Installation, Operation and Maintenance Instructions

Pre-Installation Guidelines:

The basic intent of a proper installation is to secure the volume control damper into the opening in such a manner as to prevent distortion and disruption of damper operation. The following check list will assist in completing the damper installation in a timely and effective manner:

1) Check the schedules for proper damper locations within the building. Visually inspect the damper for damage.

2) Lift or handle damper using sleeve or frame. Do not lift damper using blades, linkage, actuators or jackshafts. When handling multiple section assemblies, use sufficient support to evenly lift at each section mullion (see drawing). Do not drag, step on, or apply excessive bending, twisting or racking.

3) Do not install screws in damper frame that will interfere with unexposed blade linkage and prevent damper blades from opening and/or closing.

4) Damper must be installed into duct or opening square and free of twist or other misalignment. Damper must not be squeezed or stretched into duct or opening. Out of square, racked, twisted or misaligned installations can cause excessive leakage and/or torque requirements to exceed damper/actuator design.
5) Damper and actuator must be kept clean, dry and protected from dirt, dust and other foreign materials prior to and after installation. Common examples of such foreign materials include sawdust, mortar dust, drywall dust, fireproofing materials, plaster and paint overspray.

6) Damper should be sufficiently covered as to prevent overspray if wall texturing or spray painting will be performed within 10 feet (3m) of the damper. Excessive dirt or foreign material deposits on damper can cause excessive leakage and/or torque requirements to exceed damper/actuator design.

7) Suitable access to dampers and actuators must be provided for damper inspection, maintenance and servicing. Where it is not possible to achieve sufficient size access, it will be necessary to install a removable section of duct.

**Electrical Guidelines:**

All electrical and or pneumatic connections to damper actuators should be made in accordance with applicable codes, ordinances and regulations.

**SAFETY DANGER!**

Electrical input may be needed for this equipment. This work should be performed by a qualified electrician.

**SAFETY CAUTION!**

Verify power requirements before wiring actuator. Alumavent is not responsible for any damage to, or failure of the unit caused by incorrect field wiring. Electrical and/or pneumatic connections to damper actuators should be made in accordance with wiring and piping diagrams developed in compliance with applicable codes, ordinances and regulations.

**Installation Instructions:**

**IMPORTANT:** Failure to follow instructions will void all warranties.

1. **INSTALLING MULTIPLE SECTION DAMPERS:**
   A damper assembly is not restricted to a maximum number of sections, but must not exceed the maximum section sizes shown below. These dampers are intended to be self supporting only in their largest single section size. Multiple section damper assemblies may require bracing to support the weight of the assembly and to hold against system pressure. Alumavent recommends appropriate bracing to support the damper horizontally. Support ductwork in area of damper to prevent sagging due to damper weight.

<table>
<thead>
<tr>
<th>Damper Model Series</th>
<th>Max. Single Section Size</th>
<th>Max. Size for Multi-Section Dampers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100 &amp; 3900</td>
<td>48”w x 60’h (1219 x 1524)</td>
<td>Unlimited</td>
</tr>
<tr>
<td>4000 &amp; 4100</td>
<td>48”w x 72’h (1219 x 1829)</td>
<td>Unlimited</td>
</tr>
</tbody>
</table>

Cycle the dampers by hand before installation to ensure freedom of movement.

Fasten damper sections together with #10 x ¾” (19mm) sheet metal screws, ¼ in. (6mm) diameter nuts and bolts, tack or spot welds. Attachments should be spaced a maximum of 6” (152mm) on centers and a maximum of 3” (76mm) from corners. Attachments must be made on both front face and back face (air entering and air exiting sides) of damper sections.

2. If more than three sections wide, unit ships as multiple section assemblies for assembly in the field. Assemblies are to be joined together where the jackshaft extends past the frame 4 inches (102mm).

3. Duct opening or opening square should measure ¾” (6mm) larger than damper dimension and should be straight and level.

4. If no holes are present in frame, drill appropriate size holes as necessary, depending on fastener type, on 6” (152mm) centers and fasten frames together.

5. Use shims between damper frame and duct opening or opening space to prevent distortion of frame by fasteners holding it in place. Brace at every horizontal mullion and vertically brace at every 8 feet of damper width for strength. Dampers subjected to high velocities (2000 fpm [10.2 m/s]) may require more bracing. Note: Alumavent dampers are specifically designed and engineered for structural integrity based on model and conditions. Attachment, framing, mating flanges, and anchoring of damper assemblies into openings, ductwork, or walls is the responsibility of the installer. Design calculations for these retaining and supporting members should be determined by field engineers for that particular installation.

6. If damper actuator is to be mounted out of the air stream, the extension pin should extend approximately 4 inches (102mm) beyond the frame. On jack shafted units, the jackshaft should extend through the jackshaft bearing assembly and approximately 6 inches (152mm) beyond the frame.
7. Individual damper sections, as well as entire multiple section assemblies must be completely square and free from racking, twisting, or bending. Measure diagonally from upper corners to opposite lower corners of each section (see drawing below).

8. Damper blades, axles, and linkage must operate without binding. Before system operation, cycle dampers after installation to assure proper operation. On multiple section assemblies, all sections should open and close simultaneously.

**Damper Maintenance:**

Alumavent control dampers are designed to operate trouble free under normal operation. Dampers are to be installed square and straight so as to prevent binding during operation. The following annual damper maintenance suggestions will help to insure proper damper operation and increase the life expectancy of the damper.

- **Foreign Matter:** Over the course of time, dirt and grime may collect on damper surfaces. The damper surfaces should be cleaned with a non oil-based mild solvent/cleaner to prevent hindrance to airflow.

- **Moving Parts:** Make sure that parts such as linkage, bearings, blades, etc. that are intended to move freely can do so. Lubricating these components helps prevent possible rusting and unnecessary friction increase. Use only a moli-spray oil or similar graphite based dry lubricant, as regular lubricating oil will attract dirt. Bearings: Synthetic, oil impregnated, and ball bearings (without grease fittings) do not require lubrication. Ball bearings with grease fittings require only minimal grease.

- **Closure:** Remove foreign materials that may be interfering with blade closure or effective sealing of the blades with each other or with the frame.

- **Operation:** While operating the damper through its full cycle, check to see that the blades open and close properly. If there is a problem, check for loose linkage, especially at the actuator. Tighten linkage where required.

**Damper Trouble Shooting:**

The following is a cause and correction list for common concerns regarding damper operation:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damper does not fully open and/or fully close</td>
<td>Frame is racked/out-of-square causing blades to bind on jamb seals</td>
<td>Adjust frame so that it is square and plumb within the duct/opening</td>
</tr>
<tr>
<td>Actuator linkage loose</td>
<td></td>
<td>Close damper, disconnect power, adjust and tighten linkage</td>
</tr>
<tr>
<td>Defective actuator</td>
<td></td>
<td>Replace actuator</td>
</tr>
<tr>
<td>Screws in damper linkage</td>
<td></td>
<td>Locate screws and remove or relocate</td>
</tr>
<tr>
<td>Actuator linkage hitting wall or floor</td>
<td></td>
<td>Damper installed too far into wall. Move out</td>
</tr>
<tr>
<td>Contaminants on damper</td>
<td></td>
<td>Clean with a non oil-based mild solvent/cleaner</td>
</tr>
<tr>
<td>Actuator runs hot or makes a humming noise</td>
<td>Actuator prohibited from reaching end of stroke</td>
<td>Disconnect linkage from jackshaft, open damper, power actuator to end of spring, tighten linkage. Verify amperage draw.</td>
</tr>
</tbody>
</table>
Warranty:

Alumavent warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove to be defective during the warranty period will be repaired or replaced at our option. Alumavent shall not be liable for damages resulting from misapplication or misuse of its products. Alumavent will not be responsible for any installation or removal costs. Alumavent will not be responsible for any service work or back charges without prior written authorization.