



Armstrong® Condensate Collection (CCA/CCAF/CCM) and Steam Distribution (MSD/SMSD) Manifolds Installation, Operation and Maintenance Instructions

This bulletin should be used by experienced personnel as a guide to the assembly, operation and maintenance of Armstrong Condensate Collection and Steam Distribution Manifolds, and their repair parts. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Armstrong or its local Representative if further information is required.

Note: Armstrong's Condensate Collection Assembly can be installed with piston or plug valves. This installation, operation and maintenance manual will only pertain to the piston valve (TVS4000) version. For plug valve (TVS2000) installation instructions, consult Installation Bulletin IB-250.

Instructions for Assembly

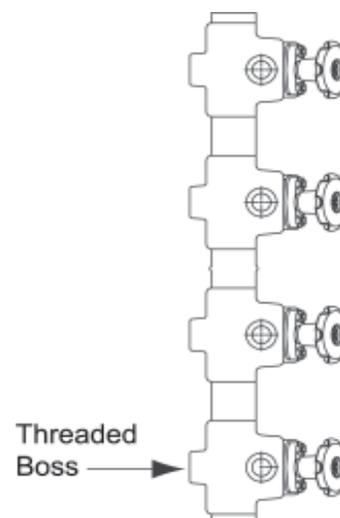
1. Before connecting the Condensate Collection or Steam Distribution Manifold to the system, blowdown the line at full pressure to clear the pipes of dirt, pipe cuttings, and/or welding beads.
2. The Steam Distribution (SMSD/MSD) Manifolds may be installed vertically, horizontally, or they may be inclined without affecting the way they operate. Vertical installation is preferable, because it saves space and improves the removal of condensate that may form in the manifold. The Condensate Collection CCA Manifold must be installed vertically.
3. If tracers are to be welded to the outlet parts of the valves, be sure the valves are in the closed position. The sealing rings do not have to be removed, but closing the valve allows the piston to protect the sealing rings.
4. The manifold needs to be fixed onto the support only by means of the upper and lower threaded bosses at the back. Only two supports are needed, and using the upper and lower minimizes shifting. Provide some space if you plan to insulate.

If these instructions are followed, very little maintenance should be required.

Operating Principal

1. General

The SMSD/MSD, CCA and CCM Manifolds use ½" Piston valves, unique in that they assure leak tightness with a sealing system especially designed for steam systems. Valves seal by contact of the stainless steel piston to the graphite rings. A constant load is maintained on the sealing rings by disc springs. The CCA(F) Manifolds come standard without valves.



2. Sealing Forces

Dual sealing action. The piston valve is a seatless valve which includes two graphite and stainless steel valve sealing rings that seal the stem and function as a seat. This combination provides long-term protection against leaks to the atmosphere and downstream piping.

Self-cleaning action. Stainless steel piston slides without rotating between the two valve sealing rings, preventing dirt from damaging the surfaces.

Sealing integrity. Flexible disc springs automatically provide leak tightness by exerting pressure which keeps the upper and lower valve sealing rings compressed at all times. Sealing tightness is assured by the compression of the sealing rings against the piston and valve body. This combination of disc springs and dual valve seal rings protects against expansion and contraction due to heating and cooling. This assures dependable operation, even after years of service.

Protected valve stem. The valve stem and sealing surfaces are completely protected from dirt and corrosion by the stem cap, whether in an open or closed position.

In-line repairability. All sealing valve components may be easily replaced in-line.

Long-term operation. Piston valve design assures actuation even after many years without operation.

3. Opening and Closing the Valve

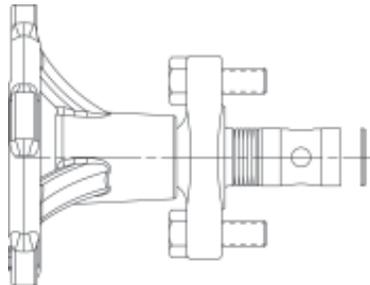
The valve begins to stop flow when the valve plug enters the lower valve sealing ring.

When the valve is completely closed, 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 valve 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.

3. Pull bonnet assembly out of valve body.
4. Remove the disc springs, valve sealing rings, valve washers and lantern bushing using a Packing Hook. Check to see if all components including the valve washer at bottom of valve body have been removed. Inspect and clean any debris that might have remained in the valve body.

Installing New Manifold Valve Assembly

1. Place valve washer into valve body with the beveled edge down.
2. Place Armstrong Part No. B5148 valve assembly in manifold body (The piston and sealing rings have been lubricated at the factory).
3. Align the bonnet holes with the stud and lightly tap the valve assembly to the bottom of the manifold body.
4. Coat the threads of the bonnet stud with “never seize” and **tighten the nuts evenly** until the bonnet seats on the valve body.
5. Check the valve for proper operation by opening and closing the valve one or two times leaving them in the open position.
6. Open isolation valves up a down stream from the manifold and check for leaks.



**Manifold Valve Assembly
Part No. B5148**



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