

VAV THERMAL DIFFUSERS

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

Installation

1. Before installation, inspect diffuser for freight damage.
2. Remove the face panel protector.
3. Mount unit into the ceiling T-bar frame. Note: Do not position diffuser to discharge against surface mounted light fixtures or other ceiling obstructions.

ACCESS TO SET POINT ADJUSTMENT

Opening Face Panel

The solid face panel is held in place by four spring clip legs. Approach panel from the induction trough side (the rectangle opening). Reach above panel on both sides until you are able to place your middle fingers behind the spring clip legs. Using your thumbs on the front edge of the panel push the panel back while pulling spring clips forward with middle fingers. Lower front of panel down for temperature adjustments.



Adjusting Temperature (SC, SCVH, SCAH)

(VAV Cooling on all models) The factory set temperature is 74° F. For a cooler room temperature rotate center actuator clockwise. For a warmer room temperature rotate center actuator counter clockwise. Determine room temperature set point by aligning the end of actuator with the indicators on the temperature scale. Each full rotation will equal + or - 2 degrees.



(SCVH VAV Heating) For a cooler room temperature, rotate red actuator clockwise. For a warmer room temperature rotate red actuator counter clockwise. Each full rotation will equal approximately + or - 2°.

(SCAH Constant Volume Heating) Heating adjustments are made by turning the heating control rod. For less heat turn control rod clockwise. For more heat turn counter clockwise. Heating control is adjustable from full open position to a full closed position.

(Note: Factory set at minimum flow.)

Balancing

Thermal diffusers are of the variable discharge type. There are no applicable Ak factors and the volume (CFM) must be measured with a balancing hood. Units are thermally powered and thermostatically actuated. Prior to balancing, supply air must be 70°F or less.

1. Open the diffuser to full open position by rotating the large center actuator clockwise (3 turns in to stop position). Do not over tighten.
Note : actuators may be more difficult to turn when room air is above 72° because the shaft is beginning to move against significant spring pressure.
2. Balance the unit to achieve maximum demand volume. After adjusting the volume, turn the thermostat actuator counter-clockwise (3 full turns) to return to factory setting of 74°F.
3. Re-attach face panel and allow at least 15 minutes for space temperature to control the discharge opening at approximately 74°F.

All outlets are balanced as constant volume devices, including the thermal diffusers. When the thermal diffusers are put back into a normal operating condition, the volume at the remaining outlets will vary proportionally as the thermal diffusers operate.

Total fan capacity is not typically sufficient to supply 100% of the demand volume to all the outlets as one or more thermal diffusers may be closed. The thermal diffuser is a smart device which has been specifically designed for air volume VAV system applications. The air discharge opening size is varied to optimize the discharge velocity and/or volume.

Static Pressure

Calibration of the static pressure control is a mandatory function of the proper installation procedure. A calibrated control pressure of .25 in. wg and minimum of .05 wg at mid point between the static pressure control damper and the last branch duct is typical. The static pressure sensor must be located at that point.

The static pressure sensor for a constant size duct loop system may be located anywhere within the loop, but at least 5 duct diameters downstream of nearest obstruction.

1. Set the static pressure controls to the lowest operating pressure. This will allow the maximum demand volume to be supplied from the outlet requiring the highest total pressure loss (usually the last outlet on the duct system).
2. Individually measure the volume from each thermal diffuser to determine that it is capable of supplying the maximum demand volume at a full open position. Excess volume is a result of excess pressure. Static pressure in excess of .25 wg may result in higher NC and is not recommended.

Maintenance

VAV thermal diffusers are designed to be virtually maintenance free. The moving parts require no adjustments or lubrication. We do recommend that the outer surfaces of the diffuser be kept clean. Wipe with water and mild detergent.