



Technical Note: 10000049

Dual Sensor Head - Replacement of Bellows Assembly

The dual sensor head (DSH) is virtually maintenance-free. However, like any of the moving mechanical parts, it has its limits. One component that needs replacement is the bellows assembly. It is advisable that the DSH be sent back to the manufacturer for repair. If it is not possible, please follow the following instruction to replace the used bellows assembly with a new one. This instruction is applied to all DSH models.

Tools required:

- #4 Philip Head Screwdriver
- 1/4" open wrench or a small pair of pliers
- 1/16" Allen wrench
- 5/64" Allen wrench

Procedure: See Figure 1 (below)

Removing the old bellows assembly.

1. Use the 1/4" open wrench or a small pair of pliers to hold on to the LINK (E).
2. Use the 1/16" Allen wrench to unscrew and remove the SHOULDER SCREW (A). Make sure LINK (E) does not move when you loosen the SHOULDER SCREW (A).
3. Use the #4 Philip Head Screwdriver to unscrew and remove both of the #4 Philip mounting SCREWS (F).
4. Remove the bellows assembly from the DSH. If the air tube is attached to a feedthrough, remove it from the feedthrough.

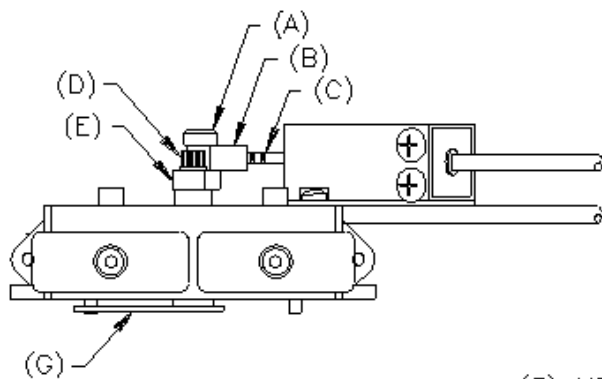
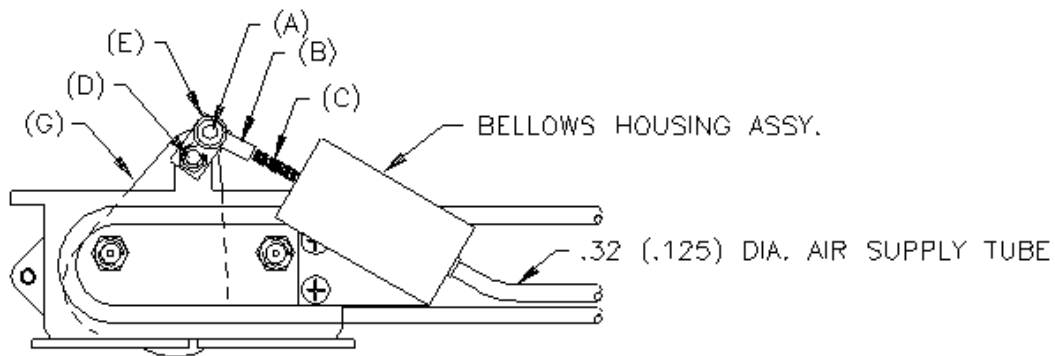
Attaching the new bellows assembly.

Attaching the new bellows assembly basically involves the reverse order of the above steps. However, it may require extra steps to set the shutter opening threshold pressure.

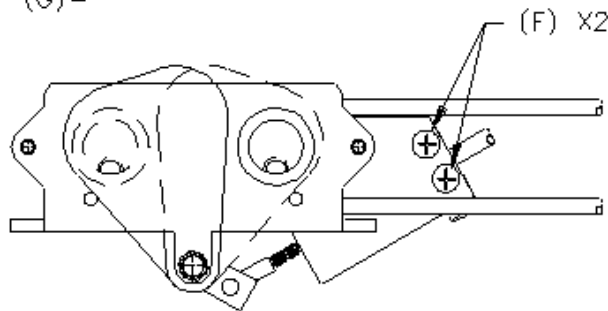
1. Attach the new bellows assembly using the 2 #4 Philip mounting SCREWS (F). Make sure that the bellows housing is aligned with the mounting plate. Use the #4 Philip Head Screwdriver to tighten the screws.
2. Attach the ACTUATOR (B) to the LINK (E) using the SHOULDER SCREW (A). Screw it all the way down, but do not tighten.
3. Slowly apply air pressure to the bellows. The shutter should remain at the rest pin until the threshold pressure is at 21 ± 2 PSI. If the shutter moves outside this pressure range, the total length of the ACTUATOR (B) and THREADED SHAFT (C) need to be adjusted. If the shutter moved before the threshold pressure was reached, the actuator length needs to be shortened up. If the shutter moved after the threshold pressure is reached, the actuator length needs to be lengthened.

4. To shorten the actuator length, remove the SHOULDER SCREW (A), screw the ACTUATOR (B) clockwise into the THREADED SHAFT (C).
5. To lengthen the actuator length, remove the SHOULDER SCREW (A), unscrew the ACTUATOR (B) counter clockwise out from the THREADED SHAFT (C).
6. Repeat steps 2 through 5 until the pressure threshold is established.

Use the 1/16" Allen wrench to tighten the SHOULDER SCREW (A) to the LINK (E). Again, Use the 1/4" open wrench or a small pair of pliers to hold on to the LINK (E). Make sure LINK (E) does not move when you tighten the SHOULDER SCREW (A).



- PART ID
- (A) #4 SHOULDER SCREW
 - (B) ACTUATOR
 - (C) #2 THREADED SHAFT
 - (D) #4 ALLEN SCREW
 - (E) LINK
 - (F) #4 PHILIP SCREWS
 - (G) SHUTTER



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