

# CHAMPION VALVES, INC.

## DUAL DISC SPRING LOADED WAFER CHECK VALVES

INSTALLATION AND OPERATION MANUAL



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## WAFER CHECK VALVE

### APPLICATION, OPERATION AND INSTALLATION INSTRUCTIONS



### APPLICATION AND OPERATION

The Champion Wafer Check valve is a self operating check valve designed to prevent the backflow of gas or liquid media. Initial opening of the Wafer Check's discs 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's discs open, flow velocity determines the position and stability of the discs.

If the flow velocity upstream of the Wafer Check decreases and/or stops, the springs force the discs to a closed position. Ideally, the discs will be fully closed just prior to flow reversal, thus alleviating the potential for water hammer.

### LIMITATIONS AND PRECAUTIONS

Wafer Check 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 valves.

- Accurate sizing of Wafer Checks 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	3 to 11 feet/second
	.91 to 3.35 m/second
Gas	20 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 and likely causes of turbulence (i.e. pump discharge, reducers, elbows, and tees, etc.).

## INSTALLATION

1. Remove the valve from carton or packing skid.
2. The protective rust proof coating on the internal parts of steel or cast 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 vertical.
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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## WAFER CHECK VALVE

### ASSEMBLY AND DISASSEMBLY INSTRUCTIONS



#### ASSEMBLY

Assembly of the Wafer Check 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 discs inside the body, sealing surface down, with the disc hinge lugs together.
3. Place thrust bushings between the body and outer disc lug.
4. Rotate the forward spring leg clockwise, with spring legs pointing downward.
5. Place wound spring between the discs on the center post
6. While maintaining pressure on spring with hand, insert hinge shaft through the body, thrust bushing, discs' 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 stop or hinge shaft. Preset spring(s) may cause serious injury when tension is released.

To disassemble, reverse "Assembly" instructions.

**PLEASE USE EYE PROTECTION!**