



# INSTALLATION INSTRUCTIONS

## MODEL MRCD CEILING DAMPER / TB5000 BLANKET / AIR DIFFUSER ASSEMBLIES



UL CLASSIFIED  
(SEE COMPLETE MARKING  
ON PRODUCT)



Metal-Fab, Inc. ceiling radiation dampers are classified for all UL Fire Resistant Floor-Ceiling and Roof-Ceiling Designs in the UL Fire Resistance Directory that utilize a hinged type damper in the design. The classified UL assemblies are rated for three (3) hours or less and construction materials include gypsum wallboard and acoustical panels (lay-in tiles). Refer to the UL Fire Resistance Directory for specific design information.

When installed as described herein, the MRCD damper, TB5000 blanket assembly provides the necessary protection to lay-in style ceiling air diffusers in Fire Rated Floor/Roof-Ceiling Assemblies with fire resistance ratings of 3 hours or less, as described in the current UL Fire Resistance Directory. A maximum size ceiling penetration of 576 sq. in. can be protected utilizing the TB5000 blanket furnished with the ceiling damper, to protect the exposed portion of the ceiling air diffuser and the neck or inlet of the diffuser. Installation and diffuser shown in this instruction illustrate general arrangement. Installations must also include any specific requirements described in the specific fire resistant design.

Metal-Fab, Inc. ceiling radiation dampers are unrestricted in the type of transition incorporated between the damper and supply air or return air duct systems. It is acceptable to attach the duct, rigid metal sleeve (plenum or boot) or flexible, directly to the damper. Refer to the UL Fire Resistance Directory for specific design information.

All ceiling assemblies, in the Fire Resistance Directory, require that lay-in ceiling panels which are cut to fill smaller size openings in the ceiling grid modules, due to air duct penetrations, must bear a minimum of  $\frac{3}{8}$ " on the flanges of the grid.

### PRINCIPAL COMPONENTS

1. UL Classified Model MRCD Damper and Model TB5000 Blanket (marked accessory part of MRCD dampers/blanket assembly, UL Classified for use with damper size as noted on blanket).

### INSTALLATION OF TB5000 THERMAL BLANKET

1. Install the blanket over the back of the diffuser making sure the hole in the blanket fits over the neck of the diffuser, and making sure the blanket is square to the diffuser. Replace the TB5000 Thermal Blanket if damaged during installation or shipment.

### ATTACHMENT OF MRCD DAMPER TO DIFFUSER NECK

1. Place damper on or in the neck of diffuser and attach it to diffuser neck using #10 (min.) x  $\frac{1}{2}$ " long sheet metal screws at 8" o.c. (max.). Use a minimum of (4) screws per damper (3 screws per side minimum if installed with transition), see **FIG. 2**, at a minimum of  $\frac{3}{16}$ " from bottom of damper frame.

**IMPORTANT: SCREWS USED IN CONNECTION OF DAMPER MUST NOT INTERFERE WITH DAMPER BLADE OPERATION.**

### PLACEMENT OF DAMPER/BLANKET/DIFFUSER

1. Place diffuser in ceiling grid as shown in **FIG. 1**. Make sure diffuser is flat and level with T-bar system.
2. Tuck TB5000 blanket behind T-bars around diffuser perimeter. Blanket must cover all exposed surfaces of ceiling air diffuser.

### PREPARATION OF CEILING MEMBRANE

In order to properly install the Model MRCD damper/TB5000 blanket/lay-in diffuser, the following must be done:

1. After installing the 2' cross tee in the ceiling grid (or if already installed), bend back the tabs of the 2' T-bars against the web of the T-bar intersected.
2. Using #12 S.W.G. (min.) galvanized steel hanger wire, independently support all four corners of the T-bar system at the corners of the diffuser. The hanger wires should be vertical (not splayed) and adequately fastened to the structural floor of roof members above.

## GENERAL NOTES:

1. No dampers/ductless grilles (returns) shall be located in adjacent 24" x 48" ceiling grid modules.
2. If flexible duct is used, it shall be fastened to the diffuser neck with a steel clamp or #16 S.W.G. (min.) galvanized steel wire. The flexible air duct shall be Class O or Class I type, bearing the UL Listing Mark-See the UL "Gas and Oil Equipment Directory". Maximum Length of flexible duct shall not exceed 14'-0" in length. The flexible air duct shall not rest on the back surface of the ceiling grid or panels and provide a minimum of 4" clearance. The flexible air duct shall not interfere with the closing of the MRCD damper.
3. MRCD Damper/TB5000 MRCD Blanket/Air Diffuser Assemblies are for use in lieu of the hinged-blade, sheet metal damper as specified in the individual floor and roof-ceiling design(s) being used, as illustrated and described in the current UL "Fire Resistance Directory".
4. Cycle damper after installation.

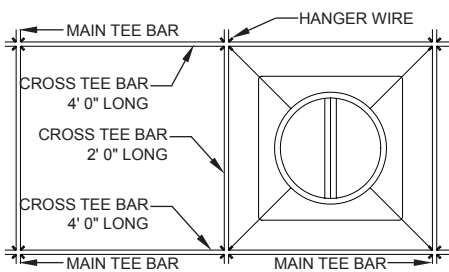


FIG. 1

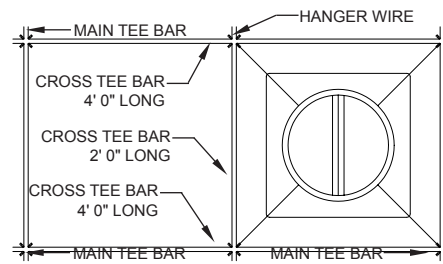
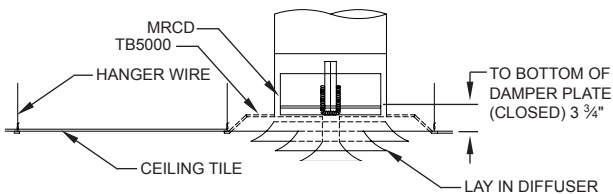
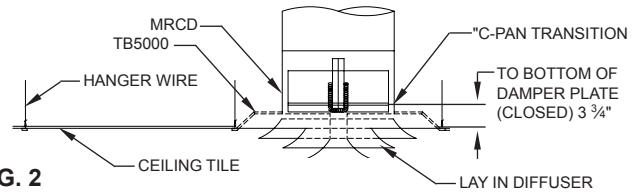


FIG. 2



## INSTALLATION IN STEEL DUCT DROPS WITH SURFACE-MOUNTED STEEL DIFFUSERS.

Type MRCD ceiling dampers are for use in lieu of the hinged-blade, sheet metal damper as specified in the Design Information Section-General and in the individual floor or roof-ceiling design(s) being used, as illustrated and described in the current UL Fire Resistance Directory.

## INSTALLATION WILL REQUIRE:

1. #16 GA., 1 1/2" Steel Channels with 9/16" flanges.
2. #12 S.W.G. Galv. Steel Hanger Wire.
3. #10 x 3/4" Steel Sheet Metal Screws.

## INSTRUCTIONS:

1. Ceiling Damper to be installed in round duct drop with fasteners (#3 above), minimum 3 and not over 8 O.C. Damper shall be close to the back of ceiling membrane with the distance from bottom of damper blade to face of ceiling not more than 3 3/4".
2. If damper has an adjustable volume control, the 2 fuse links (shipped loose with damper) must be installed on damper for proper operation.
3. Channel duct supports to be placed under horizontal duct, approximately 1" to 3" from vertical sides of duct drop (see dwg.) Channels shall be extend 4" to 6" beyond sides of horizontal duct and be spaced a maximum of 48" O.C. between duct drops.
4. Channels shall be suspended from joists with hanger wires tied at each end of channel forming trapeze-type supports.
5. Duct outlets shall be located in the field of a ceiling membrane but where it is necessary to cut a main runner or cross tee, each cut end shall be supported by a vertical #12 S.W.G. hanger wire. A 1/2" clearance shall be maintained between the duct outlet and each cut end of main runner or cross tee. The duct outlet shall be located so that no more than one main runner or cross tee is cut when penetrating the ceiling membrane.
6. Steel Diffuser to be attached to the round duct drop with fasteners (#3 above), uniformly spaced not over 6" on center (minimum 3 per side). Diffuser to provide a minimum 1" support for ceiling membrane. Size of hole cut in the ceiling membrane for passage of duct drop shall be no more than 1" larger than the duct drop.