

Installation, Operation and Maintenance Instructions

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).

CRD-1WT Dampers are intended for installation in accordance with ceiling radiation damper requirements established by:

National Fire Protection Association

NFPA Standards 80, 90A, 92A, 92B, 101, & 105

IBC International Building Codes



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.

“UL CLASSIFIED (see complete marking on product)”

UL Standard 555C (Classification #R13446)

These instructions describe the installation of a CRD-1WT in designs: M508 and P554 as detailed in the UL Fire Resistance Directory.

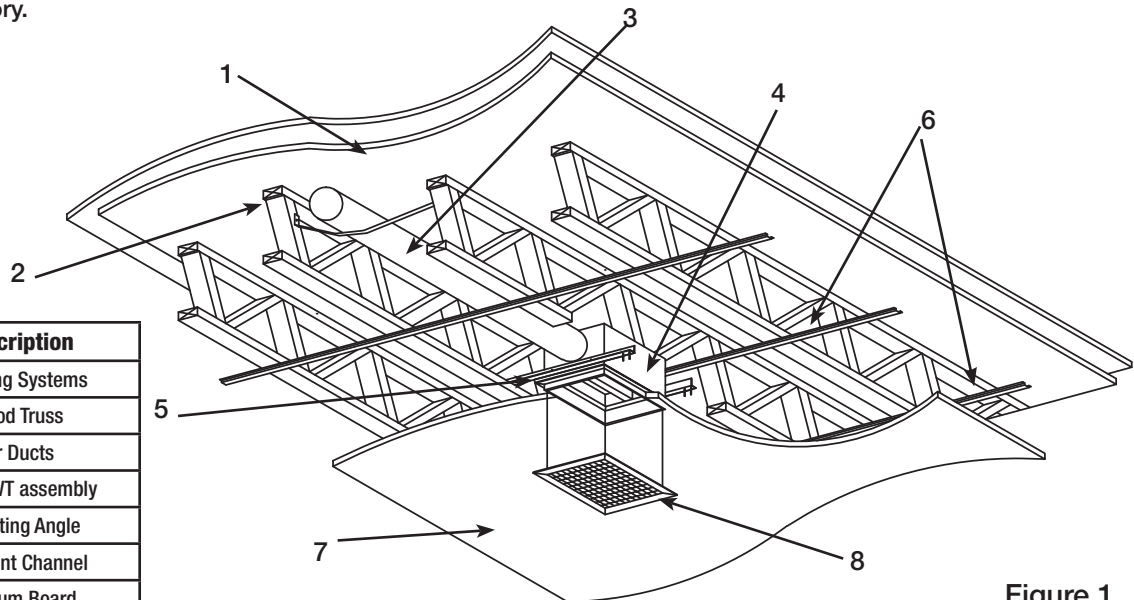


Figure 1

Number	Description
1	Flooring Systems
2	Wood Truss
3	Air Ducts
4	CRD-1WT assembly
5	Mounting Angle
6	Resilient Channel
7	Gypsum Board
8	Grille (not supplied)
9	Finishing System (not shown)

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 Guidelines

- 1) CRD's are shipped from the factory with the blades in the closed position. The fusible link must be installed at the time of installation such that the blades are held open as shown in Figure 2.
- 2) Fasteners (screws, bolts, rivet, etc.) used for installation **must not interfere with blade operation**.
- 3) Flexible duct must be Class I or 0 type, bearing the UL listed mark. Steel duct must be a minimum 28 ga. (.5mm) and maximum 20 ga. (1mm).
- 4) Ceiling damper must be installed as described in these installations.
- 5) Ceiling penetration shall be located between floor/ceiling trusses.
- 6) Dampers supplied without a factory supplied plenum box require a steel or ductboard plenum to be field installed (see pages 4 and 5).
- 7) Dampers shipped with factory attached plenums **MUST** be installed prior to sheetrock ceiling installation.

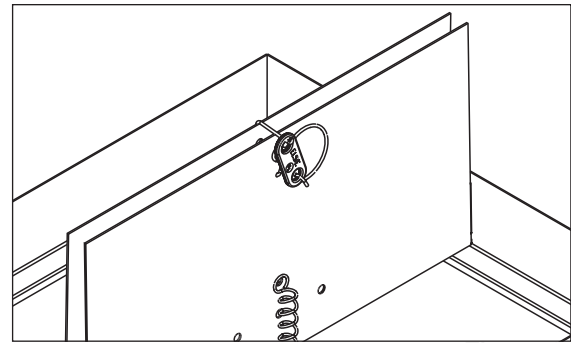


Figure 2

Installation

- 1) The damper assembly is to be attached to the trusses using 2 - 1 in. x 1 in. x 16 ga. (25mm x 25mm x 1.5mm) or 2 - 1 1/4 in. x 1 in. x 20 ga. (32mm x 25mm x 1mm) mounting angles. See Figure 3 for alternate mounting angle detail. Attach each mounting angles to the damper with a minimum of 2 - #8 screws or 5/32 in. (4mm) diameter steel rivets.

Note: Make sure the fasteners do not interfere with the damper operation.

- 2) Install the damper assembly, with attached mounting angles, between the trusses as shown in Figures 4 - 7 and attach mounting angles to the trusses using 4 - 1 1/4 in. long steel screws per mounting angle.
- 3) For grille mount installations, the grille/diffuser frame shall be steel. The grille/diffuser shall be attached with a minimum of 4 - 1 in. (25mm) long #6 screws run through the gypsum wall board into the plaster flange (Figure 4 and 5).
- 4) For duct mount installations, 1 in. x 1 in. x 24 ga. (25mm x 25mm x 0.7mm) retaining angles shall be installed on all four sides and shall be attached with a minimum 4 - 1 in. (25mm) long #6 screws run through the gypsum wallboard into the plaster flange (Figure 6 and 7).

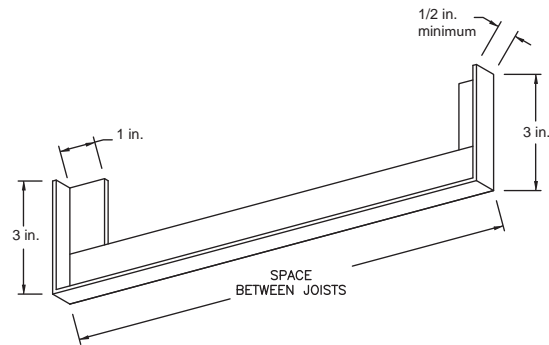
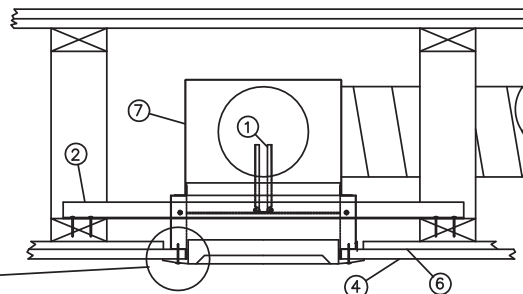
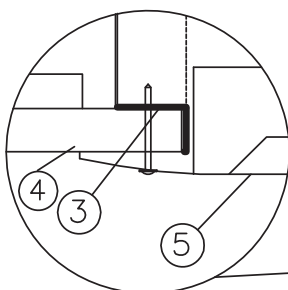


Figure 3 - Alternate Mounting Angle (provided by others)

Note: For grille mount installations, the damper blades shall be maximum 3 1/4 in. (83mm) above the top of the ceiling plane. For duct mount installations, the damper blades shall be maximum 1/8 in. (6mm) above the top of the ceiling plane.



1. Damper
2. Mounting Angle
3. Plaster Flange
4. Gypsum Board
5. Grille
6. RC Channel
7. Steel Plenum

Figure 4: Grille Mount with Steel Plenum

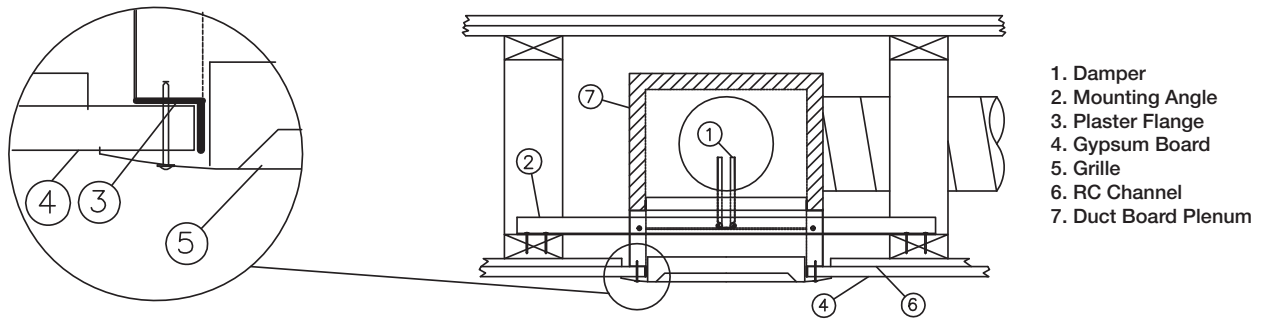


Figure 5: Grille Mount with Duct Board Plenum

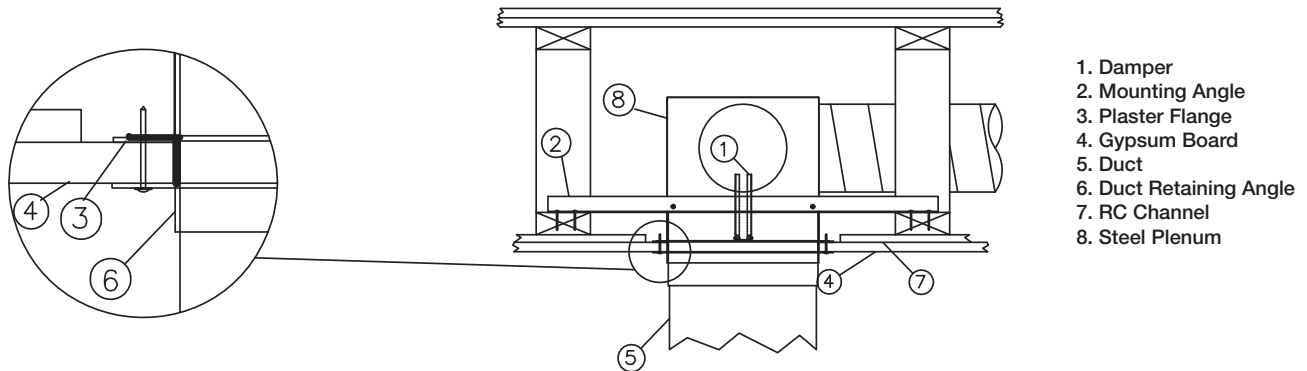


Figure 6: Duct Mount with Steel Plenum

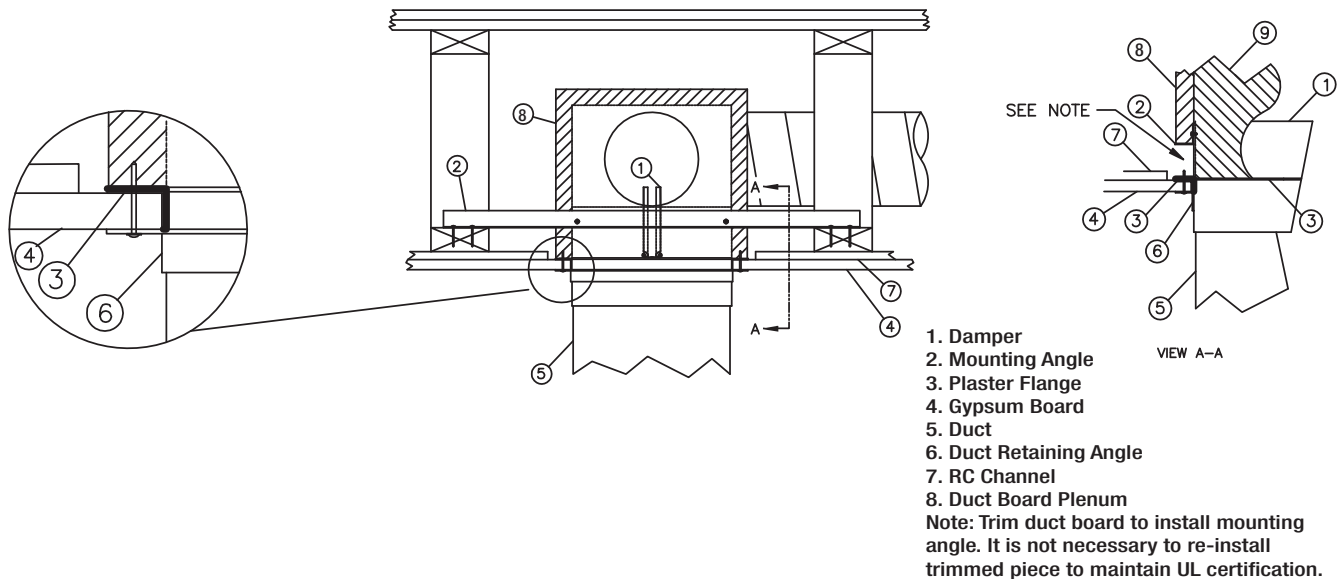


Figure 7: Duct Mount with Duct Board Plenum

Field Installation of Steel Plenums

1. The steel plenum box shall be a minimum of 28 ga. (0.47mm) of galvanized steel.
2. The inside width x length dimensions of the steel plenum shall be sized no greater than 1/8 in. (3mm) larger than the damper frame. The maximum plenum height shall be 14 in. (356mm) as illustrated below. The plenum should be sized to provide a snug fit over the damper frame.
3. The plenum duct collars shall be a minimum of 30 ga. (.39mm) galvanized steel. The total area of the plenum box duct collars shall not exceed 78.5 sq. in. (1994 sq. mm) with a maximum of two duct

collars per plenum. Duct collars shall be securely fastened to the plenum surface. Any segment of the duct collar that protrudes inside the plenum wall must not interfere with the damper blade operation.

4. The steel plenum box is to be attached to the damper using a #8 screws, 1/8 in. (3mm) rivets, spot welds or tack welds. Minimum of two per side (Figure 8).
5. The attachment of the screws or rivets must not interfere with damper operation.

Field Installation of Steel Plenums cont.....

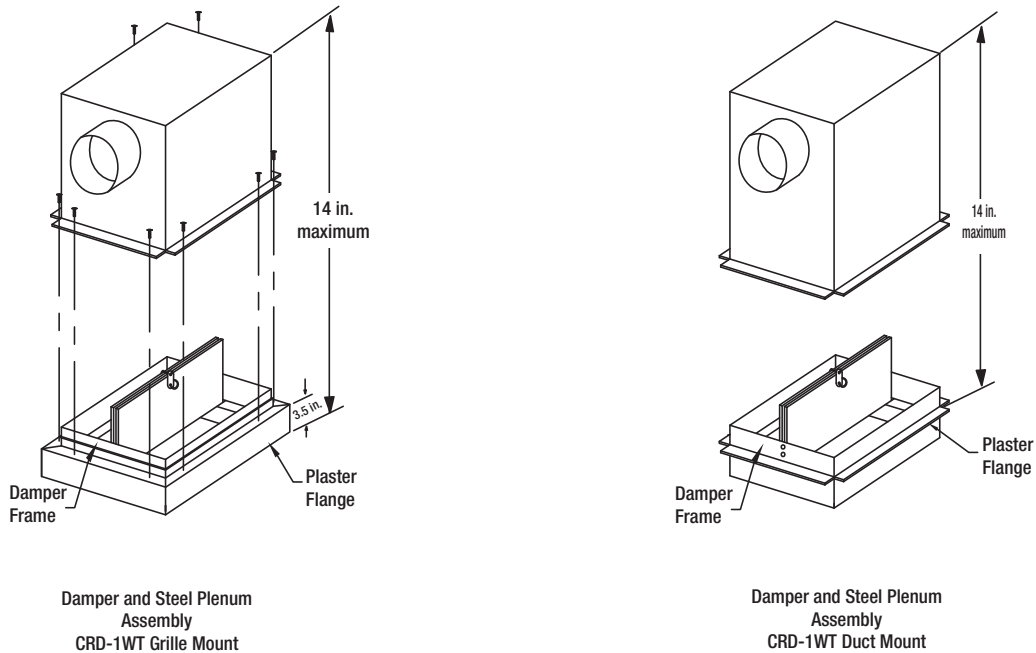


Figure 8

Fabrication of Fiberglass Ductboard Plenum for CRD-1WT

1. Fiberglass ductboard shall be a minimum of 1 inch (25mm) thick UL181 Listed and have a minimum R-value 4.3 .
2. The inside width x length dimensions on the duct board plenum shall be sized no greater than 1/8 in. (3mm) larger than the damper frame. The maximum plenum height shall be 15 in. (381mm) as illustrated below. The plenum should be sized to provide a snug fit over the damper frame.
3. Edge and corner preparation shall be accordance with details shown (Figures 9 and 10). Plenum top shall be fabricated and attached using similar method, S-AF and SF-AF (Figures 9 and 10).
4. Corner sealing tape shall be UL 181 Listed and minimum of 2 in. (51mm) wide.
5. The plenum duct collars shall be minimum of 30 ga. (.39mm) galvanized steel. The total area of the plenum box duct collars shall not exceed 78.5 sq. in. (1994 sq. mm) with a maximum of two duct collars per plenum. Duct collars shall be securely fastened to the plenum duct board. Any segment of the duct collar that protrudes inside the plenum must not interfere with the damper blade operation.
6. Plenum shall be attached to ceiling damper sub-frame using UL 181 Listed tape (Figure 11).
7. Refer to Figure 4- 7 for ceiling damper installation. The CRD-1WT ceiling radiation damper is classified for use in specific wood truss ceiling assemblies. See UL Fire Resistance Directory for floor/ceiling design number M508 and roof/ceiling design number P554.

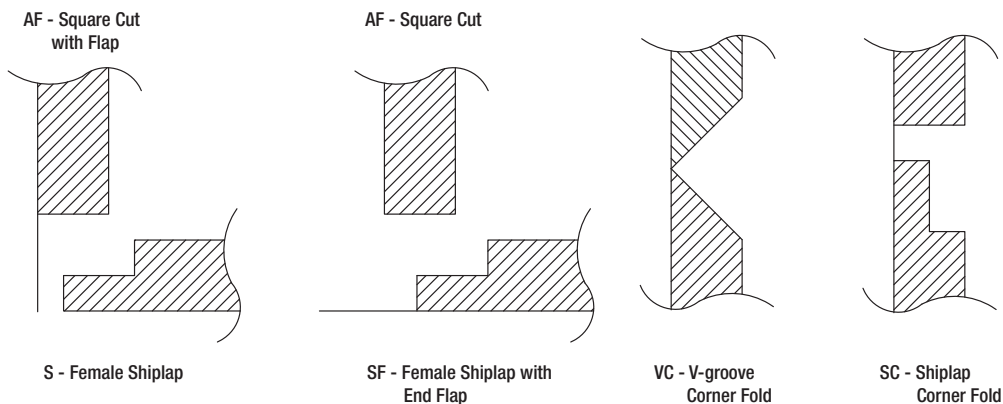


Figure 9

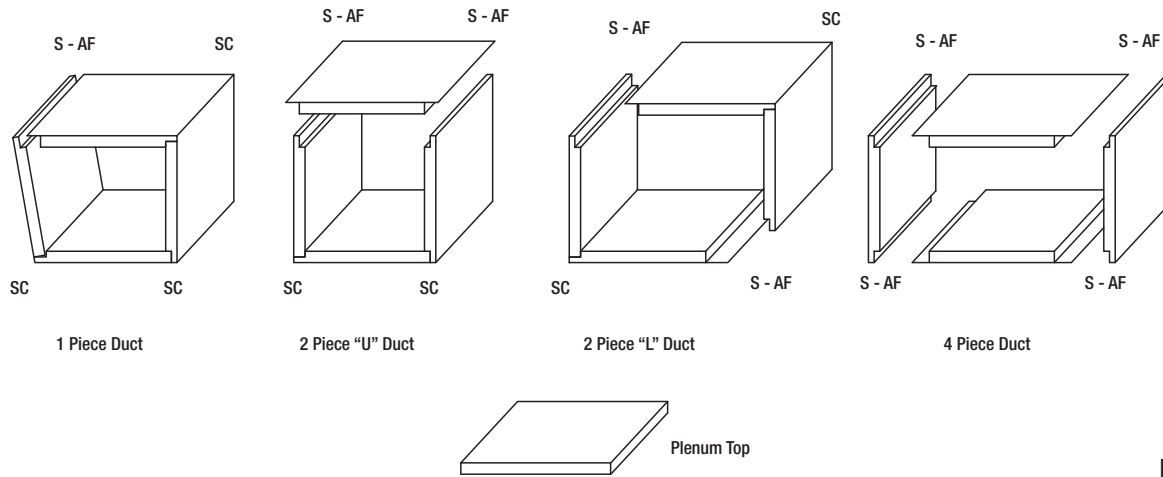
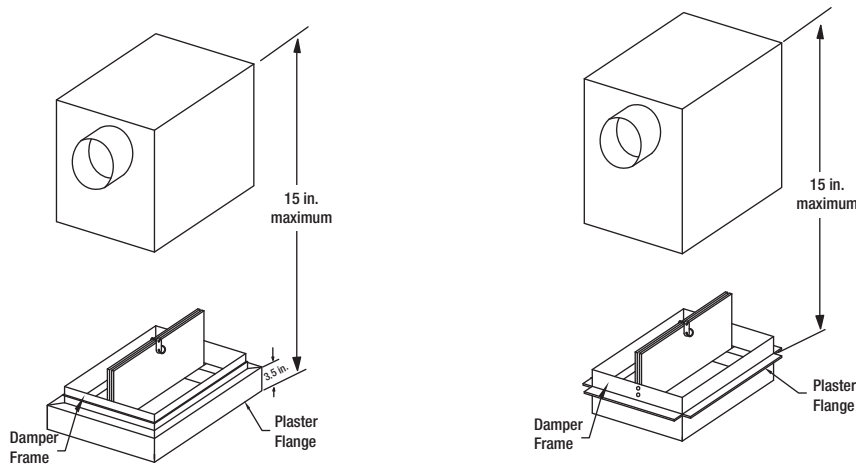


Figure 10



Damper and Duct Board Plenum Assembly
CRD-1WT Grille Mount

Damper and Duct Board Plenum Assembly
CRD-1WT Duct Mount

Figure 11

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, 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.

Our Commitment

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

Specific Greenheck product warranties can be located on greenheck.com within the product area tabs and listed in the Library under Warrantees.

