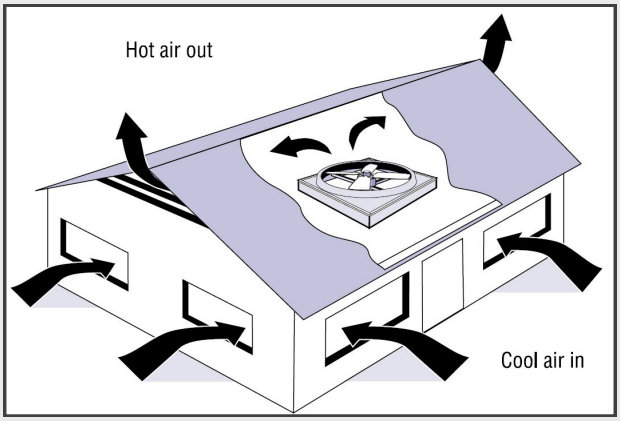
Selecting a Whole House Fan

A whole house fan is a simple and inexpensive method of cooling a house. The fan draws cool outdoor air inside through open windows and exhausts hot indoor air through the attic to the outside. Running a whole house fan whenever outdoor temperatures are lower than indoor temperatures (typically at night time) will cool a house. This eZtip should help in the selection and installation to keep you cool.



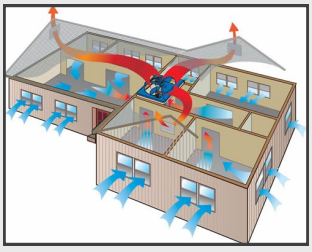
Whole house fans can be used either as a primary source of cooling, or in place of more expensive air conditioners, especially in climates or seasons where night time temperatures are cooler.
There are however some restrictions or key points to consider prior to the decision to install or use a whole house fan.
First you need to be sure the fan is properly sized for the location. The easiest way to determine is to multiply your square footage by your average ceiling height. This will give you the cubic feet requirement. The fan should be sized 1/2 to 1 times your cubic feet. Example– 1300 ft² x 8 ft. ceilings = 10400 cubic feet. Multiply this x 1/2 = 5200 cfm. Another option to consider is a 2 speed fan, such as one that is 5250 at high speed, to quickly cool the house, and a second slower speed, such as 3000 cfm to maintain the coolness, without much noise or wind effect.

Second, be sure that the attic has enough free open area for the air to escape. One square foot of open vent area is required for 750 cfm (cubic feet per minute) of air being moved. Vents with insect screens are half as effective, and 2x the free area would be required. Example– a whole house fan has a spec of 5250 cfm. 5000 ÷ 750 = 7 ft² If the free open area has insect screen then 14 ft² would be required. Roof, ridge and soffit vents typically are great vent types.


Roof Vent

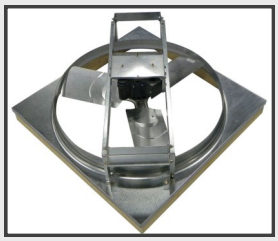

Ridge Vent


Soffit Vent

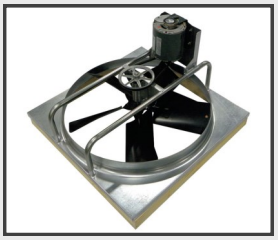


In order to maximize the effectiveness of the fan, it should be installed in an area centralized to the home, as high as possible. A hallway on the upper floor would be ideal, while in a single story home just centralized would be sufficient. In addition, running the fan creates a negative air pressure in the living quarters. Opening windows on the lower or farthest locations to the fan will provide relief from the vacuum, and help to cool down the home with the introduction of the outside cooler air.

Not all fans are created equal. In addition the drive types, they may be available with multiple set speeds, speed adjustable, thermostat and timer controls.



Direct Drive Fan
While the direct drive fan may be a less expensive option, they do tend to operate with more noise.



Belt drive fan
These tend to operate with less noise, however could result in a slightly higher investment in equipment costs. Speeds may be adjusted by changing belts/pulleys.

Additional Options/Accessories

Louvers help control unwanted air flow when the fan is not active.

Digital timers can be set for auto on/off cycles.

Thermal covers help keep the cold out in the winter, and attach with magnetic strips.

Information sources include W.W. Grainger, U.S. Department of Energy

If you are still having difficulty choosing a Whole House Fan, please contact us at askzoro@zoro.com or 855-289-9676

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