

Overview

Benefits of Using Fan Coil Units

Fan coils have been in use for decades as a means of providing heating and cooling to individual zones. The major advantages of using fan coil units are that they allow for local control of individual zones, reduce the amount of cross-contamination between zones and allow for hydronic heating and cooling.

Hydronic systems are far more efficient than all air systems because water piping takes up a fraction of the space of ductwork. Fan coils can be selected to handle a zone's sensible cooling load, significantly reducing the air flow requirements of the main air handler needed for ventilation and latent loads only. This air flow reduction results in a smaller HVAC system which translates into energy savings. A smaller HVAC footprint and duct system can also reduce floor heights or increase leasable space. During unoccupied hours the primary air system can be shut off to save energy while the fan coils maintain space temperature.

Construction

- Compact units reduced the footprint of the HVAC system and increase leasable space
- Heavy duty zinc-coated steel casings
- Unit casing's are internally lined with dual density fiberglass insulation. The insulation's high density skin provides erosion resistance while effectively attenuating noise. Insulation meets requirements of UL181 and NFPA-90A.
- Closed cell foam and foil lined fiberglass insulation are optional.
- Removable access panels provide access to the interior of the unit for cleaning, inspection and service.
- Three speed PSC motors allow for reduced energy consumption.
- EC motors allow for reductions in energy consumption and sound along with greater control of the airflow

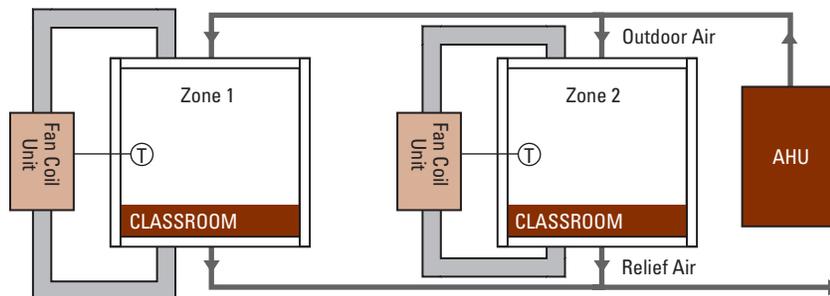
Performance

- Unit performance is AHRI certified providing reassurance that design goals will be met
- Cataloged sound performance data is the result of Price laboratory testing done in accordance with industry test standards.

Fan Coil Unit



Typical Fan Coil Layout



Product Key

FC VX

Configuration
V - Vertical

Model
C - Concealed
E - Exposed

Quality Assurance

- Each Price Fan Coil unit receives a full operational check before shipment and arrives factory configured in accordance with project specifications. This means costly labor and setup delays are avoided.
- Units are ETL listed to meet UL1995 and CSA No. 236.

Water Coil Selection Guide

Fan coils are sized to handle the heating or cooling load for an individual room or zone. This load may be purely sensible, or may also have a latent portion. The required load should be calculated based on the room occupancy, geographical location and building construction.

The Price Fan Coil Selection program, All-In-One, can be used to calculate fan coil performance ratings. Using room load, entering air conditions, entering water temperature and desired water temperature rise or flow rate, select the fan coil, coil

rows and circuits to meet the desired performance. When varying the number of coil rows and circuits to achieve the required Performance, it is important to understand that there are pros and cons to changing each variable, as shown below. When using automatic flow controls, select coils with a flow rate that is available with the automatic flow control specified.

The air flow of the unit may also be adjusted to achieve the required capacity, but care should be taken when doing this. Increasing the air flow of the unit will increase both

the generated noise and energy use of the unit. Increasing the air flow will also affect the air distribution system and could lead to uncomfortable drafts in the occupied space. In all cases, the velocity across the coil should not exceed 550 feet per minute or condensate may carry over from the coil into the downstream ductwork. If a higher air flow is necessary to meet the required capacity, a larger unit size should be considered to keep generated noise and energy use to a minimum.

	Heat Transfer	Air PD	Water PD (for a given flow rate)	Cost
Increase # of Rows	↑	↑	↑	↑
Increase # of Circuits	↓		↓	

Sound Selection Procedure

The laboratory attained sound power levels for each unit at various fan flows are presented in the Acoustical Data tables. This data is derived in accordance with ANSI/AHRI Standard 350 and shows the "raw" sound power levels of the fan coil in the 2nd through 8th octave bands with NO attenuation allowances.

The sound power levels include combined radiated and discharge noise for units operated at free-delivery conditions without enclosures or ductwork. The sound power levels are useful for comparison purposes between unit size and manufacturer but have limited value in determining the room noise level. Contact our Application Engineering group for assistance when this is required.

Generally the fan coil unit should be selected at medium speed to reduce the noise level and provide future air flow adjustment flexibility.

To reduce noise from furred in units, the fan coil should be mounted above a closet or adjacent space and ducted to a diffuser with a short run of lined duct. Acoustically lined flex on the diffuser connection will further reduce discharge sound from entering the space. A short section of lined duct on the return will also be beneficial for inlet sound reduction. A ceiling with high transmission loss will help reduce radiated sound.

Noise Reduction Design Considerations

