

COIL COMPANY
HEAT EXCHANGE · AIR HANDLING



Quick Links

[Our Website](#)

[Product Literature](#)

[Coil Selection Program](#)

[Coil Replacement
Guide](#)

[Contact Us](#)

Our standard unit availability is 8-9 weeks. Most units we can expedite in 4 or 2 week schedules.

Coil Company will send a factory supervisor to the job site to help coordinate disassembling and reassembling of factory sections for those projects that require this type of breakdown.

Replacing Central Station Air Handling Units

Installations of large multi-sectional central station air handling units rarely take into consideration that the units someday may need to be replaced. For every unit that sits next to a very accessible space within a building there may be ten more that have virtually no access and half the mechanical room needs to be broken down to move a new unit into place. Some units have no building access in upper floors except maybe freight elevators. This whole situation really needs to be reviewed in detail and the proper professionals such as engineers, installers and unitary manufacturers need to be selected. The process is specialized and not many in the industry understand it totally.

Performance Engineering

The first consideration is to calculate the size and capacity information of the existing unit. Sometimes you have as built drawings and submittals but even then the unit drives and components may have been changed over the years and you have to make sure that you are updating a new unit to new duty and not the duty of 25 years ago. Without this past information (we have found that 75% of old units don't have the original information) it becomes a bit more of a problem trying to meet the intended performance. There are a few methods to do this and one is knowing the manufacturer and model number of the old unit. Knowing coil model numbers and filter numbers etc. all help in the analysis. There are some units that just do not have any information and we can still figure information that will help. Most units cool as well as heat. If you measure the face area of the cooling coil and then multiply times 500 (500 feet per minute face velocity) then you will be very close to the system CFM airflow. After finding out the CFM and then knowing the motor HP you can look at fan curves and calculate rather closely the total static pressure of the units. You can also make a cross check with filters by taking the filter area x 450 fpm and see if the two numbers match.

Coils are replaced frequently without knowing the performance and replacing an entire air handling unit isn't any different. Matching coil face area, rows and fins per inch, tube diameter and circuitry almost always is a performance match. Today's coil design is far in advance of past designs and you easily have a 5% advantage with heat transfer.

Once you have determined the fan and coil side then you have the remainder of any unit to be replaced and all the other components work themselves into the design.

(Continued)

Overall Size and Sectional Review

The physical size of a unit to be replaced is very important because the majority of units replaced need to fit into the box dimensions of the old unit. Every unit has a height x width x length in direction of air flow. Let's go over all three. Height is established by taking into consideration the overall height of existing unit to include any external base rails and vibration isolators and even motors sometimes sitting on top of units. Please remember that new units today have motors, drives and spring isolation mounted inside the cabinet. The width always has to be 90 degrees to the air flow or in the same direction the tubes run in the coil. The in direction of air flow length is simple once you have established height and width.

The sectional review is an easy one. Start with the inlet air side of the unit and be careful to figure what was supplied as an integral part of the unit and what may have been supplied as a sheet metal section by the original installer. Most units begin with a mix box or a filter section. If it is a mixing box, then you need to establish the damper locations (usually top, back or bottom). If the mix box includes an integral filter section then a combination mix box and filter section needs to be supplied. Let's move to the filter and remember today's MERV driven filter ratings are much more efficient than the older filter designs. It is here that you can now change that efficiency and bring your filtration up to date with codes and requirements of today. Other sections can be face and bypass damper sections, preheat coil sections, cooling coil and reheat coil sections, humidifiers and fan sections. If sections will need to be delivered separately (new unit) then the manufacturer needs the dimensions of each one of these sections.

Building Access Review

This is one of the most important parts of the evaluation to replace an air handling unit. A new unit is outside the building and now its sections need to be secured and delivered to the existing pad site of the old unit. Cutting up the old unit is usually not that big a problem but the new unit is a whole new ball game. We have found that most sections will fit into a building, elevator or stairway except mixing boxes and fan sections which are always wider than a 36 inch door. There are also buildings that all of the sections can't fit because of lack of access.

If any or all of the sections have no access into the building then you must select a unitary manufacturer that has a unit design whereby all of the sections and components can be broken down further and brought into the building that way and then reassembled at pad site. Most installers do not have an expertise so that installer probably needs factory help with the disassembling and reassembling process.

The Timing Issue

All buildings where major air handler replacement happens have their own schedules. Some are much more stringent than others. We have worked on many projects where air handlers had to be replaced in a number of hours and that was from Friday sundown to Monday sun-up. Hospitals, schools, office buildings are all types of facilities that may need this type of replacement. The coordination between owner, installer and manufacturer is very important.

We talk with owners all the time that have looked at air handlers and have been told they can't replace an old design because of the problems related here. That simply is not true. The proper selection of the manufacturer and installer that knows how all of this works and has a proven track record will get the job done. Many times the new unit is quieter, more efficient and better quality. It is a win, win, win for the owner!!