



## **FULLER Duckbill VALVE SERIES CVI-F IN-LINE CHECK VALVE**

**Power Plant Supply Co Distributors Fuller Valve**

902 435 9899 Fax 902 435 9899

<mailto:atlantic@powerplantsupplyco.com>

<http://www.powercanadasolutions.com/checkvalves.html>



**FLANGE MOUNT DUCKBILL**

The design of the Series CVI-F In-Line 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 venting of storage tanks.

Fuller Valve Series CVI Check Valve is available in a wide variety of elastomers and is designed to meet your exact flow specifications.

Fuller Series CVI Check Valves are made with 125/150# ANSI flanges; other flange drilling is available on request.

- **Simple Design**
- **Cost effective**
- **No cavities or dead spots to bind valve operation**
- **Low maintenance**

**Before performing any maintenance on the Series CVI In-Line Check Valves 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. Fuller Valve can accept NO liability resulting from the improper use or installation of this product.

## 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. Fuller Valve recommends that pipe line flanges are serrated approximately 1/16" deep at 90°, in order to prevent 'creep" of the rubber valve flange. **Flanges with an oversized I.D. can cut the valve flange, and are not recommended with Fuller Valve Series CVI Check Valve.** Grind or file any sharp edges of pipeline flange to prevent damage to the sleeve. PVC flanges may not seal properly and are not recommended by Fuller Valve. If PVC flanges are used, metal back-up rings should be placed behind the PVC flanges in order to prevent yielding. Typically, PVC flanges will yield before the valve will seal.

### 2. GASKETS:

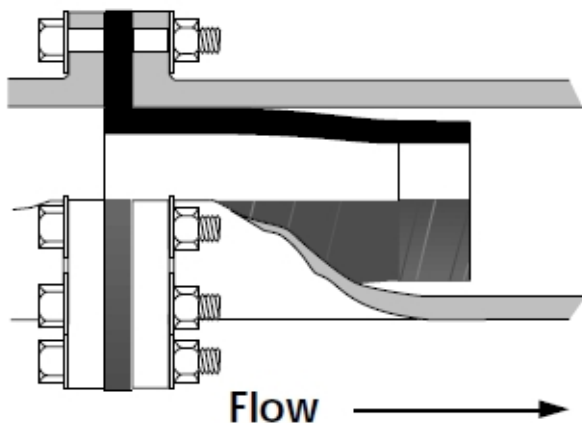
The Fuller Valve Series CVI Check Valve is self gasketing, and does not need a separate gasket.

**CAUTION: Do not use any sharp tool such as a crowbar or screwdriver on the rubber during installation. Sharp instruments can damage flange faces and cause possible leakage.**

### 3. INSTALLING FLANGE BOLTS:

Tighten all bolts uniformly to distribute pressure evenly around the sleeve flange. (*For Complete information on bolting dimensions refer to installation notes for Fuller Valve Series CVI Check Valves of this I.O.M.*)

### 4. VALVE ORIENTATION:



The valve end with the rubber flange face should be installed on the pressure side of the system. The bill area should be installed facing downstream, with the "slit" vertically oriented. The inlet flange makes use of the rubber check valve flange as the gasket (additional rubber gaskets are not required on the inlet flange). The installation bolt torque on the end flange bolts are listed in the table of this I.O.M.

**Never** use sharp tools on rubber sleeve.  
**Never** exceed design working pressure.  
**Never** install the valve backwards.

<mailto:atlantic@powerplantsupplyco.com>

<http://www.powercanadasolutions.com/checkvalves.html>

## OPERATION

The Fuller Valve Series CVI Check Valve is a self-contained check valve for use on low back pressure systems. All check valves are built for each specific application. Back pressures in excess of the maximum rated back pressure may invert the sleeve and cause valve failure.

Fuller Valve Series CVI 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 properly. Valves made to withstand high back pressure may not self-drain completely.

## 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 SLEEVE REPLACEMENT:

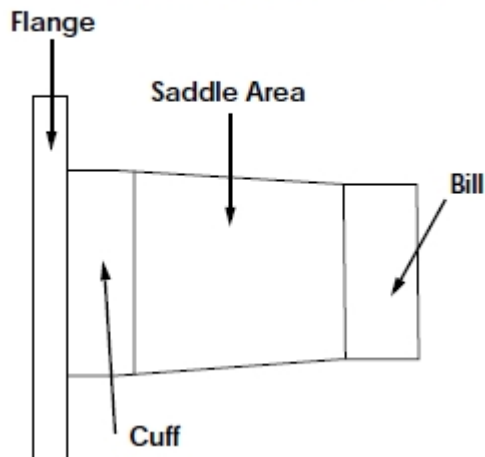
1. A spare replacement check valve sleeve should be placed on order when this valve is placed in service.
2. Remove the existing valve and install the replacement as specified under *INSTALLATION*

## STORAGE

If your Fuller Valve Series CVI Check 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 a 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 check valve or flanges to prevent possible damage.
3. Store this manual with the valve, so that it is readily available at time of installation.

## PART DESCRIPTION



## TROUBLESHOOTING GUIDE

### **SYMPTOM: LEAKAGE AT FLANGE**

Retighten all flange bolts uniformly as explained in this I.O.M.

### **SYMPTOM: SLEEVE RUPTURE (At juncture of flanges)**

- Excessive back pressure due to water hammer or pressure surge.
- High velocity of abrasive media with the valve cracked open.

### **SYMPTOM: CUTS ON FLANGE SURFACE**

- Sharp I.D. of mating flange.
- Oversized I.D. of mating flange.

### **SYMPTOM: SLEEVE INVERTED**

Excessive back pressure.

<mailto:atlantic@powerplantsupplyco.com>

<http://www.powercanadasolutions.com/checkvalves.html>

**FULLER VALVE SERIES CVI-F CHECK VALVE**  
**WORKING PRESSURE AND FLANGE BOLTING**

VALVE SIZE	WORKING PRESSURE (psig)	BACK PRESSURE (psig)				NUMBER OF BOLTS	BOLT CIRCLE DIAMETER	THREAD SIZE	BOLT TORQUE (ftlbs)
		CONSTRUCTION							
		XL	L	M	H				
2"	150	5	20	60	100	4	5 1/2"	5/8"-11 UNC	50
3"	150	5	20	60	100	4	6"	5/8"-11 UNC	55
4"	150	5	20	60	100	8	7 1/2"	5/8"-11 UNC	40
5"	150	3.75	15	40	75	8	8 1/2"	3/4"-11 UNC	50
6"	150	3.75	15	40	75	8	9 1/2"	3/4"-11 UNC	60
8"	150	3.75	15	40	75	8	11 3/4"	3/4"-11 UNC	80
10"	150	2.5	10	30	65	12	14 1/4"	7/8"-9 UNC	80
12"	150	2.5	10	30	65	12	17"	7/8"-9 UNC	120
14"	150	2.5	10	30	65	12	18 3/4"	1"-8 UNC	150
16"	150	2.5	10	30	65	16	21 1/4"	1"-8 UNC	130

- Torque values are suggested minimum values.

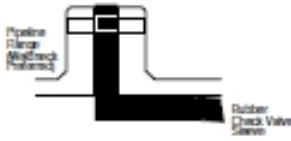
- Torque all flange bolts in a star pattern. First to 50% of tabulated values, then re-torque to 100% of tabulated values. If greater torque is required, continue re-torque in increments of 50% of tabulated values.

- Variables such as 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.

- Use of a high quality anti-seize compound on all bolt threads is recommended.

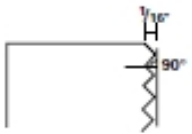
## INSTALLATION NOTES FOR FULLER VALVE SERIES CVI CHECK VALVES

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, full faced, and serrated.

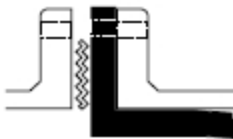
B.



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.

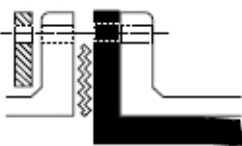
“slick”  
serrated

C.



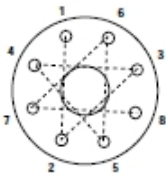
C. When installing a check valve to a rubber, PVC, or any mating flange, we recommend that you install a metal gasket between the two flanges to assist in the seal.

D.



D. 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.

E.



E. Always use a “star” pattern when bolting a check valve.

<mailto:atlantic@powerplantsupplyco.com>

<http://www.powercanadasolutions.com/checkvalves.html>

## FULLER VALVE WARRANTY

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

Unless otherwise agreed to in writing signed by Fuller Valve, all Products supplied by Fuller Valve will be described in the specification 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 FOR TRADE).

Fuller Valve 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 Fuller Valve's recommendations. Replacement for items of Fuller Valve's manufacture will be made free of charge if proved to be defective within such year; but no 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. Fuller Valve 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. Fuller Valve does not guarantee resistance to corrosion, erosion, abrasion or other sources of failure, nor does Fuller Valve guarantee a minimum length of service, or that 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 Fuller Valve, or failure to pay entire contract price when due, shall be a waiver by purchaser of all rights under this warranty. 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 of warranty binding on Fuller Valve, anything on the contrary contained in purchaser's order, or represented by any agent or employee of Fuller Valve in writing or otherwise, notwithstanding implied warranties. FULLER VALVE MAKES NO WARRANTY THAT THE PRODUCTS, AUXILIARIES AND PARTS ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE.

### **Power Plant Supply Co Distributors**

Fuller Valve

902 435 9899 Fax 902 435 9899

<mailto:atlantic@powerplantsupplyco.com>

<http://www.powercanadasolutions.com/checkvalves.html>

PLEASE CONTACT US FOR ASSISTANCE WITH SELECTION AND SIZING

