



Air Handlers and their Components

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This article will discuss the various components of air handlers as related to larger heating, ventilating, and air-conditioning (HVAC) systems in most commercial buildings. Generally, an air handler cabinet, which is a large metal box, contains a blower, heating and/or cooling elements, filter racks/chambers, sound attenuators, and dampers (a larger air handler that conditions 100% outside air, and no recirculated air, is known as a makeup air unit). Air handlers connect to ducts that distribute the air through the building.

The general components included in an HVAC system are:

- **Blower/fan**
 - **Heating and/or cooling elements**
 - **Filters**
 - **Mixing chamber**
 - **Controls**
 - **Vibration isolators**
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- **Fans/blowers** - Air handlers typically use a fan or blower (or several fans or blowers) to move the air. The blower can operate at variable speeds and flow rates.
 - **Heating and cooling elements** - Most large air handling units utilize coils to circulate hot water for heating and cold water for cooling. The hot water is provided by a boiler, and the chilled water is provided by a chiller.
 - **Controls** - Controls regulate the normal functions of an air handler. They monitor rate of flow, supply temperature, mixed air temperature, humidity, and quality. Most control components contain temperature sensors, humidity sensors, sail switches, actuators, motors, and controllers.
 - **Vibration isolators** – The large fans required in commercial buildings can often lead to substantial vibration. Vibration isolators prevent this vibration from being transferred to the buildings occupants by absorbing the vibrations from the fan/blower.

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