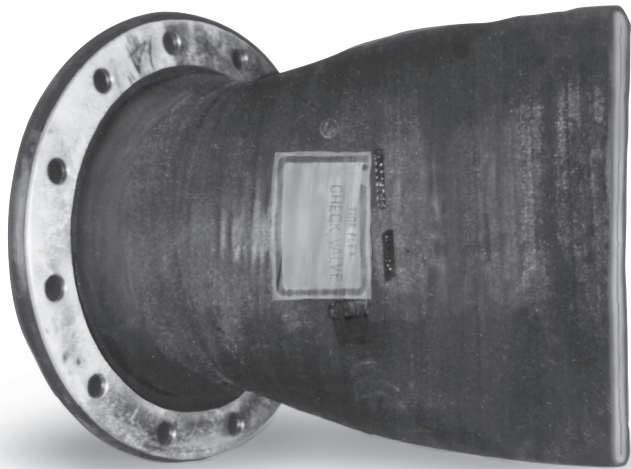


SERIES 35/35-1 CHECK VALVE

Installation, Operation, and Maintenance Manual



The revolutionary design of the Series 35/35-1 Check Valve provides absolute backflow protection. This unique "duck bill" design eliminates costly backflow from oceans, rivers or storm water and is the ideal valve for effluent diffuser systems.

Series 35/35-1 Check Valves seal "drop tight" on entrapped solids and debris without jamming. Unlike traditional flap gates there are no hinged gates to hang open and no warping or freezing. They're maintenance-free.

The Series 35/35-1 Check Valve is available in a wide variety of elastomers and is designed to meet your exact flow specifications.

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 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.

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 backcharges 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, notwithstanding implied warranties. TIDEFLEX® TECHNOLOGIES MAKES NO WARRANTY THAT THE PRODUCTS, AUXILIARIES AND PARTS ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE.

INSTALLATION

The valve end with the rubber flange face should be installed on the pressure side of the system using the split backup rings provided. The sleeve split should be installed facing downstream, with the split in the vertical position.

The installation bolt torque on the end flange bolts are listed in the table below.

RECOMMENDED BOLT TORQUE

Valve Size	Bolt Size	Torque (ft*lb.)
1"	1/2" - 13NC	20
1-1/2"	1/2" - 13NC	20
2"	5/8" - 11NC	30
2-1/2"	5/8" - 11NC	40
3"	5/8" - 11NC	40
4"	5/8" - 11NC	30
5"	3/4" - 10NC	40
6"	3/4" - 10NC	30
8"	3/4" - 10NC	40
10"	7/8" - 9NC	40
12"	7/8" - 9NC	50
14"	1" - 8NC	50
16"	1" - 8NC	50
18"	1-1/8" - 7NC	30
20"	1-1/8" - 7NC	30
24"	1-1/4" - 7NC	40
30"	1-1/4" - 7NC	30
36"	1-1/2" - 6NC	40
42"	1-1/2" - 6NC	30
48"	1-1/2" - 6NC	30

Torque values are suggested minimum values.

Torque all flange bolts in a star pattern, first to 50% of tabulated values, then retorque to 100% of tabulated values. If greater torque is required, continue retorquing in increments of 50% of tabulated values. Use of a high quality anti-seize compound on all bolt threads is recommended.

Variables such as the surface finish on bolt threads, type of anti-seize compound used, and surface finish of the mating flanges all have an effect on the minimum torque required to obtain a leak-tight flange seal.

OPERATION

The Series 35/35-1 Check Valve is a self-contained check valve for use on low back pressure systems. Back pressures in excess of rated pressure can invert the sleeve and cause valve failure.

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, and/or prevent the valve from draining completely. Valves made to withstand high back pressure may not self-drain completely.

MAINTENANCE

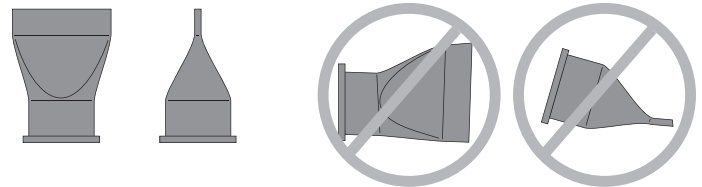
The Series 35/35-1 Check Valve should remain trouble free for the life of the system.

STORAGE

Rubber Check Valves should be stored in a cool, dry location on original shipping pallet with the bill facing upward (not on side) (Figure #1). Do not drop, bend or twist the Check Valve or damage may occur.

1. Store the valve in a cool, clean, dry location.
2. Avoid exposure to light, electric motors, dirt or chemicals. Resilient Check Valves are subject to deterioration when exposed to ozones and non-compatible chemicals.
3. Store Installation Operation Manual with product so it will be readily available for installation.

FIGURE 1



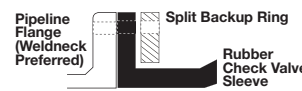
Store Vertically

NEVER Store Horizontally

TROUBLESHOOTING

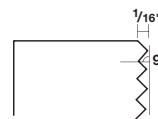
During installation you may need to retorque the flange bolts several times for a proper seal. This will overcome any leaks due to the cold flow of the rubber sleeve flange.

A.



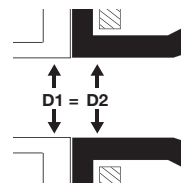
A. Standard check valves are built to schedule 40 pipe I.D. and to ANSI Class 125/150# flange and bolt circle specifications. It is recommended that the mating flanges are flat and full faced.

B.



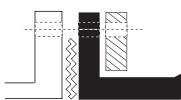
B. It is recommended that the mating flange be serrated to "grip" the rubber flange. The serrations should be cut 1/16" deep, with a 90° angle tool point. The pitch should be 8 (eight) cuts per inch.

C.



C. Mating flange ID must match the Check Valve sleeve ID.

D.



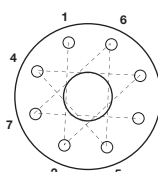
D. When installing a check valve to a rubber, PVC, or any "slick" mating flange, we recommend that you install a metal serrated gasket between the two flanges to assist in the seal.

E.



E. When bolting a check valve to a PVC or synthetic mating flange, use a split back-up retaining ring, since the mating flange will yield prior to generating enough force on the flange faces for a proper seal.

F.



F. Always use a "star" pattern when bolting a check valve.