

Tideflex® Series WF-3 Waterflex® Check Valve Installation, Operation and Maintenance Manual



The revolutionary design of the Series WF-3 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.



Certified to
NSF/ANSI/CAN 61

Only certain valves have NSF/ANSI/CAN 61 Certification.

Contact Red Valve with the valve's part number and serial number that are embedded in the rubber to confirm.

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® 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) 279-0044. We appreciate your comments. Thank you for choosing Tideflex®.

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®. 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.)

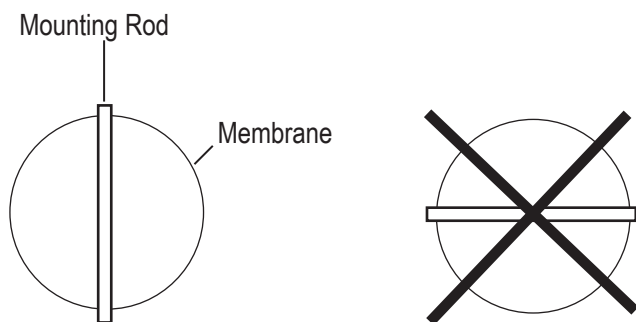
3. INSTALLING FLANGE BOLTS:

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

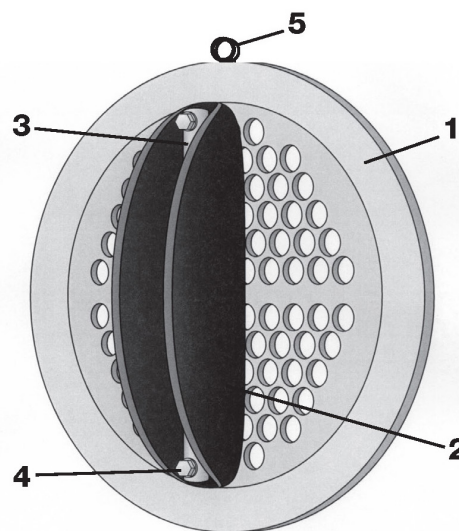
4. VALVE ORIENTATION:

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

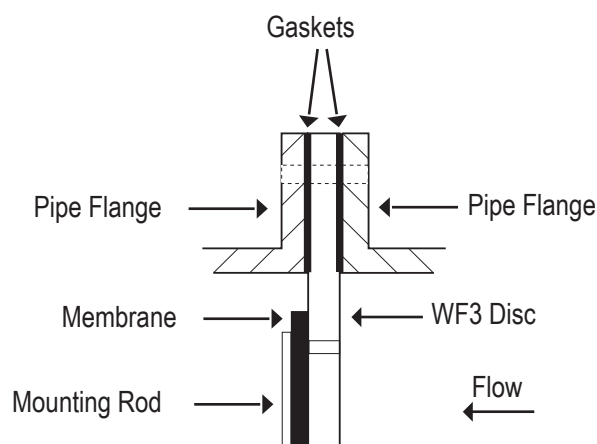
Make sure membrane is concentric with pipe I.D. When installed in a horizontal pipeline, the rod must be in the vertical position. (See Figure 3.)



(Figure 3.)



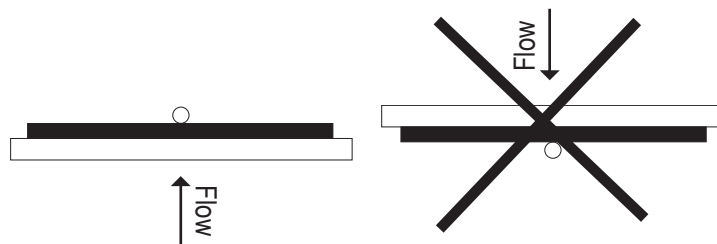
(Figure 1.)



(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® 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

TROUBLESHOOTING

Symptom: Leaking Flange

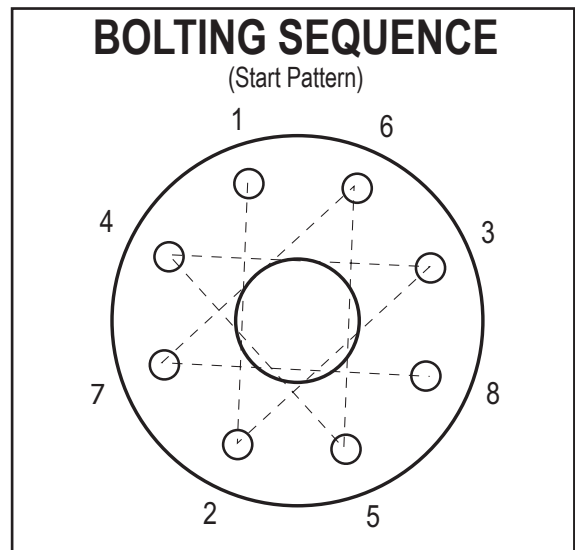
- Check gaskets
- Retighten all flange bolts uniformly in star pattern (See figure to right)

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.



Limited Warranty

Red Valve Company ("Seller") manufactured products, auxiliaries and parts thereof that we manufacture for a period of twenty-four (24) months from date of shipment from Seller's factory, are warranted to the original purchaser only against defective workmanship and material, but only if properly stored, installed, operated, and serviced in accordance with Seller's recommendations and instructions.

For items proven to be defective within the warranty period, your exclusive remedy under this limited warranty is repair or replacement of the defective item, at Seller's option, FCA Incoterms 2020 Seller's facility with removal, transportation, and installation at your cost.

Products or parts manufactured by others but furnished by Seller are not covered by this limited warranty. Seller may provide repair or replacement for other's products or parts only to the extent provided in and honored by the original manufacturer's warranty to Seller, in each case subject to the limitations contained in the original manufacturer's warranty.

No claim for transportation, labor, or special or consequential damages or any other loss, cost or damage is being provided in this limited warranty. You shall be solely responsible for determining suitability for use and in no event shall Seller be liable in this respect.

This limited warranty does not warrant that any Seller product or part is resistant to corrosion, erosion, abrasion or other sources of failure, nor does Seller warrant a minimum length of service.

Your failure to give written notice to us of any alleged defect under this warranty within twenty (20) days of its discovery, or attempts by someone other than Seller or its authorized representatives to remedy the alleged defects therein, or failure to return product or parts for repair or replacement as herein provided, or failure to store, install, or operate said products and parts according to the recommendations and instructions furnished by Seller shall be a waiver by you of all rights under this limited warranty.

This limited warranty is voided by any misuse, modification, abuse or alteration of Seller's product or part, accident, fire, flood or other Act of God, or your failure to pay entire contract price when due.

The foregoing limited warranty shall be null and void if, after shipment from our factory, the item is modified in any way or a component of another manufacturer, such as but not limited to; an actuator is attached to the item by anyone other than a Seller factory authorized service personnel.

All orders accepted shall be deemed accepted subject to this limited warranty, which shall be exclusive of any other or previous warranty, and this shall be the only effective guarantee or warranty binding on Seller, despite anything to the contrary contained in the purchase order or represented by any agent or employee of Seller in writing or otherwise, notwithstanding, including but not limited to implied warranties.

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Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:

Web site: RedValve.com E-Mail: support@redvalve.com



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