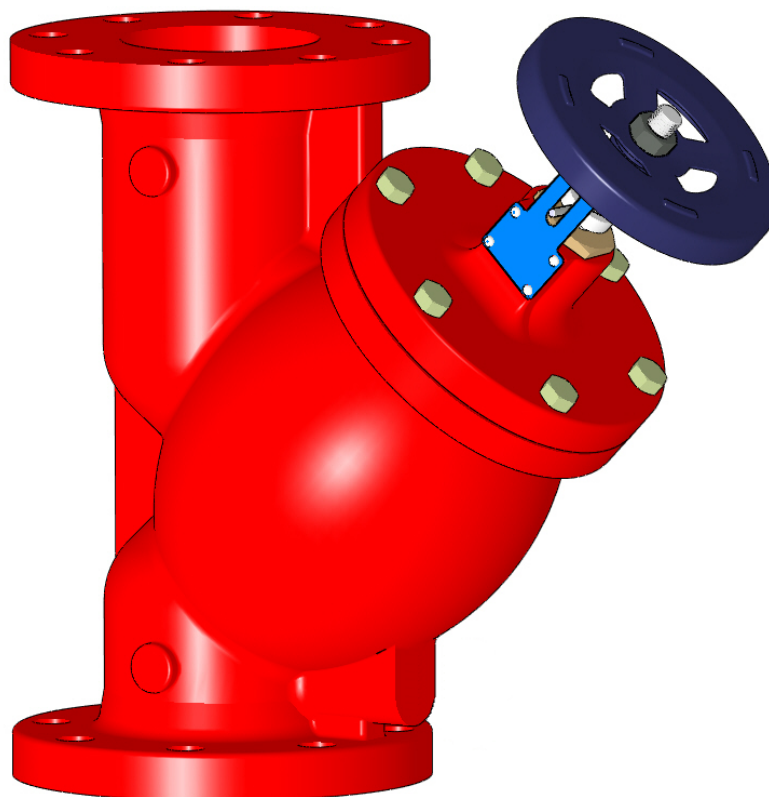


**INSTALLATION AND OPERATING INSTRUCTIONS**

**Armstrong Model FTV  
350mm to 600mm  
Flo-Trex Valve**



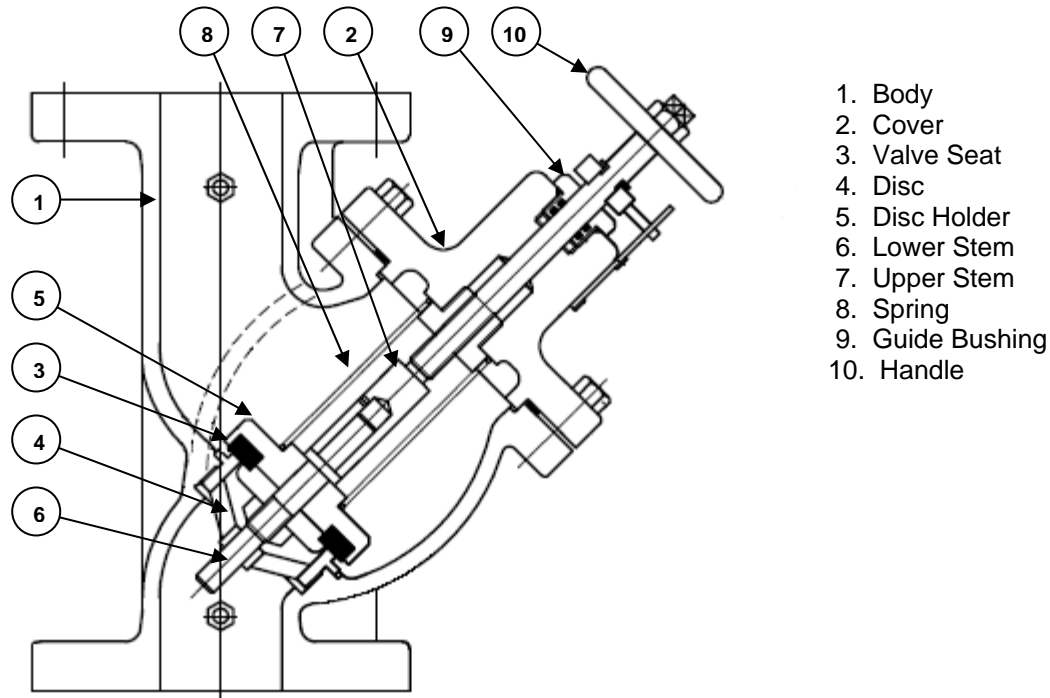
**TABLE OF CONTENTS**

<b>Section</b>	<b>Page</b>
1.0 - Introduction .....	2
1.1 - Warning .....	2
2.0 - Installation .....	3
3.0 - Storage .....	3
4.0 - Cleaning .....	3
5.0 - Maintenance .....	3
6.0 - Disassembly & Assembly .....	4

## 1.0 - INTRODUCTION

The Armstrong Model FTV Flo-Trex Combination Valves are designed for installation on the discharge side of centrifugal pumps. The Armstrong Combination Valve incorporates three functions in one valve:

- Drip-tight shut-off valve
- Spring-closure design, non-slam check valve
- Flow throttling valve



1. Body
2. Cover
3. Valve Seat
4. Disc
5. Disc Holder
6. Lower Stem
7. Upper Stem
8. Spring
9. Guide Bushing
10. Handle

## 1.1 - WARNING

These instructions must be read, understood and followed before attempting to install, maintain or operate this equipment. Otherwise severe personal injury or damage to equipment may result.

Before installing the Flo-Trex valve, make sure that there is enough room provided to disassemble the valve for maintenance.

Before undertaking any maintenance on the Flo-Trex valve, it must be isolated from the system line and any pressure must be allowed to normalize to atmosphere.

Valves that remain in one position for long periods of times may be subject to some degree of reduced operability as a result of loss of effective lubricants in threads, aging of gasket, surface corrosion of moving parts, or accumulation of foreign solids. Refer to this manual's recommended maintenance section to maintain valve performance.

## 2.0 - INSTALLATION

The valve should be mounted to a spool piece on the discharge side of the pump. Spool piece length is based on a minimum recommended space of 2 times the pipe diameter (e.g.: 350mm discharge requires 350mm D x 711mm L spool piece).



It is not recommended to mount a valve directly to the pump as this could cause undesirable noise in the system.

Sufficient clearance around the valve should be left for valve removal or repair.

Install valve in the direction of the flow arrows on the valve body.

The valve body has been designed to handle the weight of the pump on vertical in-line installations. The body is not designed to support the piping weight. It is recommended that the piping be supported by hangers. Pipe supports should be provided under the valve and strainer bodies.

Ensure that the Flo-Trex is installed with the valve stem in the upright position. Valve slam may occur if installed in any other configuration.

### 3.0 - STORAGE

The Flo-Trex valve must be examined for signs of damage that may have occurred during transportation.

The Flo-Trex valve should be stored in a suitably sheltered environment to protect it from the effects of weather, dust, dirt, and moisture.

The Flo-Trex valve is shipped with end caps on the inlet and outlet ends. These end caps should be left in place until it is ready for installation.

The Flo-Trex valve should be stored at a constant temperature between -10°C to 40°C (14°F to 104°F).

### 4.0 - CLEANING

The Flo-Trex valve has been cleaned, inspected, and sealed at the factory prior to shipment. The protective end caps will guard against entry of foreign matter and no additional cleaning should be required. A visual examination of the interior of the body should be made to ensure that the Flo-Trex valve is free of contaminants.

### 5.0 - MAINTENANCE

The Flo-Trex valve requires inspection and periodic maintenance at regular intervals to maintain optimum valve performance and prolong equipment life.

The troubleshooting chart presented in the following table lists typical problems and methods for resolving them. It should be noted that this chart does not present all possible problems or all possible solutions.

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
Leakage	<ul style="list-style-type: none"> <li>• Disc may fail to seat (Foreign material lodged in orifice)</li> <li>• Valve installed backwards</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and clean</li> <li>• Re-install in the direction of the flow arrows</li> </ul>
Pump overloading	<ul style="list-style-type: none"> <li>• Valve may be closed or slightly opened</li> <li>• Incorrect selection of valve size</li> </ul>	<ul style="list-style-type: none"> <li>• Fully open the valve</li> <li>• Re-size the valve</li> </ul>
Water hammer	<ul style="list-style-type: none"> <li>• Buckling of stem. Foreign material lodged in stem etc.</li> <li>• Damage of the disc or seat</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble and check the stem</li> <li>• Disassemble and check the disc and seat</li> </ul>

## **6.0 - DISASSEMBLY & ASSEMBLY**

**General:** Before beginning to disassemble the Flo-Trex valve, become fully familiar with the construction details and disassembly and re-assembly instructions prior to beginning any work.

Before undertaking any maintenance on the Flo-Trex valve it must be isolated from the system and any pressure must be allowed to safely normalize to atmosphere.

To ensure that the Flo-Trex valve is re-assembled properly, it is necessary to mark certain parts and measure and record certain dimensions. Additionally, ensure that spare and replacement parts such as o-rings, gaskets, etc. are on hand before beginning the disassembly procedure.

### **6.1 - DISASSEMBLY**

**CAUTION:** *The Flo-Trex valve must be isolated from the system line and any pressure must be allowed to normalize to atmosphere.*

Remove handle by disengaging lock-nut from the stem.

Disassemble the travel indicator by removing the snap ring.

Unscrew guide bushing (*The o-ring / gasket must be thoroughly cleaned. If there are any indications of wear and/or scratches, they must be replaced.*)

Release hex bolts and turn anti-clockwise until spring is slack.

Disassemble the cover, upper stem, spring and gasket. (*The upper and lower stem, seat and disc must be thoroughly cleaned. If there are any indications of bending, wear and/or scratches, they must be replaced.*)

When disassembling the disc assembly (disc holder, disc, lower stem) carefully lift the stem assembly straight out of the body in order to avoid causing unnecessary damage.

If there is no damage to the seating surface, do not disassemble the seat.

### **6.2 - ASSEMBLY**

Prior to assembly, be sure that all parts are clean and reassemble in reverse order of the disassembly.

Check to see that flange gaskets are properly positioned before tightening the bolts.

Tighten bolts gradually in a back and forth clockwise rotation.

Gradually adjust the stem until the proper flow rate is reached.

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