

Modular Hot Water Coil Installation With the iSeries

CAUTION

To prevent damage to the motor from excessive heat, limit water temperature to 150°F (65°C). See Bulletin 20-20.4 for more information.

When installing a modular 2430 or 3036 iSeries unit, position the hot water coil between the cooling coil and the blower. The position of the hot water coil module (sizes 2430 and 3036) has traditionally been upstream of the refrigerant coil in Unico System installations (Fig. 1). The purpose for this configuration was to avoid freezing the heating module (hot water coil) during the cooling season. In some cases, air flowing across the DX coil would be cooled below 32°F (0°C) and could freeze the water inside the hot water coil causing it to rupture and leak.

With the iSeries this is no longer an issue. The temperature of the refrigerant coil is closely regulated by the EEVs and the temperature of the leaving air is never allowed to drop below freezing. Consequently, the hot water coil may be installed downstream of the DX coil (Fig. 2). This installation arrangement may be used for horizontal, vertical upflow or downflow applications.

Note: This arrangement is not available for the one-piece U1218 air handler.

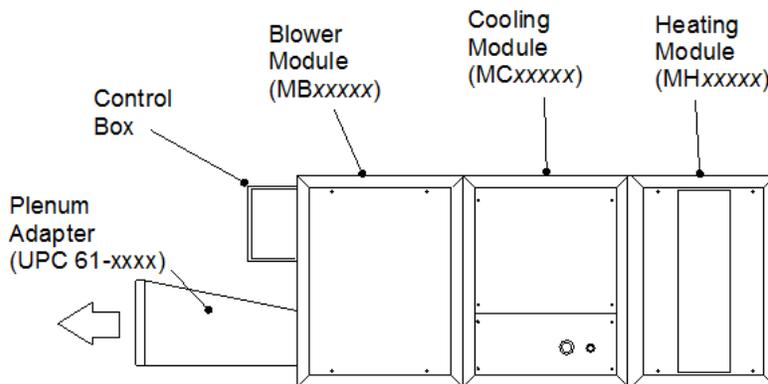


Figure 1 Conventional (non-iSeries) Unico modular air handler configuration

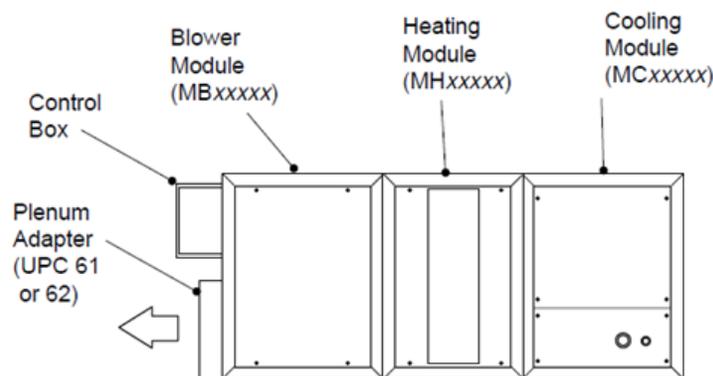


Figure 2. iSeries modular air handler configuration

There are multiple benefits to having the DX coil upstream of the hot water coil:

1. **Efficient heat production.** Each installation has a balance point where the load on the structure exceeds the capacity of the heat pump. Most installations will shut down the heat pump below this temperature and rely on a backup heat source (such as hydronic). With this installation arrangement, the heat pump can continue to run, providing efficient heat, and the boiler can be used as necessary to meet the space heating load. Even at low outdoor temperatures, the iSeries is able to preheat the return air, reducing the work required of the boiler.
2. **Continuous High-Wall Operation.** If the *Boiler Changeover* function is used, the iSeries will shut down at a user-selectable outdoor temperature. In systems with hi-wall units, this means that they will no longer be able to provide heat to the space. With the installation arrangement shown here, the outdoor unit can continue to run, providing heat to spaces conditioned using hi-wall units. This improves comfort in spaces conditioned with hi-wall units.