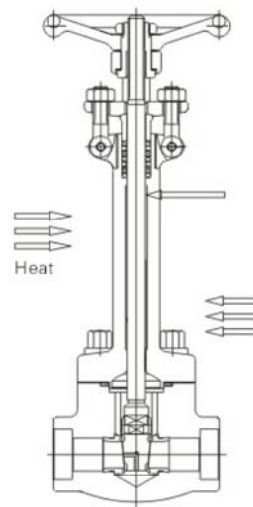


Forged steel cryogenic valves

Häger 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;
- ※ Outsied 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.



Pressure relief illustration

Cryogenic test

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

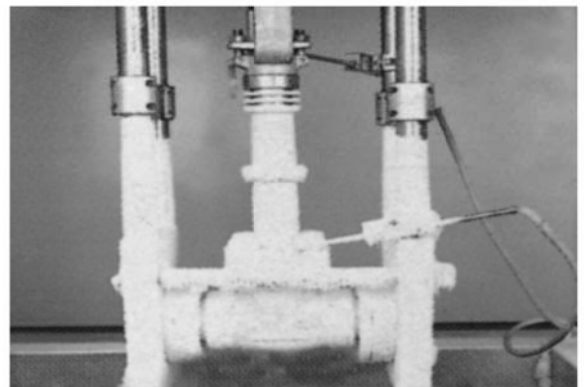
Environment: Inside a device full of liquefied Nitrogen , temperature smaller than 196°C.

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.

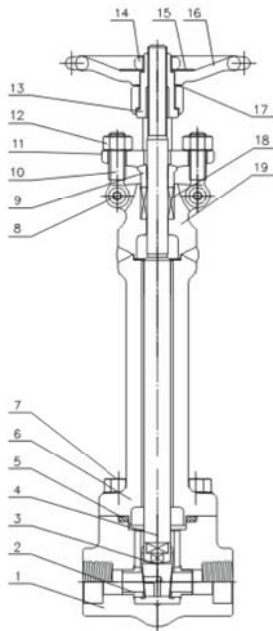
Operating performance test in cryogenic conditions.

Sealing performance tests for packing and gasket

Sealing performance test for backseat



Cryogenic gate valves



Application standards

- 1、 Design and manufacture conform to API 602 BS5352 B16.34;
- 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
- 5、 Materials conform to ANSI/ASTM.
- 6、 Main materials: LF2; LF3; 304(L); 316(L); F347; F321; F51.

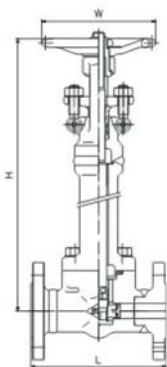
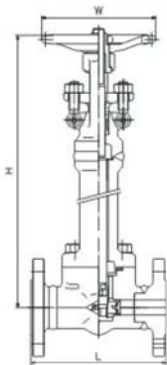
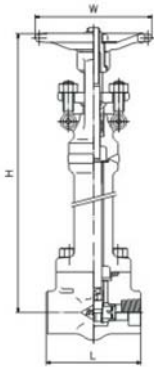
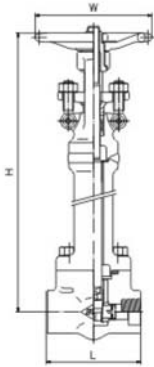
Carbon steel temperature–pressure rate

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	LF3/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	–	–	LF2	LF3	F304(L)	F316(L)	F51
2	Seat ring	–	–	304	304	304(L)	316(L)	F51
3	Wedge disc	–	–	F304	F304	F304(L)	F316(L)	F51
4	Stem	–	–	304	F304	304(L)	316(L)	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	B8	B8
8	Pin	–	–	410	410	304	304	304
9	Gland	–	–	304	304	304	316	F51
10	Gland eyebolt	–	–	L7	L7	B8(M)	B8(M)	B8M
11	Gland flange	–	–	LF2	LF3	F304	F304	F304
12	Hex nut	–	–	2H	2H	8(M)	8(M)	8M
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
19	Stents	–	–	LF2	LF3	F304(L)	F316(L)	F51

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 dimension)	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 dimension)	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	L(RF), L1(BW)	-	-	140	152	165	-	191	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 dimension)	d	-	-	9.5	13	17.5	-	29	36.5	
	CL R F	-	-	5.0	5.5	8.8	-	15	20.3	
	CL R F	-	-	5.8	7.3	9.7	-	19.5	22.3	
Weight (Kg)	CL R F	-	-	6.0	8	11.2	-	21.5	24.8	
	CL R F	-	-	-	-	-	-	-	-	
	CL R F	-	-	-	-	-	-	-	-	

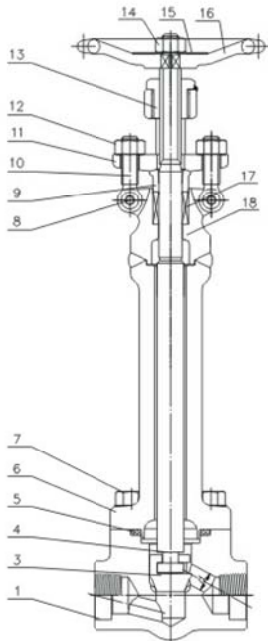
If you want to order one piece body, please contract with sale department

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	325	368
Handwheel diameter	W		100	100	125	160	160	180
Height	H	-196	337	337	377	377	445	465
Height(angle dimension)	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

- 1、 Design and manufacture conform to API 602 BS5352 B16.34;
- 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、 Valve 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
- 5、 Materials conform to ANSI/ASTM.
- 6、 Main materials: LF2; LF3; 304(L); 316(L); F347; F321; F51; Monel; 20 Alloy.

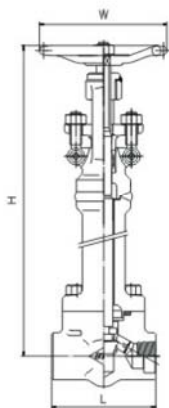
Carbon steel temperature–pressure rate

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	LF3/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	-	-	LF2	LF3	F304(L)	F316(L)	F51
2	Seat ring	-	-	304	304	304(L)	316(L)	F51
3	Wedge disc	-	-	F304	F304	F304(L)	F316(L)	F51
4	Stem	-	-	304	304	304(L)	316(L)	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	B8	B8
8	Pin	-	-	410	410	304	304	304
9	Gland	-	-	304	304	304	316	F51
10	Gland eyebolt	-	-	L7	L7	B8(M)	B8(M)	B8M
11	Gland flange	-	-	LF2	LF3	F304	F304	F304
12	Hex nut	-	-	2H	2H	8(M)	8(M)	8M
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	Packing	-	-	Graphite	Graphite	Graphite	Graphite	Graphite
18	Stents	-	-	LF2	LF3	F304(L)	F316(L)	F51

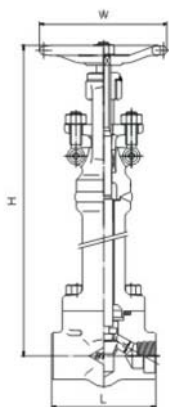
Cryogenic globe valves



CL800

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

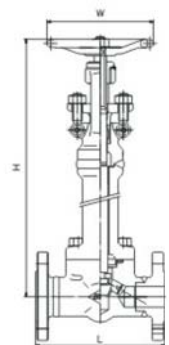
Specification (NPS)	R.P F.P	- 1/4	1/2 3/8	3/4 1/2	1 3/4	1 1/4 1	1 1/2 1 1/4	2 1 1/2	2 1/2 2
Face to face	L	73	73	80	100	114	145	160	-
Handwheel diameter	W	100	100	100	125	160	160	180	-
Height(open)	H -196°C	300	300	300	337.5	368	390	437	-
Flow port dimension	d	7.0	9.0	12	17.5	22.5	29	35	-
Weight (Kg)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

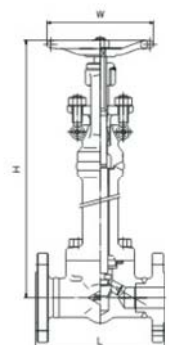


CL150-300-600

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)	CL150	-	-	108	117	127	-	165	203
	L1(BW)	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	337.50	-	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	145	19	26	29	-

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