

Disassembly

Tools Needed:

- 3/8" open/closed ended wrench
- 1/8" Hex key wrench
- Flathead screwdriver
- Phillips head screwdriver

1. Remove the air eliminator head assembly by disconnecting the vent line and removing the eight mounting bolts.

Caution: Assure that live pressure is at 0 psig prior to removing the flange bolts. Failure to do so could result in personal injury or an environmental product spill.

2. Remove the three screws and nuts holding the float guard to the three brackets. Remove the float guard.



Figure 1 – Float guard removal

3. Remove the retaining ring from the float pin, then remove the float from the rocker spring.
4. In order to remove the valve assembly from the cover, the rocker spring will have to be positioned to provide access to the three 1/4 - 20 by 1/2" screws with lock washers.

Note: Use the closed end of the 3/8" wrench and the 1/8" Hex key wrench.

Caution: The valve assembly is spring loaded and has a tendency to “snap” open by itself, as going from the position shown in Figure 2 to the position shown in Figure 3. Therefore, when the third screw is removed, be sure to hold the valve assembly so it will remain in the position shown in Figure 3. Make sure to hold and slowly move the spring when switching spring positions as shown in Figure 4. Remove the valve assembly from the head.

5. Tip the rocker spring as shown in Figure 5. The bias band may now be removed by working the band back and forth while pulling to displace holding tab in seal block (see Figure 9).

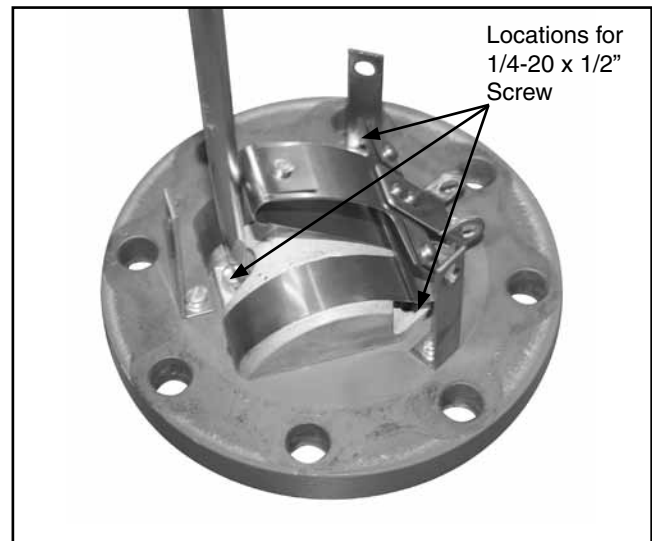


Figure 2

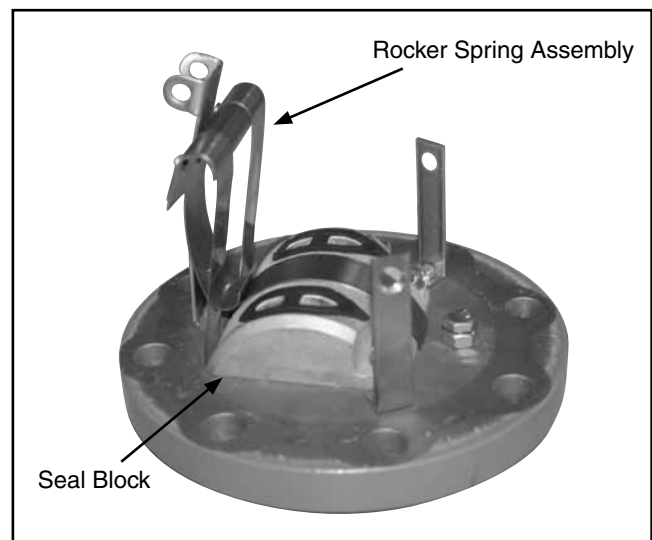


Figure 3 – Valve Assembly



Figure 4

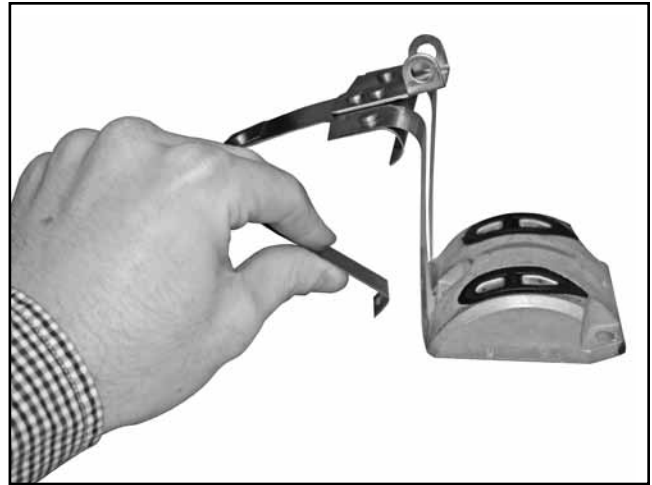


Figure 7

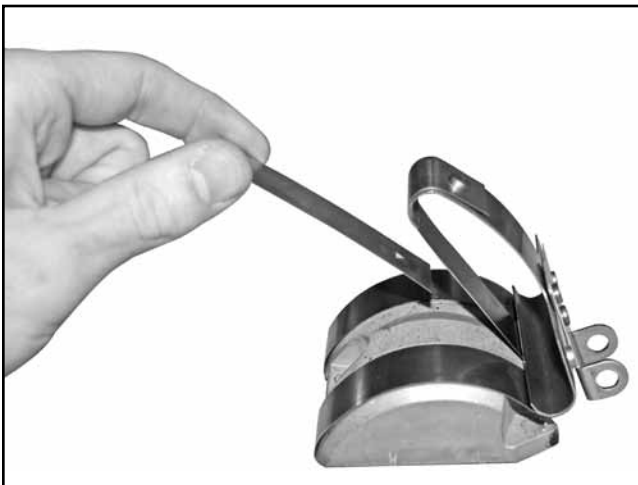


Figure 5

6. In order to remove the Rocker Assembly, tip the spring as shown in Figure 3. Apply pressure to the middle of the rocker spring; use a Phillips head screwdriver to remove the screw (see Figure 6).

Caution: Make sure to guide the Rocker Spring until it is in the position in Figure 7. Failure to do so will cause the spring to “snap” to that position.



Figure 6

7. Remove the two other screws to remove the Rocker Spring from the Seal Block.

Inspection

1. Examine the molded seals on the seal block. The raised portion should be above the metal surface of the seal block and uniform in height. No foreign material should be imbedded in the molded seal. Such a condition could prevent the valve bands from making a tight seal and allowing it to leak.
2. Examine the valve bands. They should be free of any kinks or dents that would prevent them from making complete contact with the entire raised portion of the molded seal.
3. Any parts that prevent the raised portion of the molded seals and valve bands from making continuous contact around both vent openings will cause the seal to leak, and therefore, should be replaced.
4. Examine the float for dents, holes or any other damage. Shake the float and listen for any fluid inside. There should be none as this is a sealed float. If defects or fluid are present in the float it must be replaced.
5. Examine the two o-ring seals on the bottom side of the block (see Figure 8). Replace if damaged. If damage has occurred, ensure that the proper o-ring elastomer is chosen to fit the liquid application.
6. Examine the shape of the bias band (see Figure 11). Refer to the Buoyancy Adjustment section to ensure proper float buoyancy.

Assembly

1. When the bands are fastened to the seal block, they should be in line with the seal block's edge (reference Figure 8). This allows the bands to “rock” square with the seal block by lying completely flat against it. If the bands are not in line with the edge of the seal block, they will tend to rock at an angle and may not lie flat on the molded seals. If found in this condition the bands must be adjusted or replaced.

- Gently force the entire rocker spring forward until the cross-section of the rocker spring touches the center band. Insert the bias band under the center band and push it in until it comes in line with the edge of the seal block. (reference Figures 5 and 9). The protruding tab of the bias band is designed to fit into a slot in the seal block (reference Figure 9). Make sure the bias band is inserted correctly by checking that the edges are not visible under the center band and gaps are not visible under the center band when the rocker spring assembly is in the position shown in Figure 9. When seated correctly (as shown in Figure 9), the bias band will not come out when being pulled by hand with an approximate force of 8 to 12 lb.
- The complete air eliminator head is assembled by reversing the disassembly.

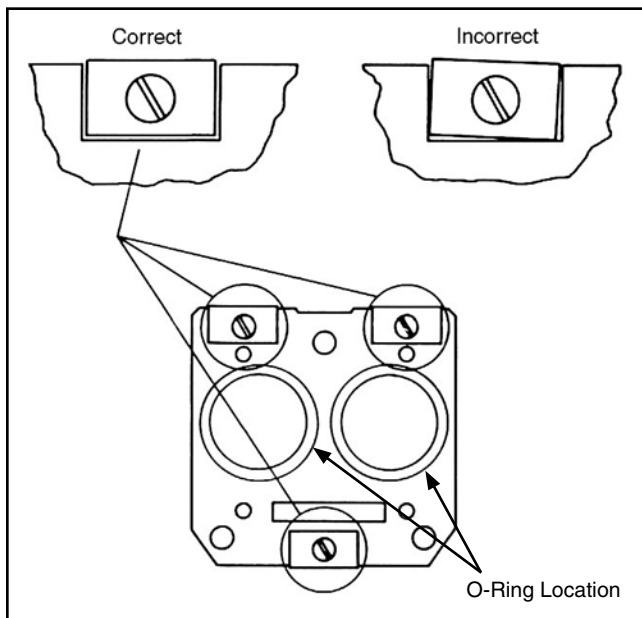


Figure 8

Adjustment of Top Stop

- With a fully assembled air eliminator head held upside down in a vertical position (reference Figure 10) and the float up against the float guard wall opposite the top stop (reference Figure 10-A), the rocker spring should be resting on the top stop (reference Figure 10-B), and the float should not hit the rocker spring (reference Figure 10-C). The top stop should be adjusted so that there is a clearance of $1/32''$ to $1/8''$ between the float and the rocker spring (reference Figure 10-C). This adjustment allows the valve to close and provides a positive top stop for the float.

Buoyancy Adjustment

The float provides the energy to open and close the valve assembly. The shape of the bias band can affect the force required to open and close the valve assembly and, consequently, affects the buoyancy of the float. When a unit is assembled at the factory, the bias band has

the approximate shape as shown in Figure 11, Shape "B". This shape results in the valve assembly assuming a position as shown in Figure 12. The valve is partially open and requires very little vertical force to close or open further. This adjustment should be satisfactory for the majority of applications. If it is necessary to alter the float buoyancy for a particular application, the bias band should be altered in the following manner:

- If the curve of the bias band is increased, as shown in Figure 11, Shape "A", the valve wants to open and less air will have to be accumulated in the air eliminator before the float drops to open the vent.
- If the curve of the bias band is reversed, as shown in Figure 11, Shape "C", the valve wants to close and more air will have to be accumulated in the air eliminator before the float drops and the vent opens.
- To insure that the float buoyancy is satisfactory, the following tests can be conducted.
 - With the fully assembled air eliminator head held in a vertical position, raise the float by hand to close the vents. Release the float. It should drop down onto the bottom of the float guard with no hesitation having free movement. This indicates the float will open the vents in the presence of air.
 - With the fully assembled air eliminator head held in the vertical position, slowly lower the unit into a vessel containing the fluid which is the same, or very similar, in specific gravity to the product that will be flowing through the line serviced by the air eliminator. The float should close the vent and raise the rocker spring up against the stop in the cover. This indicates the float will close the vents in the presence of the fluid.

WARNING!

Thermal Pressure

Thermal expansion of liquid in this equipment can cause high pressure damage. A Thermal Pressure Relief Valve may be necessary in the system.

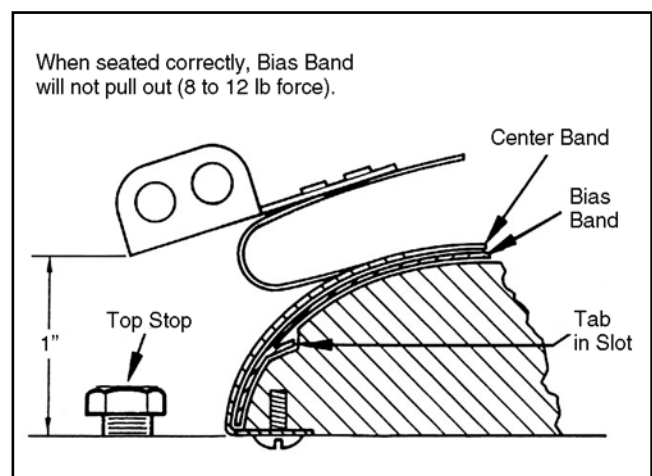


Figure 9

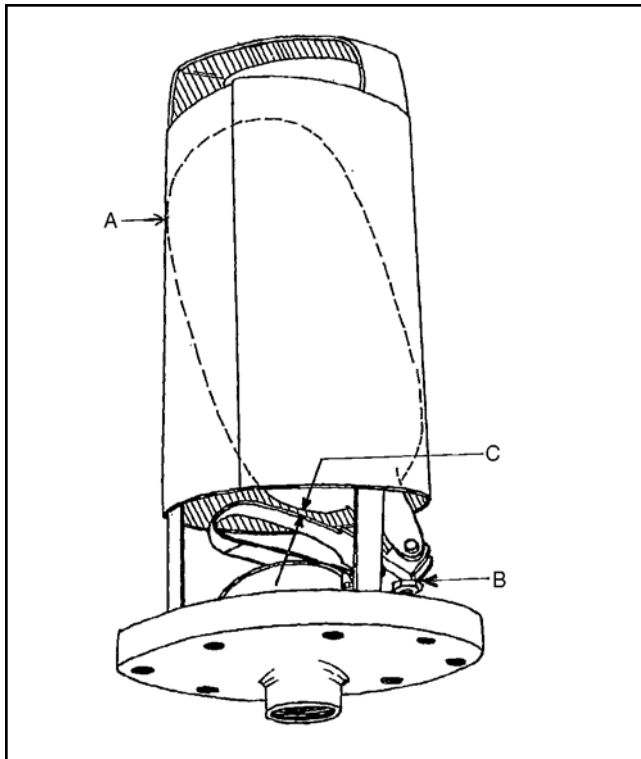


Figure 10

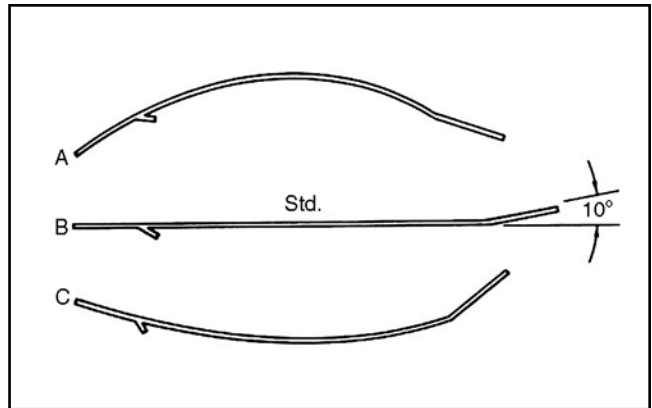


Figure 11 – (Drawn to Scale)

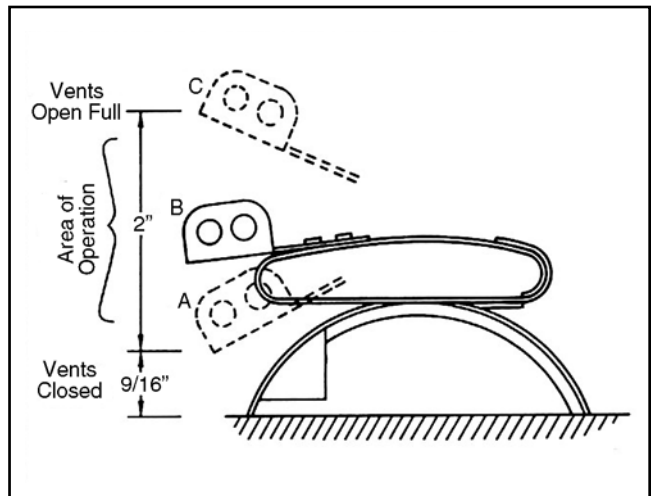


Figure 12

Revisions included in MN01023 Issue/Rev. 0.2 (1/11):
 Manual Type changed from Installation/Operation/Service to Service only.
 Page 1: List of tools added.
 Caution revised under step 4.
 Figure 1, 4, 6, 7 added. Step 6 and 7 added. Figure numbers adjusted.
 Page 2: Figure numbers adjusted. Step 3a revised.
 Page 3: Figure numbers adjusted.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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Headquarters:

500 North Sam Houston Parkway West, Suite 100, Houston, TX 77067 USA, Phone: +1 (281) 260 2190, Fax: +1 (281) 260 2191

Measurement Products and Equipment:

Erie, PA USA +1 (814) 898 5000
Ellerbek, Germany +49 (4101) 3040
Barcelona, Spain +34 (93) 201 0989
Beijing, China +86 (10) 6500 2251
Buenos Aires, Argentina +54 (11) 4312 4736
Burnham, England +44 (1628) 603205

Dubai, United Arab Emirates +971 (4) 883 0303
Los Angeles, CA USA +1 (310) 328 1236
Melbourne, Australia +61 (3) 9807 2818
Moscow, Russia +7 (495) 5648705
Singapore, +65 6861 3011
Thetford, England +44 (1842) 822900

Integrated Measurement Systems:

Corpus Christi, TX USA +1 (361) 289 3400
Kongsberg, Norway +47 (32) 286700
Dubai, United Arab Emirates +971 (4) 883 0303

Visit our website at www.fmctechnologies.com/measurementsolutions