

## Installation Instructions Models – 420 & 421

**Notes:** Before installing damper model 420 or 421, open blades and hook fusible link.

420 - Hook link to opposite blade and bend down tab to secure link. Maximum size 24 x 24 or 24" round.

421 – Connect tab to sleeve or duct work with #8 sheet metal screw provided by Safe-Air/Dowco and bend down tab to secure link. Maximum size 24 x 24.

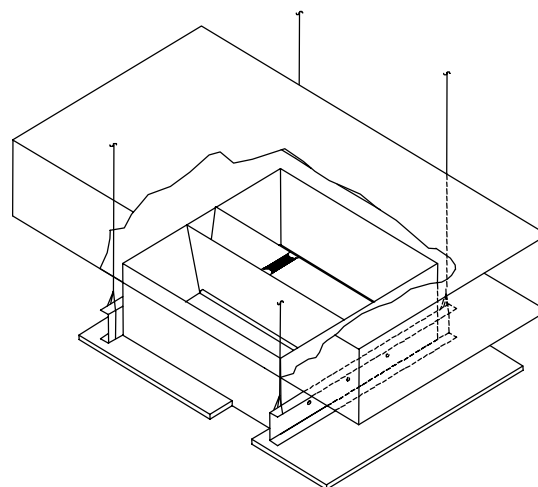
### Installation: Method 1

1. Attach the two (2) 16 ga. cold rolled steel support channels (1-1/2 inches deep with 1/2 inch flanges) through the duct drop and ceiling damper using 3/16 inch diameter by 1/2 inch long steel coils spaced 6 inch O.C. maximum with (2) bolts per channel minimum. The bolts shall not interfere with the closing of the ceiling dampers.

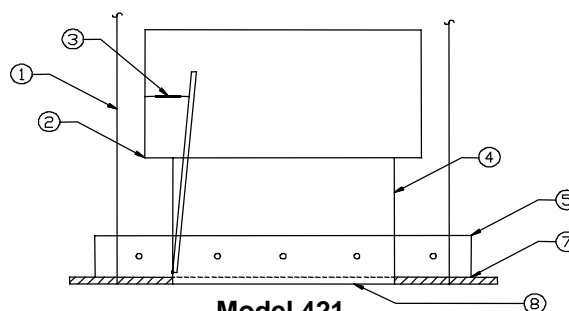
### Method 2

2. Support the duct with (2) 16 ga. cold rolled steel support channels (1-1/2 inch deep with 1/2 inch flanges) place the support channels at the bottom of the duct drop adjacent to both sides of the duct drop. Install the ceiling damper in the duct drop using 3/16 inch diameter by 1/2 inch long steel bolts, #8 by 1/2 inch sheet metal screws or 3/16 inch diameter steel rivets at 6 inch O.C. with two (2) per side minimum.

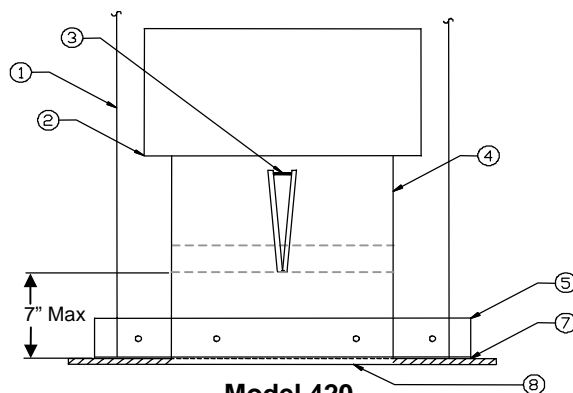
- A. Use 12 SWG galvanized steel wire hangers to independently support channels to the structural members of the floor and roof above.
- B. Steel grille or diffuser to be attached to the duct drop or ceiling damper using #8 sheet metal screws 1/2 inch long at 8 inch O.C. maximum and at least one screw per side. The grille or diffuser flange face shall overlap the ceiling opening by 1-inch minimum.
- C. The clearance between each side of the ceiling damper and the duct drop shall be 1/8 inch maximum.
- D. Duct outlets in lay-in ceiling should be located in the field of an acoustical ceiling panel or tile, where it is necessary to cut a main runner or cross tee. Each cut shall be supported by a vertical 12 ga. hanger wire. A 1/2 inch clearance shall be maintained between the duct outlet and each cut at main runner and 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.
- E. The design information section-general and in the individual floor or roof ceiling designs being used, as resistance illustrated and described in the current U.L. Fire Resistance Directory. One ceiling damper of the same size as the allowable duct outlet size may be substitutes for each hinged sheet metal damper specified in the design.



**Model 420  
Typical**



**Model 421**



**Model 420**

1. Wire Hanger (4 Required)
2. Steel Duct
3. Listed Fusible Link
4. Steel Duct Drop
5. Support Channel (2 Required)
6. Mounting Bolt, Screws or Rivets
7. Ceiling: Acoustical (Lay-in), Acoustical Tile or Gypsum Wallboard
8. Steel Grille or Diffuser (See Note B)



## OPERATION AND MAINTENANCE INTRUCTIONS

### FIRE DAMPERS

This operation and maintenance instructions should not serve as a standard basis for all damper products and other manufacturers, but for Safeair-Dowco damper products.

All back-draft and fire dampers require routine maintenance procedures in order for dampers to operate as intended in any case in which fire and smoke may occur within the building. Periodic testing of all parts linked to the damper is essential to maintaining a working damper. Check that all actuators, blades, fans, etc. are functioning properly and that nothing is preventing blades or controls from operating. Be sure to check that nothing is blocking or hindering air way passage. According to NFPA 80, periodic testing of all years begin 1 year after installation date and followed every 4 years proceeding.

*In any case where the damper is difficult to remove and/or impossible to test due to size and accessibility Safeair-Dowco recommends a complete examination for damper to be square and plumb and blade to have no obstructions. Check also that nothing hinders or prevents full operation of blades and airflow.*

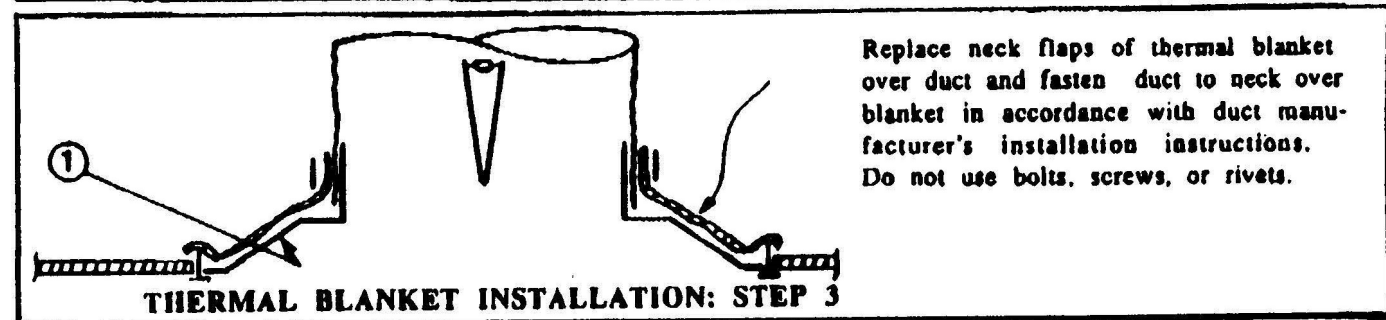
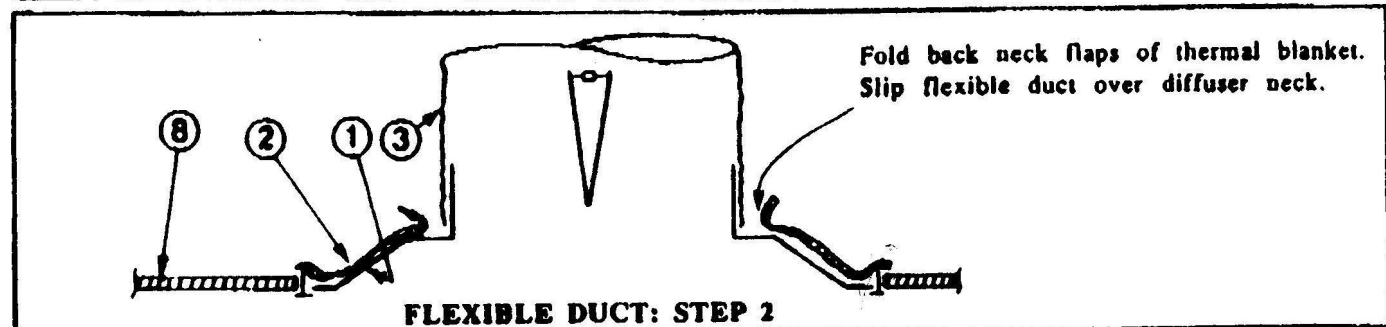
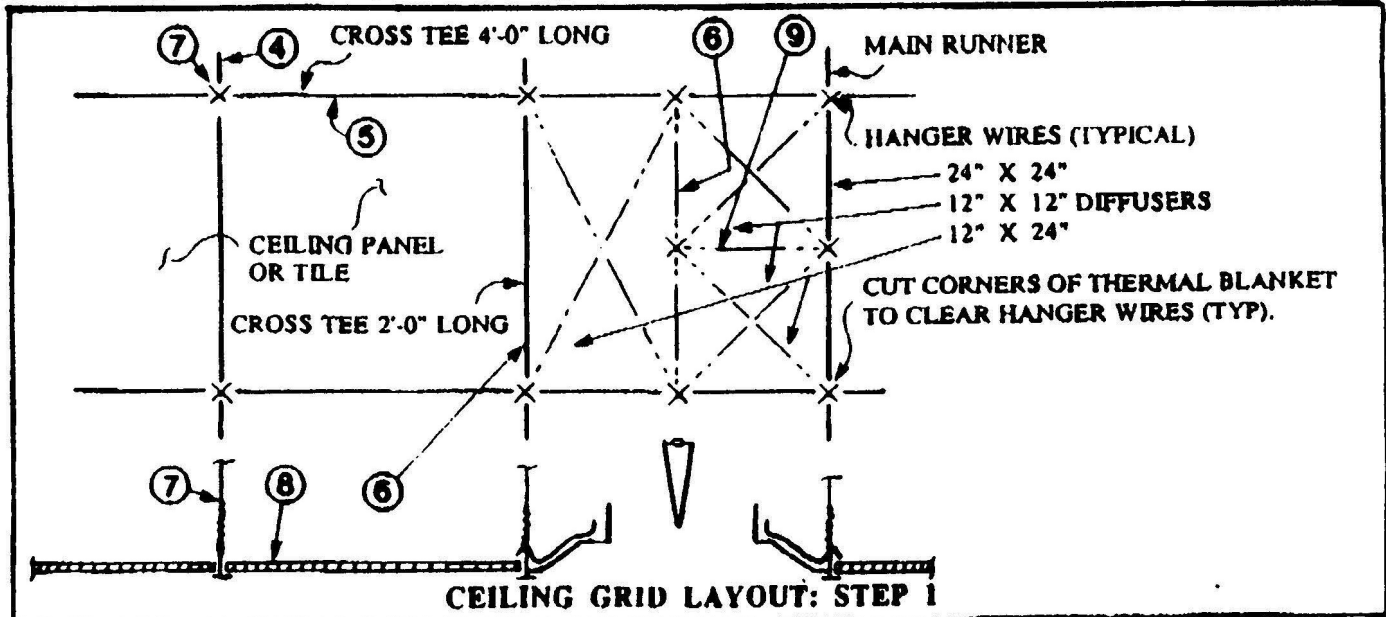
### MAINTENANCE:

1. Check interior and exterior sides of dampers for any major defects or material disintegration, rust, wear, corrosion, or any signs of damage that may prevent proper functioning of damper.
  - a. In serious damage contact Safeair-Dowco <http://safeair-dowco.com/contact.php>
2. Make sure all items linked to damper are in good condition, such as closure spring and fusible links. If part is inoperable, repair or replace part.
3. Damper blades, Shafts, bearings, pivot points etc. should be cleaned and lubricated with a light spray oil. Any and all access should be removed.
  - a. Use silicone based lubricant and not petroleum based lubricant.
  - b. Dampers with non-mettalic or carbon sleeve bearings do not require lubrication
4. Blades should be visually checked through their complete cycle for defects, binding or misalignment. Check blades and see that they are fully closed when operated.
  - a. Damper should be operated under normal airflow conditions.
5. Move blade package back to its open position and replace the fusible link.
6. If in any case actuators, blades or linkage is not properly functioning, contact Safe-Air Dowco at our given inquiry page located above to be further assisted.

### TESTING PROCEDURE:

1. With the fusible link intact, heat or remove the link with a temperate heat source. Allow blade package to drop.
  - a. **(Be sure to keep hands out of path of blades and blade package)**
2. After testing procedure check that all blades are completely closed.
  - a. Damper should be operated under normal airflow conditions.
3. Record date of testing procedure and label on a sheet.
4. Repeat testing procedure on a set periodic routine.

## CEILING FIRE DAMPER - MODEL 420-R



- |                                  |                           |
|----------------------------------|---------------------------|
| 1. Series 4000 or 4400 diffuser. | 6. 2'-0" cross T-bar.     |
| 2. Thermal blanket.              | 7. Hanger wires.          |
| 3. Flexible duct.                | 8. Ceiling panel or tile. |
| 4. Main T-bar runner.            | 9. 1'-0" cross T-bar.     |
| 5. 4'-0" cross T-bar.            | See note 9.               |

**\*CAUTION: REPLACE THERMAL BLANKET IF IT IS DAMAGED DURING SHIPPING OR INSTALLATION.**



DEPENDABLE PRODUCTS SINCE 1955

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## CEILING FIRE DAMPER – MODEL 420-R

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### NOTES:

BEFORE INSTALLING DAMPER, OPEN BLADES AND HOOK FUSIBLE LINK OVER TAB ON OPPOSITE BLADE. BEND DOWN TAB TO SECURE LINK IN POSITION.

### INSTALLATION:

1. When installing ceiling damper in duct drop use 3/16 inch diameter by 1/2 inch long steel bolts or #8 by 1/2 inch long sheet metal screws or 3/16 inch diameter steel rivets at 6 inches o.c., 4 per damper minimum spaced evenly. The fasteners shall not interfere with the closing of the damper blades.
2. Support the duct with 2-16 gauge cold-rolled steel support channels, 1 1/2 inches deep with 1/2 inch flanges. Place the support channels at the bottom of the duct adjacent to both sides of the duct drop.
3. Use 12 swg galvanized steel wire hangers to independently support the support channels to the structural members of the floor or roof above.
4. Maximum size of 420R is 24 inches diameter.
5. Steel diffuser or grille to be attached to the duct drop or ceiling damper using #8 by 1/2" long sheet metal screws at 8 inches o.c. maximum and at least 4 screws per damper. The diffuser or grille flange face shall overlap the ceiling opening by 1 inch minimum.
6. The clearance between the ceiling damper and the duct drop shall be 1/8 inch maximum.
7. Type 420R Ceiling Dampers are for use in lieu of the hinged-blade, sheet metal damper in steel ducts with steel diffuser or grilles as specified in the "Design Information Section - General" and in the individual floor and roof ceiling design(s) being used, as illustrated and described in the current UL Fire Resistance Directory. One ceiling Damper of the same size as the allowable duct outlet size may be substituted for each hinged sheet metal damper specified in the design.
8. Duct outlets in lay-in ceilings should be located within the field of an acoustical ceiling panel or tile. Where it is necessary to cut a main runner or cross tee, each cut end shall be supported by a vertical 12 swg hanger wire. A 1/2 inch clearance shall be maintained between the duct outlet and each cut end at main runner and 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.



## FIRE DAMPERS

**This operation and maintenance instructions should not serve as a standard basis for all damper products and other manufacturers, but for Safeair-Dowco damper products.**

All back-draft and fire dampers require routine maintenance procedures in order for dampers to operate as intended in any case in which fire and smoke may occur within the building. Periodic testing of all parts linked to the damper is essential to maintaining a working damper. Check that all actuators, blades, fans, etc. are functioning properly and that nothing is preventing blades or controls from operating. Be sure to check that nothing is blocking or hindering air way passage. According to NFPA 80, periodic testing of all years begin 1 year after installation date and followed every 4 years proceeding.

*In any case where the damper is difficult to remove and/or impossible to test due to size and accessibility Safeair-Dowco recommends a complete examination for damper to be square and plumb and blade to have no obstructions. Check also that nothing hinders or prevents full operation of blades and airflow.*

### **MAINTENANCE:**

1. Check interior and exterior sides of dampers for any major defects or material disintegration, rust, wear, corrosion, or any signs of damage that may prevent proper functioning of damper.
  - a. In serious damage contact Safeair-Dowco <http://safeair-dowco.com/contact.php>
2. Make sure all items linked to damper are in good condition, such as closure spring and fusible links. If part is inoperable, repair or replace part.
3. Damper blades, Shafts, bearings, pivot points etc. should be cleaned and lubricated with a light spray oil. Any and all access should be removed.
  - a. *Use silicone based lubricant and not petroleum based lubricant.*
  - b. *Dampers with non-mettalic or carbon sleeve bearings do not require lubrication*
4. Blades should be visually checked through their complete cycle for defects, binding or misalignment. Check blades and see that they are fully closed when operated.
  - a. *Damper should be operated under normal airflow conditions.*
5. Move blade package back to its open position and replace the fusible link.
6. If in any case actuators, blades or linkage is not properly functioning, contact Safe-Air Dowco at our given inquiry page located above to be further assisted.

### **TESTING PROCEDURE:**

1. With the fusible link intact, heat or remove the link with a temperate heat source. Allow blade package to drop.
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