INDDOP ENGINEERING & MARKETING PRIVATE LIMITED

SWING CHECK VALVE

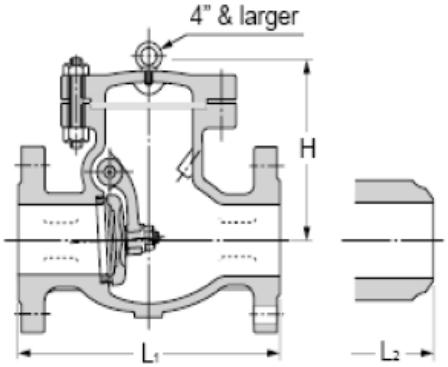
Characteristics:

Check Valves prevent reversal of flow through pipe lines. Most swing check valves can be installed in horizontal or vertical, upward flow, piping. They offer low resistance to flow and are particularly suited to low velocity service.

Check valves are mechanical valves that permit gases and liquids to flow in only one direction, preventing process flow from reversing. They are classified as one-way directional valves. Fluid flow in the desired direction opens the valve, while backflow forces the valve closed. The mechanics of check valve operation are not complicated. When the pressure behind the seat exceeds that above the disc, liquid is allowed to flow through the valve. But once the pressure above the disc exceeds the pressure below the seat, the dics returns to rest in the seat, forming a seal that prevents backflow.

CLASS 150 – 300 – 600:

Bolted cover, Swing type disc.



Buttwelding End

Material Specification:

Parts	Materials
Body	ASTM A216 Gr. WCB
Cover Plate	ASTM A216 Gr. WCB
Hinge	ASTM A216 Gr. WCB
Hinge Pin	AISI SS410
Disc	ASTM A216 Gr. WCB + 13%Cr.
Disc Nut	AISI SS304
Cotter Pin	AISI SS304
Seat Ring	C.S. + 13% Cr.
Stud & Nut	ASTM A193 Gr.B7 & ASTM A194 Gr.2H
Gasket	Spiral Wound SS304 + CAF

Testing Standard: As per API 598 / BS 6755 - I

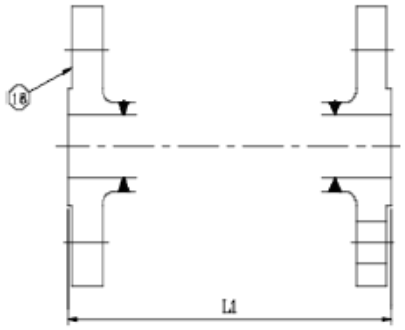
Test Pressure in PSI				
	Class	**150**	**300**	**600**
Hydro	Shell	450	1125	2225
	Seat	315	815	1630

INDDOP ENGINEERING & MARKETING PRIVATE LIMITED

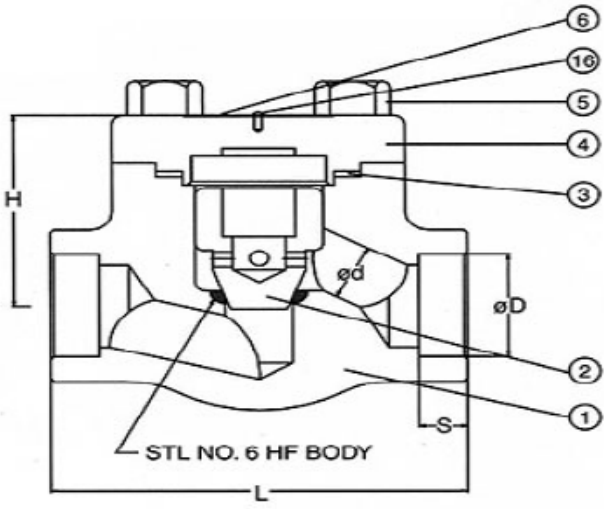
FORGED STEEL LIFT CHECK VALVE 800#

APPLICABLE STANDARDS:

- Design as per API 602 / BS 5352
- Socket Weld & Threaded End as per ANSI B16.11
- Pipe Threads as per ANSI B1.20.1
- Flanged End as per ANSI B16.5
- Inspection & Testing as per API 598.



Flanged Ends



Material Specification:

Part No.	Part Name	Specification
1	Body	ASTM A105
2	Disc	AISI SS410
3	Gasket	Spiral Wound SS304
4	Cover	ASTM A105
5	Stud & Nut	ASTM A193 Gr. B7 & ASTM A194 Gr. 2H
6	Name Plate	SS304
7	Seatring	AISI SS410
18	Side Flanges	ASTM A105

Testing Standard: As per API 598

Test Pressure in PSI		
	Class	**800**
Hydro	Shell	3000
	Seat	2200

Also available in Welded Flanged Ends

Also available in seal weld Body & Bonnet

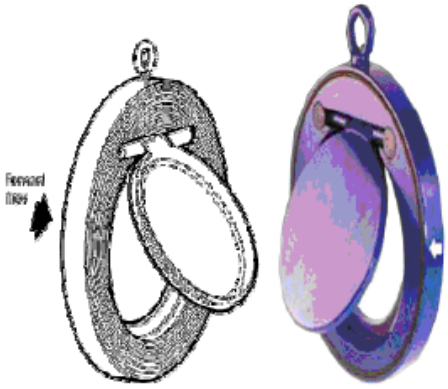
Wafer Check Valves

Characteristics:

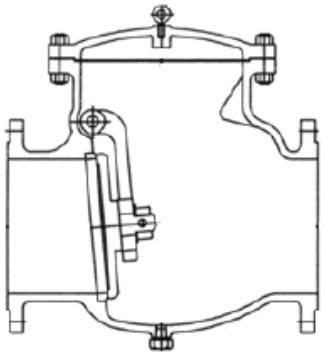
These are similar to the standard swing check valves, but do not have the full-bodied arrangement, instead, when the valve opens, the flap is forced into the top of the pipeline. Subsequently, the flap must have a smaller diameter than that of the pipeline, and because of this, the pressure drop across the valve, which is often high for swing type valves, is further increased.

There is however one problem with using larger size valves; due to their size, the discs are particularly heavy, and therefore possess a large amount of kinetic energy when they close. This energy is transferred to the seat and process fluid when the valve slams shut, which could cause damage to the seat of the valve and generate water hammer.

Wafer check valves are becoming the preferred type of check valve for most applications, due to their compact design and relatively low cost . The valve is inserted between two flanges. These are most commonly used in liquid services.



Wafer Check Valve



Conventional Check Valve

Salient Features:

- Simple but robust construction with reliability.
- 100% tight shut - off.
- Short overall length - very short space required.
- Suitable for installation between all types of flanges
- Material - C.I. / M.S. / C.S. / CF8 / CF8 M.
- 'O' rings - Nitrile/ EPDM / Silicon/PTFE etc.

Material Specification:

Items	Material Specification	Optional Material
Body	C.I. IS. - 210 FG - 200	ASTM A216 Gr. WCB / ASTMA 351 Gr. CF8 & CF8M, etc
Disc	C.I. IS. - 210 FG - 200	ASTM A216 Gr. WCB / ASTMA 351 Gr. CF8 & CF8M, etc
Shaft	IS - 1570 Grade 40C - 8	AISI - 410, 304, 316, etc
Seat	Nitrile / EPDM	Nitrile / EPDM / Silicon / Viton etc.
Bush Bearing	Self Lubrication / Sintered Bronze	G.M. / PTFE, etc

➡ **Type of Valves:**

Dual Plate, Disc type, Wafer Type Check Valves

➡ **Manufacturing Standard:**

API 6D / API 594

➡ **Inspection & Testing:**

API 59S/API 594

➡ **Material of Construction:**

C.1 / M.S / SS 304 / SS 316 WCB / CF8 / CF8M / CF3 / CF3M / 4A/5A

➡ **End Connections:**

Wafer Type / Flanged End

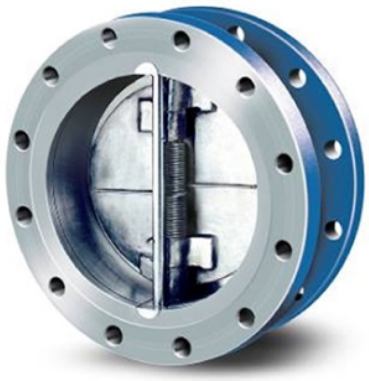
➡ **Pressure Rating:**

ASA 125# / 150# / 300# / 600# / 900# PN-16 / PN-40 and PN-64.

➡ **Size Range:**

25mm to 900mm

The Dual Plate Check Valve is a multi-purpose valve that is stronger, lighter and smaller compared to conventional swing check or lift check valves.



Design Features

Separate springs are provided for each door to close. This reduces and overcomes the frictional coefficient due to one plate resting upon another. The spring life cycle is studied and the dynamic behaviour of the valve is recorded. This type of valve prevents flow reversal, functions silently and totally prevents "Water Hammer". It's generally light weight, and can be mounted in any direction (Horizontal/Vertical). Also, it has a high CV value and less pressure drop. It's designed for non-slamming action that prevents premature valve failure, and the valve functions silently for longer duration.

Applications

Chemicals, Fertilizers, Refineries, Effluent Treatment Plant

Operators:

Automatic Spring return.

Special Features:

Rubber Lined, Soft Seated

Special Features:

Rubber Lined, Soft Seated

Production Capacity: 2"-12" - 150 Nos/Month, 14" & above - 50 Nos/Month

Material	Size Range	Construction	ANSI Class	Standard
Cast Carbon Steel	2" - 36"	Wafer / Flanged,	150# - 2500#	API 6D / API 594
Cast Stainless Steel	2" - 36"	Wafer / Flanged,	150# - 2500#	API 6D / API 594
Cast Iron	2" - 36"	Wafer / Flanged,	125#	BS 5351

Temperature range: -100°C to 600°C
Pressure Rating: Vacuum upto 621 Kg/Cm²
Inspection Std.: API 598
Ends: Flanged, Wafer, Lugged

OUR PRODUCT RANGE

Valve Type	ASME Class	Design Standard		Valve Material		Size Range
		P-T Rating	Complies to	Shell	Trim	
Gate Valve	150	ANSI B16.34	API 600/BS 1414	WCB, LCB, CF8, CF8M, CF3, CF3M, C5,WC6, CD4MCu, Etc.	AISI: SS410, 304,304L, 316, 316L, ST6, Hard Faced, Etc.	1" TO 24"
	300					1" TO 24"
	600					2" TO 12"
	900					2" TO 12"
	1500					2" TO 12"
	2500					2" TO 8"
Globe Valve	150		API 600/BS 1873	WCB, LCB, CF8, CF8M, CF3, CF3M, C5,WC6, CD4MCu, Etc.	AISI: SS410, 304,304L, 316, 316L, ST6, Hard Faced, Etc.	1" TO 16"
	300					1" TO 12"
	600					2" TO 12"
	900					2" TO 12"
	1500					2" TO 12"
	2500					2" TO 8"
Non-Return Valve	150		API 600/BS 1868	WCB, LCB, CF8, CF8M, CF3, CF3M, C5,WC6, CD4MCu, Etc.	AISI: SS410, 304,304L, 316, 316L, ST6, Hard Faced, Etc.	2" TO 24"
	300					2" TO 24"
	600					2" TO 12"
	900					2" TO 12"
	1500					2" TO 12"
	2500					2" TO 8"
Forged Steel Gate Valve	800		API 602/BS 5352	A105, F304, F316, F304L, F316L, Etc.	- do -	¼"TO 2"
	1500					¼" TO 1½"
Forged Steel Globe Valve	800		API 602/BS 5352	A105, F304, F316, F304L, F316L, Etc.	- do -	¼"TO 2"
	1500					¼" TO 1½"
Forged Steel Check Valve	800		API 602/BS 5352	A105, F304, F316, F304L, F316L, Etc	- do -	¼"TO 2"
	1500					¼" TO 1½"
Wafer Type Check Valve	150/PN 10		API 594/API 6D	CI, WCB, CF8, CF8M, Etc.	Seat: EPDM, Viton, Nitrile, Silicone, PTFE, Etc.	1" TO 28"
	300/PN 16					1" TO 28"
Ball Valve	150		API 6D/BS 5351	WCB, CF8, CF8M, A105, Etc.	PTFE, Reinforced PTFE, Etc.	2" TO 6"
	300					2" TO 6"
	800					½" TO 2"
Butterfly Valve	150/PN 10		API 609/BS 5155	CI, WCB, CF8, CF8M, Etc.	Seat: EPDM, Hyplone, PTFE Nitrile, Silicone, etc	1" TO 48"
	300/PN 16					1" TO 48"

+ Any other special materials or requirements available on request.
+ Gear Box & actuator operated valves available upon request.
+ Stelliting or Hard facing of valve seats available upon request.
+ Position Indicator, By-Pass arrangement, Locking arrangement available upon request.
+ Seal welded body seatring available upon request.
+ Butt Weld Ends available upon request.
+ Swing Check Valves available with Dash Pot & counter Weight Arrangement upon request.
+ Butt Weld Ends available upon request.

DESIGN SPECIFICATIONS

Items	American Standard	British Standard
Shell wall thickness and general valve design specifications for Cast Steel & Forged Valves	API 600 / API 6D / API 602 / ASME B 16.34	BS1414 (Gate valve) BS1873 (Globe valve) BS1868 (Check valve)
Pressure-temperature ratings	ASME B16.34	BS1560
Face-to-face dimensions for Flanged Ends End-to-end dimensions for Butt Weld Ends	ANSI B16.10	BS2080
End flange dimensions for Flanged Ends	ANSI B16.5	BS1560
Welding end dimensions for Butt Weld	ANSI B16.25	BS1414 (Gate valve) BS1873 (Globe valve) BS1868 (Check valve)
Welding end dimensions for Socket Weld	ANSI B 16.11	
Testing & Inspection Standard	API 598	BS 6755 (Part-I)
Radiography & NDT	ASME 16.34	

INSPECTION AND WARRANTY POLICY

Each & every valves are subjected to 100% pressure tests, according to API 598 or BS 6755 Part 1 requirements. Material test reports and inspection certificates are available on your request, while each valve is guaranteed for 12 months after placement in service, but not exceeding 18 months after shipment from our factory.

Some of the additional inspections and tests performed are:

- Random Radiograph Inspection of Body and Bonnet Castings to ASME B16.34 Appendix B
- Random Chemical Composition and Mechanical Properties Verification of Fasteners to ASTM A-193/A-194
- Liquid Penetrate Inspection of Seat Rings
- Visual Inspection of Casting to MSS-SP-55
- Receiving, In-Process, and Final Dimensional Inspections to Relevant Valve Standards.

Test / Inspection Item	Complies to	Evaluation
Chemical composition analysis		Relevant ASTM Std.
Mechanical property test	ASTM A370	Relevant ASTM Stds.
Pressure tests	API 598 or BS 6755 Part 1	API 598
Radiographic inspection	ASTM E142 / E49	ASME B16.34
Wet magnetic particle inspection	ASTM E138	
Liquid penetrant inspection	ASTM E165	
Low temperature impact test	ASTM E23	ASTM A352
Dimensional inspection		Relevant Valve Stds.
Visual inspection		MSS SP-55

Other inspections or tests can be performed or evaluation criteria applied when specified by the customer.