These instructions apply to installation of leakage rated smoke dampers supplied with factory installed damper actuators. Specific requirements in these instructions are mandatory. These instructions meet the requirements of UL 555S and UL classification R13317.

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Receiving and Handling

Upon receiving dampers, check for both obvious and hidden damage. If damage is found, record all necessary information on the bill of lading and file a claim with the final carrier. Check to be sure that all parts of the shipment, including accessories, are accounted for.

Dampers must be kept dry and clean. Indoor storage and protection from dirt, dust and the weather is highly recommended. Do not store at temperatures in excess of 100°F (38°C).

Safety Warning

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.

This manual is the property of the owner and is required for future maintenance. Please leave it with the owner when the job is complete.
General Information

“UL CLASSIFIED (see complete marking on product)”
“UL CLASSIFIED to Canadian safety standards (see complete marking on product)”
Standard 555S (Listing #R13317)

Installation Supplements
Refer to the appropriate Greenheck installation supplements for special requirements:
• Drive Slip Breakaway Connection
• Double Flanged Mounted
• Open or Close Indicator (OCI)
• Quick Connect Breakaway Connection
• Smoke Detector - Various Types


Electrical Guidelines

Electrical Guidelines
All wiring shall be done in accordance with the National Electrical Code ANSI/NFPA-70 latest edition, any local codes that may apply, and wiring diagrams developed in compliance with the job or project design and specifications.

Important!
Electrical input may be needed for this equipment. This work should be performed by a qualified electrician. Verify power before wiring actuator. Greenheck is not responsible for any damage to, or failure of the unit caused by incorrect field wiring. To avoid causing death or serious bodily harm to building occupants, follow all instructions carefully. Dampers must close completely to preserve the integrity of the fire smoke separation.

Pre-Installation Guidelines

The following items will aid in completing the damper installation in a timely and effective manner.
1) Check the drawings for proper damper locations within the building.
2) Lift or handle damper using sleeve or frame. Do not lift damper using blades or actuators.
3) Damper has label on outside of sleeve indicating a ‘No Screw’ area. Do not install screws into this area as screws may 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. Out of square, racked, twisted or misaligned installations can cause excessive leakage and/or torque requirements to exceed damper/actuator design.
6) Damper and actuator must be kept clean and protected from dirt, dust and other foreign materials prior to and after installation. Examples of such foreign materials include but are not limited to:
   a) Mortar dust
   b) Drywall dust
   c) Firesafing materials
   d) Wall texture
   e) Paint overspray

7) Damper should be sufficiently covered as to prevent overspray if wall texturing or spray painting will be performed within 5 feet of the damper. Excessive dirt or foreign material deposits on the damper can cause excessive leakage and/or torque requirements to exceed damper/actuator design.

8) The Code Authority Having Jurisdiction (AHJ) must evaluate and provide approval of final installation where variations to these instructions are necessary.

Smoke Damper Requirements

Smoke dampers are required to close and prevent the passage of air and smoke through ducts or ventilation openings in smoke barriers. Smoke dampers are also applied in engineered smoke control systems to establish air pressure differentials and thereby prevent the spread of smoke.

Installing Multiple Section Damper Assemblies

A damper assembly is not restricted to a maximum number of sections, but must not exceed the section sizes and assembly sizes shown in the Maximum Assembly Table.
Some multiple section high damper assemblies require additional structural support between the damper frames. The following multiple section high damper assemblies require the use of either a support mullion between the damper frames as shown in Figure 1 or individual sleeves around each row of dampers as shown in Figure 2:
• All horizontal mount dampers
• All vertical mount dampers over 72 in. (1829mm) high and greater than 2 sections wide
• All vertical mount dampers rated for more than 4 in. wg (1 kPa)
• All vertical mount dampers that use fusible links as a closure device
• All SMD-401EF that are over one section high will need to be field assembled using the mullion plate provided
Installing Multiple Section Damper Assemblies cont.....

The damper sections must be attached together with #10 (¾ in. max. [19mm]) sheet metal screws, ¼ in. (6mm) diameter nuts and bolts, tack or spot welds, or 3/16 in. (48mm) diameter steel pop rivets. Attachments must be spaced a maximum of 6 in. (152mm) on centers and a maximum of 2 in. (51mm) from corners. Attachments must be made on front face and back face (air entering and air exiting side) of damper sections.

**Note:** Dampers ordered for individual installation may not be installed together. The full assembly size must be specified at the time the dampers are ordered.

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### Maximum Assembly Tables

<table>
<thead>
<tr>
<th>Damper model</th>
<th>Maximum Single Section Size in. (mm)</th>
<th>Maximum Overall Size for Multiple Section Dampers in. (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMD-201, 202, 203</td>
<td>36 x 48 or 32 x 50 (914 x 1219 or 813 x 1270)</td>
<td>144 x 100 or 288 x 50 (3658 x 2540 or 7315 x 1270)</td>
</tr>
<tr>
<td>SMD-201M, 202M</td>
<td>36 x 36 (914 x 914)</td>
<td>144 x 72 or 288 x 36 (3658 x 1829 or 7315 x 914)</td>
</tr>
<tr>
<td>SMD-301, 302</td>
<td>32 x 50 (813 x 1270)</td>
<td>128 x 100 or 256 x 50 (3251 x 2540 or 6502 x 1270)</td>
</tr>
<tr>
<td>SMD-301M, 302M</td>
<td>32 x 50 (813 x 1270)</td>
<td>128 x 100 or 256 x 50 (3251 x 2540 or 6502 x 1270)</td>
</tr>
<tr>
<td>SMD-401</td>
<td>48 x 60 (1219 x 1524)</td>
<td>192 x 120, 48 x 288, or 384 x 36 (4877 x 3048, 1219 x 7315 or 9754 x 914)</td>
</tr>
<tr>
<td>SMDR, SESMDR, SSSMDR</td>
<td>24 (610)</td>
<td>NA</td>
</tr>
<tr>
<td>SESMD-201, SSSMD-201</td>
<td>24 x 30 (610 x 762)</td>
<td>88 x 72 (2235 x 1829)</td>
</tr>
<tr>
<td>SMD-301V</td>
<td>50 x 32 (1270 x 813)</td>
<td>100 x 32 (2540 x 813)</td>
</tr>
<tr>
<td>SMD-401M</td>
<td>36 x 36 (914 x 914)</td>
<td>144 x 72 or 288 x 36 (3658 x 1829 or 7315 x 914)</td>
</tr>
<tr>
<td>SMD-401EF</td>
<td>48 x 60 (1219 x 1524)</td>
<td>192 x 120 or 96 x 240 (4877 x 3048 or 2438 x 6096)</td>
</tr>
</tbody>
</table>

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**Figure 1:** Single sleeve around outside with support mullion

**Figure 2:** Two individually sleeved units with no mullions

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Smoke Dampers 3
Sealing After Installing

After installing the damper in the ductwork, seal the joint between the damper frame and the duct using Dow Corning RTV 732 sealant, GE1200 series silicone construction adhesive or Component Hardware SLT-5000 silicone sealant. Make sure to press the sealant into the joint to guarantee a proper seal. Make sure to press the sealant into the joint to guarantee a proper seal. Use the minimum amount of material required to completely seal the joint (see Figure 3).

Blade Orientation for Round Smoke Dampers

30° Off Horizontal (Maximum)

30° Off Horizontal (Maximum)

Normal
Actuator and Open/Close Indicator Connections

Actuator Connections
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 (see Electrical Guidelines).

Open/Close Indicator
OCI - The OCI (open or closed indicator) option contains two single pole single throw switches used to indicate the damper blade position. The switches provide a positive open and closed signal and can be used in conjunction with remote indicator lights. Refer to Figure 3 for wiring of the OCI option.

Ratings (Figure 4)
Integral Switch Type: Single Pole, single throw
Electrical Capacity: 10 Amps, 1/4 hp, 120 or 240 Vac
1/2 Amp, 125 Vdc; 1/4 Amp 250 Vdc
5 Amps, 120 Vac “L” (lamp load)
1.0 Amps, 24 Vac
1.5 Amps, 24 Vdc
Temperature Limit: 302°F (150°C) ambient or nominal

Fan Isolation Application
For air handling equipment isolation, leakage rated dampers are designed to operate with blades running horizontally. Dampers can be installed in a vertical or horizontal position. Sealants and damper seal materials meet the requirements for NFPA 90A for smoke developed rating (≤50) and flame spread index (≤25) as tested per UL 723/ASTM E84-91 A/NFPA 255. Dampers can be attached to the fan system discharge or inlet without being 24 in. (610mm) of a smoke barrier when used as an air handling equipment isolation damper.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Damper frame</td>
</tr>
<tr>
<td>2</td>
<td>Duct outlet</td>
</tr>
<tr>
<td>3</td>
<td>Fan (not limited to centrifugal)</td>
</tr>
<tr>
<td>4</td>
<td>#10 sheet metal screws</td>
</tr>
<tr>
<td>5</td>
<td>Actuator</td>
</tr>
</tbody>
</table>

The actuators are to be installed to function per system requirements and to be controlled by smoke detection devices.
**Damper Maintenance**

Dampers do not typically require maintenance as long as they are kept dry and clean. If cleaning is necessary, use mild detergents or solvents. If lubrication is desired for components such as axle bearings, jackshaft bearings and jamb seals, do not use oil-based lubricants or any other lubricants that attract contaminants such as dust.

Dampers and their actuator(s) must be maintained, cycled, and tested a minimum in accordance with:

- The latest editions of NFPA 80, 90A, 92, 101, 105, UL864, AMCA 503-03 and local codes.
- Actuator manufacturer recommendations.

**Damper Troubleshooting**

The following is a possible cause and correction list for common concerns with the dampers.

<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 close</td>
<td>Frame is ‘racked’ causing blades to bind on jamb seals</td>
<td>Adjust frame such that it is square and plumb</td>
</tr>
<tr>
<td></td>
<td>Actuator linkage loose</td>
<td>Close damper, disconnect power, adjust and tighten linkage</td>
</tr>
<tr>
<td></td>
<td>Defective motor</td>
<td>Replace</td>
</tr>
<tr>
<td></td>
<td>Screws in damper linkage</td>
<td>Damper installed too far into wall. Move out to line as designated on damper label</td>
</tr>
<tr>
<td></td>
<td>Contaminants on damper</td>
<td>Clean with a non-oil based solvent (see Damper Maintenance)</td>
</tr>
<tr>
<td>RRL or TOR sensor tripped</td>
<td>Heat</td>
<td>Push reset button located on backside of RRL or TOR</td>
</tr>
<tr>
<td>Damper does not operate</td>
<td>No power supplied to the actuator</td>
<td>Add power supply</td>
</tr>
</tbody>
</table>
Notes

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Product warranties can be found online at Greenheck.com, either on the specific product page or in the literature section of the website at Greenheck.com/Resources/Library/Literature.