



## TVS-811 Series Trap Valve Station Installation, Operation and Maintenance Instructions

### Operation

In a piston valve, the control of stem and seat leakage is obtained by tightness of the valve sealing rings to the body and valve plug. The bonnet compresses the valve sealing rings against the body and the valve plug.

Flexible disc springs automatically assure a tight seal by exerting pressure on the valve sealing rings, keeping them compressed.

### Opening and Closing the TVS Isolation Valves

The isolation valve begins to stop flow when the valve plug enters the lower valve sealing ring.

When the isolation valve is completely closed, the valve plug is in contact with the full height of the valve sealing rings, ensuring the best possible seal. In fact, there is no advantage to be gained in torquing the valve closed. **Armstrong recommends that after closing the isolation valves completely, the handwheel should be turned back one half turn.** This makes it easy to re-open the valve by avoiding metal to metal seizure.

### Troubleshooting - Isolation Valves

A piston valve will retain its leak tightness for several years without maintenance. In severe service, such as rapid heating and cooling, some field maintenance may be required. Depending on the problem, these simple steps may help:

- **Isolation Valve leaks, when the valve is closed.** First, **Check to make sure the valve is actually closed.** Check to see if bonnet is seated on the body, if not, tighten the bonnet nuts until the bonnet seats. This recompresses the valve sealing rings against the body and the valve plug. If valve continues to leak, replace the isolation valve assembly.
- **Isolation Valve stem leaks.** Same above.
- **Maintain the isolation valve as soon as leakage starts.** Internal leakage can wear the valve plug or valve sealing rings and they will have to be replaced if leakage continues.

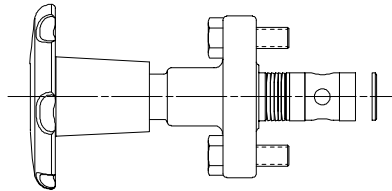
**Caution: Before tightening the bonnet bolts, make sure the isolation valve is in the closed position**

### Replacing the Isolation Valve Assembly

**Special Extractor Tool Required** — Do not attempt to replace the valve sealing rings without the Part No. A9542 special valve sealing ring extractor tool. This tool is available from Armstrong International, Inc.

## Removing the valve seal rings, lantern bushing and valve washers.

- This can be done with the TVS811 Trap Valve Station remaining in the steam line. **Be sure to isolate the TVS811 Trap Valve Station both up and down stream by using separate shut-off valves before performing any maintenance.**
- Using the TVS's handwheels, **open** each valve all the way until it stops.
- Loosen and remove the bonnet bolts.
- Pull isolation valve assembly out of valve body.
- Place the special valve sealing ring extractor into the body of the valve and turn the top square nut of the special valve ring extractor with a wrench in order to allow the spindle to expand under the valve washer.
- Tighten the lower nut of the extractor and pull the extractor out of the valve body. The disc springs, valve sealing rings and lantern bushing will come out on the end of the extractor. Check to see if all components including valve washer at bottom of valve body has been removed. Inspect and clean any debris that might have remained in the valve body.



**TVS-811 Isolation Valve Repair Kit  
Part No. B5249**

## Installing New Isolation Valve Assembly

- Place valve washer into valve body with **Beveled Edge down**.
- Place Armstrong Part No. B5249 isolation valve assembly into valve body.
- Lightly tap the isolation valve assembly to the bottom of the valve body.
- Coat the treads of the bonnet bolts with “never seize”, insert bolts through bonnet and tighten **evenly** until the bonnet seats on the valve body.
- Check the isolation valve for proper operation by opening and closing the valves one or two times leaving them open.
- Open separate shut-off valves up and down stream from the Trap Valve Station and check for leaks.

Contact Armstrong International or your local representative if you have questions regarding the installation, use or repair of Armstrong Model TVS811 Trap Valve Station.



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