

## INSTALLATION INSTRUCTIONS CEILING FIRE DAMPERS MODELS CFD(R)5, CFD(R)5A

### APPLICATION

Ceiling dampers maintain the integrity of the fire resistive membrane ceiling assembly with ratings of three hours or less, recessed-style ceiling diffusers. The thermal insulating blanket protects the exposed portion of the ceiling diffuser and protects the neck or inlet of the ceiling diffuser/damper. The floor/ceiling and roof/ceiling designs are illustrated in the current UL Fire Resistance Directory.

### Ceiling Penetration

The four intersections of the cross-tees and main runner at the corners of the grid module containing the diffuser, or the midpoint of the cross-tees adjacent to the diffuser, shall be directly supported from the structural members of the floor or roof by 12 SWG minimum vertical hanger wires. When the duct extends over the intersections of the grid members, cold-rolled channels shall be used to ensure that the grid is supported from structural members by 12 SWG minimum hanger wires. Ceiling assemblies require lay-in ceiling panels be cut to fill the remainder of the 24" x 48" module and overlap the ceiling and members by a minimum of  $\frac{3}{8}$ " (10).

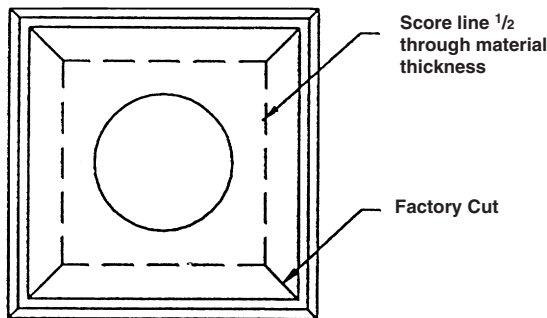
### MINERAL WOOL THERMAL BLANKET

The thermal insulation blanket is installed by laying it over the exposed surface of the ceiling diffuser. The **Mineral Wool** rests upon and protects exposed portions of the ceiling diffuser. The **Refractory Ceramic Fiber** is retained around the damper or diffuser neck by a 16 SWG minimum steel wire with the wire ends twisted tightly together.

The Thermal insulation blankets must cover all exposed horizontal and vertical back surface of the diffuser and fit inside adjacent tee bars.

#### Note:

Screws, bolts, rivets, etc., shall be a minimum of  $\frac{3}{16}$ " (4.5) from the edge of the damper frame, duct drop, or grill frame and **MUST NOT INTERFERE WITH BLADE OPERATION.**



### Damper to Grille Connections

**Damper to Grille Attachment:** Fasten the damper to the grille or diffuser frame with minimum of #8 sheet metal screws,  $\frac{3}{16}$ " (4.5) steel rivet or tack welds spaced 6" O.C. Use a minimum of one connection per side. (For round dampers use a minimum of three screws, rivets or welds equally spaced.)

### Damper to Duct Connections

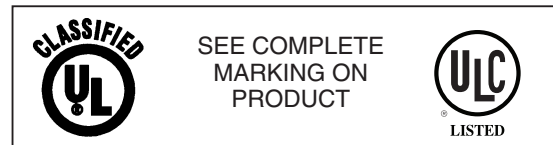
**Flex Duct Connection:** Flex duct connection shall be made with steel clamp; 16 SWG wire; or cable ties.

**Steel Duct Connection:** Fasten the damper to the steel duct with minimum of #8 sheet metal screws;  $\frac{3}{16}$ " (4.5) steel rivet; or tack welds spaced 6" O.C. Use a minimum of one connection per side. (For round dampers use a minimum of three screws, rivets or welds equally spaced.)

### Damper and Duct Support

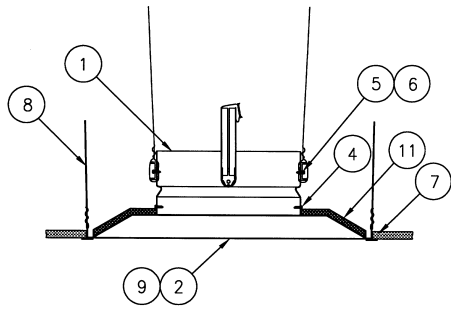
**The duct can be supported by the damper and diffuser/grille assembly** (refer to figure 2). Duct support is achieved by the use of minimum four 12 SWG hanging wires, looped around the ends of 16 MSG x  $\frac{1}{2}$ " channels, attached to the damper by #10 sheet metal screws (refer to figure 2). The wires can also be looped directly around #10 sheet metal screws (one per side) which are attached directly to the damper (refer to figure 5 for hanging wire and loop detail). Round dampers require the use of minimum three hanging wires equally spaced around the circumference.

**The duct can support the damper and diffuser/grille assembly.** The duct supports the damper assembly by the use of minimum 16 MSG x  $\frac{1}{2}$ " channels adjacent to both sides of the duct drop. 12 SWG hanging wires, looped around the ends of the channels, support the duct and attach to the ceiling structure. Damper hangers are not required in this application.



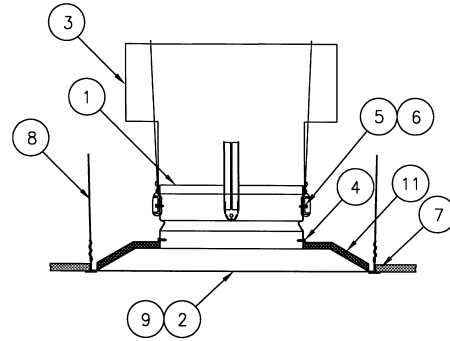
California State Fire Marshal Listing No. 3225-245:101

Figure 1



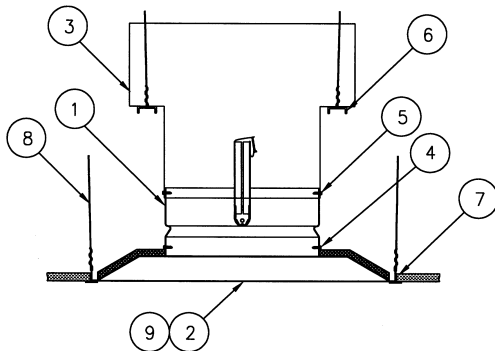
Ductless Application

Figure 2



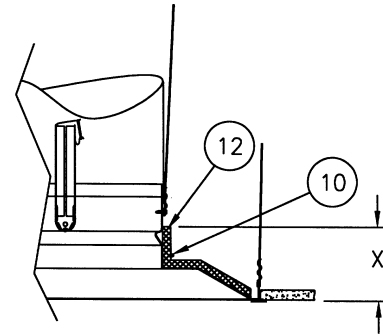
Duct Support by the Damper

Figure 3



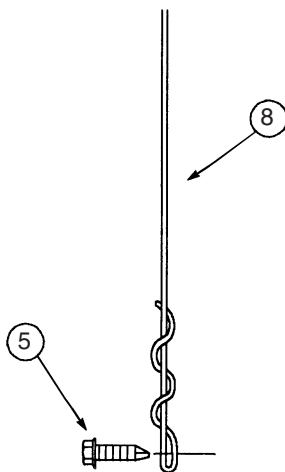
Damper Support by the Duct

Figure 4



Damper Height

Figure 5



Hanging Wire and Loop

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1.	Damper	8.	12 SWG Steel Wire
2.	Grille Frame (24 Ga. Min.)	9.	Diffuser or Grille Core (Metallic or Non-Metallic)
3.	Duct (where shown)	10.	16 SWG Steel Wire
4.	#8 Sheet Metal Screw	11.	Thermal Blanket Insulation
5.	#10 Sheet Metal Screw	12.	Insulation strips (Refractory Ceramic Fiber or Mineral Wool)
6.	16 MSG x 1 1/2" Channel		
7.	Ceiling (UL Classified)		

**"X" DIMENSION**

X dimension is the distance between the bottom of the ceiling to the blades in the closed position.

**Ducts 12" Diameter and Smaller:** When the "X" dimension is 4" (102) or smaller, insulation strips (Item 12) are not required.

**Ducts Above 12" Diameter:** When the "X" dimension is 2 3/4" (70) or smaller, insulation strips (Item 12) are not required.

**Insulating Strips** are required when the "X" dimension exceeds the above dimensions but not greater than 5" (127). Wrap the 3" (76) wide insulation strips around the neck of the damper/diffuser and attach with 16 SWG minimum steel wire with the wire ends twisted tightly together. Steel clamps or cable ties are also acceptable.