Double Door Wafer Check Valve
Model No.: LF-CVWW

Installation, Operation & Maintenance

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

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APPLICATION

Users can install the check valve for pipelines in petroleum, chemicals, food, medicine, paper marking, hydroelectricity, shipbuilding, water supply, sewage, metallurgy, energy engineering, etc., which is ideal to stop the return of the flow of corrosive in corrosive glass, liquids.

PERFORMANCE

Nominal Diameter		50(2")~700(24")	50(2")~700(24")	mm(inch)
Nominal Pressure		10	16	bar
Testing Pressure	Body	15	24	
	Sealing	11	17.6	
	Low Pressure for Sealing	1	1	
Working Temperature		-50 to 120 °C		
Suitable Mediums		Fresh water, Sewage, Sea Water, Air, System, Food, Medicine, Oils, Acids.		

APPLICABLE STANDARD

1. The product complies with the standard of BS5153.
2. The flange connection dimension complies with the requirement of GB/T 17241.6-1998, ISO standard, BS standard, DIN standard, and ANSI standard, etc.
3. The face to face dimension follows the standard of ISO5752-82 and GB/T 12221-1989.
4. The test is as the requirement of BSEN 12226.

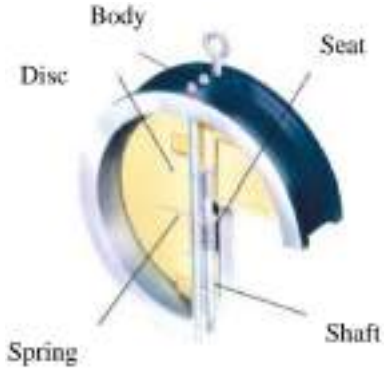
FEATURES

1. Small size and light weight. Compacted structure. Easy installation and maintenance.
2. Two torsion springs are used exciting on each of the pair valve plates, which close the plates quickly and automatically.
3. The quick-close action prevents the medium from flowing back and eliminates water-hammer effect.
4. It is easy to install on pipeline, which is laid horizontally or vertically.

MAIN COMPONENTS AND DESCRIPTION

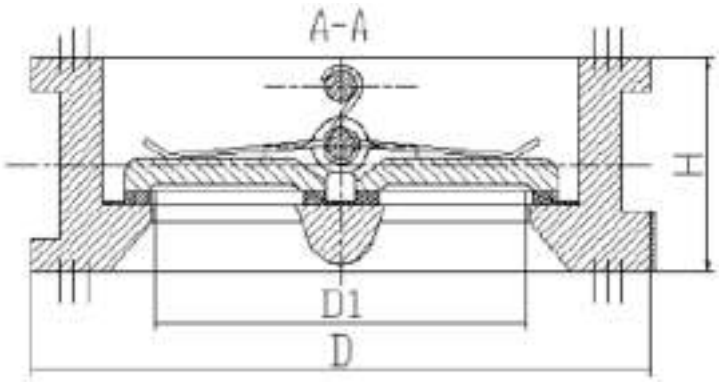
Material Description

Body	Disc	Shaft	Spring	Seat
Cast Iron (CI)	DI	SS304	SS304	EPDM
Ductile Iron (DI)	AL-BZ	SS316	SS316	NBR
Steel	CF8	SS431	INCONEL	VITON
CF8	CF8M	INCONEL		
CF8M				



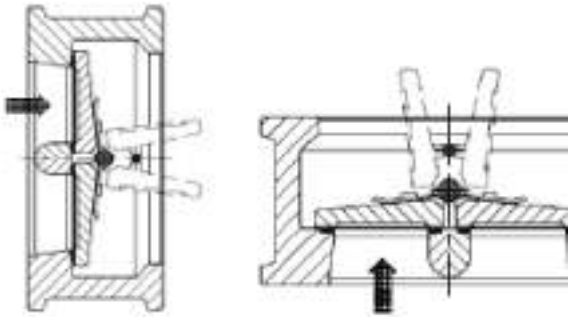
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OVERALL DIMENSION



Size	D	D1	H
DN50	107	40	43
DN65	127	60	46
DN80	142	70	64
DN100	162	88	64
DN125	192	115	70
DN150	218	134	76
DN200	273	182	89
DN250	328	220	114
DN300	378	260	114
DN350	438	298	127
DN400	489	350	140
DN450	555	385	152
DN500	615	438	152
DN600	724	538	178
DN700	800	640	229

INSTALLATION



Horizontal Flow **Vertical Flow**

Cracking Pressure

Direction	DN	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250
Flow	NPS	2"	2.5"	3"	4"	5"	6"	8"	10"
↑	Cracking Pressure (KPa)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.2
→		0.2	0.2	0.2	0.2	0.2	0.2	0.2	1
Direction	DN	DN300	DN350	DN400	DN450	DN500	DN600	DN700	
Flow	NPS	12"	14"	16"	18"	20"	24"	28"	
↑	Cracking Pressure (KPa)	1.2	1.5	1.7	1.7	1.7	1.7	2	
→		1	1	1	1	1	1	1.5	

Before Installation

1. Allow sufficient space for operation, installation, and subsequent maintenance of valves;
2. For smooth operation, inspection and maintenance, take appropriate measures for the valves installed in a small place;
3. Do not install valves in a place where such outer forces as vibrations may hamper valve functions.

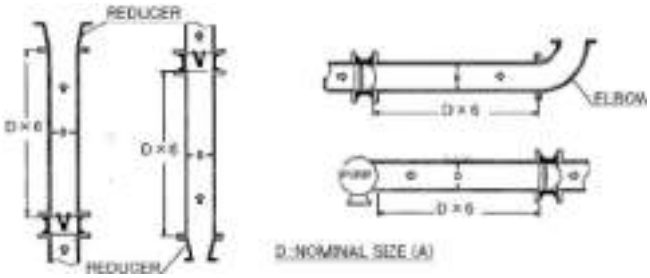
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Caution

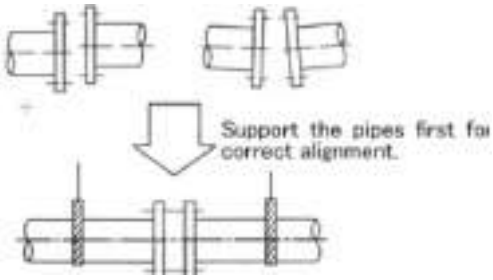
1. The disc shall stick out from the face-to-face dimension when the valve is in the open position. Install the valve properly so that the disc does not contact the pipe end or gasket.
2. The valve shall not be connected directly to other valves because the disc, which is similar to the disc of a butterfly valve, sticks out from the body and may cause interference to the operation.
3. Install the hinge pin vertically if the valve is installed in the horizontal position. Refer to the figure below.



4. Valves may be damaged, and their product life may be shortened due to fluid vortex, turbulence, or pulsation at the pump outlet and the downstream or upstream of the reducer. It is recommended to place a valve at a distance of at least 6 times the nominal size using an additional pipe from the devices, as mentioned above. Refer to the following figures.



5. Valve shall be properly installed following the arrows indicated on the valve body.
6. Use connecting flanges, which have no damage or deformation. Remove any foreign objects or rusts from the flange surfaces.
7. Align the upstream side and downstream side of the pipe accurately. Leakage from flange connections may be caused by inaccurate alignment.



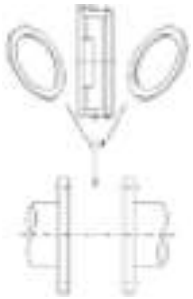
8. When a valve is hanged by a chain block or other appropriate tools, use an eye bolt on the valve body in nominal size 200A (8") and over.
9. Use new gaskets for installation. A gasket having an inside diameter slightly larger than the pore diameter is recommended.

Installation Measures

1. Use jack-up bolts if required to keep a space for valve installation. This space shall be 6 to 10 mm wider than the face to face dimension of the valve.
2. Firstly set two bolts into the lower side of the pipe flanges without tightening them and then install the valve between the flanges carefully. Install the gaskets into the both sides and set two bolts into upper side of the pipe flanges.

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3. Tighten four of the upper and bottom bolts temporarily, align the pipes and the valve carefully.

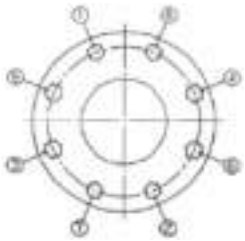


4. Tighten all other bolts through the holes of the pipe flanges.
5. Tighten the bolts evenly, gradually and alternately in a star pattern as shown below. The ends of all tightened bolts shall equally protrude beyond the nuts.
6. Gradually raise the line temperature and pressure for a pilot operation. Re-tighten the threaded portions as required.

OPERATION

Leakage from Flange Area

Tighten the flange bolts evenly, gradually and alternately in the star pattern as shown in the figure.



Possible Causes of Abnormal Noise

1. The disc hits the stop pin in the open position due to a turbulent flow of the fluid.
2. The disc flaps the body seat due to a low flow velocity (known as chattering).
3. Water hammer phenomenon.

When any abnormal noise is found, disassemble, and check the components such as disc, pin, or spring. Consult with a piping engineer to take appropriate measures against abnormal noises.

Troubleshooting

Trouble	Possible Cause	Measures
Leakage From Gaskets	Loosing of the flange bolts and nuts	Re-tighten the flange bolts and nuts
	Uneven tightening of the bolts and nuts	Re-tighten the flange bolts and nuts evenly and gradually
	Damage of the gaskets	Replace the gaskets
Leakage From Seat Area in Full Closed Position	Damage of the Seat	Disassemble and Check the seat
	Deformation of the seat due to an external stress	Consult with a piping engineer
Abnormal Noise and Vibration	Loosening of the bolts and nuts	Re-tighten the bolts and nuts

STORAGE

1. Store valves in a dust-free, least humid, and well-ventilated place. Indoor storage is recommended.
2. The storage of valves directly on the ground or concrete floor is not recommended. Valves shall be placed on a rack for storage.

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3. Take appropriate measures to prevent valves from direct exposure to dust, rain, and sunlight if stored outdoors.

CAUTION

1. Do not store valves in the corrosive environment. It may cause corrosion on the threaded portions of valves.
2. Do not remove the protection cover until installation. Protection covers prevent foreign objects, which may damage the disc or seat, from entering into the valve internal.
3. Do not place any objects on the valve or do not step on the valve. Overloading may damage the valve.
4. Do not carelessly pipe up products. Risk of product damage and personal injury caused by unstable piling.

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