

Champion Valves, Inc.

Single Disc Spring Loaded Wafer Check Valves

INSTALLATION AND OPERATION MANUAL



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CHAMPION VALVES, INC.

WAFER CHECK VALVE – MODEL SD

APPLICATION, OPERATION AND INSTALLATION INSTRUCTIONS



APPLICATION AND OPERATION

The Champion Wafer Check – Model SD valve is a self operating check valve designed to prevent the backflow of gas or liquid media. Initial opening of the Wafer Check – Model SD’s disc begins when the upstream pressure exceeds the downstream pressure and the effective torque of the spring. This pressure is called the “cracking” pressure. Once the Wafer Check – Model SD’s disc open, flow velocity determines the position and stability of the disc.

If the flow velocity upstream of the Wafer Check – Model SD decreases and/or stops, the spring forces the disc to a closed position. Ideally, the disc will be fully closed just prior to flow reversal, thus alleviating the potential for water hammer.

LIMITATIONS AND PRECAUTIONS

Wafer Check – Model SD valves are not recommended for the following service conditions.

- Pulsating Flows
- Service condition requiring a “Full Port” opening
- Installation directly to a Butterfly valve or other piping accessory that may interfere with the opening or closing of Wafer Check discs
- Vertical Flow DOWN without prior Factory Approval

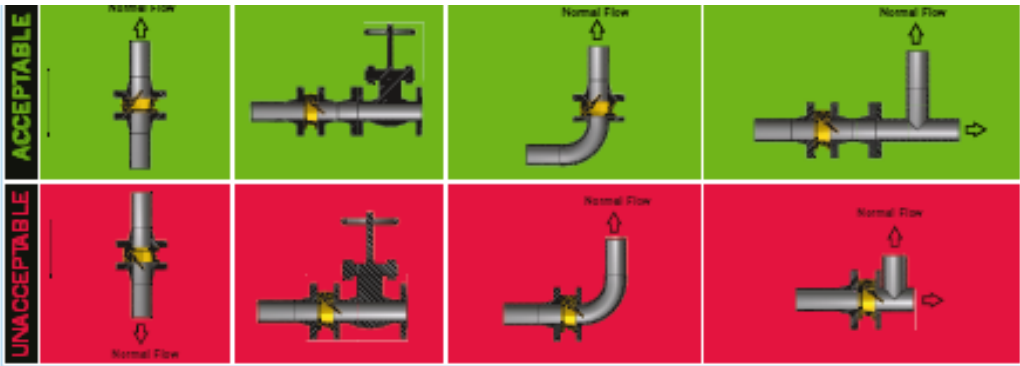
The following precautions should be taken to insure long service life of Wafer Check – Model SD valves.

- Accurate sizing of Wafer Check – Model SD is crucial to ensure an acceptable pressure drop and a long service life.
- Flow velocities should be in the following ranges:

MEDIA	FLOW RATE
Liquid	5 to 11 feet/second
	.91 to 3.35 m/second
Gas	50 to 250 feet/second
	6.1 to 76.2 m/second

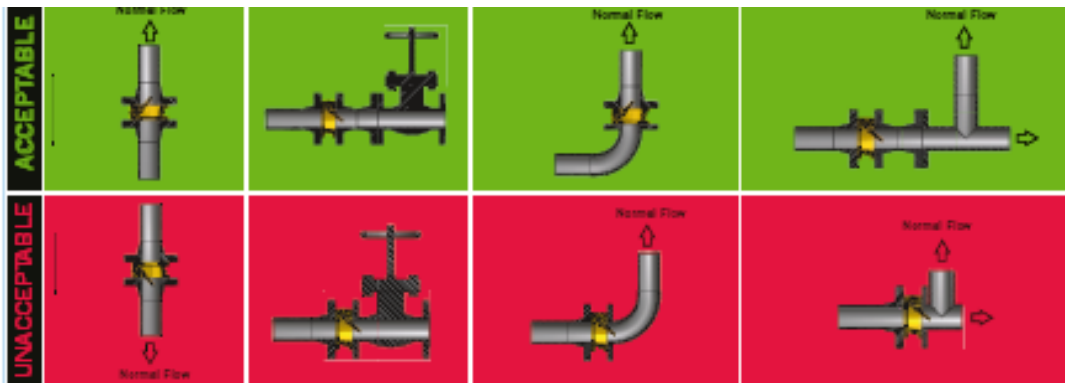
- A minimum of 5 (five) pipe diameters should be maintained between the Wafer Check – Model SD and likely causes of turbulence (i.e. pump discharge, reducers, elbows, and tees, etc.).

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INSTALLATION

1. Remove the valve from carton or packing skid.
2. The protective rust proof coating on the internal parts of steel or iron valves should be removed by brushing out with any standard petroleum solvent (Varsol, Kerosene), and air dry. Insure internal parts operate freely.
3. Stainless Steel or Bronze valves need only to be wiped clean and installed.
4. In horizontal flow installation, the hinge pin must be horizontal.
5. Insert the valve between two companion flanges of the same series as the valve and place gaskets on flange faces. The arrow on the valve or name plate indicating direction of flow should coincide with line flow. Install studs through companion flanges and tighten, using standard industry practice.
6. In liquid service we recommend valve be installed at least five (5) pipe diameters downstream from a pump discharge and/or other pipe fittings for maximum service life.



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ASSEMBLY AND DISASSEMBLY INSTRUCTIONS



ASSEMBLY

Assembly of the Wafer Check – Model SD valve is moderately simple using an open end wrench, Teflon tape and the following instructions:

NOTE: EYE PROTECTION IS RECOMMENDED WHEN ASSEMBLING AND DISASSEMBLING WAFER CHECK VALVES.

1. Lay the body down with downstream side facing upward.
2. Lay the disc inside the body, sealing surface down.
3. Place thrust bushings between the body and ID of the body hinge area.
4. Rotate the forward spring leg clockwise, with spring legs pointing downward.
5. Place wound spring between the disc's hinge arms.
6. While maintaining pressure on spring with hand, insert hinge shaft through the body, thrust bushing, disc's hinge lugs, and spring. Release spring.
7. Wrap retainer(s) and body pipe plugs with 1-1/2 rounds of Teflon tape.
8. Screw retainer(s) into body and tighten.
9. Move hinge shaft to insure that it is free from binding on retainers.

DISASSEMBLY

Please use caution when removing the hinge shaft. Preset spring(s) may cause serious injury when tension is released.

To disassemble, reverse "Assembly" instructions.

PLEASE USE EYE PROTECTION!