

February 20, 2009

Re: Conversion of Manual Louvers to Automatic operation

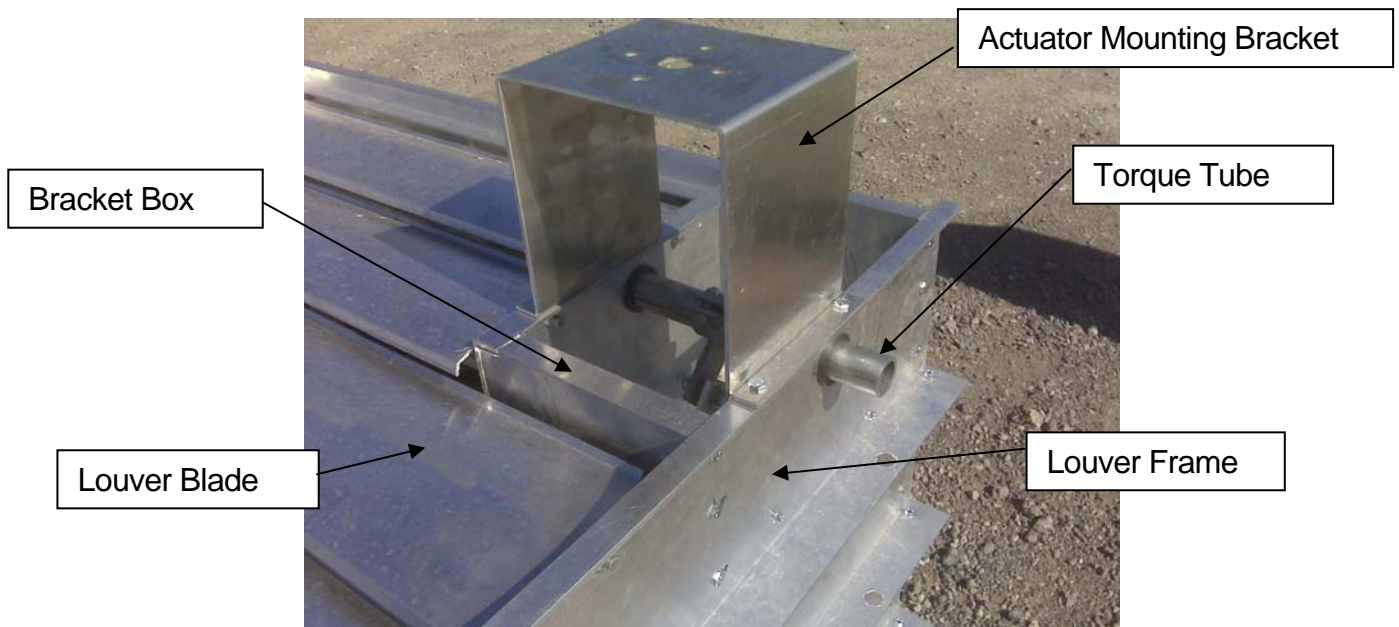
Conversion of the louvers from manual operation to automatic shall consist of removing the existing hardware / pieces used for manual operation and installing the parts supplied create automatic operation.

REMOVAL OF EXISTING HARDWARE:

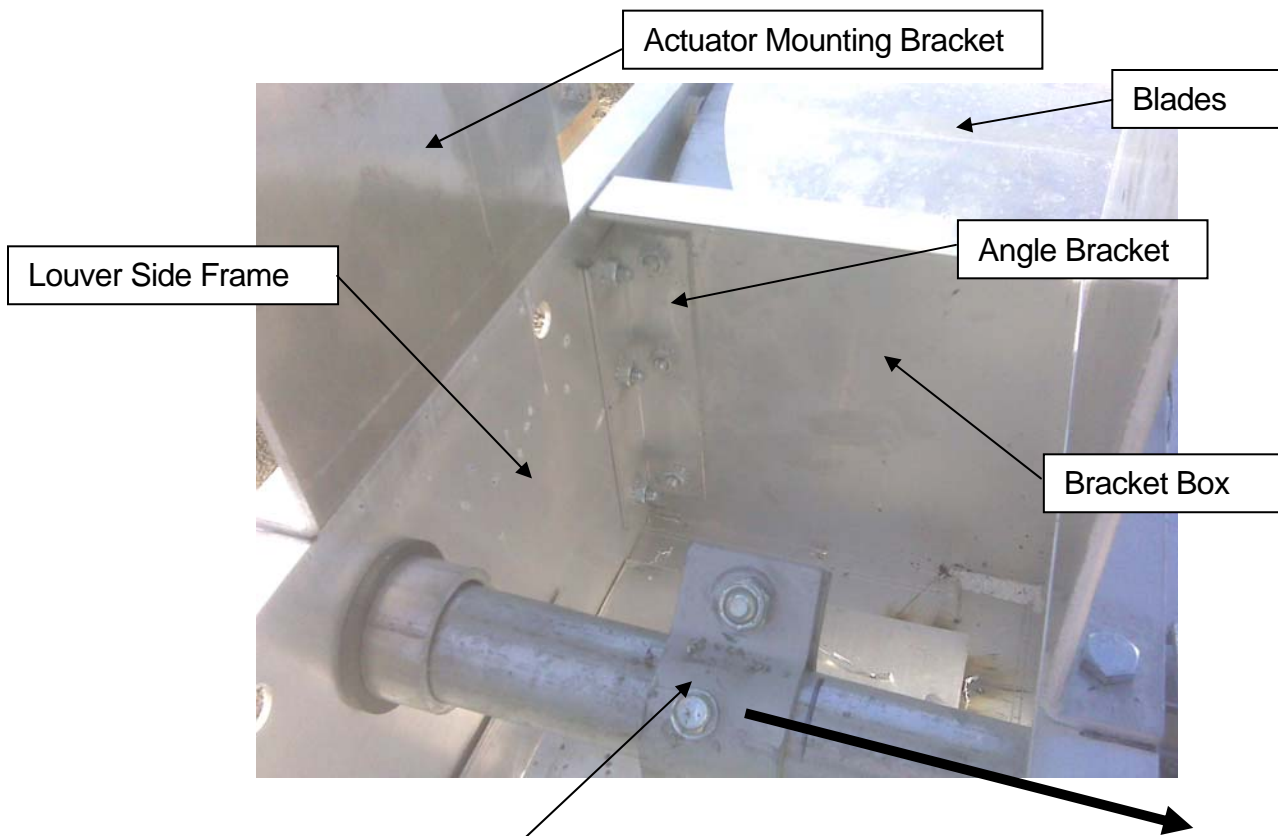
- a. Unbolt, remove and discard the existing operator arm, manual handle bracket and index plate.

INSTALLATION OF AUTOMATIC OPERATION PARTS:

1. Identify the following parts and pieces
 - a. Durastroke 1100 Pneumatic kit (1 per louver)
 - b. Actuator Mounting Bracket (1 / louver)
 - c. Control link (connector between lever arm and actuator clevis) (1 / louver)
 - d. Lever Arms for torque tube connection to control link at actuator clevis (1 / louver)
 - e. Actuator Clevis (factory mounted on actuator stem (1/ louver)
 - f. Assembly Hardware
2. Install Actuator mounting box into louver frame.



- a. Determine the correct location for the actuator in the louver and remove the end two blades in that louver section. This is done by first removing the shoulder bolt and nut which attaches the blade horn to the actuator rod, rolling the blade over so the bottom is facing up then driving the blade pin out of the louver end. Be cautious to save the pin, the bearing and the washer – all will need to be used later.
- b. Cut 8" length off the two blades that were removed. Make one cut and remove all 8" from one end. Drive the blade pin back into it's cavity and set the blades aside.
- c. Detach the lever arm (welded to the torque tube) from any other actuator rod connections and slide the torque tube to the side.
- d. Hold the bracket box in position then clamp it into place.
- e. Use the included angle brackets and nuts/bolts to attach the bracket box to the louver frame. You'll need to drill $\frac{9}{32}$ " holes through the angle bracket and louver frame to install the .25" bolts.



This lever arm won't be installed till later. Loosen the retaining collars and slide torque tube out of the way. Remember to save all bearings and collars



- f. After the bracket box is firmly bolted into place, slide the torque tube through it's hole and then back through the louver frame. Be sure to reinstall the bearings/bushings and then firmly tighten the collars into place.
- g. Reattach all other lever arms and linkage then install the supplied lever arm to the torque tube. You'll want to leave it loose enough to turn on the torque tube for final adjustment.
- h. Set the actuator mounting bracket into place, drill holes and attach it to the louver frame and the newly installed bracket box.
- i. For the louvers to "Fail Open" upon loss of air it is imperative the actuator mounting bracket (and actuator) be installed as shown in the above photograph....on the side of the bracket box AWAY from the nearest louver end.
- j. Install the actuator as prescribed in the, "Actuator Mounting Instructions".