

Applications

Model SBM Air-Handling Units offer a wide range of application flexibility, while maintaining a simple, easy to install unit design. These units are intended to provide comfort cooling and heating within a small footprint. They may be applied in many types of building structures including schools, office buildings, hospitals, condominiums, assisted living facilities, apartments or stores. Applications can be constant or variable volume. There are many applications in which the SBM product can be utilized. Some examples include:

Constant volume applications

- » Two-pipe hydronic system for cooling and/or heating
- » Two-pipe hydronic cooling system with electric heat
- » Four-pipe system with dedicated heating and cooling coils
- » Direct Expansion (DX) split systems with hydronic heat
- » Direct Expansion (DX) split systems with electric heat

Variable volume applications

- » Two-pipe hydronic system for cooling and/or heating
- » Two-pipe hydronic cooling system with electric heat
- » Four-pipe system with dedicated heating and cooling coils

ACOUSTICS

Control of noise within both occupied and unoccupied spaces has become increasingly important to designers and building owners/ occupants. Proper consideration must be given to placement of indoor air conditioning units, particularly in the occupied space.

Inherent flexibility of the fan and coil combination in the vertical configuration allows application in sound-sensitive areas. In such instances, a fan running at low speed with a high capacity coil normally yields satisfactory results. It also may be desirable to select a larger nominal capacity unit and operate it at a less than nominal airflow for further acoustic benefit.

Three phase motors are recommended for sound-sensitive applications to avoid potential single phase motor hum. Unit operation in the stall region of the fan curve is not recommended since it may cause unsatisfactory noise levels and excessive unit vibration.

INSTALLATION

These floor mounted or ceiling hung units can be installed on a base rail or hanger rods at the corner points. All units have internally isolated fan decks; therefore, flex connections are not required, which will reduce installation costs. One of the most important and basic IAQ issues is condensate management. The first step to ensure trouble-free operation is proper installation. It is very important that the unit be mounted high enough so that the condensate drain from the unit may be properly trapped. Please refer to the SBM IOM Manual at www.superiorrex.com for specifics on this issue. As with all HVAC systems, these units should be installed according to all applicable ASHRAE standards, SMACNA and local code requirements.

OPERATING LIMITATIONS

Units must not be operated above maximum fan speed or unit airflow as listed in the Fan Performance section of this catalog. Unit operation at greater than maximum fan speed could drastically reduce bearing life and may result in a catastrophic failure. Operating at greater than the maximum allowable airflow in the cooling mode may result in unsatisfactory operation due to moisture carry over from the coil. In addition, it is often not economical to operate a unit at its maximum fan speed due to the greater motor power requirements.

Units with electric heat should not be operated with leaving air temperature greater than 104°F, to prevent excessive leaving air temperatures and electric heat limit trips. A hydronic (or steam) coil and electric heat should not be operated simultaneously to prevent excessive leaving air temperatures and limit trips. Electric heat units are equipped with a lockout switch that disables the electric heater if the temperature of the hydronic (or steam) coil is greater than 104°F (40°C).

Water coils must not be operated above a fluid velocity of 8 ft./sec. to reduce the possibility of velocity induced erosion and flow noise. Water coils must not be operated below a fluid velocity of 1 ft./sec. to prevent degraded coil performance caused by laminar flow. These high or low fluid flow rates may not be included in the AHRI coil certification.