Title: Channel Blender Damper Maintenance

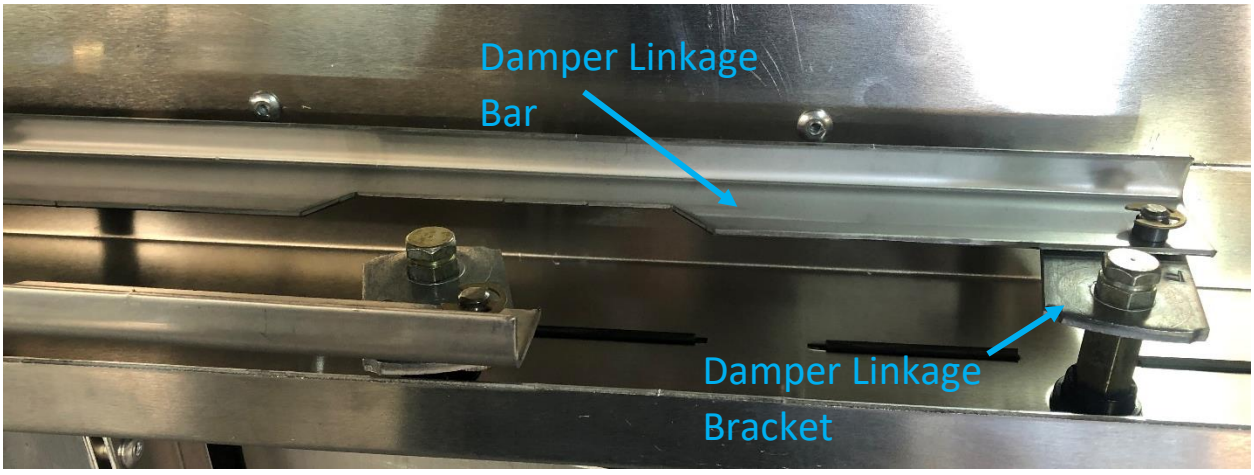
Description: The Channel Blender is an economizing damper module that contains both OA and RA dampers integrated into a frame that channels OA and RA into adjacent paths for the purpose of providing air mixing while controlling air flow rates of OA and RA into the AHU. The dampers on the Channel Blender have been designed and tested to survive for the reasonable service life of the air handling unit (20 years). Like any component in an air handling unit regular inspection and maintenance is recommended to insure proper operation and reliability.

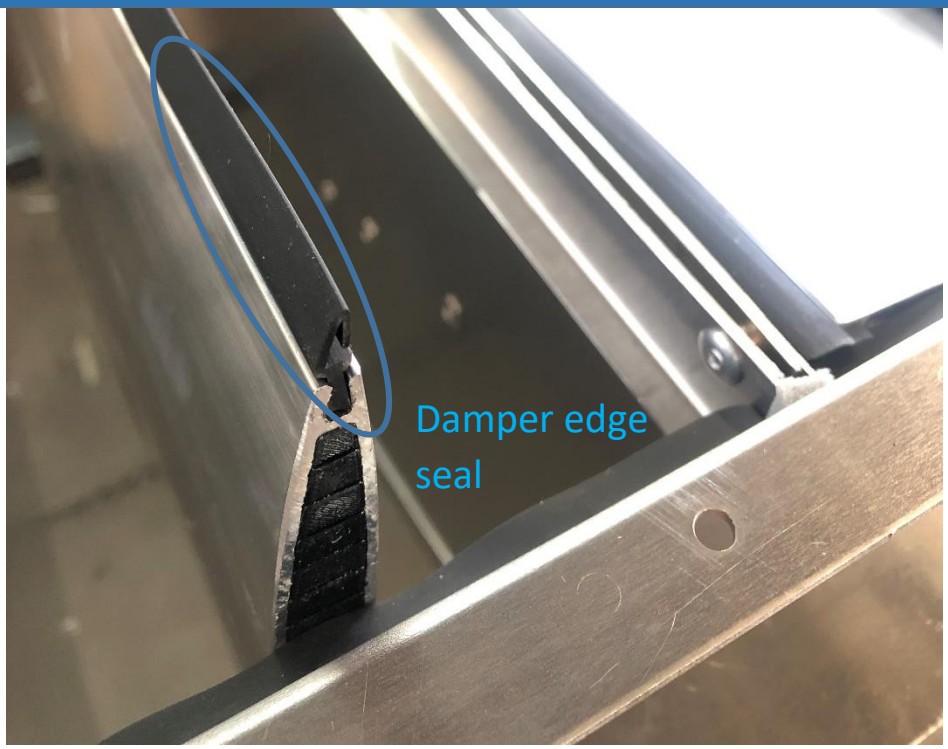
Maintenance Interval: Visual inspection of cleanliness and actuation of the dampers is recommended on an annual basis.

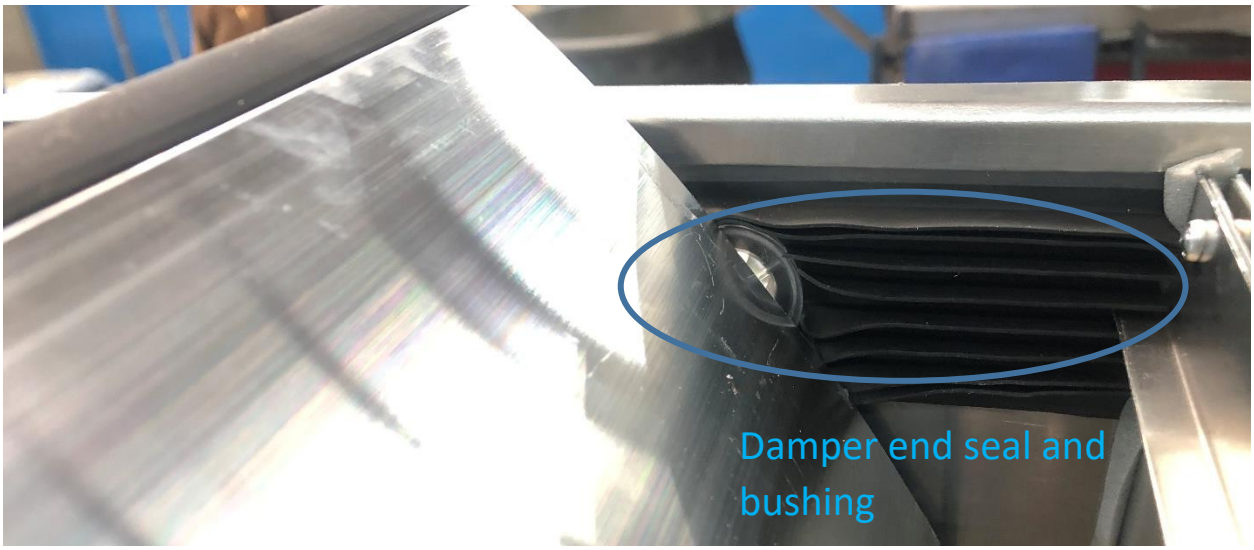
Inspection & Maintenance Guideline:

- **Always use appropriate personal protective apparel and equipment when working with sheet metal where sharp edges and corners present risks.**
- **Observe marked pinch points and keep clear of all pinch points when actuating dampers for inspection.**

1. Visually inspect the dampers, linkage, and seals for any apparent damage, foreign matter, and general cleanliness.
2. Small amount of dust on the blades, frame, linkage, or in the channels is not cause for concern. Wiping, vacuuming, or blowing the dust from these surfaces is advised if it appears to be excessive and could interfere with the operation of the damper. Care should be used to not bend, tear, or damage any components while cleaning. Refer to the illustration below for areas of concern.







3. Damper shafts are zinc coated steel and rotate in a set of Lexan/acetal copolymer thrust bearings set in the damper frame. Lubrication is typically not needed on these components. Use of petroleum-based products could lead to excessive dust collection.
4. There is a small polymer sleeve between the damper linkage pins and the damper linkage bar. Lubrication is typically not needed on these components. Use of petroleum-based products could lead to excessive dust collection.
5. Small amounts of a black powder may be seen where the damper end seals contact the ends of the damper blades. This is customary and no cause for concern. Cleaning as outlined in step 2 above can be used to remove this powder.

6. Use actuators to modulate the OA and RA dampers open and close independently to observe actuation. If any or all of the blades fail to actuate use the trouble shooting guide below.

Damper Actuation Trouble Shooting Guide:

Problem: None of the Dampers move when operating the actuator.

There are a number of failure modes that could lead to a damper bank failing to actuate.

1. Make sure damper linkage bracket on the end of each blade is connected to the damper linkage bar.
2. Make sure the actuator is connected and receiving a voltage signal to actuate. If not correct problem with actuator getting a voltage signal accordingly.
3. If the actuator is receiving voltage to actuate and is not turning, remove the actuator from the jack shaft and test for operation when it is not connected to the jack shaft. If actuator fails to operate replace actuator. (Refer to actuator installation instructions and video for proper removal and attachment of the actuator from the jack shaft.)
4. If actuator operates properly when not applied to the jack shaft, reconnect the jack shaft to the damper bank without the actuator installed and attempt to turn the jack shaft by hand to actuate the dampers. If the all the dampers appear to actuate properly with reasonable effort (Torque should be approximately 10 in-lb/ft^2 of the mixer face) replace the actuator. If it takes excessive effort to actuate the dampers inspect actuator linkage for any foreign matter or damage that may be preventing actuation or increasing the torque required to actuate the dampers. Take measures to remedy the failure. If there is damage that would require replacement parts contact a Blender Application Engineer.