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FLOW CONTROL

## Series 1000 Butterfly Valves Installation and Maintenance Manual 2"-12"

### Flange Requirements

The Series 1000 valves are designed for installation between ANSI Class 125/150 flat or raised faced flanges. Gaskets are not required. Lined pipe, heavy wall pipe or flanges must have a minimum allowable inside diameter at the centered body face to clear the disc sealing edge when opening the valve.

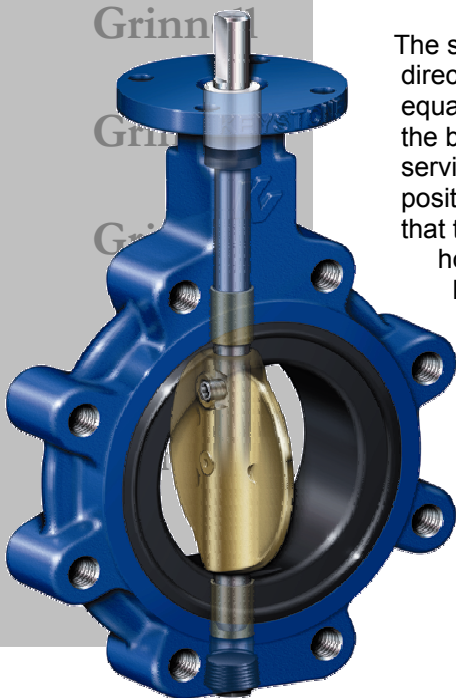
### Storage

The valves should be stored on a pallet or "skid" in a clean, dry warehouse. If the valves must be stored outside, the following applies:

1. Valves must be kept off the ground and high enough to avoid standing water.
2. Cover the valves with a water repellent cover (not supplied)

### Installation Instructions

The series 100 valves are bi-directional and will control flow equally in either direction. For the best results in slurry service regarding sedimentation, position the valve assembly so that the valve stem is in the horizontal position and the Lower disc edge opens downstream this will create a self flushing effect, thereby extending the Service life of the valve.



Consideration should be given to the location of the valve in the piping system. The valve should not be placed too close to other valves, elbows, etc. as its performance may be affected. It is recommended the valve have a minimum of six pipe diameters upstream (see illustration 1) and six pipe diameters downstream between it and other valves, elbows, etc. in the piping system.

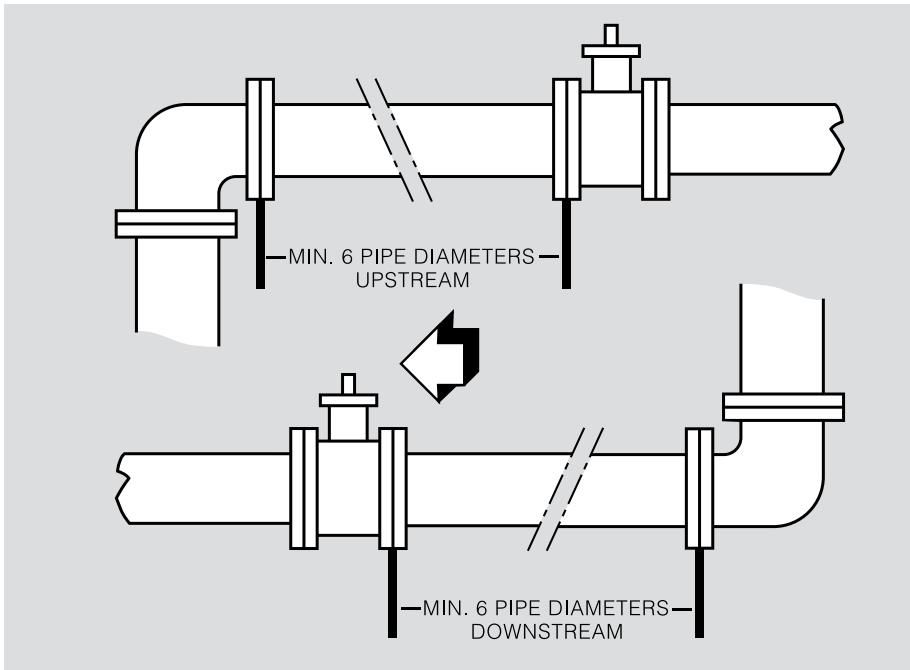
### Installation Between Pre-Existing ANSI Flanges

1. Spread the flanges to exceed the valves face-to-face dimension by 3 /16" before placing the valve in position to prevent distortion and / or damage to the sealing face of the seat.
2. The valve may be installed with the disc in the open or closed position. Be careful not to damage the disc edge during installation.
3. Tighten the bolting hand tight. Slowly open the valve to check for adequate disc clearance.
4. Cross tighten all bolting to the proper torque specification.
5. Again, check for adequate disc clearance. If the installation is satisfactory, the valve is ready for service and / or installing the valve actuator.

### Installation in New Construction using ANSI Welding Type Flanges

1. Align and center the companion flange bolt holes to the body lug holes.
2. Assemble the body and flanges with the flange bolting and mate up the bolting using the flange-body-flange assembly for fit-up and centering to the pipe.
3. Tack weld the flanges to the pipe.

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4. Remove the flange bolting and valve assembly from between the flanges.

**NOTE: Do not finish weld the flanges to the pipe with the valve bolted between the flanges as this will result in serious heat damage to the valve seat.**

5. Finish welding the flanges to the pipe and allow the flanges to cool completely before proceeding.
6. Follow steps 2 through 5 of "INSTALLATION BETWEEN PRE-EXISTING ANSI FLANGES."

## TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SOLUTION
Valve opens only a few degrees and stops (it will not open to the full angle desired).	Improper installation. The valve is improperly aligned.	Loosen the flange bolts, realign the valve with flanges, and retighten the flange bolts to correct torque per ANSI requirements.
Leakage past the flange face.	<ol style="list-style-type: none"> <li>1. Flange bolts are not evenly torqued.</li> <li>2. Improper flanges.</li> <li>3. Use of flange gaskets.</li> </ol>	<ol style="list-style-type: none"> <li>1. Loosen the flange bolts and tighten the flange bolts to correct torque per ANSI requirements.</li> <li>2. Refer to "Flange Requirements" on page 1.</li> <li>3. Remove gaskets.</li> </ol>
Leakage in the closed position (leakage in the pipeline).	<p>The disc is not closing fully:</p> <ol style="list-style-type: none"> <li>1. Actuator is not properly adjusted.</li> <li>2. Line pressure exceeds valve's working pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to actuator adjustment procedures.</li> <li>2. Reduce line pressure to valve working pressure.</li> </ol>
Water Hammer	The valve is closing too quickly.	Adjust the actuator.
Excessively high torque.	<ol style="list-style-type: none"> <li>1. Obstruction in the pipeline.</li> <li>2. Valve stem or disc is bent.</li> <li>3. Scale build-up on stem or seat.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove valve from pipeline and remove obstruction.</li> <li>2. Return valve to factory for disc/stem replacement (check for water hammer or freezing of line material).</li> <li>3. Open and close the valve several times. Operate the valve at least once a month. Check the valve seat for deterioration.</li> </ol>



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