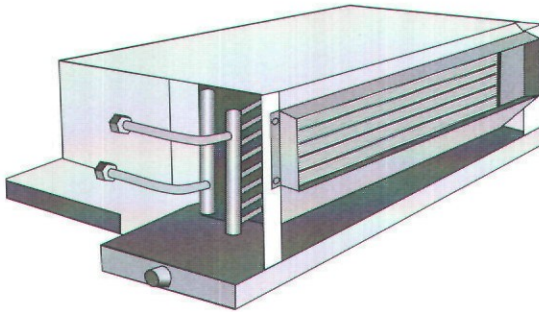


## Fan Coil Units

The **Fan Coil Unit (FCU)** is a sheet metal cabinet that houses a Chilled Water Coil constructed out of copper tubes and aluminium fins, a Blower with motor and an Air Filter. Fan Coil Units are generally used where multiple areas (example, hotel rooms) are to be cooled independently, using a central airconditioning plant.



**Fig. 43.** A small Fan Coil Unit

The water is chilled centrally and pumped to various parts of the building through insulated pipes. The chilled water enters the FCU, where heat exchange takes place between the room air and the chilled water in the

coil. Air is passed over the coils using a three speed blower motor, mounted in the FCU. The air speed can be controlled by choosing the blower motor speed, from a selector switch, in the conditioned space.

A **thermostat\*** is also mounted in the airconditioned space. The thermostat controls a **solenoid valve\*\*** that closes when the desired temperature is reached, thereby shutting off the flow of chilled water into the FCU water coil. Once the temperature in the room rises, the thermostat activates the solenoid valve which opens allowing the chilled water to flow into the coil again.

Now world-class FCUs are manufactured right here in India, which are quiet, reliable and suitable for high-end applications like five star hotels.

\*Thermostats are temperature sensing and controlling devices. They consist of a gas filled capillary tube and bellow arrangement. When the sensor at the end of the capillary tube is subjected to low temperatures the gas in the bellow contracts thereby breaking an electrical contact, and vice versa when the sensor is warmed.

\*\*A solenoid valve is an electrically operated valve. It consists of an electromagnetic coil which moves a plunger opening or closing the valve when activated.