



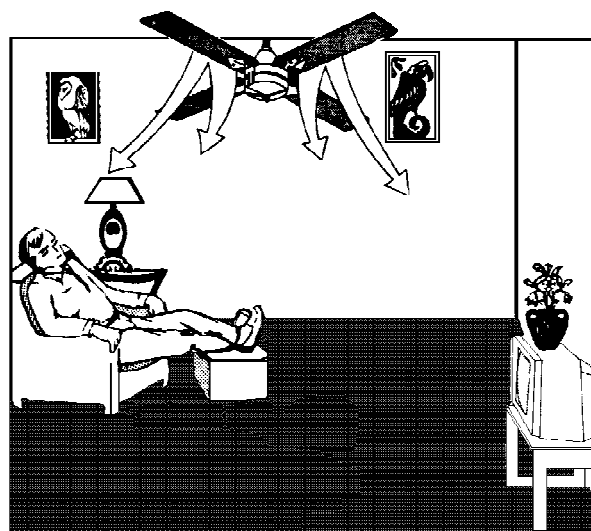
Selecting a Ceiling Fan¹

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An alternative to consider when attempting to reduce air-conditioning costs is a ceiling fan. Ceiling fans are available in various types, sizes, and styles to suit your needs. The use of a ceiling fan will allow you to operate your air conditioner at a higher thermostat setting than usual, since the air movement created by a fan produces a cooling effect on the body.

COMFORT

There have been many attempts to determine the conditions that make a person feel comfortable. The factors that influence human comfort are as varied and complex as the individuals themselves. However, the major factors that affect personal comfort in the home are air temperature, relative humidity, and air movement.



A ceiling fan has no effect on the first two factors. Only the home air conditioner can affect both the temperature and the humidity in the house. The ceiling fan, on the other hand, can increase air movement in a room, thus creating a cooling breeze that will help to increase your level of comfort.

Air movement helps to keep you cool primarily by increasing the rate of evaporation of moisture from your skin. Increasing the amount of air movement will allow you to feel comfortable at higher than normal temperatures. However, higher humidity levels will make it more difficult for the fan to have a beneficial effect.

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Most people are aware of air velocities of around 200 feet per minute, which corresponds to a breeze of 2-1/2 mph. Ceiling fans are capable of producing air velocities in the range of 200 to 700 feet per minute, depending on the speed setting. Of course the comfort you receive from air motion over the body is strictly an individual matter.

CEILING FAN EFFICIENCY

The efficiency of a fan may be determined if the power consumption in watts and the airflow rating in cubic feet per minute (cfm) are known. This information is usually contained in the manufacturer's literature that accompanies the fan. For fans that have variable speeds, you may find different efficiencies depending upon the speed setting (fan efficiency = airflow (cfm) / power required watts. Be sure when comparing two fans to use the efficiency calculated at the same fan speed (usually the highest speed).

To calculate the efficiency simply divide the airflow rating in cfm by the power consumption in watts. The higher the cfm per watt, the higher the efficiency of the fan. Higher efficiencies relate directly to lower operating costs. Typical figures for fan efficiency should range from 150 to 200 cfm per watt, when calculated at the highest fan speed. In general, a larger diameter fan will be more efficient than a smaller diameter fan.

FAN SIZING

Ceiling fan sizes are determined by the diameter of the fan blades. You can find fans ranging in diameter from 24 inches up to 60 inches, with several sizes in between. The most common and readily available fan sizes are 36 inches and 52 inches. A larger fan will be able to move more air than a smaller fan and thus would be suitable for larger rooms.

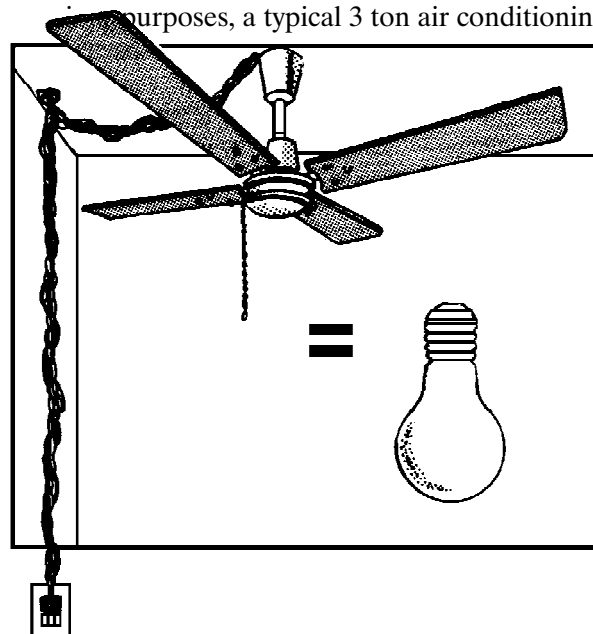
Choosing the proper size ceiling fan for your home requires a little thought about your particular application. Do you want a centrally located fan to help keep you cool in a large family or living room? If so, then the 52 inch fan should be your choice. If you only wish to provide breezes for a small 10 by 10 foot bedroom, then the 36 inch fan should do just fine. Remember that the larger fan will move more

air than the smaller one, so when in doubt choose the 52 inch fan.

A 36 inch fan operating at high speed moves the same amount of air as a 52 inch fan operating at a lower speed. Operating at a lower speed reduces both the operating cost and the noise level. It is no wonder that the 52 inch fan is most often chosen for economical whisper-quiet operation.

OPERATING COSTS

Ceiling fans require very little energy to operate. For example, a typical ceiling fan uses only about as much energy as an incandescent light bulb. If you were to operate your ceiling fan for 10 hours daily, it would only cost you about 6 to 8 cents per day. For comparison purposes, a typical 3 ton air conditioning



unit operated for 10 hours daily could cost you about \$3.00 to \$5.00 per day.

The previous example is not meant to imply that a ceiling fan can replace an air conditioning unit. In times of moderate temperature and humidity, the ceiling fan may provide all the cooling that is needed. This is especially true in the fall and spring seasons. However, most of the time the ceiling fan will be used in conjunction with the air conditioning system to provide comfort.

In order to achieve a savings through use of the fan, you must raise the air conditioning thermostat setting while using the fan. Raising the thermostat

setting will cause the air conditioner to operate less, thus saving you money. The ceiling fan will provide the gentle breezes to keep you cool so that you do not require as much air conditioning.

INSTALLATION HINTS

Ceiling fan installation kits generally come in two types. The first type of installation kit is one that mounts the fan to an electrical outlet box overhead. These types of mountings frequently take the place of an existing light fixture. One advantage of this type of installation is that it can reduce wiring costs. However, be careful when using electrical boxes since they are not usually adequately braced to hold the weight of a ceiling fan. If the electrical box has been well secured with additional bracing, this is an excellent method of mounting. Remember that you may have to add a light kit to the fan in order to replace any light fixtures that were removed.

A second method of mounting a ceiling fan is with a large wood screw that has a hook on the end. These screws are specially designed to hold the weight of the fan. The screw is long enough so that it can pass through the ceiling panels and be secured in the wooden studs that form the ceiling joists. Since these screws serve a special function, you should never substitute a hardware store replacement. Use of this type of mounting requires that a stud be located where you wish to hang the fan. Fans are frequently hung in this manner in apartments and other housing where there is no access to the attic. Electrical wiring is usually provided through the use of a swag kit.

Fans should be mounted at least 7 feet above the floor in order to minimize the hazard to individuals from coming contact with the moving blades. In places where this is not practical, you might want to consider arranging furniture so that someone can not stand directly under the fan. Placing a fan over the bed, dining room table, or large coffee table can frequently solve fan height problems. The "ceiling hugger" fans that attempt to solve this problem by eliminating the downrod are not as efficient as conventionally hung fans.

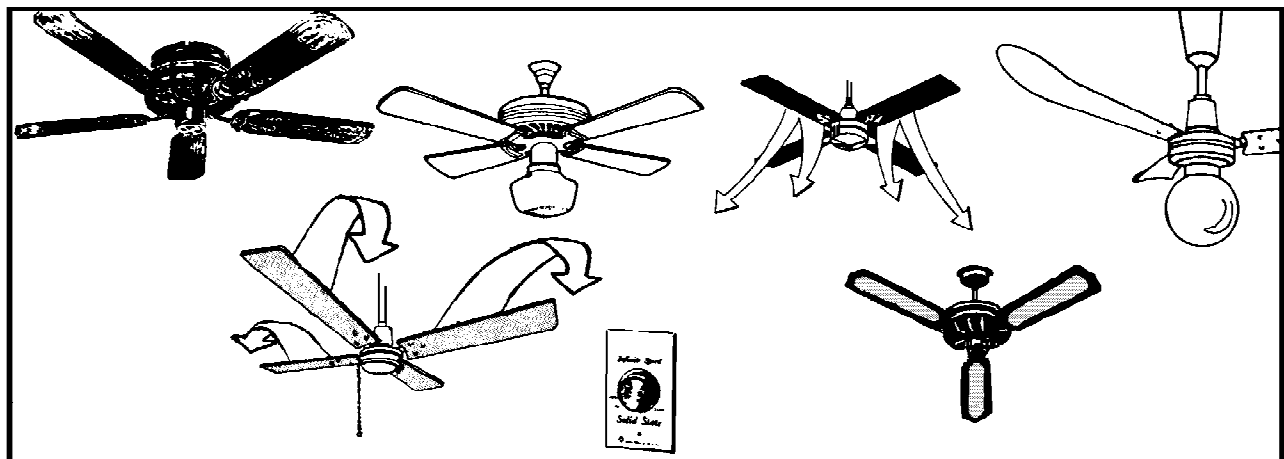
AVAILABLE FEATURES

When selecting your ceiling fan you will find that there are many available features from which to choose. Some of these features are functional and some are decorative. Many features may be available only at extra cost. You should determine which features are the most important to you so that you can make intelligent comparisons when shopping.

Motor Speed. You will need different speeds in order to obtain a comfortable setting under varying conditions. At least three speeds are desirable. Continuously variable speeds offer the maximum control.

Motor Type. The motor should be of the ball-bearing type and may be permanently lubricated or require periodic lubrication.

Blades. Most residential fans have four blades of either plastic, metal, or wood construction. Metal blades may have sharper edges and can sometimes be noisy in operation. If used near salt water, metal



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blades can corrode. Wood blades must be treated to resist absorbing moisture and warping.

Reverse Air Flow. This feature allows the direction of air flow to be reversed. Such a feature may be desirable when fans are located over beds or dining tables, since these are areas in which you may not want to have air blowing directly on you. The frequently quoted winter benefits of reverse air flow are probably not significant in southern climates.

Warranty. A warranty may cover a period from one year up to the lifetime of the fan. You should investigate the terms of the warranty to find out exactly what is covered and where the warranty claims will be serviced. Some fans must be returned to the manufacturer rather than the dealer for service.