

Gate, Globe & Check Valves



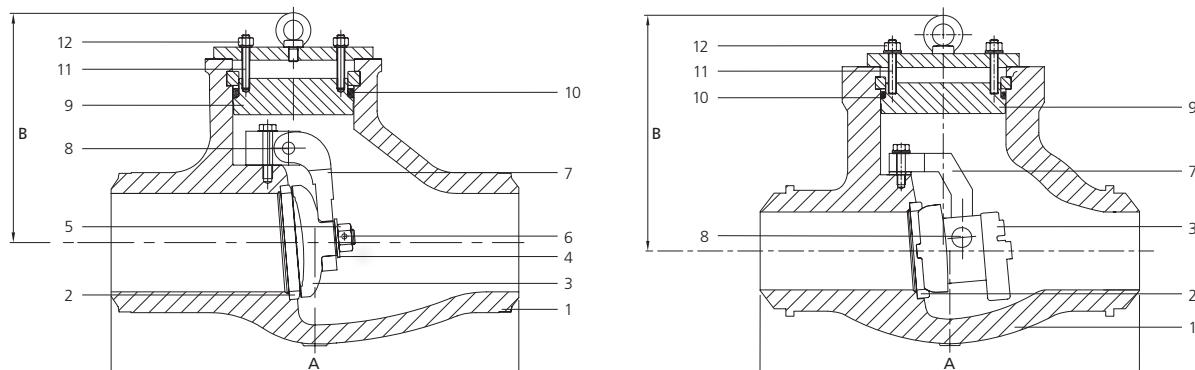
ASME Class 150 to 4500 | ½" to 42" (15 mm to 1050 mm)
ASME B16.34



L&T Valves

Check Valves - ASME Class 900 to 3500 (ASME B16.34)

L&T's high-pressure check valves are of pressure-seal design. As a standard, these valves are supplied with internal hinge-pins. Pressure-seal check valves can be offered in swing check design or tilting disc design.



Materials of Construction

No.	Components	Materials			
		WCC	WC6	WC9	C12A
1	Body	A216 Gr. WCC	A217 Gr. WC6	A217 Gr. WC9	A217 Gr. C12A
2	Seat Ring	A105N + HF	A182 Gr. F11 + HF	A182 Gr. F22 + HF	A182 Gr. F91 + HF
3	Disc	A216 Gr. WCC/ A105N + HF	A217 Gr. WC6/ A182 Gr. F11 + HF	A217 Gr. WC9/ A182 Gr. F22 + HF	A217 Gr. C12A/ A182 Gr. F91 + HF
4	Disc Washer	SS 304/ SS 316			
5	Disc Nut	SS 304/ SS 316			
6	Disc Pin	SS 304/ SS 316			
7	Hinge/ Bracket	A216 Gr. WCC/ A516 Gr. 70	A217 Gr. WC6/ A387 Gr. 11	A217 Gr. WC9/ A387 Gr. 22	A217 Gr. C12A/ A387 Gr. 91
8	Hinge Pin/ Hinge Bolt	A276 Type 410			
9	Cover	A216 Gr. WCC/ A105N	A217 Gr. WC6/ A182 Gr. F11	A217 Gr. WC9/ A182 Gr. F22	A217 Gr. C12A/ A182 Gr. F91
10	Gasket	Graphite with Braided end-rings			
11	Cover Stud	A193 Gr. B7	A193 Gr. B16	A193 Gr. B16	A193 Gr. B16
12	Cover Nut	A194 Gr. 2H	A194 Gr. 7	A194 Gr. 7	A194 Gr. 7
--	Identification Plate	SS 304			

HF - Hard-Faced with Stellite 6 or equivalent

Swing Check Valve - Dimensions & Weights

Size		Class 900			Class 1500			Class 2500			Class 3100		
NPS	DN	A	B	Wt.	A	B	Wt.	A	B	Wt.	A	B	Wt.
2	50	216	230	35	216	230	35	279	240	45			
3	80	305	270	45	305	270	45	368	240	55	368	280	112
4	100	356	270	60	406	270	65	457	290	85	457	314	113
6	150	508	305	105	559	310	120	610	350	185	610	440	235
8	200	660	405	220	711	410	260	762	540	330	762	520	486
10	250	787	490	380	864	490	430	914	610	900	914	600	946
12	300	914	595	500	991	600	650	1041	650	1130	1041	706	1376
14	350	991	615	780	1067	615	830	1118	770	1460	1241	832	1700
16	400	1092	720	980	1194	700	1350	1245	825	1900	1245	778	2593
18	450	1219	800	1260	1346	770	1850	1397	900	2650	1395	861	3659
20	500	1321	900	2050	1664	915	2745	1473	950	3640	1524	933	4223
24	600	1549	1110	3375	1943	1110	3800	1549	1110	5500	1727	1041	6700

All dimensions in mm and weights in kg

Weights of Tilting Disc Check Valves available on demand

Customised Solutions

Bellow Seal Valves

Bellow Seal Valves are used in services where leakage through stem packing area needs to be eliminated. These valves find application in lines handling hazardous fluids in nuclear and thermal power as well as hydrocarbon industries. The bellows conform to MSS SP 117 and can be offered in stainless steel, Inconel or Hastelloy.



Reheater Isolating Device

Reheater Isolating Device (RID) is used to isolate reheater lines during hydrostatic tests. The device has a disc that can be inserted from the top between hard-faced seat rings to effect sealing. After hydrostatic tests, the disc is removed and the device effectively becomes an integral part of the piping. RID eliminates the need to physically isolate lines during tests.

The body-bonnet connection of this device is of pressure-seal design.

Quick Closing Non-return Valve

Quick Closing Non-Return Valves (QCNRV) are swing check valves where quick closing is achieved using special actuation mechanisms. These are used to protect turbines and compressors from damage due to back flow.

Vacuum Service Valves

Vacuum Service Valves are offered in a variety of sizes and pressure classes. Stem finish and integrity of gland packing are crucial for these valves. The valves can also be offered with lantern-ring arrangement based on customer demand.

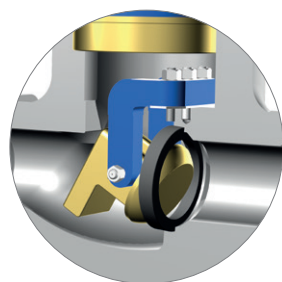
Angle Globe Valves

In Angle Globe Valves, the inlet and outlet are at right angles to each other. These valves find application in lines where pipe configuration or pressure drop is a concern.

Angle Globe Valves can be offered in pressure-seal as well as bolted bonnet designs based on line pressure.

Stop Check Valve

Stop Check Valve is a Lift Check Valve with manual control, a Globe Valve with a free-floating disc not attached to stem.



Tilting Disc Check Valve

Tilting Disc Check Valve is recommended for 'non-slam' applications. The disc in this valve is pivoted at the centre to avoid disc slamming and consequent damages.

Accessories

L&T Gate, Globe & Check Valves are supplied with a range of accessories to address process and plant requirements.

- Position Indicators
- Extension Spindle
- Locking Arrangement
- Live Loading

High pressure gate valves can be supplied with a variety of arrangements to equalize upstream and downstream pressures. Typically globe valves are used as bypass valves.

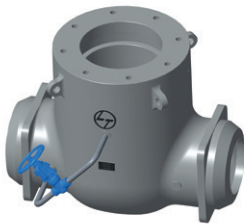
Further, to prevent centre cavity over-pressurization, the cavity is connected to the upstream side of the valve. This connection may be done with or without a pressure equalizing valve.

(For information on centre cavity relief, please refer ASME B16.34, Clause 2.3.3)



Type 1: Bypass Arrangement

The upstream and downstream sides of the valve are connected by a bypass pipe fitted with a globe valve. The gate valve is bidirectional.



Type 2: Equalizing Arrangement

The centre cavity and upstream side of the valve are connected by a bypass pipe with a globe valve. The gate valve is unidirectional.



Type 3: Bypass and Equalizing Arrangement

There is an additional connection between centre cavity and upstream for cavity relief. The gate valve is unidirectional.



Type 4: Bypass and Equalizing Arrangement

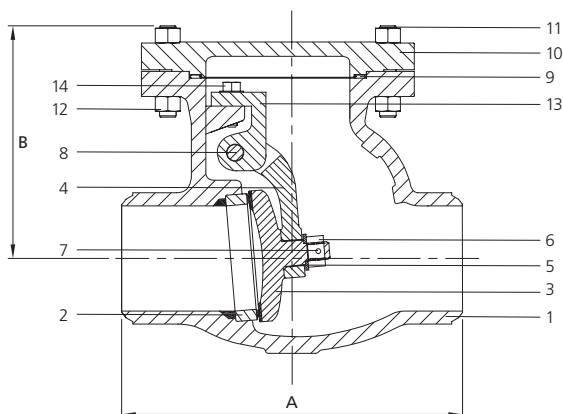
The arrangement consists of a connection between the centre cavity and a bypass pipe, with one valve each on the upstream and downstream of the bypass pipe. Based on the flow direction, one valve can act as bypass valve and the other, as a pressure equalizing valve. The gate valve is thus bidirectional.



Type 5: Bypass and Equalizing Arrangement

The arrangement consists of a connection between the centre cavity and upstream side of the valve with an equalizing valve. The upstream and downstream sides of the valve are connected by a bypass pipe fitted with a globe valve. The gate valve is thus unidirectional.

Check Valves - ASME Class 150, 300 & 600 (BS1868, ASME B16.34)



No.	Components		Materials
1	Body		A216 Gr. WCB
2	Seat Ring		A105N + HF
3	Disc		A216 Gr. WCB + 13% Cr. Steel
4	Hinge		A216 Gr. WCB
5	Disc Washer		A276 Type 316
6	Hinge		
7	Disc Nut Pin		
8	Hinge Pin		A276 Type 410
9	Gasket	Cl.150	Spiral-wound SS 316 with Graphite filler
		Cl.300	
		Cl.600	
10	Cover		A216 Gr. WCB
11	Stud		A193 Gr. B7
12	Hex Nut		A194 Gr. 2H
13	Bracket		A216 Gr. WCB
14	Hex Head Screw		A276 Type 316
--	Identification Plate		SS 304

HF - Hard-Faced with Stellite 6 or equivalent

Valves in other materials available on demand

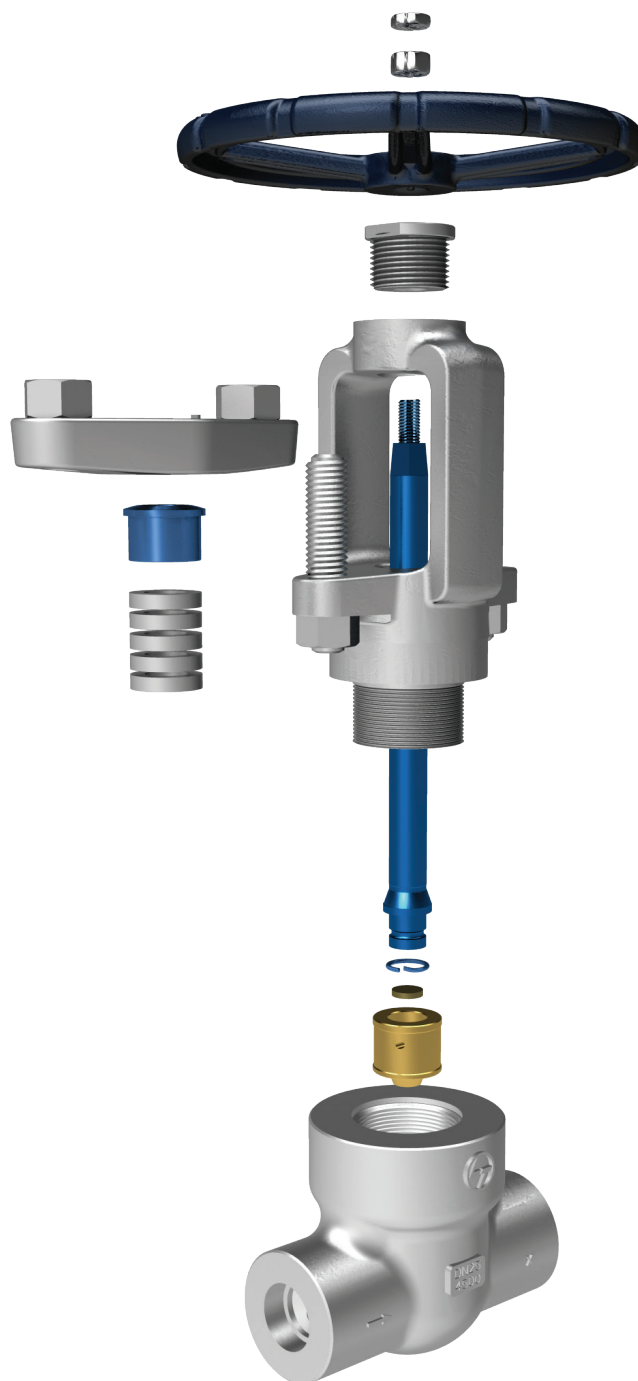
Dimensions & Weights

Size		Class 150					Class 300					Class 600				
		A		B	Wt.		A		B	Wt.		A		B	Wt.	
NPS	DN	FL	BW		FL	BW	FL	BW		FL	BW	FL	BW		FL	BW
2	50	203	203	150	21	19	267	267	160	24	19	292	292	180	35	30
3	80	241	241	180	34	27	318	318	190	45	36	356	356	205	55	46
4	100	292	292	215	49	43	356	356	230	70	56	432	432	250	92	70
6	150	356	356	270	88	77	444	444	315	151	129	559	559	330	204	161
8	200	495	495	325	168	118	533	533	370	242	210	660	660	415	323	260
10	250	622	622	405	333	198	622	622	410	333	284	787	787	500	550	455
12	300	698	698	455	413	271	711	711	485	450	378	838	838	575	790	680
14	350	787	787	490	509	365	838	838	540	659	556	889	889	610	870	790
16	400	864	864	530	580	490	864	864	575	873	747	991	991	670	1370	1260
18	450	978	978	590	635	665	978	978	680	1090	900	1092	1092	715	1750	1630
20	500	978	978	640	925	865	1016	1016	680	1360	1176	1194	1194	745	2360	2220
24	600	1295	1295	790	1500	1405	1346	1346	800	1850	1573	1397	1397	880	3820	3670
26	650	1295	1295	910	1276	1120	1346	1346	930	2375	1995					
28	700	1448	1448	850	2270	2160	1499	1499	1163	2660	2260					
30	750	1524	1524	1065	2575	2446	1594	1594	1120	3480	3320					
32	800	1700	1700	1150	2430	2130	1700	1700	1170	4000	3690					
34	850	1871	1871	1190	2780	2620	1955	1955	1230	4950	4750					
36	900	1956	1956	1225	3130	2930	2083	2083	1250	5350	5100					

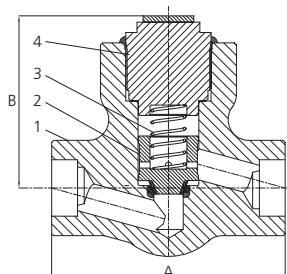
All dimensions in mm and weights in kg

Small Bore Globe & Check Valves - ASME Class 1500, 2500 & 4500 (ASME B16.34)

L&T forged steel globe and check valves in sizes up to 2" complement the high pressure gate, globe and check valves range. The T-pattern valves are IBR-certified and are available in a variety of materials.



Forged Steel Check Valves - ASME Class 1500, 2500 & 4500 (ASME B16.34)



Dimensions & Weights

Size		Class 1500/ 2500			Class 4500		
NPS	DN	A	B	Wt.	A	B	Wt.
½	15	115	83	3	130	77	5
¾	20	115	83	3	130	77	5
1	25	130	92	5	165	97	9
1 ¼	32	178	122	9	188	127	18
1 ½	40	178	122	9	188	127	18
2	50	202	136	14	230	146	30

All dimensions in mm and weights in kg

Valves in ASME Classes 1500 & 2500 are available in sizes up to 2"

Materials of Construction

No.	Components	Materials			
		A105	F22	F91	F304
1	Body (Integral Seat)	A105	A182 Gr. F22 Cl. 3	A182 Gr. F91	A182 Gr. F304
2	Disc	A479 Type 410 + HF	A479 Type 410 + HF	A479 Type 316 + HF	A479 Type 316 + HF
3	Spring	Inconel X750			
4	Cover	A105	A182 Gr. F22 Cl. 3	A182 Gr. F91	A182 Gr. F304
--	Identification Plate	Stainless Steel			

HF - Hard-Faced with Stellite 6 or equivalent

Ordering Information

Series	Type	Class	Ends	API Trim
L	F - Forged Steel Globe	A - 1500	L - Socket weld	5 - Trim 5
	L - Forged Steel Check	B - 2500	B - Butt-weld	16 - Trim 16
		F - 4500		