



Cast Steel Bolted Cover Valves

Check valves

Design

HFSH cast steel check valve has been designed to conform to BS1868, API600, and ASME B16.34.

Wall thickness dimensions comply with API 600.

Face to face, end to end, and center to face dimensions of flanged and butt welded valves are in accordance with ASME B16.10, BS 2080 and ISO 5752.

End flange dimension conform to ASME B16.5 for sizes NPS 24 and smaller, ASME B16.47 series A for sizes NPS 26 and larger.

BW end dimension conform to ASME B16.25.

Inspection and test are in accordance with API 598 and BS EN 12266.

Body and Cover

Castings are precisely machined.

A flat face gasket joint is used in the 150lb. A male and female joint is used in 300lb, 600lb. Ring joint is used in 900lb and higher. The gasket contacting surface is smooth finish that has a roughness between Ra 3.2 and 6.3 micrometer (125-250microinch). The surface roughness of gasket grooves of ring joint faces do not exceed 63 micro inch.

Body seat construction of HFSH cast steel valve has three types: threaded seat ring, welded seat ring and integral seat ring.

Disc shaft does not penetrate body.

Provided with bosses for optional by-passes or drains.

Disc Assembly

Disc is fastened securely to disc hanger with a lock nut and cotter pin. Disc is free to rotate to avoid localized wear. All parts are accessible from top for easy servicing.

Cover Gasket

Class 150~600: Jacketed graphite with stainless steel or spiral wound graphite with stainless steel .

Class 900 and over: Ring joint metal gasket.

Cover Bolting

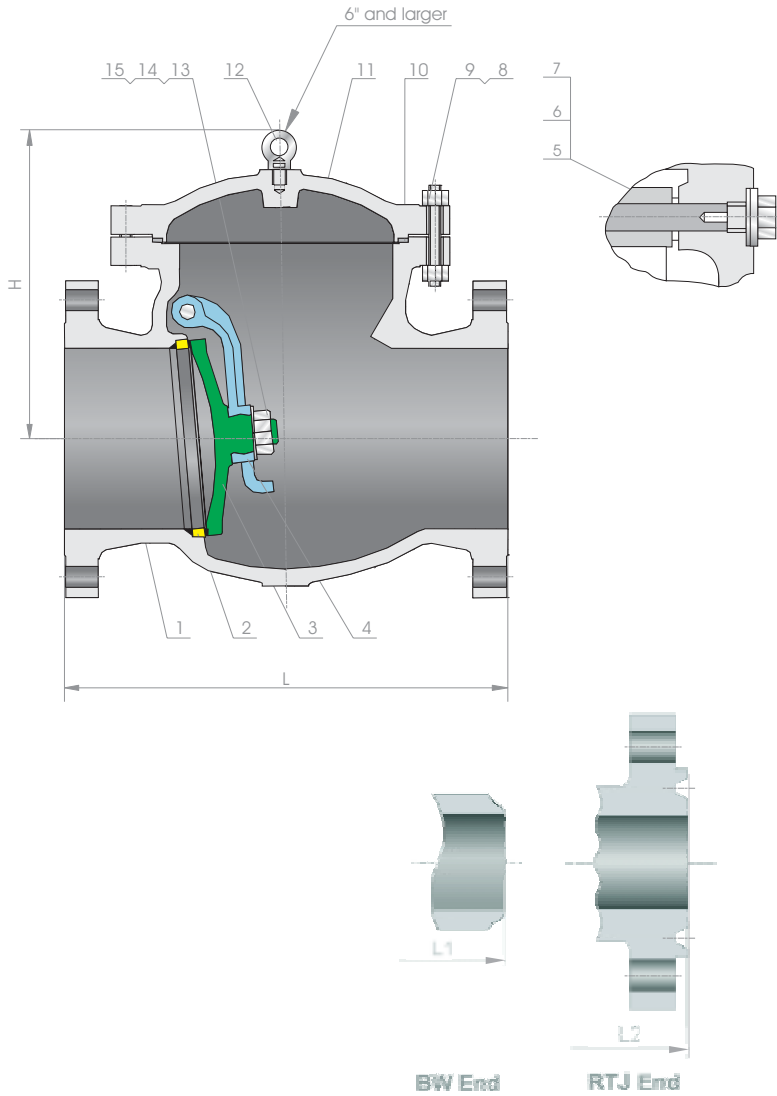
Coarse thread series for bolt sizes 1 inch and smaller, 8-thread series for bolt sizes 1 1/8 inch and larger, both conform to Class 2A/2B tolerances.



Cast Steel Bolted Cover Check Valves

Class 150

Bolted cover, Swing type disc



Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Hinge pin	ASTM A276 410
6	Washer	ASTM A276 410
7	Plug	ASTM A276 410
8	Cover bolt	ASTM A193 Gr.B7
9	Cover nut	ASTM A194 Gr.2H
10	Gasket	304S.S. Jacketed Graphite
11	Cover	ASTM A216 Gr.WCB
12	Eye bolt	C.S.
13	Pin	ASTM A276 410
14	Nut	304S.S.
15	Washer	ASTM A276 410

Features

- Face to face and end to end dimension: ASME B16.10
- Flange dimension:
24" and smaller valves: ASME B16.5
28" and larger valves: ASME B 16.47 series A
- Shell wall thickness:
24" and smaller to API 600
28" and larger to manufacturer's standard
- B. W. End to ASME B16.25

Dimensions and Weights

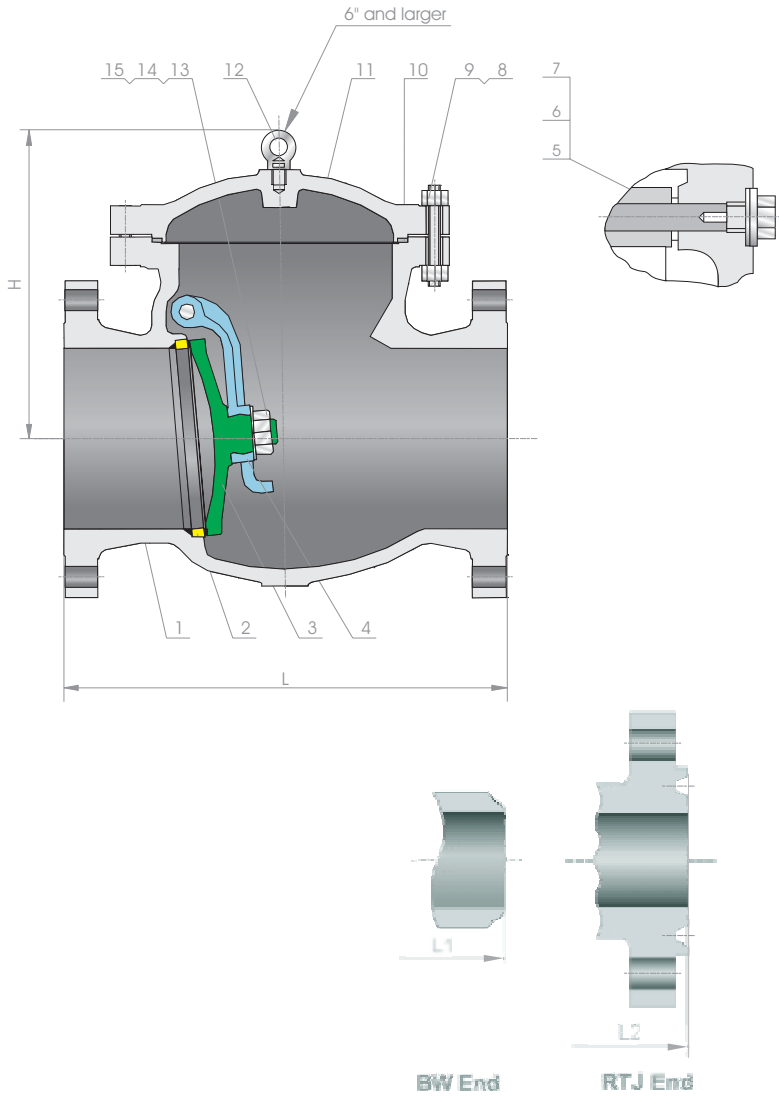
Valve Size	in.	11/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
L-L1 (RF-BW)	in.	6.5	8	8.5	9.5	11.5	13	14	19.5	24.5	27.5	31	34	38.5	38.5	51	60	77
	mm	165	203	216	241	292	330	356	495	622	698	787	864	978	978	1295	1524	1956
L2 (RTJ)	in.	7.0	8.5	9	10	12	13.5	14.5	20	25	28	31.5	34.5	39	39	51.5	60.5	77.5
	mm	178	216	229	254	305	343	368	508	635	711	800	877	991	991	1308	1537	1969
H (open)	in.	6.69	6.88	7	7.5	8.63	9.25	12.75	15.13	17.63	21.25	22	24.63	25.63	26.63	34.63	45.25	53.13
	mm	170	175	178	191	219	235	324	384	448	540	559	626	651	676	880	1149	1349
WT (kg)	RF	18	20	24	35	55	84	96	160	245	345	510	660	850	1050	1450	2350	3350
	BW	12	14	17	26	37	52	80	133	213	294	440	568	750	920	1270	2250	3150



Cast Steel Bolted Cover Check Valves

Class 300

Bolted cover, Swing type disc



Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Hinge pin	ASTM A276 410
6	Washer	ASTM A276 410
7	Plug	ASTM A276 410
8	Cover bolt	ASTM A193 Gr.B7
9	Cover nut	ASTM A194 Gr.2H
10	Gasket	304S.S. Jacketed Graphite
11	Cover	ASTM A216 Gr.WCB
12	Eye bolt	C.S.
13	Pin	ASTM A276 410
14	Nut	304S.S.
15	Washer	ASTM A276 410

Features

- Face to face and end to end dimension: ASME B16.10
- Flange dimension:
24" and smaller valves: ASME B16.5
28" and larger valves: ASME B 16.47 series A
- Shell wall thickness:
24" and smaller to API 600
28" and larger to manufacturer's standard
- B. W. End to ASME B16.25

Dimensions and Weights

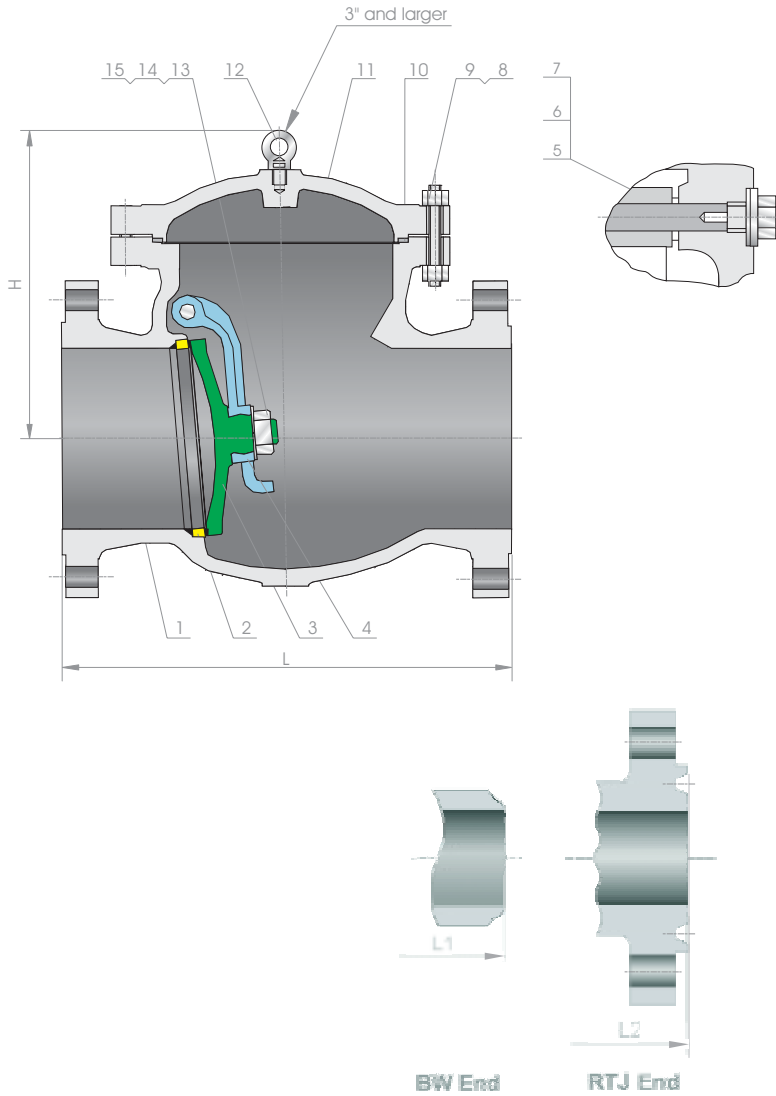
Valve Size	in.	11/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
	mm	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	750	900
L-L1 (RF-BW)	in.	9.5	10.5	11.5	12.5	14	15.75	17.5	21	24.5	28	33	34	38.5	40	53	62.75	82
	mm	241	267	292	318	356	400	444	533	622	711	838	864	978	1016	1346	1594	2083
L2 (RTJ)	in.	10	11.12	12.12	13.15	14.62	16.37	18.12	21.62	25.12	28.62	33.62	34.62	39.12	40.75	53.88	63.75	83.11
	mm	254	283	308	334	371	416	460	549	638	727	854	879	994	1035	1369	1619	2111
H (open)	in.	7.4	7.75	8	8.75	10.88	11.63	13.25	16.25	18.25	22.13	23.5	25.38	29.88	33.63	37	50	60.63
	mm	188	197	203	222	276	295	337	413	464	562	597	645	759	854	940	1270	1540
WT (kg)	RF	31	35	37	60	82	110	155	268	380	495	710	950	1200	1350	2200	3400	5000
	BW	28	32	35	50	65	70	128	230	270	460	555	800	970	1070	1780	2950	4300



Cast Steel Bolted Cover Check Valves

Class 600

Bolted cover, Swing type disc



Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Hinge pin	ASTM A276 410
6	Washer	ASTM A276 410
7	Plug	ASTM A276 410
8	Cover bolt	ASTM A193 Gr.B7
9	Cover nut	ASTM A194 Gr.2H
10	Gasket	304S.S. Jacketed Graphite
11	Cover	ASTM A216 Gr.WCB
12	Eye bolt	C.S.
13	Pin	ASTM A276 410
14	Nut	304S.S.
15	Washer	ASTM A276 410

Features

- Face to face and end to end dimension: ASME B16.10
- Flange dimension:
24" and smaller valves: ASME B16.5
28" and larger valves: ASME B 16.47 series A
- Shell wall thickness:
24" and smaller to API 600
28" and larger to manufacturer's standard
- B. W. End to ASME B16.25

Dimensions and Weights

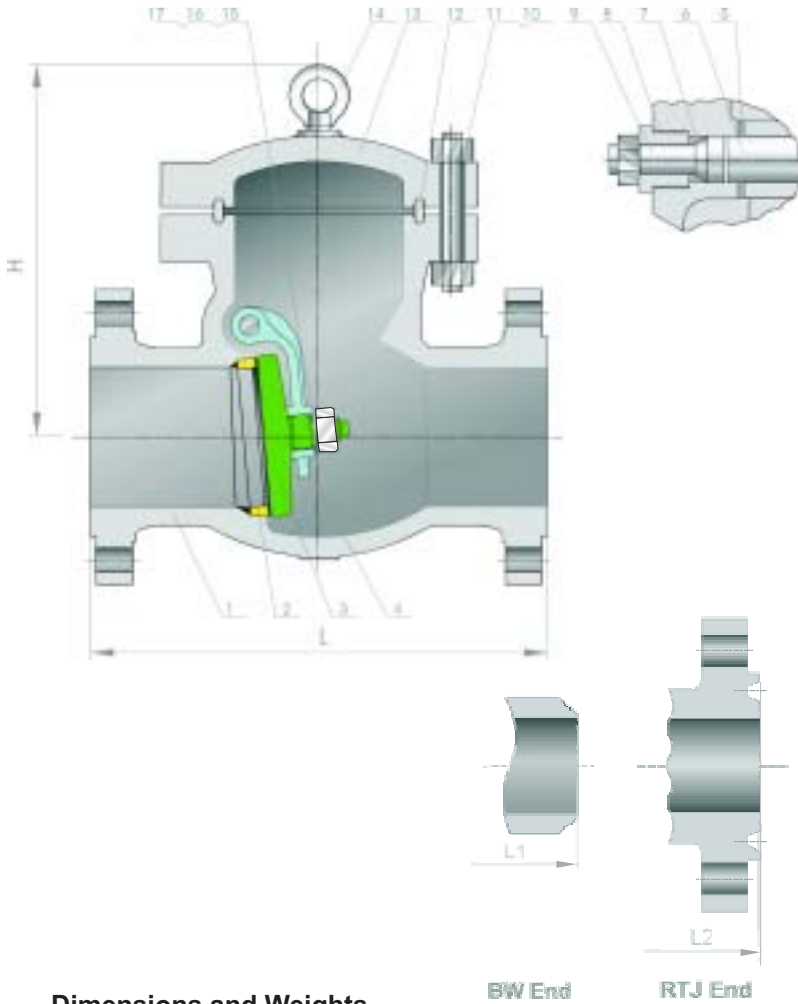
Valve Size	in.	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750
L-L1 (RF-BW)	in.	11.5	13	14	17	22	26	31	33	35	39	43	47	55	57	63	65
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1600	1651
L2 (RTJ)	in.	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.5	63.5	65.5
	mm	295	333	359	435	562	663	790	841	892	994	1095	1200	1407	1461	1613	1664
H (open)	in.	8.25	8.63	10.5	11.75	15	18.75	21.63	22.63	26.38	30.13	35.25	38.38	43.75	48	53.13	56.25
	mm	210	219	267	299	381	476	549	575	670	765	895	975	1111	1219	1349	1429
WT (kg)	RF	40	55	72	120	270	420	620	810	1100	1450	1800	2100	3000	3500	4100	5000
	BW	31	45	60	85	225	365	500	715	880	1140	1450	1650	2300	3000	3500	4300



Cast Steel Bolted Cover Check Valves

Class 900/1500/2500

Bolted cover, Swing type disc



Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Washer	ASTM A276 410
6	Arm rod	ASTM A276 410
7	Gasket ring	ASTM A182 F304
8	Plug	ASTM A276 410
9	Push bolt	ASTM A276 410
10	Cover bolt	ASTM A193 Gr.B7
11	Cover nut	ASTM A194 Gr.2H
12	Gasket	Soft Iron
13	Cover	ASTM A216 Gr.WCB
14	Eye bolt	C.S.
15	Pin	ASTM A276 410
16	Nut	304S.S.
17	Washer	ASTM A276 410

Features

- Face to face and end to end dimension: ASME B16.10
- Flange dimension: ASME B16.5
- Shell wall thickness: API 600
- B.W. end to ASME B16.25

Dimensions and Weights

	Valve Size	in. mm	2	2 1/2	3	4	6	8	10	12
			50	65	80	100	150	200	250	300
900lb	L - L1 (RF - BW)	in. mm	14.5 368	16.5 419	15 381	18 457	24 610	29 737	33 838	38 965
	L2 (RTJ)	in. mm	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968
	H	in. mm	12.63 321	13.75 349	12.63 321	16 406	18.88 479	22.25 565	26.13 664	30.5 775
	WT (kg)	RF BW	70 50	160 71	90 68	150 113	305 230	516 387	810 632	1120 901
	L - L1 (RF - BW)	in. mm	14.5 368	16.5 419	18.5 470	21.5 546	27.75 705	32.75 832	39 991	44.5 1130
1500lb	L2 (RTJ)	in. mm	14.62 371	16.62 422	18.62 473	21.62 549	28 711	33.15 842	39.4 1000	45.12 1146
	H	in. mm	12.63 321	13.75 349	14.38 365	16.5 419	20.13 511	26.75 680	29.75 756	33.75 857
	WT (kg)	RF BW	70 50	110 87	170 135	300 245	695 560	1190 965	1850 1480	2750 2180
	L - L1 (RF - BW)	in. mm	17.75 451	20 508	22.75 578	26.5 673	36 914	40.25 1022	50 1270	56 1422
	L2 (RTJ)	in. mm	17.87 454	20.25 514	23 584	26.88 683	36.5 927	40.87 1038	50.88 1292	56.88 1445
2500lb	H	in. mm	16.38 416	16.5 419	17.38 441	18.88 479	20.13 511	28 711	33.5 851	39.38 1000
	WT (kg)	RF BW	150 120	240 195	350 280	650 540	1450 1200	2550 2200	3950 3150	5700 4550