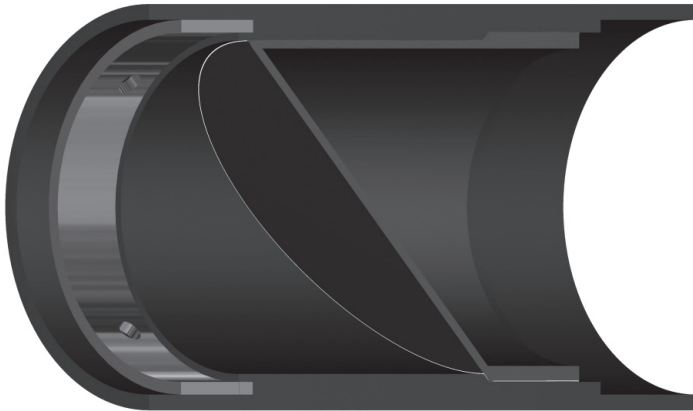


CHECKMATE INLINE CHECK VALVES

INSTALLATION, OPERATION, AND MAINTENANCE MANUAL



The revolutionary design of the CheckMate Inline Check Valve provides superior backflow prevention and odor mitigation. In outfalls, stormwater, CSO and SSO applications, the CheckMate's custom-engineered, all-rubber unibody design eliminates costly backflow from oceans, rivers and interceptors. The valve's unique elastomer fabric-reinforced design provides a proven record of maintenance-free performance, cost savings and results that no other inline check valve can match. The CheckMate is built to suit all your site-specific and flow needs.

The CheckMate has a 100% fabric and elastomer construction that eliminates corrosion problems. Because the CheckMate is made with a unibody construction, there are no mechanical components to catch debris, corrode or fail.

The CheckMate Valve's inherent flexibility virtually eliminates seating problems. The CheckMate remains in the closed position until flow in the forward direction opens it. The fabric-reinforced elastomer CheckMate Valve seals tightly around silt and small debris, preventing unwanted backflow.

The major advantage of the CheckMate Valve is its extremely low headloss. The CheckMate can open to a near full pipe diameter. This maximizes flow capacity of the outfall, which is particularly beneficial in low-lying areas where limited driving head is available.

IMPORTANT

Please take a moment to **review this manual. Before performing any maintenance on the pressure sensors be sure the pipeline has been depressurized.** The improper installation or use of this product may result in personal injury, product failure, or reduced product life. Tideflex® Technologies 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® Technologies.

INSTALLATION

1. Inspection of Valve

Check inside diameter of pipe section for rough or damaged areas. Surface should be uniform and relatively smooth. Long gouges or cracks may allow water to pass and should be filled prior to installation. The exterior of the CheckMate should have a rough texture resembling a cloth pattern. This will help the valve grip the walls of the pipe.

2. Valve Orientation

The sealing area of the CheckMate must be installed horizontally. Valves 4" - 18" (nominal) are supplied with a single clamp. The clamp turnbuckle should be oriented at top dead center.

Valves 20" - 60" (nominal) are supplied with two clamps. The turnbuckles should be oriented 180° apart.

3. Pipe Dimensions

Every CheckMate Valve is designed and built to fit into a specific pipe inside diameter. Different pipe materials such as concrete, HDPE, steel, and PVC have different I.D. dimensions for the same nominal pipe size. Do not attempt to install a CheckMate into a pipeline for which it was not intended.

4. Preparation

The CheckMate uses expanding clamp(s) to exert pressure outwards on the walls of the valve to "wedge" it in place within the pipe. The walls of

the pipe should be clean and free of debris prior to installation.

5. Securing

The valve should be inserted fully into the pipe so that no part of the cuff or bill extends outside the pipe. Ensure that the valve is not "slanted" at an angle, with the sealing area pointing upwards or downwards. The valve centerline should be parallel to the pipe centerline.

Tideflex® Technologies recommends pinning the CheckMate on all installations. See below.

Pre-drilled holes are provided in each expansion clamp. At least one clamp should be pinned. On exposed pipe, holes can be drilled through the valve and pipe, and a bolt run through secured with a nut. For buried pipe, silicon or similar sealant should be used to seal bolts.

6. The outside of the CheckMate Valve is marked with the word "top." The "top" marking is to be positioned in the 12:00 position.

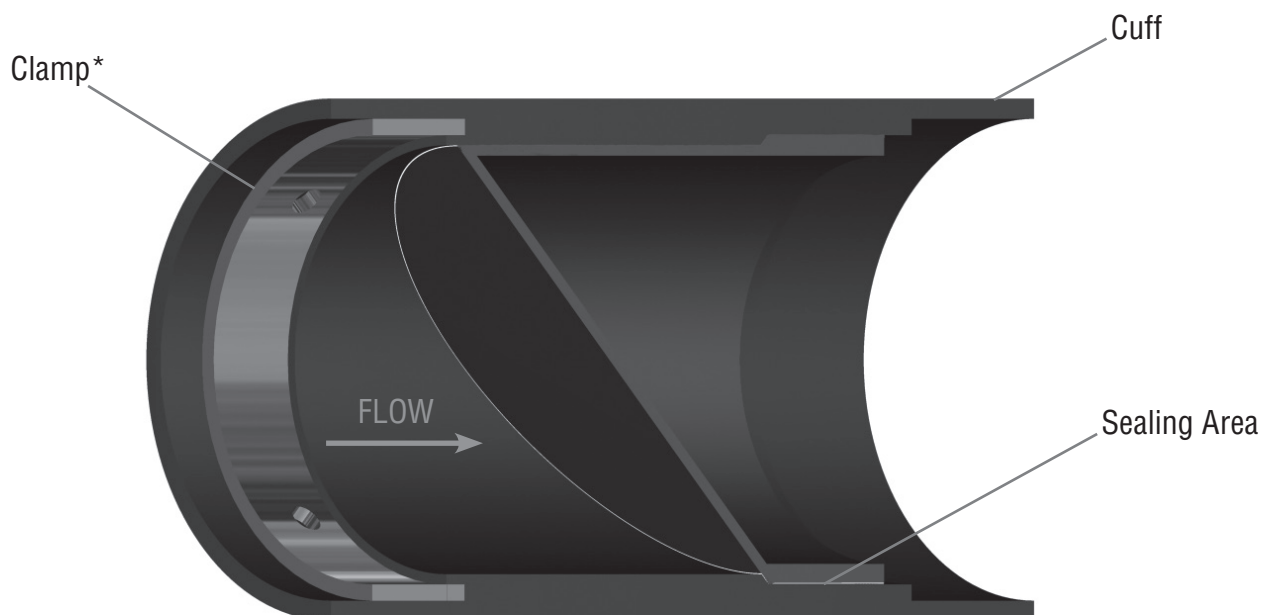
7. The CheckMate Valve is provided with a flow direction marking. The valve must be installed in the correct direction to allow the valve to operate properly. Valves installed backwards will not function, may invert and void the warranty, even if the valve position is later reversed.

NEVER...
Install the valve at an angle

NEVER...
Use Sharp Tools on Rubber

NEVER...
Exceed Design Back Pressure

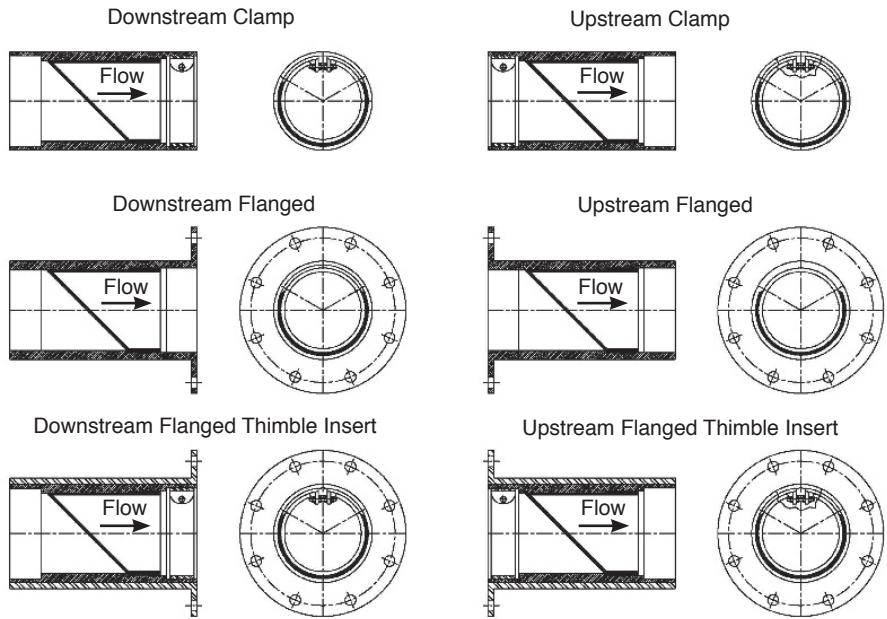
NEVER...
Install the Valve Backwards



* Clamps are installed in the upstream or downstream cuff, depending upon the application.

INSTALLATION NOTES FOR CHECKMATE

- A.** It is important that the CheckMate is installed level within the pipe. The CheckMate may "gap open" if installed improperly.
- B.** The sealing area of the CheckMate must have room to expand outwards, while bottom of the sealing area rises. The area around the sealing area must be kept free of debris to allow the bill to close in order for the valve to seal properly.
- C.** The CheckMate effectively reduces the inside diameter of the pipe in which it is installed, creating a restriction. It may also create a "ledge" inside the pipe, causing standing water.
- D.** Back pressure in excess of the maximum line pressure may invert the sleeve and cause valve failure.
- E.** Should the conditions that the CheckMate was designed for change, (line pressure, back pressure, chemical compatibility) the performance of the valve may suffer.
- F.** CheckMate Valves must be installed in true round pipe which is concentric across the entire length. Out of round pipe will cause the sealing area of the valve to distort and gap, which will cause the valve to leak.



Nominal Pipe Size I.D.*		Overall Length**		Number of Clamps	Cuff Depth		Backpressure Rating	
Inches	Millimeters	Inches	Millimeters		Inches	Millimeters	Feet	Meters
4	100	7.86	200	1	1.5	38	40	12
6	150	9	229	1	2	51	40	12
8	200	15.23	387	1	2	51	40	12
10	250	16.12	409	1	2	51	40	12
12	300	23	584	1	2	51	40	12
14	350	25.75	654	1	4	102	20	6
16	400	28.61	727	1	4	102	20	6
18	450	31	787	1	4	102	20	6
20	500	42.14	1070	2	8	203	20	6
24	600	47.5	1207	2	8	203	20	6
30	750	54.87	1394	2	8	203	20	6
36	900	62.25	1581	2	8	203	20	6
42	1050	70.62	1794	2	8	203	10	3
48	1200	79	2007	2	8	203	10	3
54	1350	86.37	2194	2	8	203	10	3
60	1500	102.5	2604	2	12	305	10	3

*Larger sizes available upon request.

**Shorter lengths available.

MAINTENANCE

1. Inspection

Valves should occasionally be inspected for damage, wear, and buildup of debris. The frequency of the inspections should be determined by the severity of the service and the environment in which it operates.

The clamp should be checked for proper tension, and be sure that the inside of the valve is free of debris. Soft marine growth is normal on valves in submerged applications. Because hard marine growth such as barnacles will not bond well to the CheckMate, they can be easily removed. Also insert pins to ensure they are tight.

TROUBLESHOOTING GUIDE

SLEEVE INVERTED

- Excessive back pressure, water surge, or water hammer.

LEAKING AROUND PERIMETER OF VALVE

- Tighten Clamp
- Check for cracks and holes in surface of pipe

BACKFLOW

- Debris lodged inside bill
- Debris built up beneath bill

STORAGE

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

1. Store in a clean, cool, dry location. Avoid exposure to light, electric motors, dirt, or chemicals.
2. Store valve vertically on floor or pallet.
3. Store valve to prevent other items from contacting check sleeve to prevent possible damage.
4. Store this manual with the valve, so that is readily available at time of installation.

TIDEFLEX® TECHNOLOGIES WARRANTY

WARRANTIES - REMEDIES - DISCLAIMERS - LIMITATION OF LIABILITY

Unless otherwise agreed to in writing signed by Tideflex® Technologies, all Products supplied by Tideflex® Technologies will be described in the specifications set forth on the face hereof.

THE WARRANTIES SET FORTH IN THIS PROVISION ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER STATUTORY, EXPRESS OR IMPLIED (INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OR TRADE).

Tideflex® Technologies Products are guaranteed for a period of one year from date of shipment, against defective workmanship and material only, when properly installed, operated and serviced in accordance with Tideflex® Technologies' recommendations. Replacement for items of Tideflex® Technologies manufacture will be made free of charge if proved to be defective within such year; but not claim for transportation, labor or consequential damages shall be allowed. We shall have the option of requiring the return of the defective product to our factory, with transportation charges prepaid, to establish the claim and our liability shall be limited to the repair or replacement of the defective product, F.O.B. our factory. Tideflex® Technologies will not assume costs incurred to remove or install defective products nor shall we incur back charges or liquidated damages as a result of warranty work. Tideflex® Technologies does not guarantee resistance to corrosion erosion, abrasion or other sources of failure, nor does Tideflex® Technologies guarantee a minimum length of service, or that the product shall be fit for any particular service. Failure of purchaser to give prompt written notice of any alleged defect under this guarantee forthwith upon its discovery, or use, and possession thereof after an attempt has been made and completed to remedy defects therein, or failure to return product or part for replacement as herein provided, or failure to install and operate said products and parts according to instructions furnished by Tideflex® Technologies, or failure to pay entire contract price when due, shall be a waiver by purchaser of all rights under these representations. All orders accepted shall be deemed accepted subject to this warranty which shall be exclusive of any other or previous warranty, and shall be the only effective guarantee or warranty binding on Tideflex® Technologies, anything on the contrary contained in purchaser's order, or represented by any agent or employee of Tideflex® Technologies in writing or otherwise, not withstanding implied warranties. TIDEFLEX® TECHNOLOGIES MAKES NO WARRANTY THAT THE PRODUCTS, AUXILIARIES AND PARTS ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE.



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