



# WATERFLEX® SERIES WF-3

## INSTALLATION, OPERATION, AND MAINTENANCE MANUAL



The revolutionary design of the Series WF-3 InLine Check Valve provides reliable backflow prevention. The valve solely operates on differential pressure and has no moving mechanical parts. The valve exhibits low headloss, high backpressure ratings and a short face-to-face dimension. The valve is only intended for clean flow media or media with only fine particulates. The Series WF-3 is constructed with ANSI, DIN, BS or special flange drillings for easy installation.

### **IMPORTANT**

Please take a moment to **review this manual. Before performing any maintenance on the valve be sure the pipeline has been de-pressurized.** The improper installation or use of this product may result in personal injury, product failure, or reduced product life. Tideflex® Technologies, Inc. can accept NO liability resulting from the improper use or installation of this product. If you have any questions or problems, please call the customer service department at (412) 919-0919. We appreciate your comments. And thank you for choosing Tideflex® Technologies.

## GENERAL DESCRIPTION

Terms used in this I.O.M. to refer to various parts of the valve are described below.

1. **Disk**
2. **Membrane**
3. **Mounting Rod**
4. **Rod Fasteners with Lock Nuts**
5. **Lifting Eye (sizes 10" and up)**

## INSTALLATION

### 1. INSPECTION OF VALVE:

Check flange faces of pipe for rough/damaged areas. Pipeline flanges must be flat, properly spaced, and parallel to achieve proper seal. PVC flanges may not seal properly, and are not recommended by Tideflex® Technologies. If PVC flanges are used, metal back up rings should be placed behind the PVC flanges in order to prevent yielding. Grind or file any sharp edges of pipeline flange to prevent damage to the gaskets.

### 2. GASKETS:

Two flange gaskets are required, one on each side of the disc. (See Figure 2.)

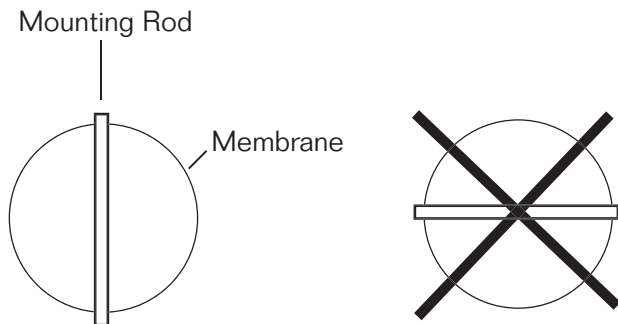
### 3. INSTALLING FLANGE BOLTS:

Tighten all bolts uniformly to distribute pressure evenly around the sleeve flange. (For bolting sequence refer to the back cover of this IOM).

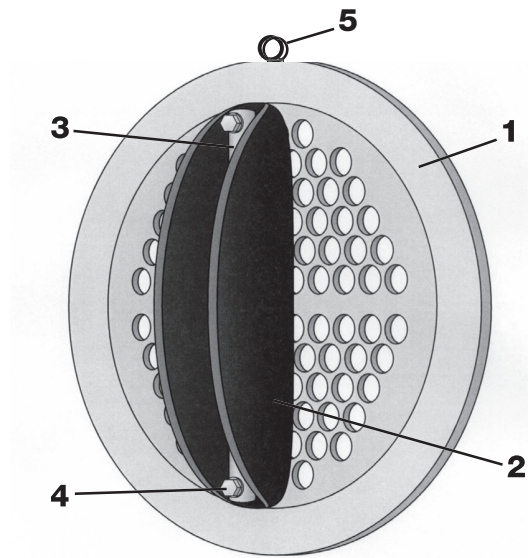
### 4. VALVE ORIENTATION:

The membrane must be on the downstream side of the disc when properly installed in a pipe line. (See Figure 2.)

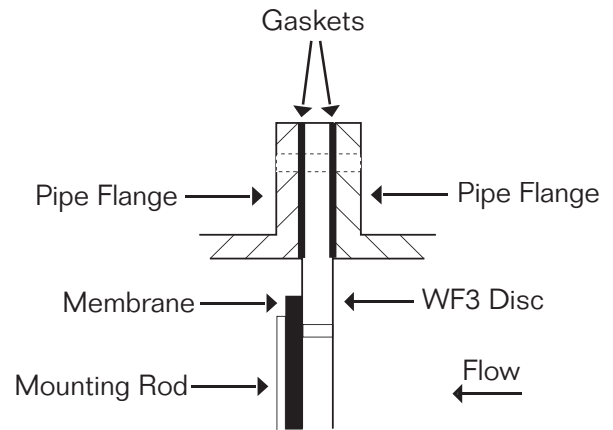
Make sure membrane is concentric with pipe I.D. When installed in a horizontal pipeline, the rod must be in the vertical position. (See Figure 3.)



(Figure 3.)



(Figure 1.)



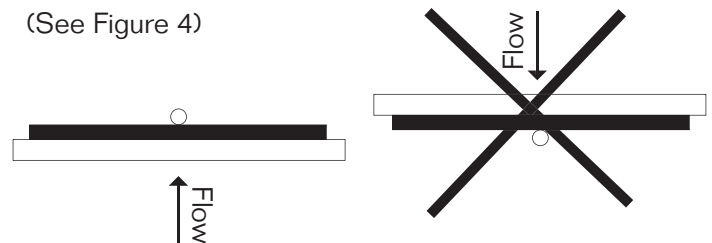
(Figure 2.)

It is acceptable to install the valve in a vertical pipeline provided normal flow direction is bottom to top.

(See Figure 4)

It is not recommended to install the valve in a vertical pipeline where the flow direction is from top to bottom. The membrane may tend to come away from the disc and may not seal.

(See Figure 4)



(Figure 4.)

## OPERATION

The Series WF-3 operates solely on differential pressure. Positive differential opens the valve allowing flow, reverse differential closes the valve preventing backflow.

The Series WF-3 Check Valve is a self-containing Check Valve with backpressure ratings shown in the table on this page. Backpressures in excess of these ratings can damage the disc or membrane.

Tideflex® Technologies check valves are custom-made products intended for a specific application and have been designed to respond to criteria unique to that purpose, such as line pressure, minimum and maximum backflow pressure, and chemical compatibility. Should the conditions for which the valve has been designed be altered or change in any way, it could affect the normal operation of the valve.

## MAINTENANCE

### 1. INSPECTION:

Valves should occasionally be inspected for damage and wear. The inspection period should be determined by the severity of the service and environment. If valves are periodically inspected and preventive maintenance done, the valve will last longer and operate better.

**CAUTION: Do not remove the bolting or valve parts with pressure in the line. It is easy to inspect the valve for obvious problems.**

### ELASTOMER MEMBRANE REPLACEMENT:

1. A spare replacement membrane should be placed on order when this valve is placed in service.
2. Remove the existing valve and install the replacement as specified under **INSTALLATION**.

## STORAGE

If your Waterflex® Valve is to be stored for a period of time prior to installation, the following storage guidelines will help preserve your valve and assure a trouble-free installation.

1. Store valve in a clean, cool, dry location. Avoid exposure to light, electric motors, dirt or chemicals.
2. Store valve to prevent other items from contacting membrane or flanges to prevent possible damage.
3. Lay Waterflex® flat with membrane up.
4. Store this manual with the valve, so that it is readily available at time of installation.

Backpressure Ratings Table

NOMINAL PIPE SIZE	ANSI FLANGE SIZE	OUTSIDE DIAMETER	BACK PRESSURE ANSI RATING psi
4"	4"	9"	150
6"	6"	11"	150
8"	8"	13.5"	125
10"	10"	16"	100
12"	12"	19"	75
14"	14"	21"	75
16"	16"	23.5"	75
18"	18"	25"	75
20"	20"	27.5"	75
24"	24"	32"	50
30"	30"	38.75"	50
36"	36"	46"	50
42"	42"	53"	50
48"	48"	59.50"	50

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## TROUBLESHOOTING

### Symptom: Leaking Flange

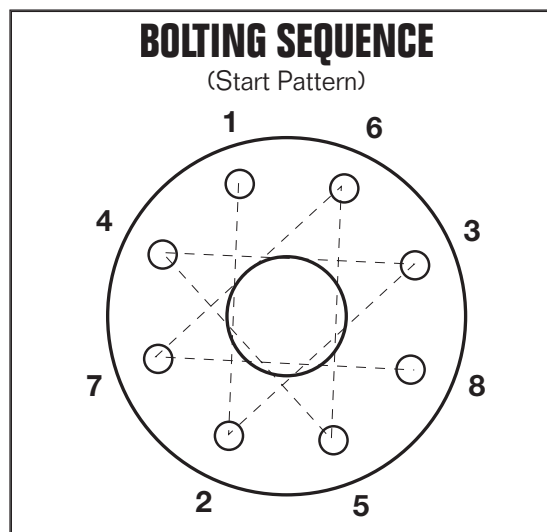
- Check gaskets
- Retighten all flange bolts uniformly in star pattern (See figure to right)

### Symptom: Valve Allows Backflow

- Not enough pressure
- Membrane damaged

### Symptom: Valve won't open or too much headloss

- Check pipe I.D. and membrane O.D. to verify membrane has not clamped between disc and mating flange.



## TIDEFLEX® TECHNOLOGIES WARRANTY

### WARRANTIES - REMEDIES - DISCLAIMERS - LIMITATION OF LIABILITY

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