

## INSTALLATION INSTRUCTIONS CEILING DAMPERS MODEL CFD8

### APPLICATION

The CFD8 is a UL labeled ceiling radiation damper. When installed as shown, it provides appropriate protection for air inlet or outlet penetrations in the ceiling membrane of floor/ceiling and roof/ceiling assemblies with fire resistance ratings of up to 3 hours. The CFD8 is used in lieu of "hinged blade" dampers shown in some designs in the UL Fire Resistance Directory (FRD).

### SYSTEM COMPONENTS

The ceiling damper and associated components (air devices, ducts, duct drops, hangar wire, etc.) must be constructed of steel unless otherwise noted. Flexible duct, if used, must be Class I or Class 0 type and bear the UL listing mark and be retained by 16 SWG minimum steel wire around the damper frame. The installations and air devices shown in these instructions illustrate general arrangements only. Installation must incorporate applicable requirements for the specific floor/ceiling or roof/ceiling construction in the UL Fire Resistance Directory.

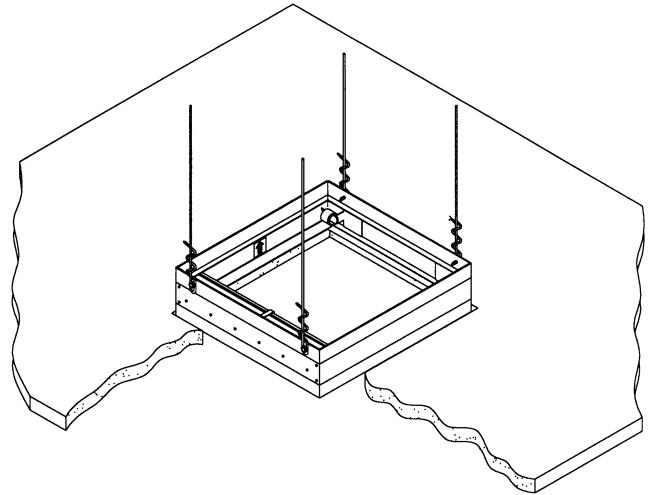
### CEILING PENETRATIONS

Ceiling penetrations should be located within ceiling tiles or panels without necessitating cuts in the ceiling suspension main runners or cross tees. If required, a maximum of one runner or cross tee may be cut to enable proper damper location and installation. Each cut end shall be supported by a minimum 12 SWG vertical hangar wire. A 1/2" (13) clearance must be maintained between the air inlet/outlet and the cut end of the runner or cross tee.

### CONNECTIONS

Connections must be made using #8 sheet metal screws, 3/16" (4) tubular steel rivets, tack or spot welds spaced 6" (152) on center. Use a minimum of one connection per side for rectangular or square dampers and three equally spaced connections for round dampers. Connections must not interfere with damper blade operation.

Dimensions shown in parentheses ( ) indicate millimeters.



## INSTALLATION 1

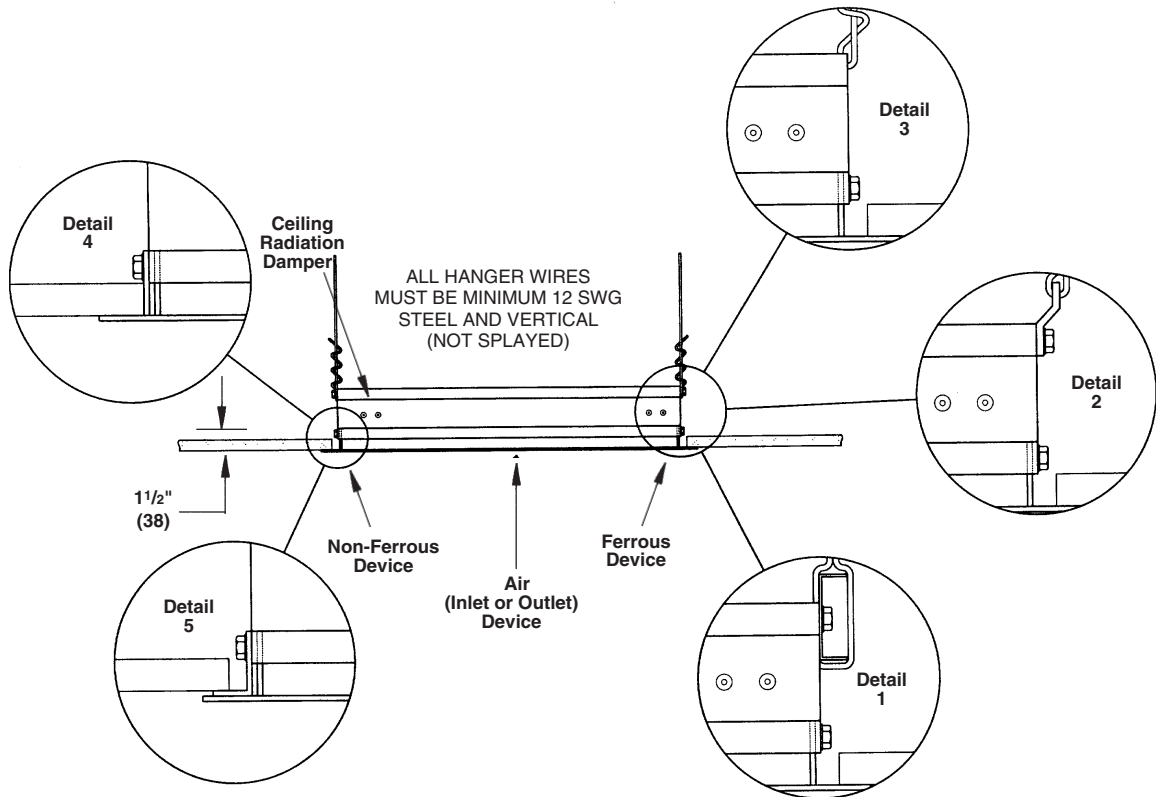
### UNDUCTED OR FLEX DUCT SURFACE MOUNT SUPPORTED FROM STRUCTURE

- Opening in ceiling membrane may be up to one inch larger than the nominal size of the ceiling radiation damper. For example a 12" x 12" (305 x 305) ceiling radiation damper could have a maximum ceiling membrane opening of 13" x 13" (330 x 330).
- Connection of ceiling radiation damper and air device may be satisfied in three ways:
  1. Ceiling radiation damper may be connected directly to the air device and supported by steel channel (see Detail 1).
  2. Ceiling radiation damper may be connected directly to the air device and supported by hanger straps (see Detail 2) or the hangar strap may be eliminated and the wires looped directly around the sheet metal screws.
  3. Ceiling radiation damper may be connected directly to the air device and supported by direct suspension with wires looped through holes in the damper frame before tying (see Detail 3).

#### Non-Ferrous Air Devices

Ceiling membrane openings that utilize air device constructed from material other than steel require one of the following:

1. A steel extension should extend from the ceiling radiation damper to the bottom surface of the ceiling membrane and the opening in the ceiling membrane should be equal to the outside of the steel extension (see Detail 4).
2. A steel angle should be attached to the bottom of the ceiling radiation damper and span the gap from the ceiling radiation damper to the bottom of the ceiling membrane. The steel angle should overlap the ceiling membrane (see Detail 5).



## INSTALLATION 2

### DUCTED SURFACE MOUNT SUPPORTED FROM DUCTWORK

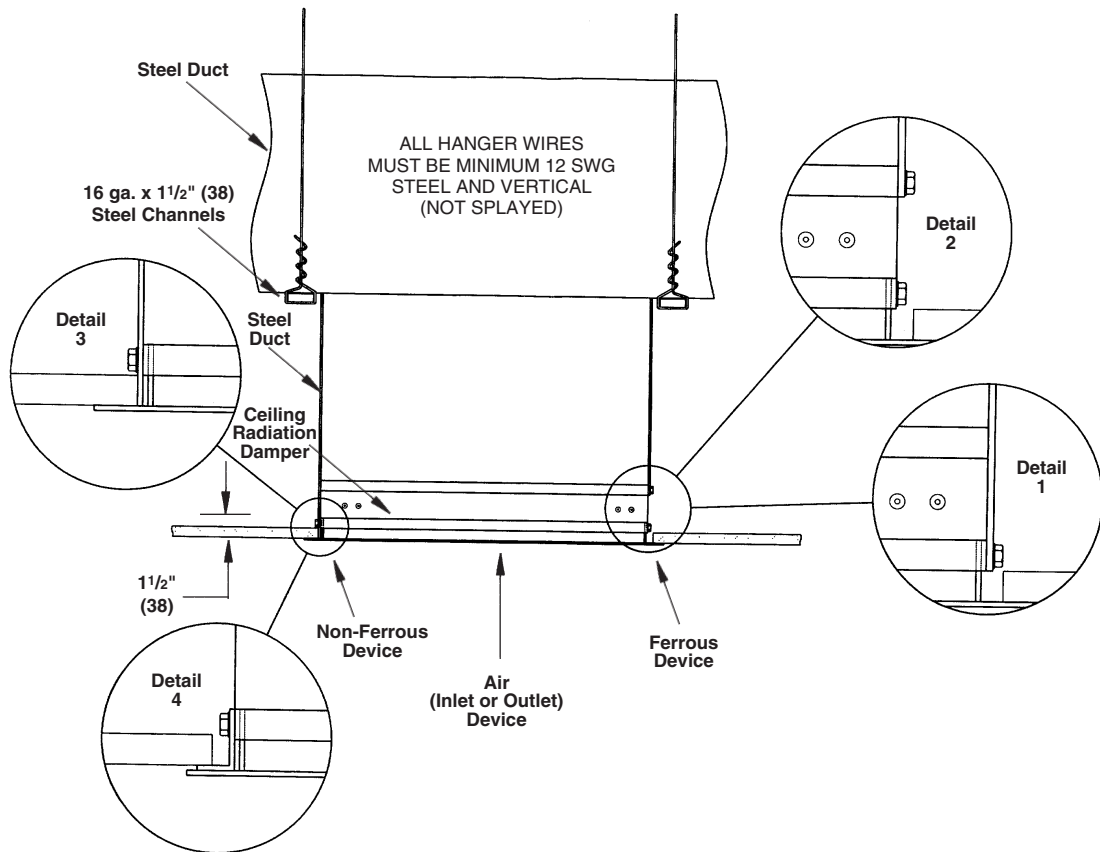
- Opening in ceiling membrane may be up to one inch larger than the nominal size of the ceiling radiation damper. For example a 12" x 12" (305 x 305) ceiling radiation damper could have a maximum ceiling membrane opening of 13" x 13" (330 x 330).
- Connection of ceiling radiation damper, grille and steel duct drop may be satisfied in two ways:
  1. Ceiling radiation damper and grille neck may be connected directly to the duct drop (see Detail 1).
  2. Ceiling radiation damper may be connected directly to the grille neck and then the duct drop connected to the damper (see Detail 2).

#### Non-Ferrous Air Devices

Air devices that have non-ferrous frames.

Ceiling membrane openings that utilize air device constructed from material other than steel require one of the following:

1. A steel duct drop should extend to the bottom surface of the ceiling membrane and the opening in the ceiling membrane should be equal to the outside of the duct drop (see Detail 3).
2. A steel angle should be attached to the bottom of the ceiling radiation damper and span the gap from the ceiling radiation damper to the bottom of the ceiling membrane. The steel angle should overlap the ceiling membrane (see Detail 4).



### INSTALLATION 3

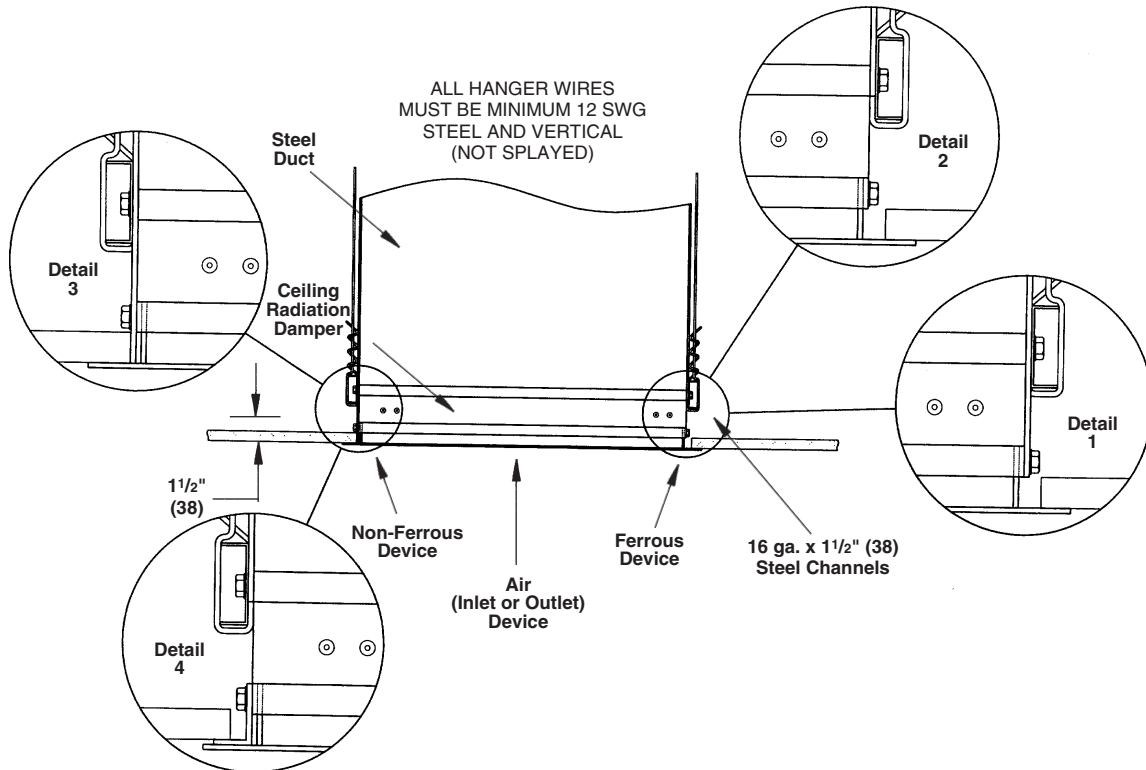
#### DUCTED SURFACE MOUNT SUPPORTED FROM STRUCTURE

- Opening in ceiling membrane may be up to one inch larger than the nominal size of the ceiling radiation damper. For example a 12" x 12" (305 x 305) ceiling radiation damper could have a maximum ceiling membrane opening of 13" x 13" (330 x 330).
- Connection of ceiling radiation damper and air device may be satisfied in three ways:
  1. Ceiling radiation damper and air device may be connected directly to the duct drop (see Detail 1).
  2. Ceiling radiation damper may be connected directly to the air device and then the duct drop connected to the damper (see Detail 2).

#### Non-Ferrous Air Devices

Ceiling membrane openings that utilize air device constructed from material other than steel require one of the following:

1. A steel duct drop should extend to the bottom surface of the ceiling membrane and the opening in the ceiling membrane should be equal to the outside of the steel extension (see Detail 3).
2. A steel angle should be attached to the bottom of the ceiling radiation damper and span the gap from the ceiling radiation damper to the bottom of the ceiling membrane. The steel angle should overlap the ceiling membrane (see Detail 5).



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