GREENHECK
Building Value in Air.

Installation, Operation and Maintenance Manual

Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.

These instructions apply to the installation of HSD-401 leakage rated smoke damper. Specific requirements in these instructions are mandatory. Dampers must be installed in accordance with these instructions to meet the requirements of UL 555S.

Table of Contents

Electrical Guidelines 1
Pre-Installation Guidelines 2
Smoke Damper Requirements 2
Location of Damper in Ductwork 2
Attaching Damper 2
Sealing the Installation 2
Actuator Connections 2
Fan Isolation Application 3
Maintenance 4
Troubleshooting 4

"UL CLASSIFIED (see complete marking on product)"

"UL CLASSIFIED to Canadian safety standards (see complete marking on product)"

Standard 555S (Listing #R13317)

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.

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.

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.

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. Visually inspect the damper for damage.
2) Lift or handle damper using sleeve or frame. Do not lift damper using blades or actuators.
3) 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
4) 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.
5) ACCESS: Suitable access must be provided for damper inspection and servicing. Where it is not possible to achieve sufficient size access, it will be necessary to install a removable section of duct. (Refer to NFPA 90A).

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. HSD-401 damper is designed to operate with blades running horizontally. Dampers can be vertically or horizontally installed at, in accordance with NFPA, or adjacent to the point where the duct passes through the smoke barrier.

Location of Damper in Ductwork

Place the damper assembly in its proper position relative to the barrier. The plane of the closed damper blades msut be within 24 in. (610mm) of the fire rated smoke barrier and before any duct inlets or outlets.

Attaching Damper

The HSD-401 damper is flange mounted to the duct, sleeve, or wall opening with ⅜ in. (10mm) minimum diameter bolts and spaced a maximum of 6 in. (152mm) apart, on center. Dampers can be attached directly to the fan, if required.

Sealing the Installation

After installing the damper in the ductwork, seal the joint between the damper frame and the duct using Dow Corning RTV 732 sealant. 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.

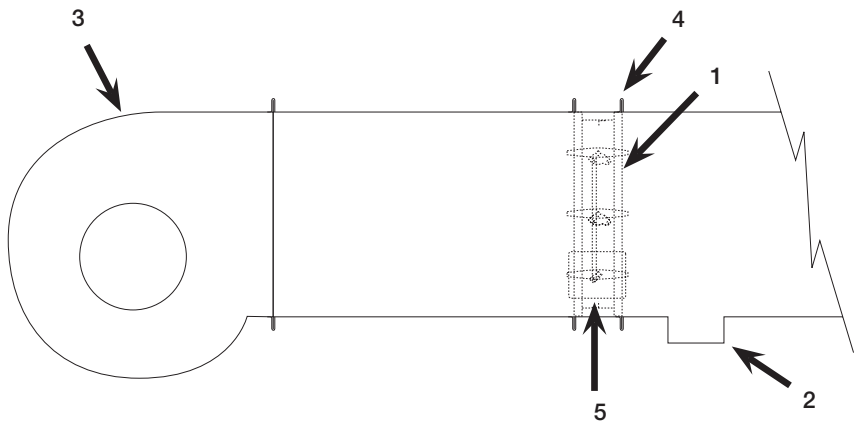
Actuator Connections

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.

Damper Model	Maximum Single Section Size (inches)	Maximum Overall Size for Multi-Section Dampers (inches)
HSD-401	60 x 60 (1524 x 1524)	240 x 120 (6096 x 3048)

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 material meet the requirements of NFPA 90A for smoke developed rating (≤50) and flame spread index (≤25) as tested per UL 723/ASME 84-91A/NFPA 255. Dampers can be attached to the fan system discharge or inlet without being 24 in. (610mm) from a smoke barrier when used as an air handling equipment isolation damper.



Item	Description
1	Damper frame
2	Duct Outlet
3	Fan (not limited to centrifugal)
4	⅜ in. (10mm) minimum diameter bolts
5	Actuator

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 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.

Symptom	Possible Cause	Corrective Action
Damper does not fully open and/or close	Frame is 'racked' causing blades to bind on jamb seals	Adjust frame such that it is square and plumb
	Actuator linkage loose	Close damper, disconnect power, adjust and tighten linkage
	Defective motor	Replace
	Screws in damper linkage	Damper installed too far into wall. Move out to line as designated on damper label
	Contaminants on damper	Clean with a non-oil based solvent (see Damper Maintenance)
Damper does not operate	No power supplied to the actuator	Add power supply

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.

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