Addendum to Bulletin MN01023

Rocker Bank Air Eliminator Head for the Air Eliminator Model T2A-1 and T3A-1

Installation, Operation, and Service

Issue/Rev. 0.0 (2/87)

Manual MN01022

Note: *This manual is designed to offer instructions for the disassembly, assembly, and buoyancy adjustment of the T2A-1 and T3A-1 Air Eliminators. It is to be used as an addendum to the existing installation, operation, and service manuals.*

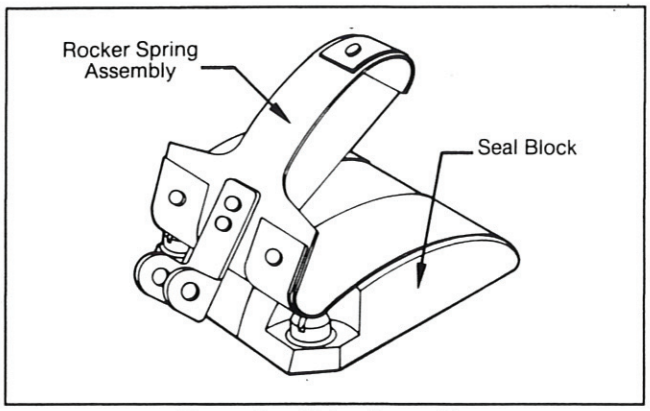

Figure 1 — Valve Assembly

Disassembly

1. Remove the head assembly by removing the six 5/16″ - 18 by 3/4″ bolts.
2. Remove locking nut from the float rod by squeezing the tabs of the locking nut with pliers. This will allow the float rod to be removed from the head assembly.
3. In order to remove the seal block from inside the head assembly, the rocker spring may have to be positioned to provide access to the three 1/4″ - 20 by 1/2″ screws with lock washers. Remove the three screws.

   Caution: The valve assembly is spring loaded and has a tendency to "snap" open by itself, as going from the position shown in Figure 1 to the position shown in Figure 2. Therefore, when the third screw is removed, be sure to hold the valve assembly so it will remain in the position shown in Figure 1. Remove the valve assembly from the head.

4. Tip the rocker spring as shown in Figure 2. The center band will become relaxed. Make sure the rivet is free from the slotted opening of the center band.
5. Laterally move the center band underneath the rocker spring until it is free of any restrictions (reference Figure 3).
6. The bias band may now be removed (reference Figure 4).
7. The rocker spring assembly must be gently forced over the seal block and through the opening of the two edge bands (reference Figure 5). This action will allow the assembly to rotate upward, relax tension on the edge bands and allow the slotted holes and rivets to disengage.

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 embedded in the molded seal. Such a condition could prevent the valve bands from making a tight seal and allowing the valve to leak.
2. Examine the valve bands. They should be free of any kinds 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 valve openings will cause the valve to leak, and therefore, should be replaced.

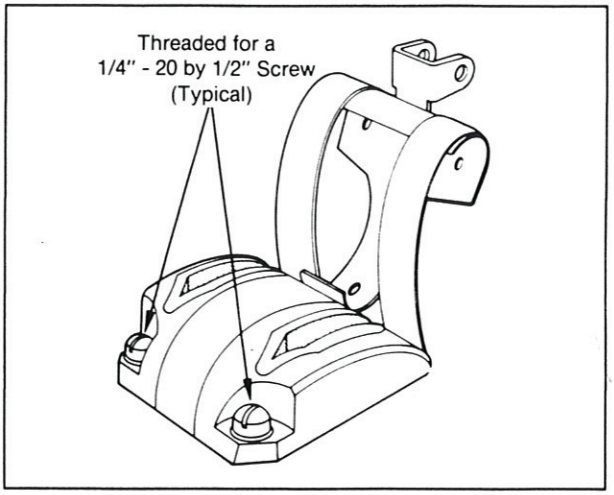

Figure 2

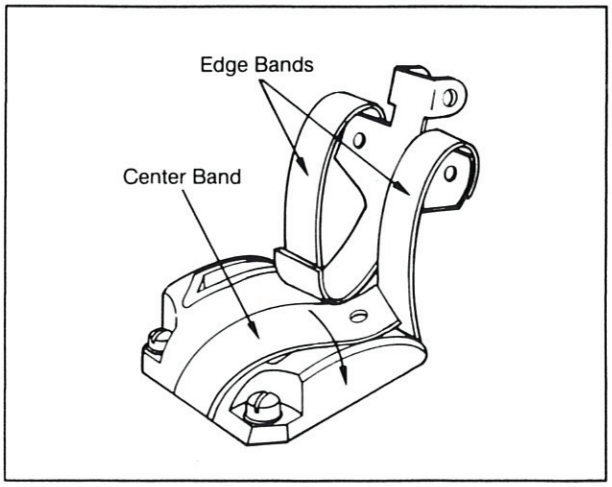

Figure 3

Assembly

1. When the bands are fastened to the seal block, they should be in line with the seal block's edge (reference Figure 6). 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 will not lie flat on the molded seals.

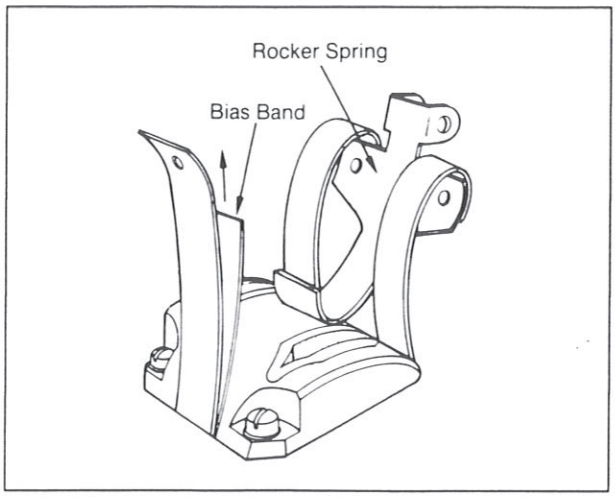

Figure 4

2. Insert the rocker spring rivets through the slotted openings in the edge bands. Make sure that the section of the rocker spring that will connect to the float rod is in the same position as shown in Figure 7.
3. While keeping the edge bands on their rivets, gently force the rocker spring between the edge bands and over the seal block (reference, Figure 8).

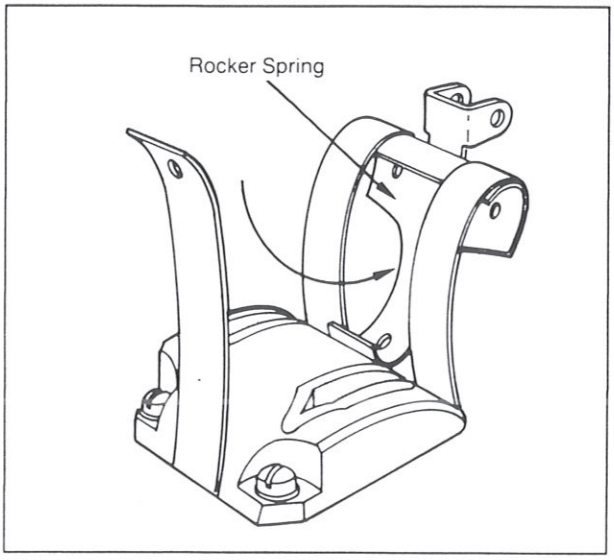

Figure 5

4. Position the center band under the rocker spring by reversing the disassembly procedure (Step 5, reference Figure 3). The bias band will be inserted later in Step 6.
5. Tip the rocker spring and the attached edge bands forward as shown in Figure 9. Cautiously guide the bottom rivet of the rocker spring into the slot of the center band. The tensile stresses of the bands are now increased, so caution is advised. Check that all three bands are seated correctly on the rivets. A force applied perpendicular to the band will assure correct seating (reference Figure 10).
6. 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 11 and 12). The protruding tab of the bias band is designed to fit into a slot in the seal block (reference Figure 12). 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 12). When seated correctly (as shown in Figure 12), the bias band will not come out when being pulled by hand with an approximate force of 8 to 12 lb.

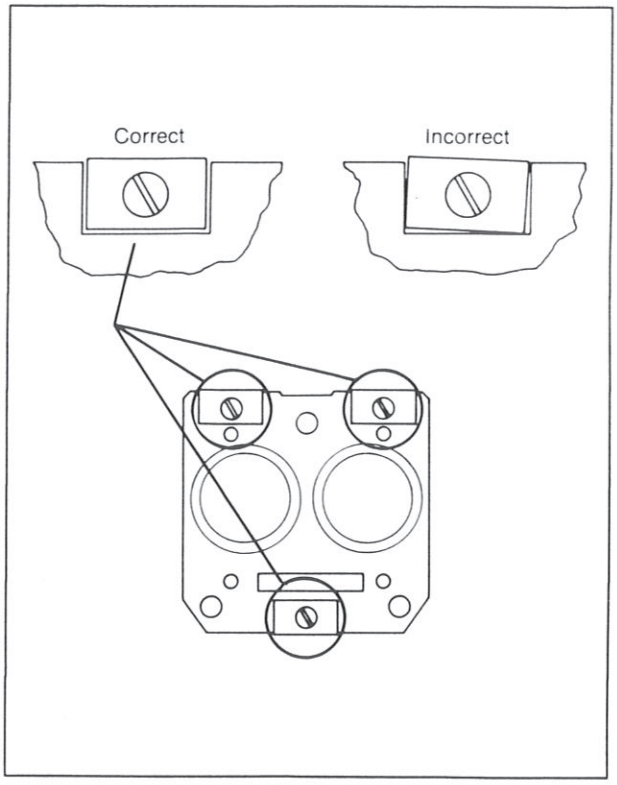

Figure 6

7. Return the valve assembly to the head assembly. Fasten the seal block to the head assembly with three 1/4" - 20 by 1/2" screws and lockwashers.
8. Attach the float rod to the float rod connections (reference Figure 7) and replace the locking washer. Maintain approximately 1/16" of play between the locking washer and the nearest float rod connection.

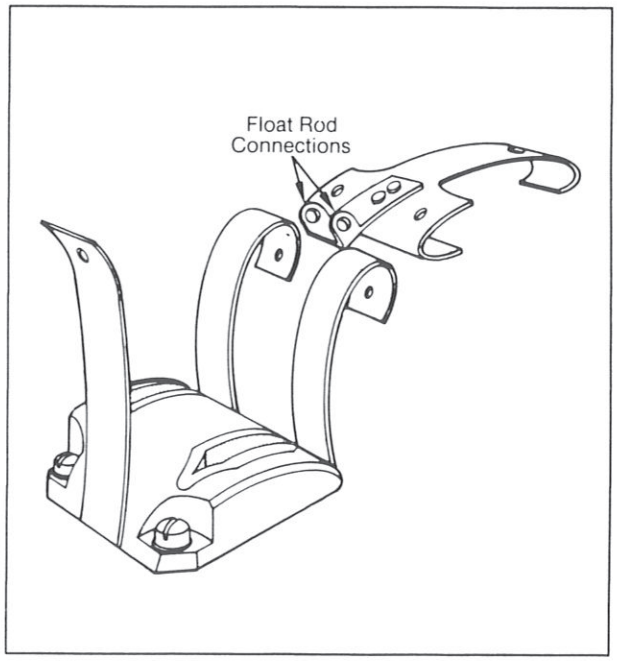

Figure 7

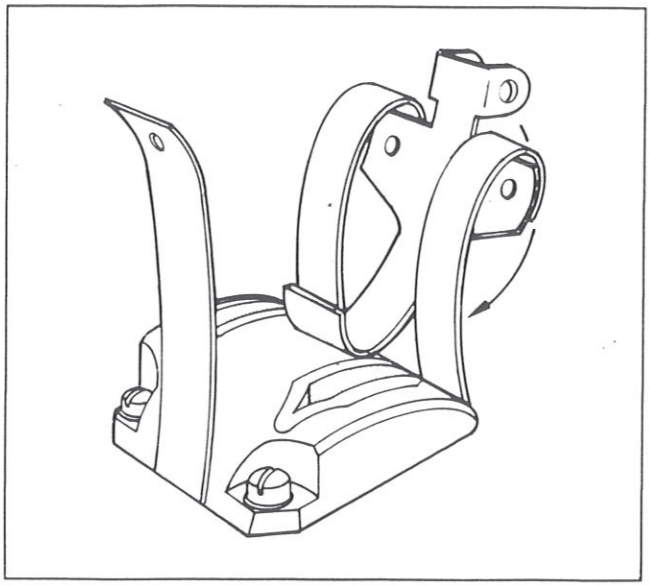

Figure 8

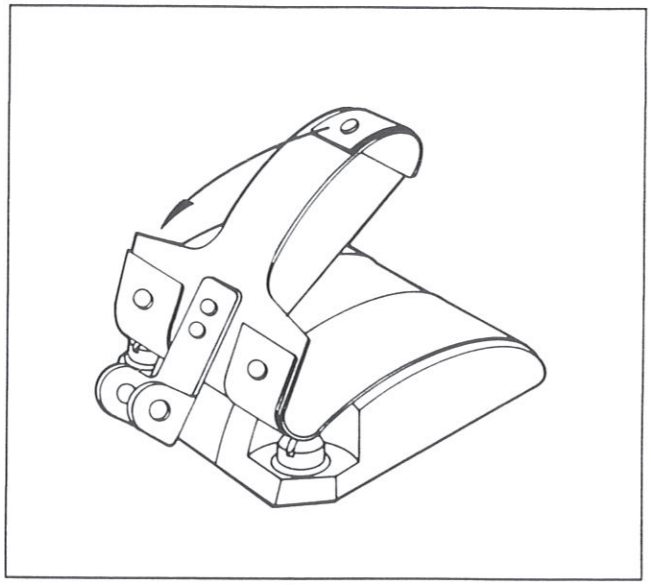

Figure 9

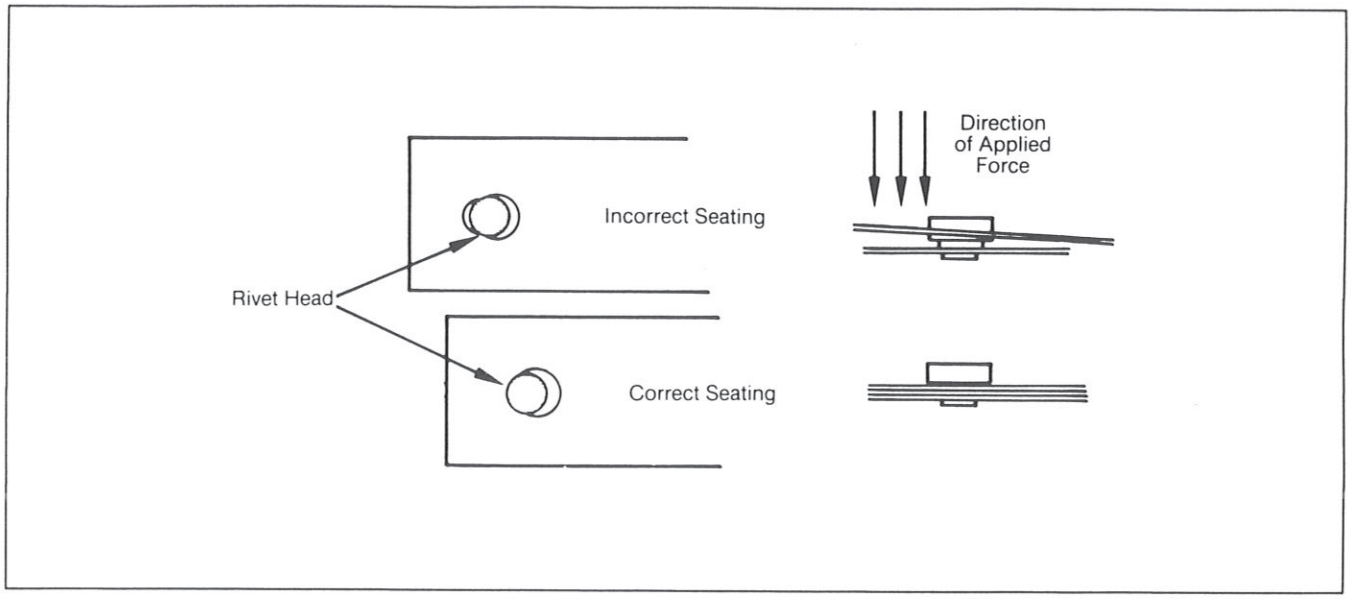

Figure 10

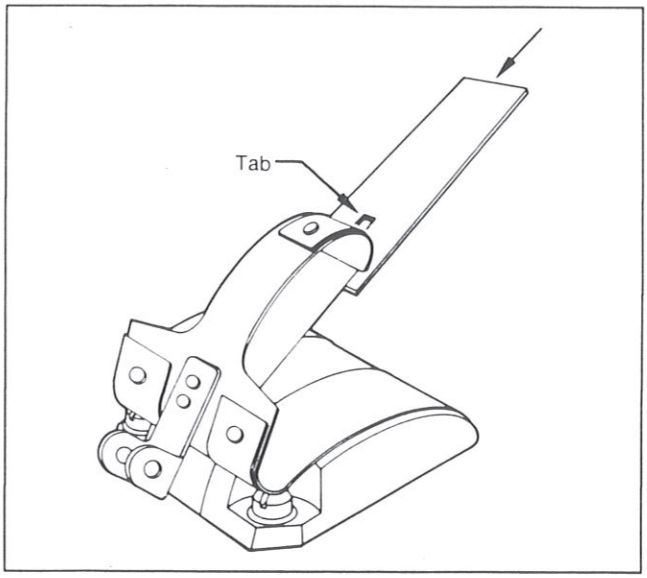

Figure 11

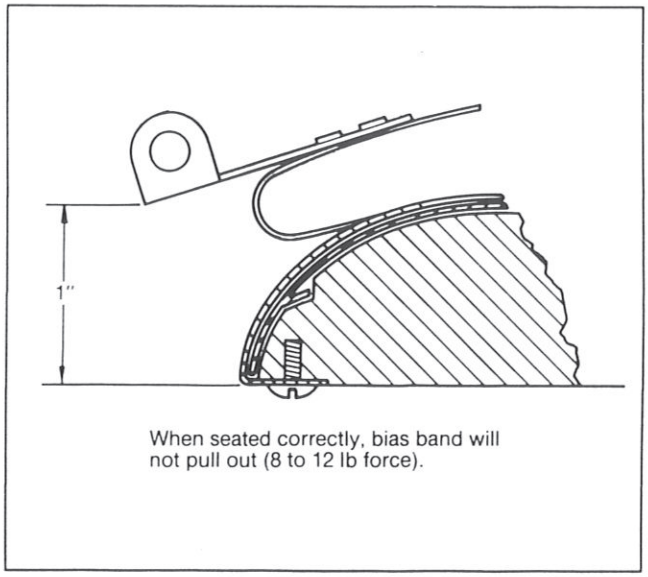

Figure 12

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 13, Shape "B". This shape results in the valve assembly assuming a position as shown in Figure 14. 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:

1. If the curve of the bias band is increased, as shown in Figure 13, 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. This shape makes the float more vulnerable to being pulled down at high flow rates. If this is overdone, the float could have difficulty in closing the valve, and product could be vented when there is no air in the air eliminator.
2. If the curve of the bias band is decreased so it is less curved, flat, or even reversed curved, as shown in Figure 13, 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 vents open. This shape makes it unlikely that the float will be pulled down at high flow rates. If this is overdone, the float could have difficulty in opening the valve and the float could "hang" in the air with the valve closed.

Note: *Different portions of the bias band affect the valve at different degrees of vent opening. The curve of the bias band near the protruding tab affects the valve at the vent closed position. This is the most important part of the buoyancy adjustment because it is the place that the valve goes from its closed to open position and vice-versa.*

The valve assembly only operates in the area shown in Figure 14. There are stops in the closed and full open position, therefore, any buoyancy adjustments need be concerned with only the area of operation.

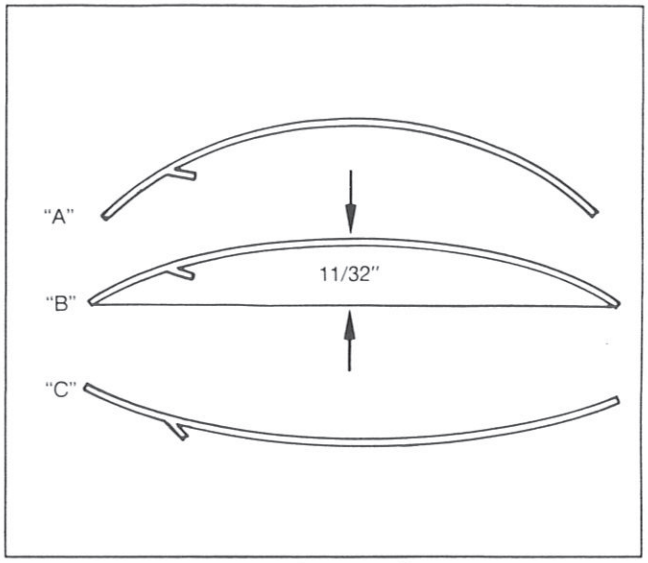

Figure 13 (Drawn to Scale)

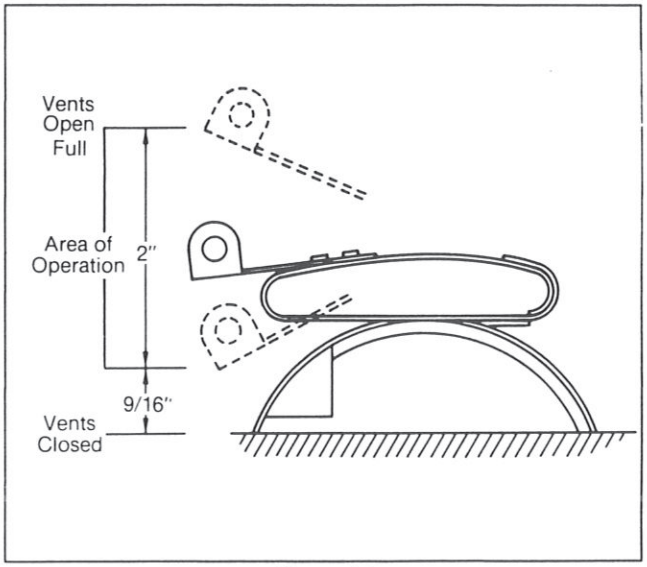

Figure 14

Revisions included in MN01022 Issue/Rev. 0.0 (2/87):
Previously made incorrectly made Obsolete. Has been returned to regular distribution.

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