

Velocities and decibel ratings for the various types of unit heaters are given in Table 1.

The *centrifugal fan type*, as illustrated by Figs. 1 and 2, delivers air at high velocity (1500 to 2500 fpm) and is equipped with outlets adjustable to deliver air in several directions. It is able to project the heating effect over distances of from 30 ft to as much as 200 ft from the unit. However, it is more suited to long than short blow, except when mounted high above the floor with discharge at a sharp angle downward. As a rule it can be located at considerable distances from other units thus reducing the piping and conserving floor space usually allotted to heating equipment.

The *propeller fan type* is divided into two classes of *horizontal* and *vertical blow*. The horizontal blow type, illustrated by Fig. 3, discharges air at from 400 to 1000 fpm. It takes care of medium distances of blow, up to approximately 100 ft where mounting height is not too great and where other conditions, such as final temperature and mass of air handled by the unit, are favorable.

The *vertical blow unit*, illustrated by Fig. 4, discharges air at from 1200 to 2200 fpm. It is mounted on the ceiling of a room or up in the roof trusses and blows vertically downward. Various diffusers are available

TABLE 1. OUTLET VELOCITIES, DISTANCE OF BLOW AND DECIBEL RATINGS FOR VARIOUS TYPES OF UNIT HEATERS

TYPE OF UNIT HEATER	OUTLET VELOCITIES FPM	DISTANCES OF BLOW—FT	DECIBEL RATING
Centrifugal Fan.....	1500-2500	20-200	34-90
Horizontal Disc Fan.....	400-1000	30-100	44-84
Vertical Disc Fan.....	1200-2200	10-50	50-82

to take care of the height and space conditions. These units are applied to elevations of from approximately 10 to around 50 ft above the floor. Where mounted in roof trusses, as in industrial buildings, they do not interfere with traveling cranes.

A code² governing the number of sizes of propeller fan units as well as standardization of fan motors and the method of specifying outlet velocities has been adopted.

Air Outlets

In order to direct the air to points desired and to diffuse the air to avoid drafts, it is common practice to equip unit heaters with directional outlets, adjustable louvers or fixed types of diffusers.

RATINGS OF UNIT HEATERS

It is standard practice to rate unit heaters on the basis of the amount of heat delivered by the air in Btu per hour above an entering air temperature of 60 F. This applies to all types of unit heaters, the steam or hot water type, the electric type and the direct fired type. There are, however, other factors which must be taken into account, especially when an attempt is made to compare one type of heater with another. These are the temperature of the heating element and the velocity of air through it. Consideration is given to these factors in the discussion of ratings for each type of unit heater in the following paragraphs.

²Standards for Propeller Type Unit Heaters prepared and adopted by the Industrial Unit Heater Association, June, 1938.

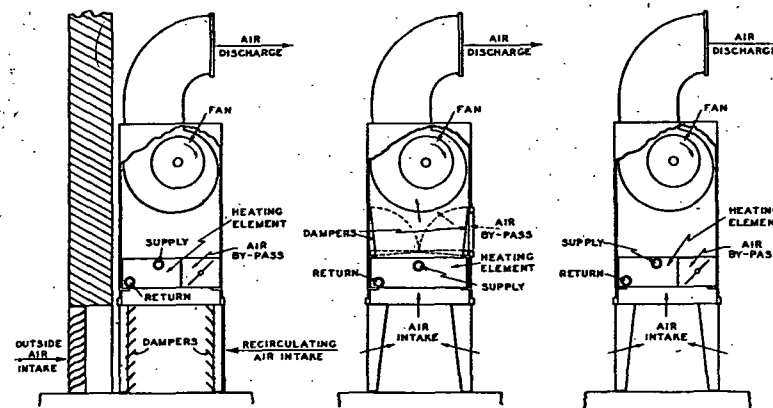


FIG. 1. FLOOR MOUNTED UNIT HEATER, HOUSED TYPE FAN

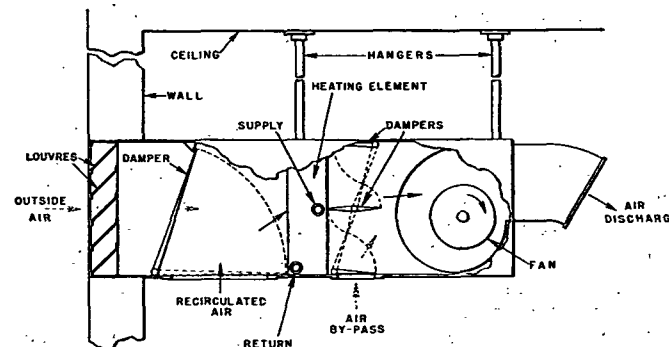


FIG. 2. SUSPENDED TYPE UNIT HEATER, HOUSED TYPE FAN

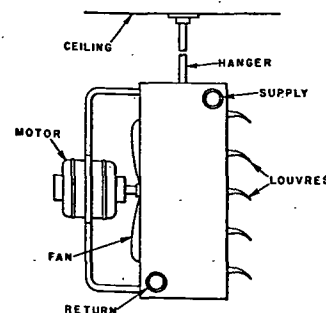


FIG. 3. SUSPENDED UNIT HEATER

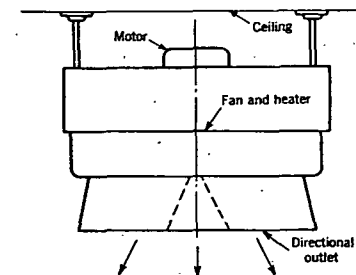


FIG. 4. VERTICAL BLOW UNIT HEATER