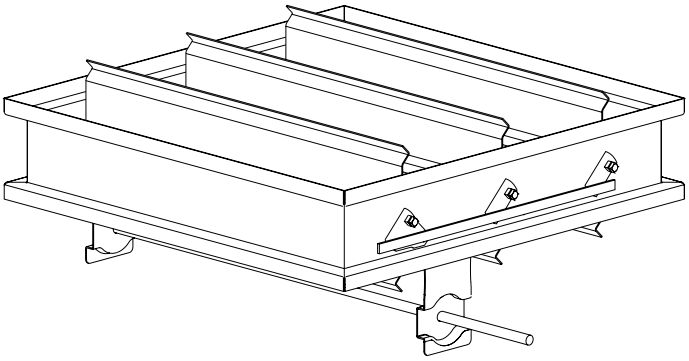
GREENHECK VENCO PRODUCTS

Part Number 461335
CFSD-XXX SERIES
Corridor Ceiling Dampers
(with factory installed actuator and sleeve)

Installation, Operation and Maintenance Instructions



CFSD models meet the requirements for corridor ceiling dampers, smoke dampers and combination fire/smoke dampers established by:

National Fire Protection Association
NFPA Standards 80, 90A, 92A, 92B, 101, & 105

IBC International Building Codes

New York City (MEA listing #260-91-M)
California State Fire Marshal (Listing #3225-0981:106) and (Listing #3230-0981:105)

"UL CLASSIFIED (see complete marking on product)"
"UL CLASSIFIED to Canadian safety standards (see complete marking on product)"
UL Standard 555 & 555S (Classification #R13317)

Installation Supplements
Refer to the appropriate Greenheck installation supplements for special requirements:

- Concrete Floor with Steel Deck
- Drive Slip Breakaway Connection
- Quick Connect Breakaway Connection
- Single Side Retaining Angle
- Sealant Usage in Conjunction with Fire Rated Dampers
- Smoke Detector Supplement
- Resettable Link (RRL)
- Open or Close Indicator (OCI)

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.

Warranty
Greenheck 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. Greenheck shall not be liable for damages resulting from misapplication or misuse of its products. Greenheck will not be responsible for any installation or removal costs. Greenheck will not be responsible for any service work or backcharges without prior written authorization.

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).

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.

Safety Caution!
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.

Due to continuing research, Greenheck reserves the right to change specifications without notice.

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.

Installation - Failure to follow these instructions will void all warranties.

These instructions cover the installation of CFSD-XXX leakage rated combination fire/smoke dampers with factory installed actuators and sleeves in corridor ceiling applications. These instructions meet the requirements of UL555, UL555S and the Uniform Building Code.

There are three different configurations available for this application. Configurations 1 & 2 apply when the fire rated ceiling is also the finished ceiling and the damper is installed behind a grille, register or diffuser. Configuration 3 applies when the fire rated ceiling is above the finished ceiling and the grille, register or diffuser is somewhere below the corridor damper.

1. MAXIMUM SIZES

Corridor dampers have a maximum size of 24 in. W x 24 in. H (610mm x 610mm) and a minimum size of 8 in. W x 6 in. H. (203mm x 152mm)

2. CLEARANCES REQUIRED BETWEEN CORRIDOR DAMPER SLEEVES AND CEILING OPENINGS

The interior dimension of the prepared ceiling opening should be 1/4 in. (6mm) larger than the overall size of the damper and sleeve assembly.

These are total clearances (ignoring fastener heads) and do not need to be spaced equally around the damper.

3. SECURING CORRIDOR DAMPER SLEEVES TO FIRE RATED CEILING OPENINGS

Corridor damper and sleeve assemblies must be installed in fire rated ceiling openings using retaining angles on each side of the ceiling as described below:

Installation of Configurations 1 & 2:

- Retaining angles must be a minimum of 20 ga. (1mm) steel and have a minimum of 1½ in. x 1¼ in. (38mm x 32mm) legs on the ducted side of the installation and 1 in. x 2½ in. (25mm x 64mm) legs on the diffuser, grille or register side.
- The 1 in. x 2½ in. (25mm x 64mm) angle may be mounted with the 2½ in. (64mm) leg inside or outside the sleeve

Installation of Configuration 3:

- Retaining angles must be a minimum of 20 ga. (1mm) steel with 1½ in. x 1¼ in. (38mm x 32mm) legs.

Retaining angles must be attached to the sleeve using:

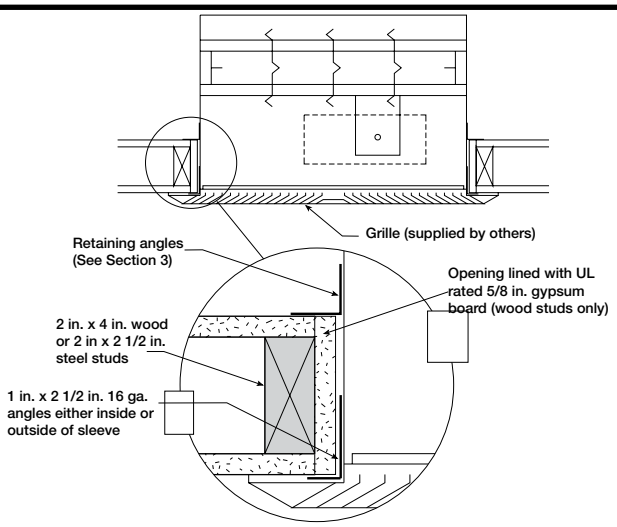
- Tack or spot welds
- No. 10 sheet metal screws
- ¼ in. (6mm) bolts and nuts
- 3/16 in. (5mm) steel pop rivets

The angles must be attached to all 4 sides of the sleeve with butt joints at each corner. A minimum of 2 attachments are required on each side, top and bottom. The angles may (but need not) be attached to each other at the corners.

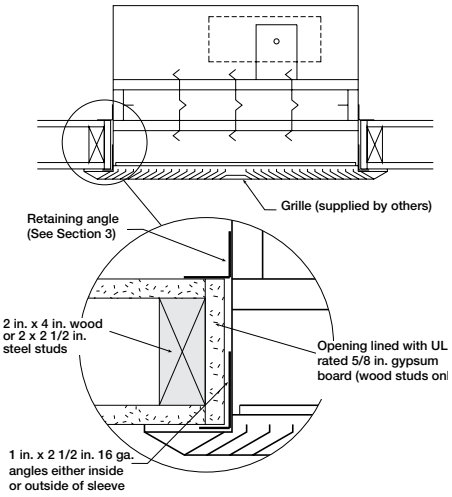
- Retaining angles must cover the clearance space between the sleeve and the ceiling opening.

4. DUCT TO SLEEVE CONNECTIONS

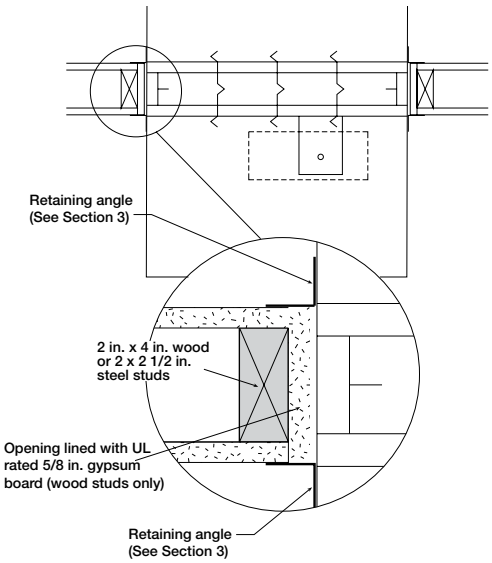
Dampers are supplied with sleeves and actuators from the factory and can be installed without the need for additional field installed sleeves.



Configuration #1
(Actuator in airstream only)
Allows access to the actuator through the grille or diffuser.



Configuration #2
(Actuator in airstream or out of airstream)



Configuration #3
(Actuator in airstream or out of airstream)
Actuator can be installed either above or below ceiling construction

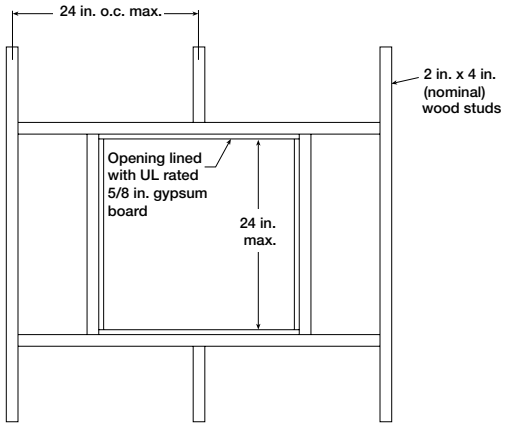
Gauge of factory furnished sleeve determines the type of duct to sleeve connections required. Any duct connection other than those breakaway connections described on page three are considered rigid. Factory furnished round duct collars on type R and CR are also considered breakaway.

6. ACTUATOR CONNECTIONS

Electrical and/or pneumatic connections to damper actuators should be made in accordance with wiring and piping diagrams developed in compliance with the job or project design and specifications.

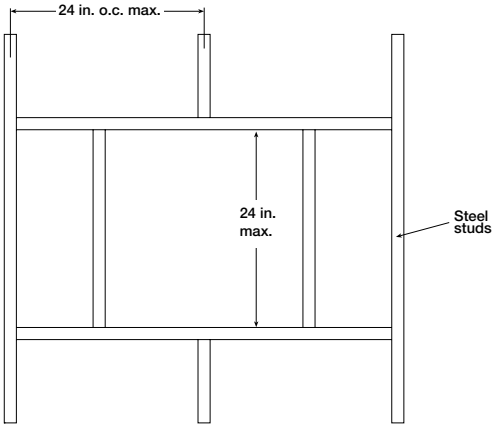
7. PREPARATION OF OPENINGS IN WOOD AND METAL STUD CORRIDOR CEILINGS

- Corridor dampers are rated in ceiling constructions with a fire resistance rating of one hour.
- Frame openings as shown below. Maximum size of opening is 24 in. x 24 in. (610mm x 610mm). See Fig. 1 & 2.
- Corridor ceiling must be covered with a minimum of one sheet of 5/8 in. (16mm) UL rated gypsum board on both sides.
- All construction and fasteners must meet the requirements of the appropriate corridor ceiling design. Gypsum panels should be attached , 12 in. (305mm) O.C. maximum, to all stud and runner flanges surrounding opening with fasteners as designated by the appropriate corridor ceiling design.



Wood Stud Assembly

Fig. 1



Steel Stud Assembly

Fig. 2

BREAKAWAY CONNECTIONS

Traditional Breakaway Style Transverse Joints

Transverse joints illustrated at right have always been approved as breakaway connections. SMACNA testing has also approved the following variations as breakaway connections.

- The breakaway connections shown below (Fig. 3) can be applied with maximum of (2) #10 sheet metal screws on each side and on the bottom located in the center of the slip pocket and penetrating both sides of the slip pocket.
- Transverse joints illustrated can be applied as top and bottom joints with Drive Slip - side joints in duct heights up to 20 inches (508mm). See ***Fig. 4.***

Fig. 4

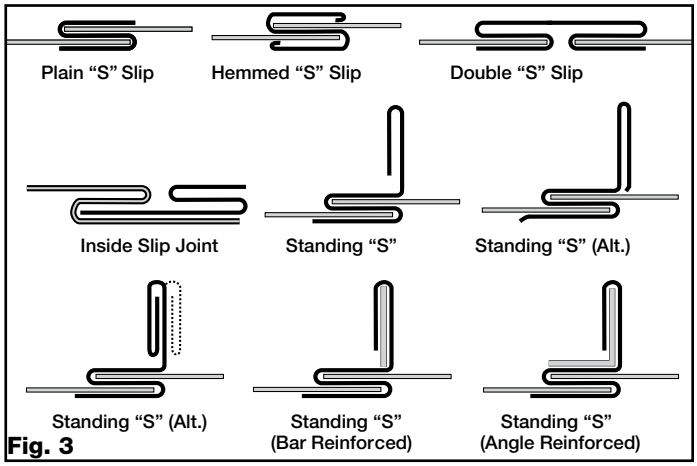


Fig. 3

Round and Oval Duct Breakaway Connections

Round or flat oval ducts connected to Type R, CR or CO damper collars may use no. 10 sheet metal screws as follows:

- Ducts to 22 in. (559mm) wide (or dia.) and smaller may use 3 screws.
- Ducts larger than 22 in. (559mm) wide (or dia.) may use 5 screws.

NOTE: All breakaway connections described may have duct sealant applied, PA2084T Duct Sealant Adhesive manufactured by Precision, DP1010 water base duct sealant manufactured by Design Polymetrics, Grey Pookie or Ductmate PROseal® in accordance with SMACNA recommendations.

Manufactured Flanged System Breakaway Connections

Flanged connection systems manufactured by Ductmate, Ward, and Nexus are approved as breakaway connections when installed as illustrated.

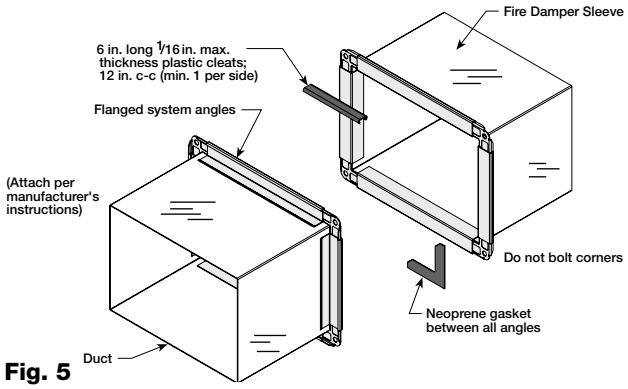


Fig. 5

Proprietary Flange System Breakaway Connections

(TDC by Lockformer, TDF by Engle) TDC and TDF systems (see Fig. 6) are approved as breakaway connections when installed as described in the TDC or TDF addendum to the SMACNA Duct Construction Standards except the corners may not be bolted. Standard 6 in. (152mm) metal clip may be used with spacing as shown in diagram (see Fig. 7). 3/8 in. (9.5mm) metal bolts and nuts may be used to fasten together corner pieces together (see Fig. 8).

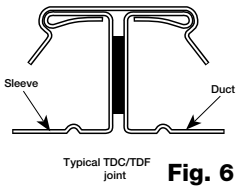


Fig. 6

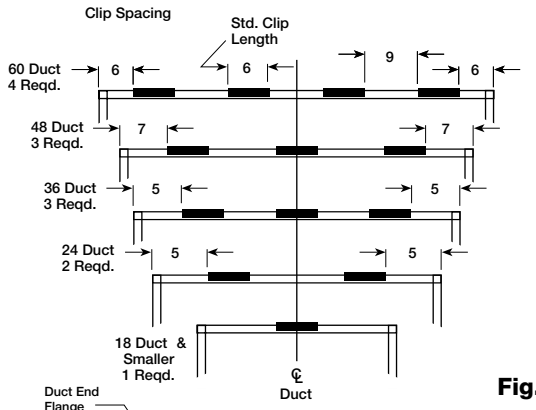


Fig. 7

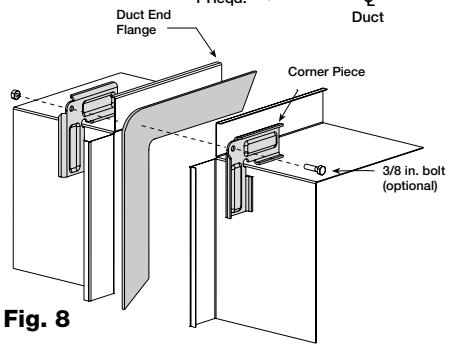


Fig. 8

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, 92A, 92B, 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)
RRL or TOR sensor tripped	Heat	Push reset button located on backside of RRL or TOR
Damper does not operate	No power supplied to the actuator	Add power supply

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