

TYPES OF UNITS

Several types and designs of air conditioning units in production and proposed are available for selection. New designs are constantly appearing, with new improvements, greater capacities, wider range of application and superior construction. It will be impossible to cover in this chapter the many types of construction on the market. Illustrations of current makes and models will be found in the *Catalog Data Section*. A few typical designs of conditioning units will be described in detail.

An all-year floor type heating and cooling unit for an exposed location and with direct expansion coil supplied with refrigerant from a remotely located compressor is shown in Fig. 10. A cooling coil for use with chilled water may be substituted for the direct expansion coil indicated. The fans below the separate cooling and heating elements deliver the air

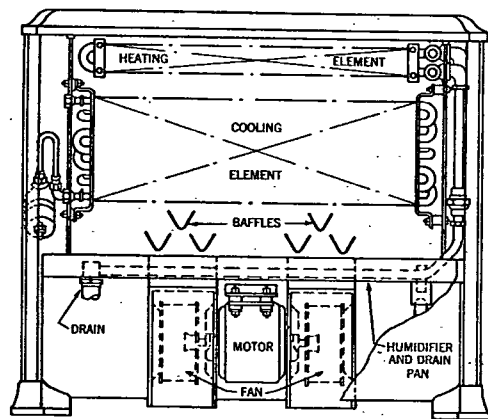


FIG. 10. FLOOR TYPE HEATING AND COOLING UNIT

against deflectors thereby obtaining distribution across the face of the element and preventing condensate from dripping down into the fans. The plate upon which the fans are mounted serves as the drip pan from which the water is conducted to the drain. Separate elements are used for heating and for cooling. Thus this unit may be used automatically for heating and for cooling. When the unit is used for summer conditioning only, the heating coil may be omitted for the installation. The illustration indicates an evaporative type humidifier and drain pan.

Other units are available in which a target spray humidifier is substituted for the evaporative type thereby providing a unit for summer cooling and dehumidification, at the same time supplying humidification in winter for application in rooms with other existing heat sources.

Still another unit is available in which the fans are mounted at the top of the unit delivering directly through a grille and drawing their air supply through the cooling and heating coils. Other variations in proportion and details of construction of this general arrangement are

common. With this type of unit, ventilation is usually provided by means of a separate duct connected to the inlet of the unit.

An entirely different arrangement shown in Fig. 11 places both the air inlet and the discharge at the top of the unit. The fan at one side discharges the air downward to the bottom where it turns and passes horizontally through an atomizing spray air washer. The path then continues upward through eliminators, a cooling surface and a heating surface before it leaves the unit. With steam or hot water connected to the heating element, tempered water to the sprays and refrigerated water to the cooling element, this unit gives controlled temperature, humidity, air cleaning, and air movement in both summer and winter. Air washing may be connected in summer, or in intermediate season to remove room

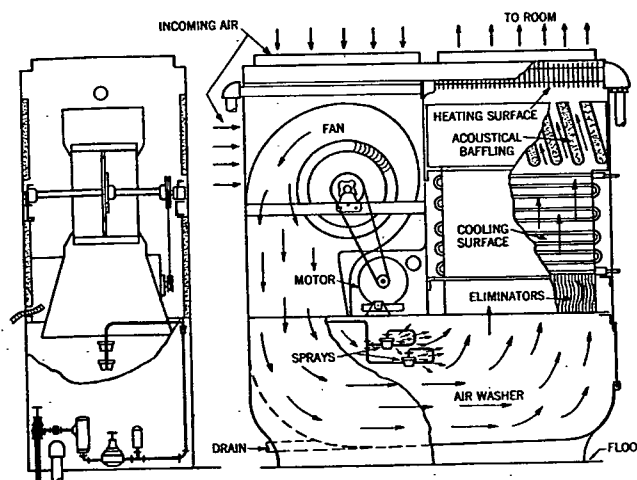


FIG. 11. CONDITIONING UNIT WITH TOP INLET AND OUTLET

odors. Excess water is run to waste. Acoustical treatment of the housing and outlet baffles permits installation where noise requirements are exacting.

One of the recently developed units, designed particularly for low cost installation is shown in Fig. 12. Twin fans with wheels mounted on extensions of the motor shaft take the air from the floor, send it downward through a passage containing a water spray and then upward through a double set of coils for cooling and heating, the air leaving the cabinet through a top grille. The spray nozzles are supplied with city water, the excess collecting in the air reversal chamber and running to the drain. The cooling coil uses water either from city mains or from other low temperature sources, or a special direct expansion coil may be provided. This unit like others may be equipped with automatic controls.

A common type of suspended type unit for exposed location utilizing a propeller type fan and suitable for summer conditioning only is illustrated in Fig. 13. Such units are equipped with either a direct expansion coil or