MANUAL – INSTALLATION & MOUNTING INSTRUCTIONS

Ceiling Radiation Damper

CRD-SR, CRD-RD, CRD-CT

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CEILING RADIATION DAMPER

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Product Overview

The Ceiling Radiation Damper, also known as a Fire Stop Flap, is a durable and dependable solution designed to maintain the fire-resistance integrity of ceilings and ceiling assemblies that incorporate air distribution outlets or penetrations. These dampers are UL 555C/ULC S112.2 listed, ensuring compliance with rigorous safety and performance standards to prevent the spread of heat through HVAC systems during a fire.

Constructed from high-quality galvanized steel, the ceiling radiation damper features a fusible link mechanism that automatically closes the damper when exposed to elevated temperatures. This heat-responsive operation effectively restricts the transfer of radiant heat through ceiling openings, maintaining the hourly fire rating of the assembly. Engineered for reliability and tested to meet building and fire safety codes, the damper offers consistent, maintenance-friendly performance for both new installations and retrofit projects. Available in a range of sizes and configurations, it integrates seamlessly with ceiling diffusers, grilles, and air terminals.

Application

The Ceiling Radiation Damper is a critical component for HVAC systems installed in fire-rated ceiling and floor-ceiling assemblies in commercial, industrial, and residential buildings. Typical applications include offices, hotels, hospitals, schools, apartment complexes, and retail spaces, where maintaining the fire rating of ceiling penetrations is essential for occupant safety and property protection.

Installed at the air outlet or return opening where ductwork passes through a fire-rated ceiling, the ceiling radiation damper helps limit the transfer of heat into adjoining spaces during a fire. The CRD is installed horizontally in the ceiling membrane of floor-ceiling or roof-ceiling assemblies with fire resistance ratings up to and including 3 hours. Designed for easy installation and compatibility with a variety of air distribution devices, it ensures compliance with UL and local building code requirements while enhancing the overall fire protection of HVAC systems. Whether for new construction or retrofit applications, this damper delivers a reliable, cost-effective solution for maintaining fire-rated integrity in ceiling assemblies.

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INSTALLATION & MOUNTING INSTRUCTIONS

applies to models CRD-SR, CRD-RD, CRD-CT

1. Ceiling Damper Installation

1.1. Damper must be attached to min. 22 ga (0.85 mm) steel sleeve or duct drop using welds, rivets, #10 (M5) screws, quick-lock, or 1/4" (6 mm)–20 bolts. Fasteners: max. 6" (152 mm) o.c., min. two per side. Do not obstruct damper blade movement.

1.2. After install, blades must be fixed open:

- For 2-blade dampers: blades back-to-back, fusible link slipped over opposite tab.
- For 1-blade dampers: open blade, rotate fuse link holder (behind blade) upright, and attach link.

1.3. Steel duct drop not required when flexible duct with square-to-round transition is used.

1.4. No additional fire wrap required if damper centerline is ≤ 3" (76 mm) above rated ceiling.

2. Ceiling Penetration & Support

2.1. Penetration must align with ceiling tile/panel. Cutting of main runners or tees not allowed unless one is cut and supported by min. 12 SWG (2.7 mm) wire at both cut ends.

3. Sleeve Termination

3.1. Sleeve may terminate in 3/4" (19 mm) flange, 5/8" (16 mm) plaster ground, or raw edge.

3.2. Raw edge requires steel diffuser with min. 1" (25 mm) flange, secured to damper using #8 (M4) screws, 3/16" (5 mm) rivets, welds, or bolts at max. 6" (152 mm) o.c., min. two per side.

4. Hanger Tabs

4.1. Min. 1" × 2" × 22 ga (25 × 51 × 0.85 mm) steel tabs. Min. one per side, two sides min.

4.2. Attach to structural ceiling using min. 12 SWG (2.7 mm) wire.

5. Duct Support Channels

5.1. Use two 1½" × ½" × 16 ga (38 × 13 × 1.6 mm) steel channels, placed at duct base, both sides.

5.2. Secure to structure using min. 12 SWG (2.7 mm) wire.

6. T-Bar Grid Support

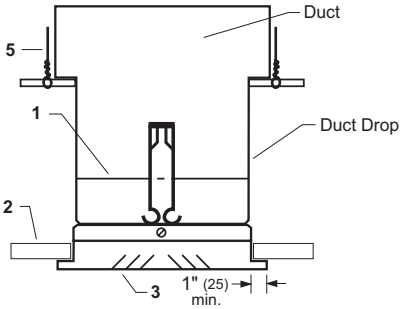
6.1. Grid must be supported at all four corners with min. 12 SWG (2.7 mm) wire.

7. Thermal Blanket (Oversized Openings)

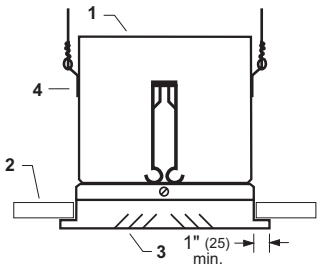
7.1. Use 1/10" (2.5 mm) thick, 8 lb/ft³ (128 kg/m³) ceramic blanket if opening exceeds nominal damper size.

7.2. Cut blanket to cover back of diffuser/outlet box up to fire damper frame base.

FIGURE 1 ▼



Installation 1



Installation 2

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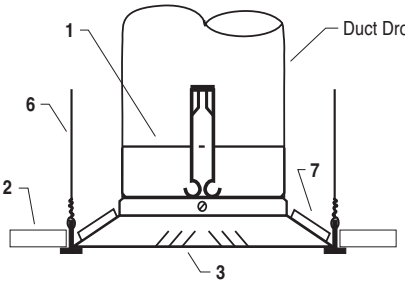

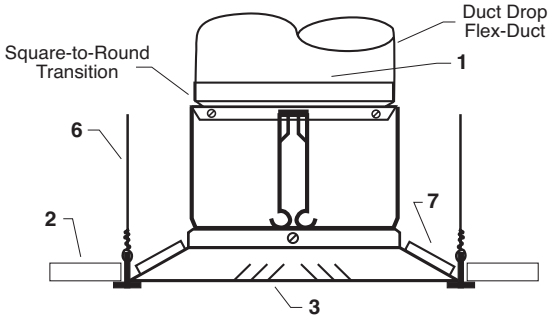

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