal bonnet;
- ※ Socket weld ends to ASME B16.11;
- ※ Screwed ends (NPT) to ANSI/ASME B1.20.1;
- ※ Equip blow down tap and renewable strainer.



Please offer the mesh of strainer
If you want to equip with, you contract with our
sale department

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
CL2500-6170 P.S.I @ 100° F



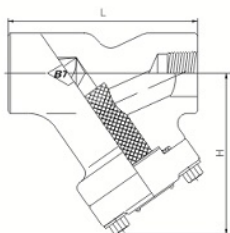
Application standards

- 1、Design and manufacture conform to BS5352 MSS SP-118;
- 2、Connection ends conform to:
 - 1)Socket welded ends conform to ANSI B16.11;JB/T1751
 - 2)Screw ends conform to ANSI B1.20.1;JB/T7306
 - 3)Butt-welded conform to ANSI B16.25;JB/T12224
 - 4)Flanged ends conform to ANSI B16.5;JB79
- 3、Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- 4、Structure features:
 - Bolted bonnet or welding bonnet
- 5、Materials conform to ANSI/ASTM.
- 6、Main materials:
 - A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

Main part materials list

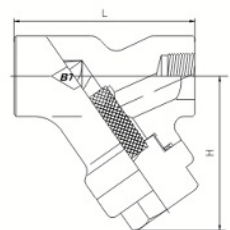
NO.	Part name	A105/F6a	A105/Fa6HFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F51
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
15	Nameplate	AL	AL	AL	AL	AL	AL	AL
32	Rivet	H62	H62	H62	H62	H62	H62	H62
40	Filter screen	304	304	304	304	304(L)	316(L)	316(L)

Y-type strainers



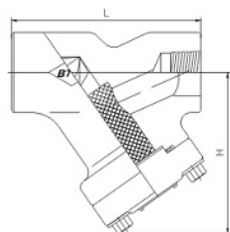
CL800 Bolted bonnet, full port and reducing port Threaded, butt-welded or socket welded ends; design to BS5352

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	98	98	98	111	140	140	155	170	
Height	H	70	70	70	100	110	120	120	150	
Height (angle dimension)	d	7	9	13	17.5	30	30	35	46	
Weight(Kg)		2.2	2.2	2.1	4.2	8.9	8.9	10	18.6	



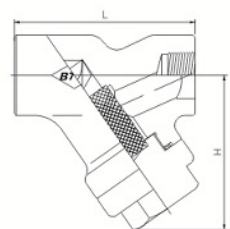
CL800 Bolted bonnet, full port and reducing port Threaded, butt-welded or socket welded ends; design to BS5352

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	79	79	92	100	140	140	155	170
Height	H	65	65	65	95	105	110	110	140
Height (angle dimension)	d	7	9	13	17.5	23	30	35	46
Weight(Kg)		1.8	1.8	2.0	3.5	9	8.0	12	16



CL800 Bolted bonnet, full port and reducing port Threaded, butt-welded or socket welded ends; design to BS5352

Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	98	111	111	140	140	155	170
Height	H	70	70	100	110	120	120	150
Height (angle dimension)	d	9	12	15	20	28	32	40
Weight(Kg)		2.1	4.2	9	8.9	10	18.6	20



CL900-CL1500 Bolted bonnet, full port Threaded, butt-welded or socket welded ends; design to BS5352

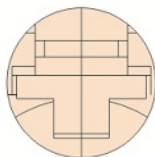
Specification(NPS)	F.P	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	92	100	100	140	140	155	170
Height	H	65	65	95	105	110	110	140
Height (angle dimension)	d	9	12	15	20	28	32	40
Weight(Kg)		2.0	3.5	8.0	8.0	12	16	18

Forged steel ball valves

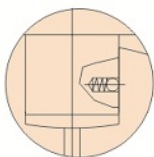
BTL Forged steel ball valves have two structures, one is of 2PCS structure, threaded bonnet, RPTFE or PEEK seal. The other is of 3PCS structure, bolted tailpieces. Different materials for seats, gaskets and packing may be chosen acc. to different using conditions.

Construction is as follows

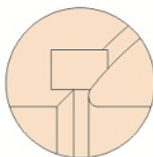
- ※ Full port or conventional port;
- ※ 90° locating and lock structure;
- ※ Special Y type handle;
- ※ Fire proof and anti static;
- ※ Mounted flange as per ISO 5211;
- ※ Blow out Proof stem;
- ※ Double sealing for the stem;
- ※ Bolted bonnet;
- ※ Socket welded ends to ASME B16.11;
- ※ Screwed ends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



Blow out proof stem



Anti static

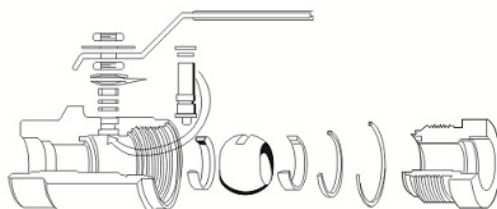


Fire safe

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

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/ fire safe/ blow out proof stem



Flow coefficient Cv

NPS	Cv value	
	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

2PCS Forged steel ball valves

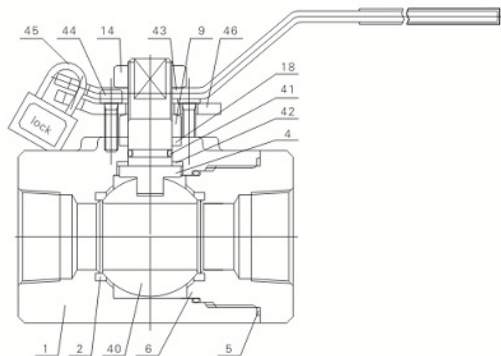
Application standards

- 1、Design and manufacture conform to BS5351 MSS SP-118;
- 2、Connection ends conform to:
 - 1)Socket welded ends conform to ANSI B16.11;JB/T1751
 - 2)Screw ends conform to ANSI B1.20.1;JB/T7306
 - 3)Butt-welded ends conform to ANSI B16.25;JB/T12224
 - 4)Flanged ends conform to ANSI B16.5;JB79
- 3、Test and inspection conform to:

API 598; GB/T13927; JB/T9092
- 4、Structure features:

Bolted bonnet; two-piece;
- 5、Materials conform to ANSI/ASTM.
- 6、Main materials:

A105; LF2; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.



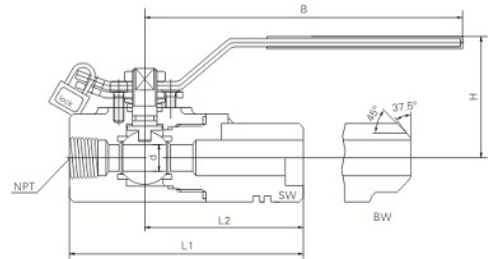
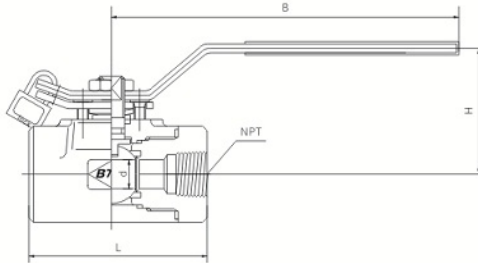
Carbon steel temperature–pressure rate

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	Body	A105	LF2	F304(L)	F316(L)	F51
2	Seat	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK
4	Stem	F304	F304	F304(L)	F316(L)	F51
5	Gasket	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE
6	Bonnet	A105	LF2	F304	F316	F51
9	Gland	F304	304	304(L)	316(L)	F51
11	Gland flange	A105	LF2	F304	F316	F51
14	Flat nut	8	8	8	8M	8M
18	Packing	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE
40	Ball	F304	F304	F304(L)	F316(L)	F51
41	O-ring	VITON	VITON	VITON	VITON	VITON
42	Back seat gasket	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE
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

2PCS Forged steel ball valves



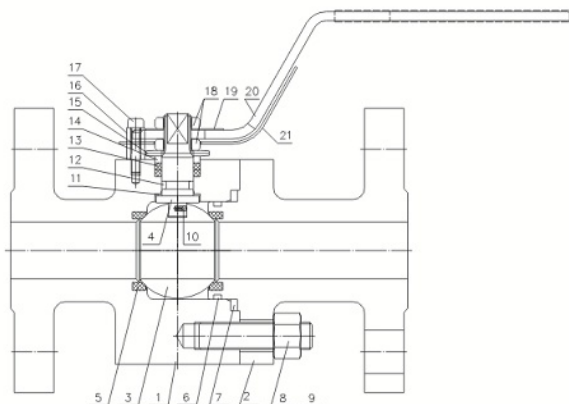
CL800 One end is welded pipe (butt-welding or socket welding) and the other is thread, design conform to BS 5351

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

CL1500-CL2500 One end is welded pipe(butt-welding or socket welding)and the other is thread, design conform to API6D

Specification(NPS)	F.P		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	
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	130
Height Weight(Kg)	H	CL1500	60	60	65	85	105	105	125	
		CL2500			90	110	125			
Height(angle dimension)	d	CL1500	6	9	13	19	25	32	38	49
		CL2500	6	9	13	19	25		38	42
Weight(Kg)		CL1500	1.2	1.5	2.5	3.7	5.8		11.5	13.7
		CL2500	1.5	1.9	2.7	4.1	6.3		12	15

2PCS Forged steel ball valves



Application standards

- 1、Design and manufacture conform to BS5351 ;
- 2、Connection ends conform to:
 - 1)Socket welded ends conform to ANSI B16.11;JB/T7746
 - 2)Screw ends conform to ANSI B1.20.1;JB/T7306
 - 3)Butt-welded ends conform to ANSI B16.25;JB/T12224
 - 4)Flanged ends conform to ANSI B16.5;JB79
- 3、Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- 4、Structure features:
 - Bolted bonnet; three-piece;
- 5、Materials conform to ANSI/ASTM.
- 6、Main materials:
 - A105; LF2; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

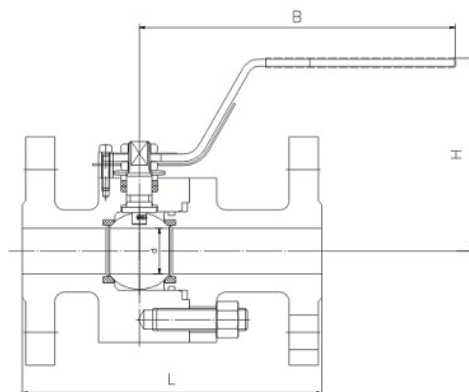
Carbon steel temperature-pressure rate

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	Body	A105	LF2	F304(L)	F316	F51
2	Closure	A105	LF2	F304(L)	F316	F51
3	ball	F6a	F304	F304(L)	F316(L)	F51
4	stem	F6a	F304	F304(L)	F316(L)	F51
5	seat ring	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK
6	O-ring	FPM	FPM	FPM	FPM	FPM
7	fire safe ring	SS+Graphite	SS+Graphite	SS+Graphite	SS+Graphite	SS+Graphite
8	Hex. nut	2H	7	8	8M	8M
9	stud	B7	L7	B8	B8M	B8M
10	static spring	304	304	304	304	304
11	thrust ring	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE
12	O-ring	FPM	FPM	FPM	FPM	FPM
13	packing	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE
14	packing gland	410	304	304(L)	316(L)	F51
15	butterfly spring	65Mn	65Mn	65Mn	65Mn	65Mn
16	positional gland	1035	1035	1035	1035	1035
17	screw	B7	L7	B7	B7	B7
18	flat nut	1035+Zn	1035+Zn	1035+Zn	1035+Zn	1035+Zn
19	nameplate	AL	AL	AL	AL	AL
20	level	1045+Zn	1045+Zn	1045+Zn	1045+Zn	1045+Zn
21	lock	Finished product	Finished product	Finished product	Finished product	Finished product

2PCS Forged steel ball valves



CL150-CL600

Connection ends may be pipe-welded (butt-welding or socket welding) and/or threaded, design to BS5351

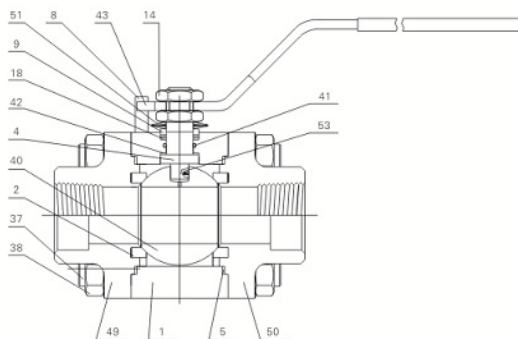
Specification(NPS)		R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	CL150	L(RF)	–	–	108	117	127	140	165	178
	CL300	L(RF)	–	–	140	152	165	178	190	216
	CL600	L(RF)	–	–	165	190	216	229	241	292
Handwheel diameter	CL150/300	B	–	–	140	140	150	180	200	250
	CL 600	B	–	–	140	140	200	200	250	300
Height	CL150/300	H	–	–	85	90	100	105	126	142
	CL 600	H	–	–	79	83	114	120	125	156
Height(angle dinmension)		d	–	–	13	19	25	32	38	49
Weight (Kg)	CL150	RF	–	–	3.0	4.0	5.0	7.0	8.0	12.0
	CL300	RF	–	–	3.0	5.0	6.0	8.0	11.0	16.0
	CL 600	RF	–	–	5.0	7.0	9.0	13.0	17.0	25.0

CL900-CL1500

Connection ends may be pipe-welded (butt-welding or socket welding) and/or threaded, design to BS5351

Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L RF/RJ			216	229	254	279	305	368
Center to handle end	B			182	200	250	300	350	500
Height	H			98	105	110	120	130	160
Height(angle dimension)	d			13	19	25	32	38	49
Weight(Kg)				10.0	14.0	17.0	25.0	33.0	48.0

3PCS Forged steel ball valves



Application standards

- 1、Design and manufacture conform to BS5351 MSS SP-118;
- 2、Connection ends conform to:
 - 1)Socket welded ends conform to ANSI B16.11;JB/T1751
 - 2)Screw ends conform to ANSI B1.20.1;JB/T7306
 - 3)Butt-welded ends conform to ANSI B16.25;JB/T12224
 - 4)Flanged ends conform to ANSI B16.5;JB79
- 3、Test and inspection conform to:

API 598; GB/T13927; JB/T9092
- 4、Structure features:

Bolted bonnet; three-piece;
- 5、Materials conform to ANSI/ASTM.
- 6、Main materials:

A105; LF2; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

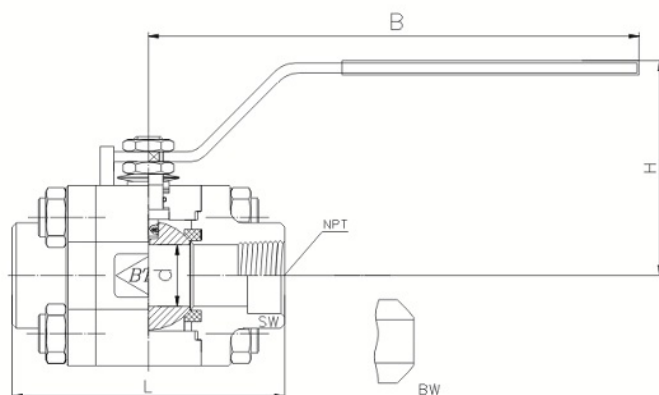
Carbon steel temperature-pressure rate

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	Body	A105	LF2	F304(L)	F316(L)	F51
2	Seat	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK	RPTFE & PEEK
4	Stem	F304	F304	F304(L)	F316(L)	F51
5	Gasket	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE
8	Pin	25	304	304	304	304
9	Gland	410	304	304(L)	316(L)	F51
14	Flat nut	8	8	8	8M	8M
18	Packing	PTFE	PTFE	PTFE	PTFE	PTFE
37	Bolt	B7	B8	B8	B8M	B8M
38	Nut	2H	8	8	8M	8M
40	Ball	F6a	F304	F304(L)	F316(L)	F51
41	O-ring	VITON	VITON	VITON	VITON	VITON
42	Back seat gasket	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE
43	Wrench	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025
49	Left bonnet	A105	LF2	F304	F316	F51
50	Right bonnet	A105	LF2	F304	F316	F51
51	Butterfly spring	65Mn	65Mn	304	304	304
53	Anti-static spring	304	304	304	316L	316L

3PCS Forged steel ball valves



CI800 Connection ends may be pipe-welded (butt-welding or socket welding) and/or threaded, design to Bs5351

Specification(NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2
F.P		3/8	1/2	3/4	1	1 1/4	2
Face to face	L	67	73	88	105	116	128
Center to handle end	B	120	120	145	145	170	170
Height	H	50	52	60	65	86	93
Height(angle dimension)	d	11.2	14.2	20.5	25	31.6	38
Weight(Kg)		0.76	0.95	1.7	2.4	3.7	4.9

CI1500 Connection ends may be pipe-welded (butt-welding or socket welding) and/or threaded, design to Bs5351

Specification(NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2
F.P		3/8	1/2	3/4	1	1 1/4	1 1/2
Face to face	L	73	88	105	116	128	146
Center to handle end	B	120	145	145	170	175	220
Height	H	50	52	60	86	93	102
Height(angle dimension)	d	11.2	14.2	20.5	25	31.6	38
Weight(Kg)		0.95	1.7	2.4	3.7	4.6	8.9

Forged steel cryogenic valves

BTL cryogenic valves are available in two bonnet designs. The first design is the Bolted Bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available.

The cryogenic valves are available in gate and globe design configurations. Valves are designed with an extended bonnet for use in cold services to 196 degrees C (-320 degrees F).

Construction is as follows

- ※ Full port or conventional port;
- ※ Outsized screw and yoke (OS&Y);
- ※ Extended bonnet;
- ※ Self-centering gland and flange;
- ※ Bolted bonnet with spiral-wound gasket sealing bonnet;
- ※ Threaded with full welding seal bonnet;
- ※ Integral backseat;
- ※ Socket welded ends to ASME B16.11;
- ※ Screwed ends(NPT) to ANSI/ASME B1.20.1.

Product application

BOTELI has many users in cryogenic valves through more than 20-year continuous efforts. BOTELI forged cryogenic gate, globe and check valves are specially designed to handle the technical problems that arise in the production, transport and storage of liquefied gases such as oxygen, nitrogen, argon, natural gas, hydrogen or helium (down to -425 F/-254 C). BOTELI specially adapted extended bonnet forged valves offer safe and efficient service.

Design features

All basic design features of BOTELI forged steel valves outlined in this catalog are adapted to special service conditions at cryogenic temperatures. Extended bonnets with sufficient gas column length, usually specified by customer, are supplied for all valves to keep stem packing at sufficient distance away from the cold fluid to remain functional. Pressure releasing Hole, designed in the wedge, warrants the pressure in body chamber to be balance, even if the pressure inside the body chamber is suddenly up. High-hard-surfaced stem hardened with nitriding remains its perfect bruise and corrosion resistance at the extreme low temperature, so as to prevent the packing from being damaged. Overlaid Stellite 6 closure members on 1/2"-2" (150 mm) valves operate with no galling in cryogenic service.

Cryogenic test

Purpose: Demonstrating the perfect operating performances in model cryogenic conditions.

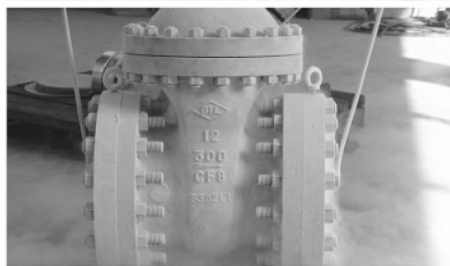
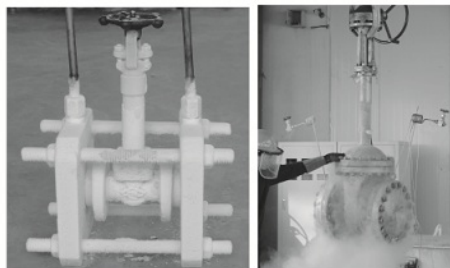
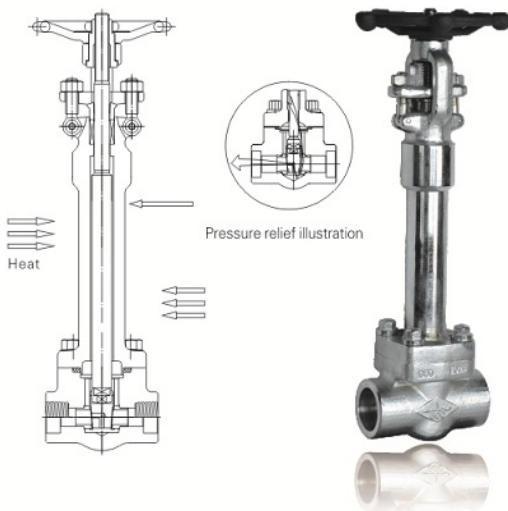
Environment: Inside a device full of liquefied Nitrogen, temperature smaller than 196°C.

Procedures: After being verified at room temperature, the valve is cleaned and dried, when the temperature reached the required one, it can begin to test.

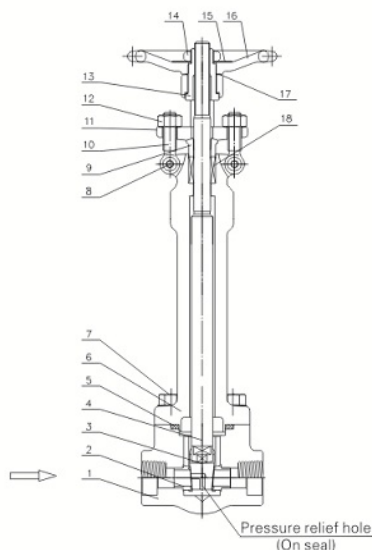
Operating performance test in cryogenic conditions.

Sealing performance tests for packing and gasket

Sealing performance test for backseat



Cryogenic gate valves



Application standards

- Design and manufacture conform to API 602 BS5352 B16.34 BS6364;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to: API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - LF2; LF3; 304(L); 316(L); F347; F321; F51.

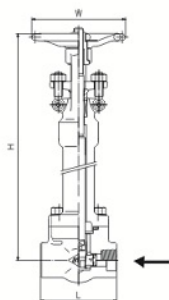
Ratings: stainless steel A182°F 304

CL150-275 P.S.I @ 100° F
 CL300-720 P.S.I @ 100° F
 CL600-1440 P.S.I @ 100° F
 CL800-1920 P.S.I @ 100° F
 CL1500-3600 P.S.I @ 100° F

Main part materials list

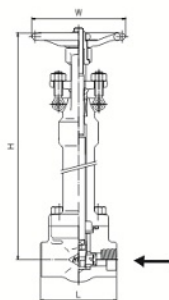
NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	LF3/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	-	-	LF2	LF3	F304(L)	F316(L)	F51
2	Seat ring	-	-	304HF	304HF	304(L)HF	316(L)HF	F51
3	Wedge disc	-	-	F304HF	F304HF	F304(L)HF	F316(L)HF	F51
4	Stem	-	-	F304+N	F304+N	F304(L)+N	F316(L)+N	F51
5	Gasket	-	-	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	-	-	LF2	LF3	F304(L)	F316(L)	F51
7	Bolt	-	-	L7	L7	B8(M)	B8(M)	B8
8	Pin	-	-	304	304	304	304	304
9	Gland	-	-	304	304	304(L)	316(L)	F51
10	Gland eyebolt	-	-	L7	L7	B8(M)	B8(M)	B8M
11	Gland flange	-	-	LF2	LF3	F304	F304	F304
12	Hex nut	-	-	8	8	8(M)	8(M)	8M
13	Stem nut	-	-	410	410	410	410	410
14	Locking nut	-	-	35	35	35	35	35
15	Nameplate	-	-	304	304	304	304	304
16	Handwheel	-	-	A197	A197	A197	A197	A197
17	Lubricating gasket	-	-	410	410	410	410	410
18	Packing	-	-	Graphite	Graphite	Graphite	Graphite	Graphite

Cryogenic gate valves



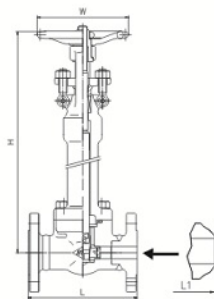
CL800 Bolted bonnet cryogenic extended bonnet full port & reduced port, OS&Y Threaded, butt-welded or socket welded ends; design to API 602

Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	73	73	80	100	114	120	130	-	-
Handwheel diameter	W	100	100	100	125	160	160	180	-	-
Height	H -196	278	278	284	337	377	377	445	-	-
Height(angle dinmension)	d	9.5	9.5	13	17.5	24	29	36.5	-	-
Weight(Kg)		3.5	3.5	4.3	5.1	10.9	12	14.8	-	-



CL1500 Bolted bonnet cryogenic extended bonnet full port & reduced port, OS&Y Threaded, butt-welded or socket welded ends; design to API 602

Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	80	100	100	114	120	130	140	-
Handwheel diameter	W	100	100	100	125	160	160	180	-
Height	H -196	284	337	337	377	377	445	465	-
Height(angle dinmension)	d	8	13	13	17.5	24	29	36.5	-
Weight(Kg)		3.5	6.7	6.7	11	12.3	15.8	28	-



CL150-300-600 Bolted bonnet cryogenic extended bonnet, reduced port, OS&Y Flanged or butt welded ends; design to API 602

Specification(NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	CL150	-	-	108	117	127	-	165	178
	CL300	-	-	140	152	165	-	190	216
	CL600	-	-	165	190	216	-	241	292
Handwheel diameter	W	-	-	100	100	125	-	160	180
Height	-196 H	-	-	278	284	337	-	377	445
Height(angle dinmension)	d	-	-	9.5	13	17.5	-	29	36.5
	CL 150	-	-	5.0	5.5	8.8	-	15	20.3
	CL 300	-	-	5.8	7.3	9.7	-	19.5	22.3
Weight (Kg)	CL 300	-	-	5.8	7.3	9.7	-	19.5	22.3
	CL 600	-	-	6.0	8	11.2	-	21.5	24.8
	CL 600	-	-	6.0	8	11.2	-	21.5	24.8

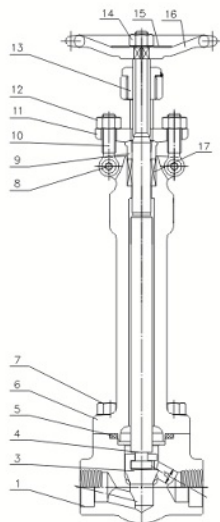
If you want to order one piece body, please contract with sale department

CL1500 Bolted bonnet cryogenic extended bonnet, full port, OS&Y Flanged or butt welded ends; design to API 602

Specification(NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L		216	229	254	279	305	368
Handwheel diameter	W		100	100	125	160	160	180
Height	H -196		337	337	377	377	445	465
Height(angle dinmension)	d		13	13	17.5	24	29	36.5
Weight (Kg)			14	23	25.3	5.7	47	72

If you want to order one piece body, please contract with sale department

Cryogenic globe valves



Application standards

- Design and manufacture conform to API 602 BS5352 B16.34 BS6364;
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Valve test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - LF2; LF3; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

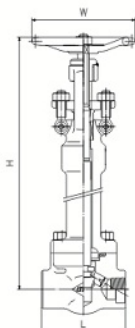
Ratings: stainless steel A182°F 304

CL150-275 P.S.I @ 100° F
 CL300-720 P.S.I @ 100° F
 CL600-1440 P.S.I @ 100° F
 CL800-1920 P.S.I @ 100° F
 CL1500-3600 P.S.I @ 100° F

Main part materials list

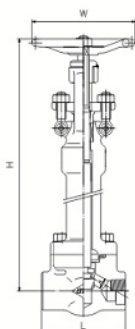
NO.	Part name	A105/F6a	A105/F6aHFS	LF2/304	LF3/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	-	-	LF2HF	LF3HF	F304(L)HF	F316(L)HF	F51
3	Wedge disc	-	-	F304HF	F304HF	F304(L)HF	F316(L)HF	F51
4	Stem	-	-	304+N	304+N	304(L)+N	316(L)+N	F51
5	Gasket	-	-	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite	316+ Flexible graphite
6	Bonnet	-	-	LF2	LF3	F304(L)	F316(L)	F51
7	Bolt	-	-	L7	L7	B8(M)	B8(M)	B8
8	Pin	-	-	304	304	304	304	304
9	Gland	-	-	304	304	304(L)	316(L)	F51
10	Gland eyebolt	-	-	L7	L7	B8(M)	B8(M)	B8M
11	Gland flange	-	-	LF2	LF3	F304	F304	F304
12	Hex nut	-	-	8	8	8(M)	8(M)	8M
13	Stem nut	-	-	410	410	410	410	410
14	Locking nut	-	-	35	35	35	35	35
15	Nameplate	-	-	304	304	304	304	304
16	Handwheel	-	-	A197	A197	A197	A197	A197
17	Packing	-	-	Graphite	Graphite	Graphite	Graphite	Graphite

Cryogenic globe valves



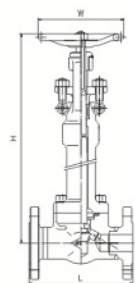
CL800 Bolted bonnet cryogenic extended bonnet full port & reduced port, OS&Y Threaded or socket welded ends; design to BS5352

Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	73	73	80	100	114	145	160	-
Handwheel diameter	W	100	100	100	125	160	160	180	-
Height(open)	H -196°C	300	300	300	337.5	368	390	437	-
Flow port dimension	d	7.0	9.0	12	17.5	22.5	29	35	-
Weight (Kg)		7.2	7.2	7.2	9.5	10.8	13.5	19.8	-



CL1500 Bolted bonnet cryogenic extended bonnet full port & reduced port, OS&Y Threaded or socket welded ends; design to BS5352

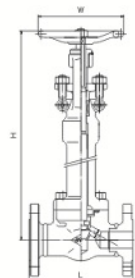
Specification (NPS)	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	80	100	100	114	145	160	172	-
Handwheel diameter	W	100	125	125	160	160	180	200	-
Height(open)	H -196°C	300	338	338	368	390	437	505	-
Flow port dimension	d	7	11	14.5	19	26	29	33	-
Weight (Kg)		7.2	9.5	9.5	10.8	13.5	19.8	29	-



CL150-300-600 Bolted bonnet cryogenic extended bonnet, reduced port, OS&Y Flanged or butt welded ends; design to BS5352

Specification(NPS)	R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF) L1(BW)	CL150	-	-	108	117	127	-	165 203
		CL300	-	-	152	178	203	-	229 267
		CL600	-	-	165	190	216	-	241 292
Handwheel diameter	W	-	-	100	100	125	-	160	180
Height(open)	H -196°C	-	-	300	300	337	-	390	437
Flow port dimension	d	-	-	9.0	12	17.5	-	29	35
Weight (Kg)		CL150	-	-	5	5.8	8.6	-	13.8 24.3
		CL300	-	-	5.8	6.8	10.3	-	19.3 25.8
		CL600	-	-	6.3	7.3	10.6	-	20.3 26.8

If you want to order one piece body, please contract with our sale department



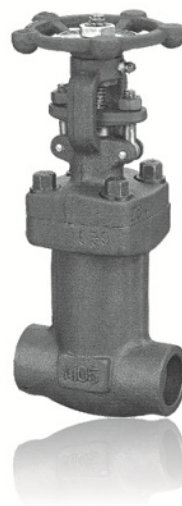
CL1500 Bolted bonnet cryogenic extended bonnet, full port, OS&Y Flanged or butt welded ends; design to BS5352

Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF)	-	-	216	229	254	279	305	-
Handwheel diameter	W	-	-	125	125	160	160	180	-
Height (open)	H -196°C	-	-	338	368	390	437	505	-
Flow port dimension	d	-	-	11	14.5	19	26	29	-

If you want to order one piece body, please contract with our sale department

Forged steel bellow sealed valves

BTL Bellow Sealed valves are available in two bonnet designs. The first design is the Bolted Bonnet, with male –female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet. with a threaded and seal welded joint. On request a full penetration strength welded joint is available.

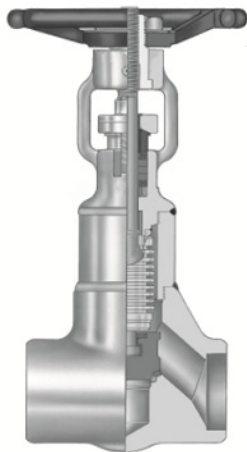


Construction is as follows

- ※ Full port or conventional port;
- ※ Outsied screw and yoke (OS&Y);
- ※ Self-centering gland and plate;
- ※ Bolted bonnet with spiral-wound gasket or threaded and seal welded bonnet;
- ※ Integral backseat;
- ※ Socket welded end to ASME B16.11;
- ※ Screwed ends(NPT) to ANSI/ASME B1.20.1.

Bellow sealed valves

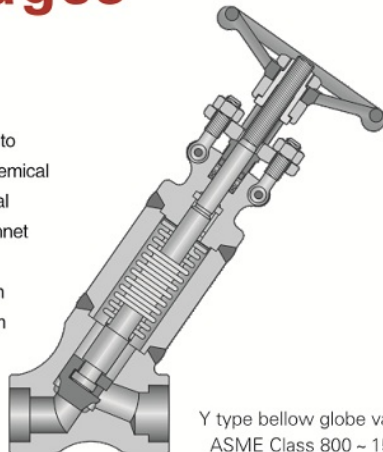
Zero leakages



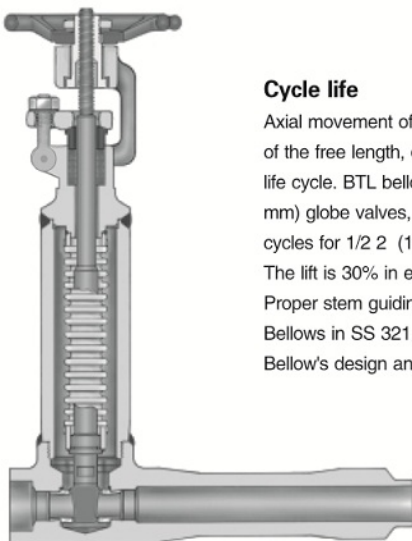
Valves design parameters

A valve with a bellows to seal off the stem enclosure is an ideal choice whenever leakage to the atmosphere is intolerable due to toxicity, chemical corrosion, radioactivity, other health or ecological reasons. In addition, seal welding the body-bonnet seal makes the valve hermetically sealed. The bellows is welded to the stem and to the bottom of the bonnet. this kind of design originates from BTL more than 20-year experiences.

Bellow seal globe valves
ASME Class 150 ~ 800



Y type bellow globe valves
ASME Class 800 ~ 1500



Cycle life

Axial movement of the bellows is limited to a maximum of 2025% of the free length, depending on pressure-temperature and desired life cycle. BTL bellows are designed for 10,000 cycles for 1/2 2(1550 mm) globe valves, 5000 cycles for bonnetless globe valves and 3000 cycles for 1/2 2 (1550 mm) gate valves.

The lift is 30% in extension and 70% in compression.

Proper stem guiding eliminates torsion of bellows.

Bellows in SS 321, Inconel or Hastelloy.

Bellow's design and manufacture as per MSS SP-117

Bellows seal drain valves
Class 800 ~ 1500



Bellows seal seal gate
Class 800 ~ 1500
Flange ASME Class 150 ~ 1500

The stem of BTL bellow seal valves has 3-level seals

SS Bellow sealing;

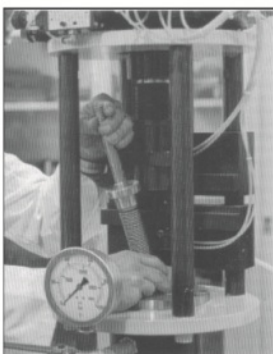
Packing emergency sealing;

Backseat sealing.

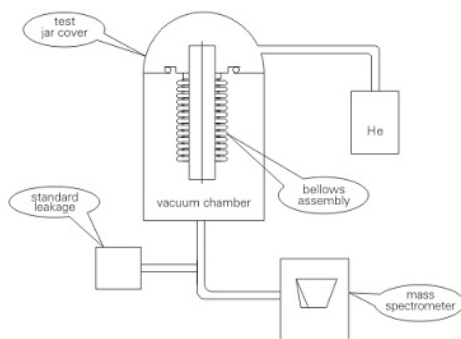
Bellow sealed valves

Quality insurance.

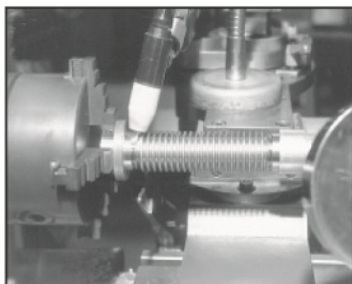
BOTELI has a set of procedures to severely inspect and test every released bellow seal valve acc. to requirements of ISO 9001 and AZ state safety register quality system in which include 100% air seal test, no bubble test and PT exam to every bellow, available to do vacuum air seal test with Helium mass spectrograph if a vacuum degree is required.



The bellow inspection device R&D by BOTELI,



Vacuum seal test with Helium mass spectrograph

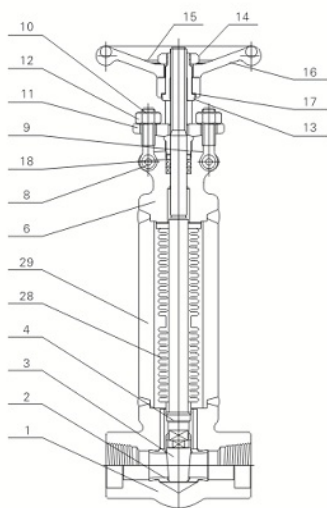


Micro bundle plasma bellow welding



Circle life test under a pressure.

Bellow sealed gate valves



Application standards

- Design and manufacture conform to API 602; MSS-SP-117
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; 304(L); 316(L); F347; F321.
- Bellow materials: 304; 321; 316; Inconel 625; Hastelloy C 276; Monel.

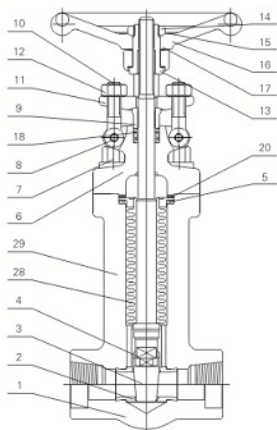
Carbon steel temperature-pressure rate

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	A105/F6aHFS	A105/F6aHF	F304(L)/304(L)	F316(L)/316(L)
1	Body	A105	A105	A105	F304(L)	F316(L)
2	Seat ring	410	410HF	410HF	304(L)	316(L)
3	Wedge disc	F6a	F6a	F6aHF	F304(L)	F316(L)
4	Stem	F6a	F6a	F6a	F304(L)	F316(L)
6	Bonnet	A105	A105	A105	F304(L)	F316(L)
8	Pin	410	410	410	304	304
9	Gland	410	410	410	304	316
10	Gland eyebolt	B7	B7	B7	B8(M)	B8(M)
11	Gland flange	A105	A105	A105	F304	F304
12	Hex nut	2H	2H	2H	8(M)	8(M)
13	Stem nut	410	410	410	410	410
14	Locking nut	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197
17	Lubricating gasket	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
28	Bellow	F321	F321	F321	F316	F321
29	Coupling pipe	A105	A105	A105	F304(L)	F316(L)

Bellow sealed gate valves



Application standards

- Design and manufacture conform to API 602; MSS-SP-117
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; 304(L); 316(L); F347; F321.
- Bellow materials: 304; 321; 316; Inconel 625; Hastelloy C 276; Monel.

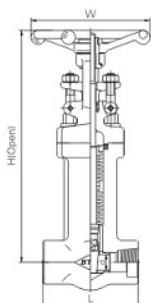
Carbon steel temperature-pressure rate

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

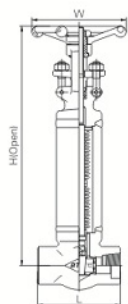
NO.	Part name	A105/F6a	A105/Fa6HFS	A105/F6aHF	F304(L)/304(L)	F316(L)/316(L)
1	Body	A105	A105	A105	F304(L)	F316(L)
2	Seat	410	410HF	410HF	304(L)	316(L)
3	Wedge disc	F6a	F6a	F6aHF	F304(L)	F316(L)
4	Stem	F6a	F6a	F6a	F304(L)	F316(L)
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite
6	Bonnet	A105	A105	A105	F304(L)	F316(L)
7	Bolt	B7	B7	B7	B8	B8
8	Pin	410	410	410	304	304
9	Gland	410	410	410	304	316
10	Gland eyebolt	B7	B7	B7	B8(M)	B8(M)
11	Gland flange	A105	A105	A105	F304	F304
12	Hex nut	2H	2H	2H	8(M)	8(M)
13	Stem nut	410	410	410	410	410
14	Locking nut	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197
17	Lubricating gasket	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
20	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite
28	Bellow	F321	F321	F321	F316L	F316L

Bellow sealed gate valves



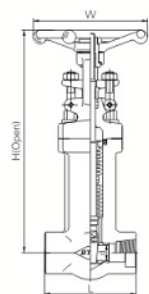
CL800 Bolted bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to API602MSS-SP-117

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2
	F.P	1/4	3/8	1/2	3/4	1	1 1/4
Face to face	L	73	73	80	100	114	120
Handwheel diameter	W	100	100	100	125	160	180
Height	H	247	247	285	344	432	477
Height(angle dimension)	d	9.5	9.5	13	17.5	24	29
Weight(Kg)		3.0	3.0	3.3	6.3	8.7	10.2



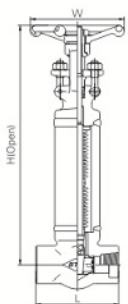
CL800 Welded bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to API 602MSS-SP-117

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2
	F.P	1/4	3/8	1/2	3/4	1	1 1/4
Face to face	L	73	73	80	100	114	120
Handwheel diameter	W	100	100	100	125	160	180
Height	H	247	247	285	344	432	477
Height(angle dimension)	d	9.5	9.5	13	17.5	24	29
Weight(Kg)		2.9	2.9	3.2	4.6	7.2	8.9



CL1500 Bolted bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to API602MSS-SP-117

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2
	F.P	1/4	3/8	1/2	3/4	1	1 1/4
Face to face	L	80	100	100	114	120	130
Handwheel diameter	W	100	125	125	160	160	180
Height	H	287	287	312	368	465	595
Height(angle dimension)	d	8	13	13	17.5	24	29
Weight(Kg)		3.1	5.1	5.1	9.0	10.5	16.7

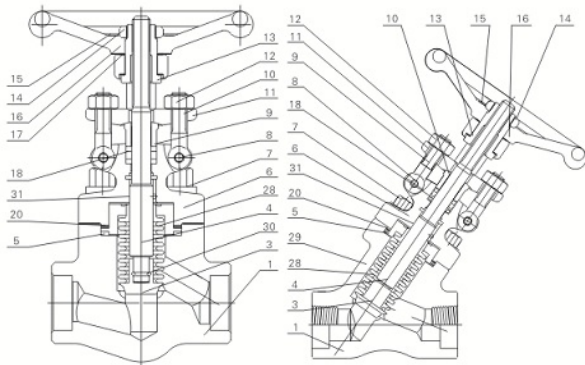


CL1500 Welded bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to API602MSS-SP-117

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2
	F.P	1/4	3/8	1/2	3/4	1	1 1/4
Face to face	L	80	100	100	114	120	130
Handwheel diameter	W	100	125	125	160	160	180
Height	H	287	287	312	368	465	595
Height(angle dimension)	d	8	13	13	17.5	24	29
Weight(Kg)		2.9	4.7	4.7	7.4	5.7	16

Short pattern bellow seal globe valves

The short pattern bellow seal globe valve, agglomerating many years experiences of BOTELI researcher studying bellows, has been developed out through a series of complicated tests. Not only do this kind of valves own the normal bellow seal valve's functions, also have the features of a compact structure and replaceable bellow. This kind of valve will out of question display its advantages if the pipe system and/or equipment have a severe requirement to the valve's installing height.



Application specifications

- Design and manufacture conform to BS5352; MSS-SP-117
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; LF2; F5; F11; F22; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.
- Bellow materials: 304; 321; 316; Inconel 625; Hastelloy C 276; Monel.

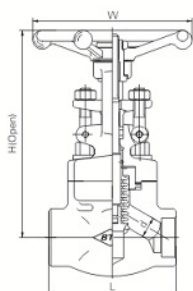
Carbon steel temperature-pressure rate

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

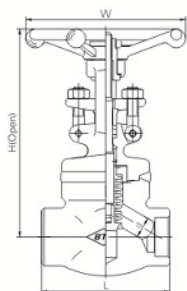
NO.	Part name	A105/F6a	A105/F6aHFS	A105/F6aHF	F304(L)/304(L)	F316(L)/316(L)
1	Body	A105	A105+HF	A105+HF	F304(L)	F316(L)
3	Disc	410	410	410HF	304(L)	316(L)
4	Stem	F6a	F6a	F6a	F304(L)	F316(L)
5	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	316+ Flexible graphite
6	Bonnet	A105	A105	A105	F304(L)	F316(L)
7	Bolt	B7	B7	B7	B8(M)	B8(M)
8	Pin	410	410	410	304	304
9	Packing bushing	410	410	410	304	316
10	Eyelet bolt	B7	B7	B7	B8(M)	B8(M)
11	Packing gland	A105	A105	A105	F304	F304
12	Hex nut	2H	2H	2H	8(M)	8(M)
13	Stem nut	410	410	410	410	410
14	Locking nut	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197
17	Lubricating gasket	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
20	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite
28	Bellow	F321	F321	F321	F321/304L	F316/316L
30	Steel wire	304	304	304	304	316
31	Pin	304	304	304	304	316

Short pattern bellow seal globe valves



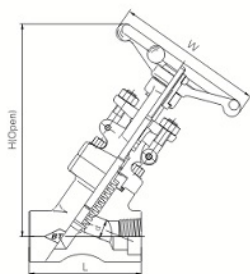
CL800 Bolted bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to BS5352/MSS-SP-117

Specification (NPS)	R.P		1/2	3/4	1	1¼	1½	2	2½	3
	F.P	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½
Face to face	L	73	73	80	100	114	145	160	220	–
Handwheel diameter	W	100	100	100	125	160	160	180	200	–
Height	H	155	155	160	198	217	235	273	303	–
Height (angle dimension)	d	7.0	9.0	12	17.5	22.5	29	35	44	–
Weight(Kg)		2.5	2.3	2.4	4.35	5.75	7.8	12.5	17.5	–



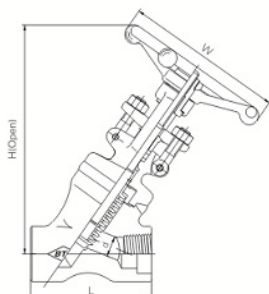
CL800 Welded bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to BS5352、MSS-SP-117

Specification (NPS)	R.P		1/2	3/4	1	1¼	1½	2	2½	3
	F.P	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½
Face to face	L	73	73	80	100	114	145	160	220	–
Handwheel diameter	W	100	100	100	125	160	160	180	200	–
Height	H	160	160	160	188	215	218	253	280	–
Height (angle dimension)	d	7.0	9.0	12	17.5	22.5	29	36	44	–
Weight(Kg)		1.8	1.7	1.9	3.3	5.2	6.8	10.6	13.8	–



CL800 Bolted bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to BS5352、MSS-SP-117

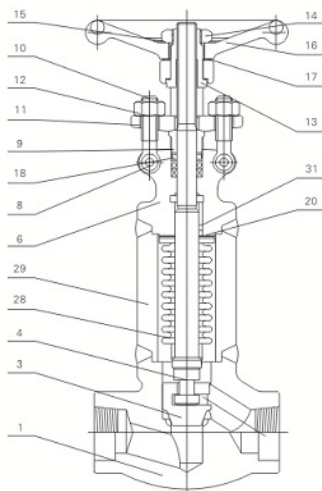
Specification (NPS)	R.P		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	98	98	98	111	140	140	155	170	
Handwheel diameter	W	100	100	100	125	160	160	180	200	
Height	H	180	180	180	188	280	280	295	350	
Height (angle dimension)	d	7	9	13	17.5	23	30	35	46	
Weight(Kg)		2.6	2.6	3.8	4.6	9.3	9.3	14	19.6	



CL800 Welded bonnet, full port & reducing port outside screw and yoke(OS & Y).
Threaded, butt-welded or socket welded ends; design to BS5352、MSS-SP-117

Specification (NPS)	R.P		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	79	79	79	90	118	155	155	175	
Handwheel diameter	W	100	100	100	125	160	160	180	200	
Height	H	172	172	172	196	235	280	260	345	
Height (angle dimension)	d	7	9	13	17.5	22.5	29.5	35	44	
Weight(Kg)		1.8	1.8	2.0	3.5	8.0	8.0	12	16	

Bellow sealed globe valves



Application standards

- Design and manufacture conform to BS5352; MSS-SP-117
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; 304(L); 316(L); F347; F321.
- Bellow materials: 304; 321; 316; Inconel 625; Hastelloy C 276; Monel.

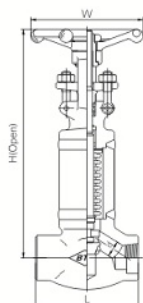
Carbon steel temperature-pressure rate

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

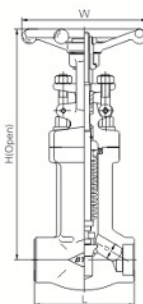
NO.	Part name	A105/F6a	A105/F6aHFS	A105/F6aHF	F304(L)/304(L)	F316(L)/316(L)
1	Body	A105	A105+HF	A105+HF	F304(L)	F316(L)
3	Disc	410	410	410HF	304(L)	316(L)
4	Stem	F6a	F6a	F6a	F304(L)	F316(L)
6	Bonnet	A105	A105	A105	F304(L)	F316(L)
8	Pin	410	410	410	304	304
9	Gland	410	410	410	304	316
10	Gland eyebolt	B7	B7	B7	B8(M)	B8(M)
11	Gland flange	A105	A105	A105	F304	F304
12	Hex nut	2H	2H	2H	8(M)	8(M)
13	Stem nut	410	410	410	410	410
14	Locking nut	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197
17	Lubricating gasket	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
28	Bellow	F321	F321	F321	F316	F316L
29	Coupling pipe	A105	A105	A105	A304(L)	A316 (L)
31	Pin	304	304	304	304	316

Bellow sealed globe valves



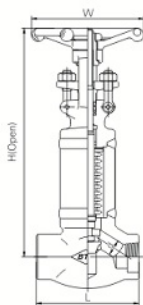
CL800 Welded bonnet, full port & reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352/MSS-SP-117

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	73	73	80	100	114	145	160	–	–
Handwheel diameter	W	100	100	100	125	160	160	180	–	–
Height	H	218	218	218	246	295	300	329	–	–
Height(angle dinmension)	d	7.0	9.0	12	17.5	22.5	29	35	–	–
Weight(Kg)		2.6	2.5	2.7	4.4	6.7	8.8	15	–	–



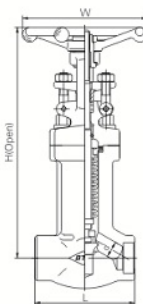
CL800 Bolted bonnet, full port & reducing port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352/MSS-SP-117

Specification (NPS)	R.P	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face	L	73	73	80	100	114	145	160	–	–
Handwheel diameter	W	100	100	100	125	160	160	180	–	–
Height	H	218	218	218	246	295	300	329	–	–
Height(angle dinmension)	d	7.0	9.0	12	17.5	22.5	29	35	–	–
Weight(Kg)		3.3	3.1	4.2	5.5	7.25	9.8	16	–	–



CL1500 Welded bonnet, full port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352/MSS-SP-117

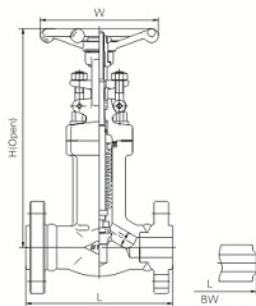
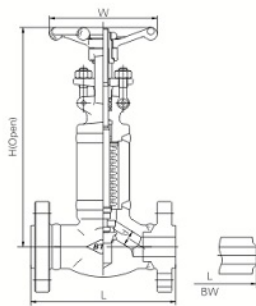
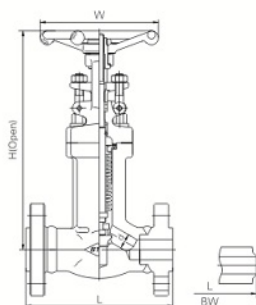
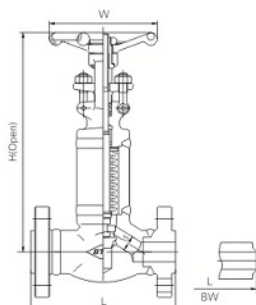
Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	80	100	100	114	145	160	172	-
Handwheel diameter	W	100	125	125	160	160	180	200	-
Height	H	237	237	239	270	298	340	395	-
Height(angle dimension)	d	7	11	14.5	19	26	29	33	-
Weight(Kg)		3.3	3.5	5	7.5	10	16	27	-



CL1500 Bolted bonnet, full port outside screw and yoke(OS & Y)
Threaded, butt-welded or socket welded ends; design to BS5352/MSS-SP-117

Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L	80	100	100	114	145	160	172	-
Handwheel diameter	W	100	125	125	160	160	180	200	-
Height	H	237	237	239	270	298	340	395	-
Height(angle dimension)	d	7	11	14.5	19	26	29	33	-
Weight(Kg)		3.3	3.5	5	7.5	10	16	27	-

Bellow sealed globe valves



CL150-300-600

Welded bonnet, reducing port outside screw and yoke(OS & Y)
Flange-welded or butt-welded ends; design to BS5352/MSS-SP-117

Specification(NPS)	R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	CL150	-	-	108	117	127	140	165	203
	CL300	-	-	152	178	203	216	229	267
	CL600	-	-	165	190	216	229	241	292
Handwheel diameter	W	-	-	100	100	125	160	160	180
Height	H	-	-	218	218	246	295	300	329
Height(angle dimension)	d	-	-	9	12	17.5	22.5	29	35
Weight(Kg)	CL150 RF/BW	-	-	3.6/3	4.3/3.6	6.3/5.7	10.5/9.5	11.5/9.8	19.5/16
	CL300 RF/BW	-	-	4/3.2	4.8/4	7.3/6.7	13/11	14.5/12	22/18
	CL600 RF/BW	-	-	5.8/4.7	8.1/6	12.5/9	18/14	24.5/18	42/36

If you want to order one piece body, please contract with sale department

CL150-300-600

Bolted bonnet, reducing port outside screw and yoke(OS & Y)
Flange-welded or butt-welded ends; design to BS5352/MSS-SP-117

Specification(NPS)	R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	CL150	-	-	108	117	127	140	165	203
	CL300	-	-	152	178	203	216	229	267
	CL600	-	-	165	190	216	229	241	292
Handwheel diameter	W	-	-	100	100	125	160	160	180
Height	H	-	-	218	218	246	295	300	329
Height(angle dimension)	d	-	-	9	12	17.5	22.5	29	35
Weight(Kg)	CL150 RF/BW	-	-	4.17/3.5	4.8/4.1	7.7/6.7	12.5/11.5	14/11.5	21.5/18
	CL300 RF/BW	-	-	4.5/3.7	5.2/4.5	8.3/7.7	14.5/12.5	16/13.5	24/20
	CL600 RF/BW	-	-	6.3/5.2	8.6/6.5	13.5/10	19.5/15.5	26/19.5	44/38

If you want to order one piece body, please contract with sale department

CL1500

Welded bonnet, full port outside screw and yoke(OS & Y)
Flange-welded or butt-welded ends; design to BS5352/MSS-SP-117

Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF), L1(BW)	-	-	-	216	229	254	279	305
	L(RTJ)	-	-	-	216	229	254	279	305
Handwheel diameter	W	-	-	-	125	160	160	180	200
Height	H	-	-	-	239	270	298	340	395
Height(angle dimension)	d	-	-	-	14.5	19	26	29	33
Weight(Kg)		-	-	-	11.1	11.8	14.1	16.5	23.8

If you want to order one piece body, please contract with sale department

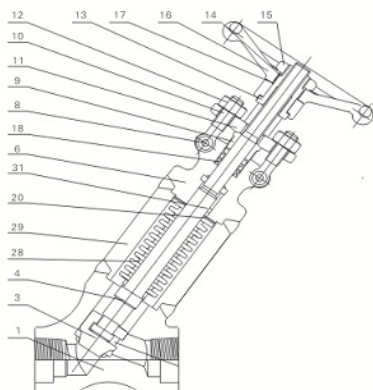
CL1500

Bolted bonnet, full port outside screw and yoke(OS & Y)
Flange-welded or butt-welded ends; design to BS5352/MSS-SP-117

Specification(NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF), L1(BW)	-	-	-	216	229	254	279	305
	L(RTJ)	-	-	-	216	229	254	279	305
Handwheel diameter	W	-	-	-	125	160	160	180	200
Height	H	-	-	-	239	270	298	340	395
Height(angle dimension)	d	-	-	-	14.5	19	26	29	33
Weight(Kg)		-	-	-	11.6	12.3	15	17.5	25

If you want to order one piece body, please contract with sale department

Y type bellow globe valves



Application specifications

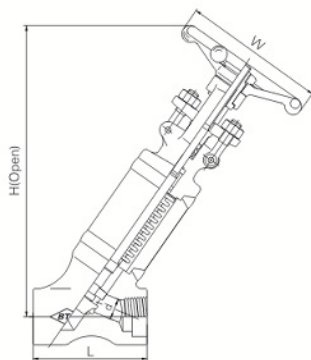
- Design and manufacture conform to BS5352; MSS-SP-117
- Connection ends conform to:
 - Socket welded ends conform to ANSI B16.11; JB/T1751
 - Screw ends conform to ANSI B1.20.1; JB/T7306
 - Butt-welded ends conform to ANSI B16.25; JB/T12224
 - Flanged ends conform to ANSI B16.5; JB79
- Test and inspection conform to:
 - API 598; GB/T13927; JB/T9092
- Structure features:
 - Bolted bonnet, outside screw and yoke
 - Welded bonnet, outside screw and yoke
- Materials conform to ANSI/ASTM.
- Main materials:
 - A105; 304(L); 316(L); F347; F321.
- Bellow materials: 304, 321, 316, Inconel 625, Hastelloy C 276, Monel.

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	A105/F6aHFS	A105/F6aHF	F304(L)/304(L)	F316(L)/316(L)
1	Body	A105	A105+HF	A105+HF	F304(L)	F316(L)
3	Disc	410	410	410HF	304(L)	316(L)
4	Stem	F6a	F6a	F6a	F304(L)	F316(L)
6	Bonnet	A105	A105	A105	F304(L)	F316(L)
8	Pin	410	410	410	304	304
9	Gland	410	410	410	304	316
10	Gland eyebolt	B7	B7	B7	B8(M)	B8(M)
11	Gland flange	A105	A105	A105	F304	F304
12	Hex nut	2H	2H	2H	8(M)	8(M)
13	Stem nut	410	410	410	410	410
14	Locking nut	35	35	35	35	35
15	Nameplate	AL	AL	AL	AL	AL
16	Handwheel	A197	A197	A197	A197	A197
17	Lubricating gasket	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
20	Gasket	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite	304+ Flexible graphite
28	Bellow	F321	F321	F321	F316	F316L
29	Coupling pipe	A105	A105	A105	F304(L)	F316(L)
31	Pin	304	304	304	304	316



CL800

Welded bonnet, full port & reducing port outside screw and yoke(OS & Y)
 Threaded, butt-welded or socket welded ends; design to BS5352/MSS-SP-117

Specification (NPS)	R.P	1/2		3/4		1		1 1/4		1 1/2		2		2 1/2		3	
		F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	1 1/2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Face to face	L	79	79	79	90	118	155	155	175	175	175	175	175	175	175	175	175
Handwheel diameter	W	100	100	100	125	160	160	160	180	180	200	200	200	200	200	200	200
Height	H	237	237	239	270	298	340	340	395	395	470	470	470	470	470	470	470
Height (angle dimension)	d	7	9	13	17.5	22.5	29.5	29.5	35	35	44	44	44	44	44	44	44
Weight (Kg)		2.6	2.6	2.8	4.6	9.5	10.0	15.5	21	21	21	21	21	21	21	21	21

CL1500

Welded bonnet, full port outside screw and yoke(OS & Y)
 Threaded, butt-welded or socket welded ends; design to BS5352/MSS-SP-117

Specification (NPS)	F.P	1/4		3/8		1/2		3/4		1		1 1/4		1 1/2		2		2 1/2	
		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	1 1/2	1 1/2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Face to face	L	79	79	90	118	155	155	175	200	200	200	200	200	200	200	200	200	200	200
Handwheel diameter	W	100	100	125	160	180	180	200	200	200	200	200	200	200	200	200	200	200	200
Height	H	300	300	300	380	390	470	550	700	700	700	700	700	700	700	700	700	700	700
Height (angle dimension)	d	7	9	13	17.5	22.5	29.5	35	44	44	44	44	44	44	44	44	44	44	44
Weight (Kg)		3.3	3.5	5	7.5	10	16	27	30	30	30	30	30	30	30	30	30	30	30

Usual ASTM materials' chemical analysis and physical properties

Body and bonnet materials

Chemical composition	Carbon steel	Cryogenic			Alloy steel				Austenite stainless steel ASTM-A182							Duplex stainless steels
	A105	LF2	LF3	F5	F91	F11Class2	F22Class3	F304	F304H	F304L	F316	F316L	F347H	F51		
C	0.35	0.35	0.20	0.15	0.08-0.12	0.10-0.20	0.05-0.15	0.08	0.04-0.10	0.035	0.08	0.035	0.04-0.1	0.030		
Mn	0.60-1.05	0.60-1.35	0.90	0.30-0.60	0.30-0.60	0.30-0.80	0.30-0.60	2.00	2.00	2.00	2.00	2.00	2.00	2.00		
P	0.035	0.035	0.035	0.030	0.020	0.040	0.040	0.045	0.045	0.045	0.045	0.045	0.045	0.030		
S	0.040	0.040	0.040	0.030	0.010	0.040	0.040	0.030	0.030	0.030	0.030	0.030	0.030	0.20		
Si	0.10-0.35	0.15-0.30	0.20-0.35	0.50	0.20-0.50	0.50-1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ni	0.40	0.40	3.3-3.7	0.50	0.40	-	-	8.0-11.0	8.0-11.0	8.0-13.0	10.0-14.0	10.0-15.0	9.0-13.0	4.5-6.5		
Cr	0.30	0.30	0.30	4.0-6.0	8-9.5	1.00-1.50	2.00-2.50	18.0-20.0	18.0-20.0	18.0-20.0	16.0-18.0	16.0-18.0	17.0-20.0	21-23		
Mo	0.12	0.12	0.12	0.44-0.65	0.85-1.05	0.44-0.65	0.87-1.13	-	-	-	2.00-3.00	2.00-3.00	-	2.5-3.5		
Mechanical property	ASTM A105	LF2	LF3	F5	F91	F11Class2	F22Class3	F304	F304H	F304L	F316	F316L	F347H	F51		
Tensile strength	70	70-95	70-95	70	85	70	75	75	75	70	75	70	75	90		
Yield strength	36	36	37.5	40	60	40	45	30	30	25	30	25	30	65		
Elongation at Rupture	22	22	22	20	20	20	20	30	30	30	30	30	30	25		
Shrinkage of R. A.	30	30	35	35	40	30	30	50	50	50	50	50	50	45		
Brinell hardness	187(2)	197	197	143-217	≤248	143-207	156-207	-	-	-	-	-	-	-		

Trim and bolt materials

Chemical composition	Trim materials					Bolt materials					
	AISI 410	AISI 416	AISI 420	ASTM B164 Monel	Stellite Gr.6	ASTM A193		AISI 430	ASTM A194		
						B7	B8		2H	G8	
C	0.15max.	0.15max.	0.15max.	0.3max.	1.00	0.37-0.49	0.08max.	0.12max.	0.40min.	0.08max.	
Mn	1.00max.	1.25max.	1.00max.	2.0max.	1.00max.	0.65-1.10	2.0max.	1.00max.	1.00max.	2.00max.	
P	0.040	0.060max.	0.040	-	-	0.035	0.045	0.040	0.040max.	0.045	
S	0.030	0.15max.	0.030	0.024	-	0.04	0.030	0.030	0.050max.	0.030	
Si	1.00max.	1.00max.	1.00max.	0.5max.	1.00	0.15-0.35	1.00max.	1.00max.	0.40max.	1.00max.	
Cr	11.50-13.50	12.0-14.0	12.0-14.0	-	28.00	0.75-1.20	18.0-20.0	14.0-18.0	-	18.0-20.0	
Ni	-	-	-	63.0min.	3.0max.	-	8.00-11.0	-	-	8.00-11.0	
Mo	-	0.600max.	-	-	-	0.15-0.25	-	-	-	-	
Cu	-	-	-	28.0-34.0	-	-	-	-	-	-	
Other element	-	-	-	Fe:2.5max.	Fe:3.0max. W:4.0 Co:balance	-	-	-	-	-	
Mechanical property	410	416	420	ASTM A164	Gr.6	B7	B8	430	2H	G8	
Tensile strength	99/85 70/130	85/170 85/170	149/298 105/210	70(2) 49.2	- -	125 87.8	75 52.7	75.4 53	- -	- -	
Yield strength	59/170 42/120	59/128 42/90	119/199 84/140	25(2) 17.6	- -	105 73.8	30 21	40 28	- -	- -	
Elongation at Rupture	(15)(1)	(10)(1)	(8)(1)	(35)(2)	-	16	30	28	-	-	
Shrinkage of R. A.	50/75	8/60	5/40	-	-	50	50	65	-	-	
Brinell hardness	180-375	180/375	300-600	-	HRC min.37	-	-	160	248-352	126-300	

Temperature and pressure rate

Class 150/300/600/800/900/1500/2500 Temperature-pressure rate(Psig)- °F

Materials	A105&A350-LF2							F5							F11						
Class	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
-20 to 100	285	740	1480	1975	2220	3705	6170	290	750	1500	2000	2250	3750	6250	290	750	1500	2000	2250	3750	6250
200	260	675	1350	1800	2025	3375	5625	260	745	1490	2000	2235	3725	6205	260	750	1500	1900	2250	3750	6250
300	230	655	1315	1750	1970	3280	5470	230	715	1430	1940	2150	3580	5965	230	720	1445	1795	2165	3610	6015
400	200	635	1270	1690	1900	3170	5280	200	705	1410	1880	2115	3530	5880	200	695	1385	1755	2080	3465	5775
500	170	600	1200	1595	1795	2995	4990	170	665	1330	1775	1995	3325	5540	170	665	1330	1710	1995	3325	5540
600	140	550	1095	1460	1640	2735	4560	140	605	1210	1615	1815	3025	5040	140	605	1210	1615	1815	3025	5040
650	125	535	1075	1430	1610	2685	4475	125	590	1175	1570	1765	2940	4905	125	590	1175	1570	1765	2940	4905
700	110	535	1065	1420	1600	2665	4440	110	570	1135	1515	1705	2840	4730	110	570	1135	1515	1705	2840	4730
750	95	505	1010	1345	1510	2520	4200	95	530	1055	1420	1585	2640	4400	95	530	1065	1420	1595	2660	4430
800	80	410	825	1100	1235	2060	3430	80	510	1015	1325	1525	2540	4230	80	510	1015	1355	1525	2540	4230
850	65	270	535	715	805	1340	2230	65	485	965	1170	1450	2415	4030	65	485	975	1300	1460	2435	4060
900	50	170	345	460	515	860	1430	50	370	740	940	1110	1850	3085	50	450	900	1200	1350	2245	3745
950								35	275	550	695	825	1370	2285	35	320	640	1005	9550	1595	2655
1000								20	200	400	510	595	995	1655	20	215	430	595	650	1080	1800
1050									145	290	375	430	720	1200		145	290	365	430	720	1200
1100									100	200	275	300	495	830		95	190	225	290	480	800
1150									60	125	185	185	310	515		60	125	140	185	310	515
1200									35	70	120	105	170	285		40	75	95	115	190	315
1250																					
1300																					

Class 150/300/600/800/900/1500/2500 Temperature-pressure rate(Psig)- °F

Materials	F22							F91							F304 F304H						
Class	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
-20 to 100	290	750	1500	2000	2250	3750	6250	290	750	1500	2000	2250	3750	6250	275	720	1440	1920	2160	3600	6000
200	260	750	1500	1910	2250	3750	6250	260	750	1500	2000	2250	3750	6250	230	600	1200	1600	1800	3000	5000
300	230	730	1455	1805	2185	3640	6070	230	730	1455	1940	2185	3640	6070	205	540	1080	1410	1620	2700	4500
400	200	705	1410	1730	2115	3530	5880	200	705	1410	1880	2115	3530	5880	190	495	995	1255	1490	2485	4140
500	170	665	1330	1705	1995	3325	5540	170	665	1330	1775	1995	3325	5540	170	465	930	1165	1395	2330	3880
600	140	605	1210	1615	1815	3025	5040	140	605	1210	1615	1815	3025	5040	140	435	875	1105	1310	2185	3640
650	125	590	1175	1570	1765	2940	4905	125	590	1175	1570	1765	2940	4905	125	430	860	1090	1290	2150	3580
700	110	570	1135	1515	1705	2840	4730	110	570	1135	1515	1705	2840	4730	110	425	850	1075	1275	2125	3540
750	95	530	1065	1420	1595	2660	4430	95	530	1065	1420	1595	2660	4430	950	415	830	1060	1245	2075	3460
800	80	510	1015	1355	1525	2540	4230	80	510	1015	1355	1525	2540	4230	80	405	805	1050	1210	2015	3360
850	65	485	975	1300	1460	2435	4060	65	485	975	1300	1460	2435	4060	65	395	790	1035	1190	1980	3300
900	50	450	900	1200	1350	2245	3745	50	450	900	1200	1350	2245	3745	50	390	780	1025	1165	1945	3240
950	35	375	755	1005	1130	1885	3145	35	385	775	1030	1160	1930	3220	35	380	765	1000	1145	1910	3180
1000	20	260	520	715	780	1305	2170	20	365	725	970	1090	1820	3030	20	320	640	860	965	1605	2675
1050		175	350	530	525	875	1455	20	360	720	960	1080	1800	3000		310	615	825	925	1545	2570
1100		110	220	300	330	550	915	20	300	605	805	905	1510	2515		255	515	685	770	1285	2145
1150		70	135	275	205	345	570	20	225	445	595	670	1115	1855		200	400	520	595	995	1655
1200		40	80	145	125	205	345	20	145	290	385	430	720	1200		155	310	415	465	770	1285
1250																115	225	295	340	565	945
1300																85	170	220	255	430	715

Temperature and pressure rate

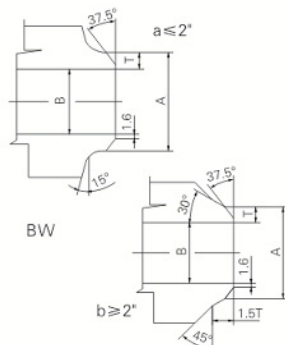
Class 150/300/600/800/900/1500/2500 Temperature–pressure rate(Psig)–°F

Materials	F321 F321H							F316 F316H							F304L F316L						
Class	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
–20 to 100	275	720	1440	1920	2160	3600	6000	275	720	1440	1920	2160	3600	6000	230	600	1200	1600	1800	3000	5000
200	240	645	1290	1720	1935	3230	5380	235	620	1240	1655	1860	3095	5160	195	505	1015	1350	1520	2530	4220
300	230	595	1190	1585	1785	2975	4960	215	560	1120	1495	1680	2795	4660	175	455	910	1210	1360	2270	3780
400	200	550	1105	1470	1655	2760	4600	195	515	1025	1370	1540	2570	4280	160	415	825	1100	1240	2065	3440
500	170	515	975	1375	1545	2570	4285	170	480	955	1275	1435	2390	3980	145	380	765	1020	1145	1910	3180
600	140	485	955	1300	1460	2435	4060	140	450	900	1205	1355	2255	3760	140	360	720	960	1080	1800	3000
650	125	480	930	1275	1435	2390	3980	125	445	890	1185	1330	2220	3700	125	350	700	935	1050	1750	2920
700	110	465	915	1240	1395	2330	3880	110	430	870	1150	1305	2170	3620	110	345	685	915	1030	1715	2860
750	95	460	900	1220	1375	2290	3820	95	425	855	1130	1280	2135	3560	95	335	670	895	1010	1680	2800
800	80	450	895	1205	1355	2255	3760	80	420	845	1105	1265	2110	3520	80	330	660	875	985	1645	2740
850	65	445	885	1190	1340	2230	3720	65	415	835	1080	1255	2090	3480	65	320	645	860	965	1610	2680
900	50	440	775	1180	1325	2210	3680	50	385	830	1050	1245	2075	3460							
950	35	385	715	1030	1160	1930	3220	35	350	775	1030	1160	1930	3220							
1000	20	355	625	950	1070	1785	2970	20	345	700	970	1050	1750	2915							
1050	20	315	545	835	940	1565	2605		305	685	860	1030	1720	2865							
1100	20	270	475	725	815	1360	2265		235	610	735	915	1525	2545							
1150	20	235	370	630	710	1185	1970		185	475	550	710	1185	1970							
1200	20	185	280	495	555	925	1545		145	370	485	555	925	1545							
1250	20	140	220	375	420	705	1170		115	295	365	440	735	1230							
1300	20	110	170	295	330	550	915			235		350	585	970							

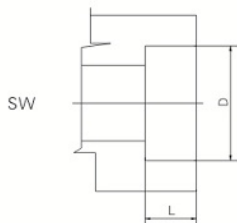
Class 150/300/600/800/900/1500/2500 Temperature–pressure rate(Psig)–°F

Materials	F347 F347H							F44 F51 F53						
Class	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
–20 to 100	275	720	1400	1920	2160	3600	6000	290	750	1500	2000	2250	3750	6250
200	255	660	1320	1760	1980	3300	5500	260	720	1400	1920	2160	3600	6000
300	230	615	1230	1640	1845	3070	5120	230	665	1330	1773	1995	3325	5540
400	200	575	1145	1530	1720	2870	4780	200	615	1230	1640	1845	3070	5120
500	170	540	1080	1440	1620	2700	4500	170	575	1150	1537	1730	2880	4800
600	140	515	1025	1370	1540	2570	4280	140	555	1115	1485	1670	2785	4640
650	125	505	1010	1345	1510	2520	4200	125	550	1100	1467	1650	2750	4580
700	110	495	990	1320	1485	2470	4120	110	540	1085	1445	1625	2710	4520
750	95	490	985	1310	1475	2460	4100	95	530	1065	1418	1595	2660	4430
800	80	485	975	1300	1460	2435	4060							
850	65	450	970	1295	1455	2425	4040							
900	50	385	900	1200	1350	2245	3745							
950	35	365	775	1030	1160	1930	3220							
1000	20	360	720	940	1090	1820	3030							
1050	20	325	645	960	1080	1800	3000							
1100	20	275	550	860	965	1610	2685							
1150	20	170	345	735	825	1370	2285							
1200	20	125	245	460	515	855	1430							
1250	20	95	185	330	370	615	1030							
1300	20	70	110	250	280	465	770							

Connection-end standards



BW



SW

Butt-welded standard ASME B16.25

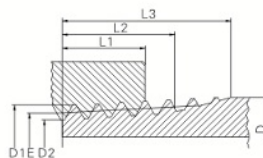
Unit:mm

Normal diameter	SCH.40			SCH.80			SCH.160			SCH.XXS		
	A	B	T	A	B	T	A	B	T	A	B	T
1/2	21.3	15.8	2.77	21.3	13.8	3.73	21.3	11.7	4.78	21.3	6.4	7.47
3/4	26.7	25.0	2.87	26.7	18.9	3.91	26.7	15.6	5.56	26.7	11.1	7.82
1	33.4	26.6	3.38	33.4	24.3	4.55	33.4	20.7	6.35	33.4	15.2	9.09
1 1/4	42.2	35.1	3.55	42.2	32.5	4.85	42.2	29.5	6.35	42.2	22.8	9.70
1 1/2	48.3	41.0	3.68	48.3	38.1	5.08	48.3	33.5	7.41	48.3	28.0	10.15
2	60.3	52.5	3.91	60.3	49.2	5.54	60.3	42.9	8.74	60.3	38.2	11.07
2 1/2	73.0	62.7	5.15	73.0	59.0	7.01	73.0	54.0	9.53	73.0	45.0	14.02
3	88.9	78.0	5.48	88.9	73.7	7.62	88.9	66.6	11.13	88.9	58.4	15.24
4	114.3	102.3	6.02	114.3	97.2	8.56	114.3	85.3	13.49	114.3	80.1	17.12

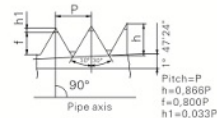
Foreign socket welded standard ANSI-JIS-JB

Unit:mm

Normal diameter	ANSI		JIS		JB	
	D	L	D	L	D	L
1/4	14.1	9.6	14.3	9.6	14.5	10.0
3/8	17.6	9.6	17.9	9.6	18.0	10.0
1/2	21.8	9.6	22.2	9.6	22.5	10.0
3/4	27.1	12.7	27.7	12.7	28.5	11.0
1	33.8	12.7	34.5	12.7	34.5	12.0
1 1/4	42.6	12.7	43.2	12.7	43.0	14
1 1/2	48.7	12.7	49.1	12.7	49.0	15
2	61.2	15.9	61.2	15.9	61.2	16



National pipe thread ASME B1.20.1



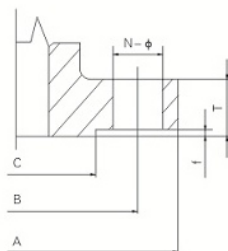
Thread standard ASME B1.20.1

Normal diameter		O.D.OF Pipe	Threads sep in.	Pitch of thread	O.D.AT Beginning of thread	Pitch dia.at beginning of ext.thread	Root dia.at beginning of ext.thread	Handtight engagement	Effective thread ext.length	Overall length ext.thread
		D	N	P	D1	E	D2	L1	L2	L3
1/8	inch	0.41	1.06	0.04	0.39	0.36	0.26	0.18	0.26	0.39
	mm	10.29	27	0.940	9.982	9.233	6.484	4.572	6.703	9.967
1/4	inch	0.54	0.71	0.06	0.52	0.48	0.43	0.20	0.40	0.59
	mm	13.72	18	1.412	13.259	12.126	10.998	5.080	10.206	15.103
3/8	inch	0.67	0.71	0.06	0.66	0.61	0.57	0.24	0.41	0.60
	mm	17.14	18	1.412	16.662	15.545	14.427	6.096	10.358	15.255
1/2	inch	0.84	0.55	0.07	0.82	0.76	0.70	0.32	0.53	0.78
	mm	21.34	14	1.814	20.726	19.263	17.805	8.128	13.556	19.850
3/4	inch	1.05	0.55	0.07	1.03	0.97	0.91	0.34	0.55	0.79
	mm	26.67	14	1.814	26.035	24.580	23.139	8.611	13.861	20.155
1	inch	1.31	0.452	0.09	1.28	1.21	1.14	0.40	0.68	0.98
	mm	33.40	11.1/2	2.210	32.588	30.825	29.058	10.160	17.343	25.006
1 1/4	inch	1.66	0.45	0.09	1.63	1.56	1.49	0.42	0.71	1.01
	mm	42.16	11.1/2	2.210	41.326	39.550	37.795	10.688	17.953	25.616
1 1/2	inch	1.90	0.45	0.09	1.87	1.80	1.73	0.42	0.72	1.03
	mm	48.26	11.1/2	2.210	47.396	45.621	43.866	10.668	18.377	26.040
2	inch	2.37	0.45	0.09	2.34	2.27	2.20	0.44	0.76	1.06
	mm	60.32	11.1/2	2.210	59.411	57.633	55.855	11.074	19.215	26.878

Flange dimensions

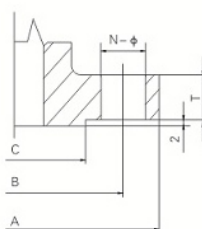
DIN flange 2544-45-46

Unit:mm

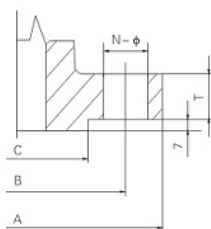


RF
PN 25-64

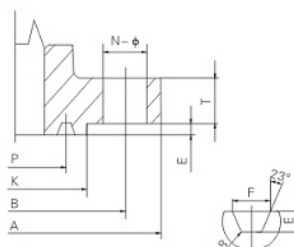
PN	DN	NPS	A	B	C	T	f	Bolt hole	
								N	φ
25	15	1/2	95	65	45	16	2	4	14
	20	3/4	105	75	58	18	2	4	14
	25	1	115	85	68	18	2	4	14
	32	1 1/4	140	100	78	18	2	4	18
	40	1 1/2	150	110	88	18	3	4	18
40	50	2	165	125	102	20	3	4	18
	15	1/2	105	75	45	20	2	4	14
	20	3/4	130	90	58	22	2	4	18
	25	1	140	100	65	24	2	4	18
	32	1 1/4	155	110	75	24	2	4	22
64	40	1 1/2	170	125	88	26	3	4	22
	50	2	180	135	95	26	3	4	22



RF
150~300Lb



RF
600~2500Lb



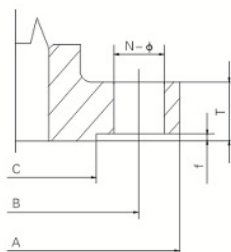
RJ
600~2500Lb

ANSI B16.5 flange standard

Unit:mm

Class	NPS	A	B	C	T	Bolt hole		Ring type joint				Ring No
						N	φ	K	P	F	E	
150	1/2	90	60.3	34.9	9.6	4	16	-	-	-	-	-
	3/4	100	69.8	42.9	11.2	4	16	-	-	-	-	-
	1	110	79.4	50.8	12.7	4	16	63.5	47.62	8.74	6.35	R15
	1 1/4	115	88.9	63.5	14.3	4	16	73.0	57.15	8.74	6.35	R17
	1 1/2	125	98.4	73.0	15.9	4	16	82.5	65.07	8.74	6.35	R19
300	2	150	120.6	92.1	17.5	4	20	102.0	82.55	8.74	6.35	R22
	1/2	95	66.7	34.9	12.7	4	16	51.0	34.14	7.14	5.54	R11
	3/4	115	82.5	42.9	14.3	4	20	63.5	42.88	8.74	6.35	R13
	1	125	88.9	50.8	15.9	4	20	70.0	50.80	8.74	6.35	R16
	1 1/4	135	98.4	63.5	17.5	4	20	79.5	60.32	8.74	6.35	R18
600	1 1/2	155	114.3	73.0	19.1	4	23	90.5	68.28	8.74	6.35	R20
	2	165	127.0	92.1	20.7	8	20	108.0	82.55	11.91	7.92	R23
	1/2	95	66.7	34.9	14.3	4	16	51.0	34.14	7.14	5.54	R11
	3/4	115	82.5	42.9	15.9	4	20	63.5	42.88	8.74	6.35	R13
	1	125	88.9	50.8	17.5	4	20	70.0	50.80	8.74	6.35	R16
900	1 1/4	135	98.4	63.5	20.7	4	20	79.5	60.32	8.74	6.35	R18
	1 1/2	155	114.3	73.0	22.3	4	23	90.5	68.28	8.74	6.35	R20
	2	165	127.0	92.1	25.4	8	20	108.0	82.55	11.91	7.92	R23
	1/2	120	82.5	34.9	22.3	4	23	60.5	39.67	8.74	6.35	R12
	3/4	130	88.9	42.9	25.4	4	23	66.5	44.45	8.74	6.35	R14
1500	1	150	101.6	50.8	28.6	4	26	71.5	50.80	8.74	6.35	R16
	1 1/4	160	111.1	63.5	28.6	4	26	81.0	60.32	8.74	6.35	R18
	1 1/2	180	123.8	73.0	31.8	4	29	92.0	68.28	8.74	6.35	R20
	2	215	165.1	92.1	38.1	8	26	124.0	95.25	11.91	7.92	R24
	1/2	135	88.9	34.9	30.2	4	23	65.0	42.88	8.74	6.35	R13
2500	3/4	140	95.2	42.9	31.8	4	23	73.0	50.80	8.74	6.35	R16
	1	160	107.9	50.8	35.0	4	26	82.5	60.32	8.74	6.35	R18
	1 1/4	185	130.2	63.5	38.1	4	29	101.5	72.24	11.91	6.35	R21
	1 1/2	205	146	73.0	44.5	4	32	114.5	82.55	11.91	6.35	R23
	2	235	171.4	92.1	51.9	8	29	133.5	101.60	11.91	7.92	R26

Flange dimensions



RF
10K~63K

JIB B2212(10K) JIB B2214(20K) JIB B2215(30K) JIB B2215(40K) JIB B2216(63K)

Unit:mm

K Grabe	DN	A	B	C	T	f	Bolt hole	
							N	φ
10K	10	90	65	48	12	1	4	15
	15	95	70	52	12	1	4	15
	20	100	75	58	14	1	4	15
	25	125	90	70	14	1	4	19
	32	135	100	80	16	2	4	19
	40	140	105	85	16	2	4	19
20K	50	155	120	100	16	2	4	19
	10	90	65	46	14	1	4	15
	15	95	70	52	14	1	4	15
	20	100	75	58	16	1	4	15
	25	125	90	70	16	1	4	15
	32	135	100	80	18	2	4	19
30K	40	140	105	85	18	2	4	19
	50	155	120	100	18	2	8	19
	10	110	75	52	16	1	4	19
	15	115	80	55	18	1	4	19
	20	120	85	60	18	1	4	19
	25	130	95	70	20	1	4	19
40K	32	140	105	80	22	2	4	19
	40	160	120	90	22	2	4	23
	50	165	130	105	22	2	8	19
	10	110	57	52	18	1	4	19
	15	115	80	55	20	1	4	19
	20	120	85	60	20	1	4	19
63K	25	130	95	70	22	1	4	19
	32	140	105	80	24	2	4	19
	40	160	120	90	24	2	4	23
	50	165	130	105	26	2	8	19
	10	115	80	52	23	1	4	19
	15	120	85	55	23	1	4	19
63K	20	135	95	60	25	1	4	23
	25	140	100	70	27	1	4	23
	32	150	110	80	30	2	4	23
	40	175	130	90	32	2	4	25
	50	185	145	105	34	2	8	23



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