



## HOW-TO BOOKLET #3006 CEILING FAN HOOK-UPS



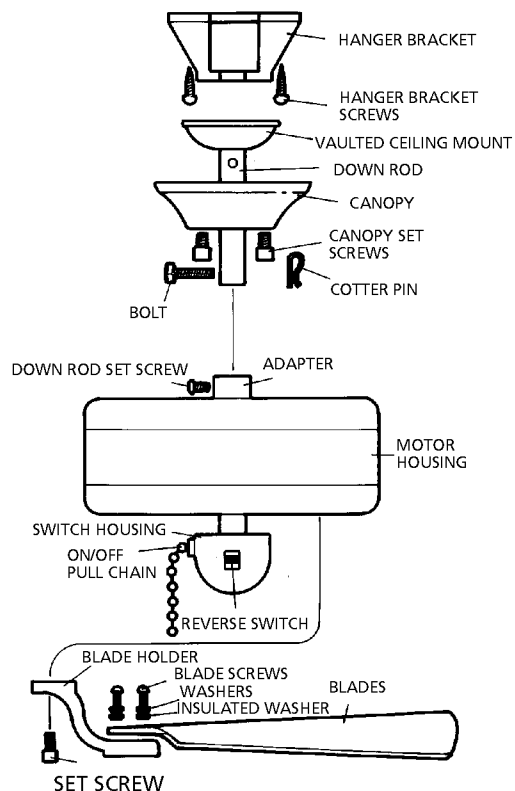
### TOOL & MATERIAL CHECKLIST

- Ceiling Fan
- Phillips and Standard Slot Screwdrivers
- Hammer
- Wire Insulation Strippers
- Wire Nuts
- Plastic Electrician's Tape
- Hacksaw
- Hex/Allen Wrench
- Stepladder
- 12/2 With Ground Cable

*Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above.*

Ceiling fans in your home can be a real energy saver with an added bonus of more comfort for everyone at little cost for the electrical power that operates the fan units. Fans are less expensive to buy now than several years ago, making the total package a bargain from store, to ceiling, to air circulation.

Ceiling fans help lower both air conditioning and heating costs. In air-conditioned rooms, the cool air tends to pool on the floor surface. With the paddles of a slow-turning ceiling fan stirring the air, cool air is distributed throughout the room. In heating situations, rooms may be comfortable at a floor level, but uncomfortably warm near the ceiling: a sleeping loft; and upper berth of a bunk bed; or a room with a cathedral ceiling are good examples. The fan corrects this by circulating the rising warm air throughout the room. It costs just pennies to distribute the costly-produced heat. A ceiling fan working during the summer season to cool can provide plenty of comfort for a fraction of the cost of running a window or central air conditioning unit.



### Anatomy of a ceiling fan.

This fan unit is typical of most ceiling fans sold in home centers, building material outlets, and specialty stores. Your model may vary slightly. The key to any fan installation is to secure the fan to a ceiling framing member. Because of the torque on the fan blades, the framing must be rigid and solid. The hanger bracket attaches to the framing and the fan hooks to the bracket via swivel or J-hook.

## THE RIGHT BLADE SPAN

Critical in choosing a ceiling fan is the correct blade span. The span is the distance from the tip of one blade to the tip of another opposite blade.

Thirty-six inch fans are the rooms up to 9x12 feet. Examples are kitchens, bathrooms, large closets.

Forty-two inch fans are designed for rooms up to 12x15 feet. Examples are kid's bedrooms, large kitchens, family rooms, studies.

Fifty-two inch fans are for rooms larger than 12x15 feet. Living rooms, dining rooms, large porches, master bedrooms, recreation rooms, large family rooms are examples.

The number of fan blades can be important in your ceiling fan selection. Most fans have four blades. Others have five or six blades. The additional blades permit a smaller fan to produce similar air movement of a larger fan. For example, a smaller fan with more than four blades is about equal to a larger fan with four blades.

## DIFFERENT CONFIGURATIONS

There are three different basic installation configurations you should consider: downrod style, next-to-the-ceiling style, and “duomount” style.

**Downrod.** This is the traditional style. The design incorporates an 8-inch downrod from the ceiling to the top of the fan motor. The design is tailored to rooms with high ceilings—those over 8-feet—or rooms where the fan will be installed over furniture. It is an excellent choice for cathedral ceilings.

Downrod units generally have a self-aligning ball hanging canopy. This device lets you install the fans on ceilings with up to a 45-degree slope or pitch.

**Next-to-ceiling.** For ceilings 8 feet or less, this style is a wise choice. Installation permits maximum clearance in rooms which have high traffic. There are two configurations in this style:

➤ **Adapter configuration** utilizes a traditional fan design. It has a bottom plate, side band, and top plate. Instead of a downrod, the adapter provides additional clearance from the bottom of the fan to the floor.

➤ **Cannister configuration** has the same clearance as the adapter. Its design combines traditional and modern styling in a unique look.

**Duo-Mount** style permits a traditional downrod installation or a next-to-ceiling installation.

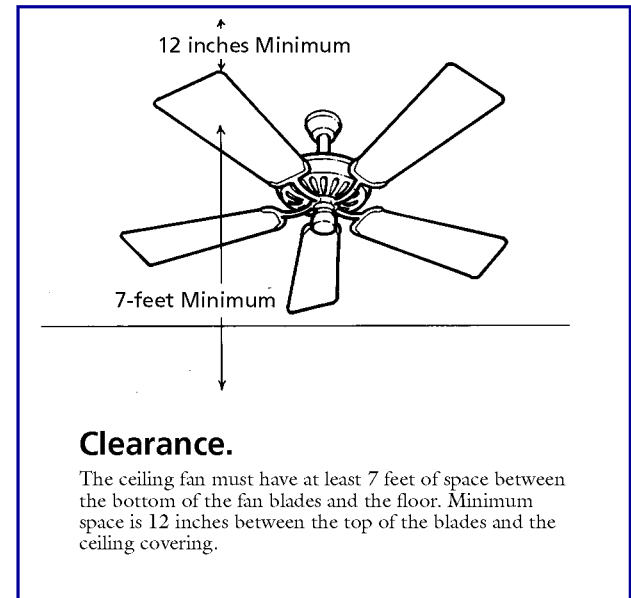
## BACKGROUND INFORMATION

The blades of ceiling fans must be at least 7 feet from the floor. There should be at least 12 inches of clearance between the top of the blades and the ceiling surface of the room in which the fan is installed. The blades should also be free to rotate: no obstructions in the rotation path. If you are doubtful about blade clearance, be sure to check the length of the fan blades at the store.

Ceiling fans operate on regular housepower. You can connect the fans directly to the wires in a ceiling outlet box, for example. No electric transformers or special switching devices are needed. Or, you can run a power wire to the outlet box. Buy No. 12/2 wire with ground for this installation. You can tap into an existing power wire in the attic or crawl space. Or, you can fish a wire to a wall outlet and tap into power at this point. A third alternative is to run a wire from the main electrical entrance panel. However, you should have a professional make this connection—and the other connections, if you don't have the know-how.

### CAUTION:

**Before working with electrical wires, turn off the power to the circuit on which you will be working at the main electrical service entrance. Do not flip a switch in the room and expect the power to be off. Go to the source panel.**



## Installation Data

Hanging brackets can vary slightly by fan design and the manufacturer of the fan. Most brackets have a ball and socket or J-hook suspension. The ball-and-socket keeps the fan in a level mode while it is running—and not running—and the device also helps prevent vibration and noise created by the rotation of the fan blades at various speeds.

Some manufacturers suspend their fans with a J-hook device. The fan just hooks over a bracket connected to a ceiling joist or other similar framing in the ceiling.

To install any ceiling fan to an existing outlet in the ceiling, remove the ceiling light first. In order: remove the cap nut holding the decorative covering or escutcheon over the electrical ceiling box; then unscrew the lock nut, strap or hanger bracket, and the stud or nipple assembly that connects to the center of the box; after you turn off the power at the main service entrance, disconnect the power wires from the light socket assembly.

If there is just an escutcheon or decorative plate hiding the ceiling box, simply remove the nut holding the escutcheon to the box. If there is no light or escutcheon, there may still be an electrical box hidden by plaster or gypsumboard joint cement. If you get at an angle to the light on the ceiling, you may be able to detect a slight texture difference in ceiling material, and that's where the box will be located. Peel back the ceiling covering material with a cold chisel and hammer to reveal the ceiling box or electrical connection at this point.

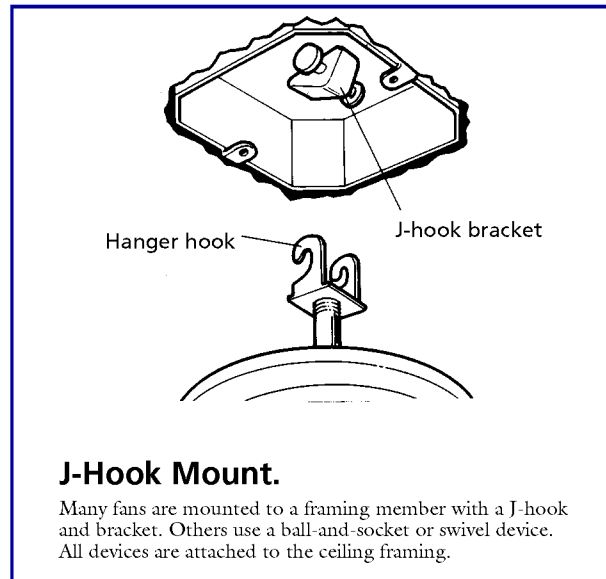
**SWIVEL BRACKET.** The bracket usually is attached to the framing member that supports the electrical box. This member can be a joist, rafter, or "cripple" that has been nailed into position to support the electrical box.

Do not attach the bracket to the electrical box—make sure the bracket is fastened to a framing member that is securely fastened. This framing must support the weight of the fan as well as the torque produced by the rotation of the fan blades.

**J HOOKS.** If the fan will be mounted on J-hooks the device is also fastened to a framing member such as a ceiling joist. It goes through a knockout in the bottom of the electrical box directly into the framing member. Do not fasten the J hook to the electrical box.

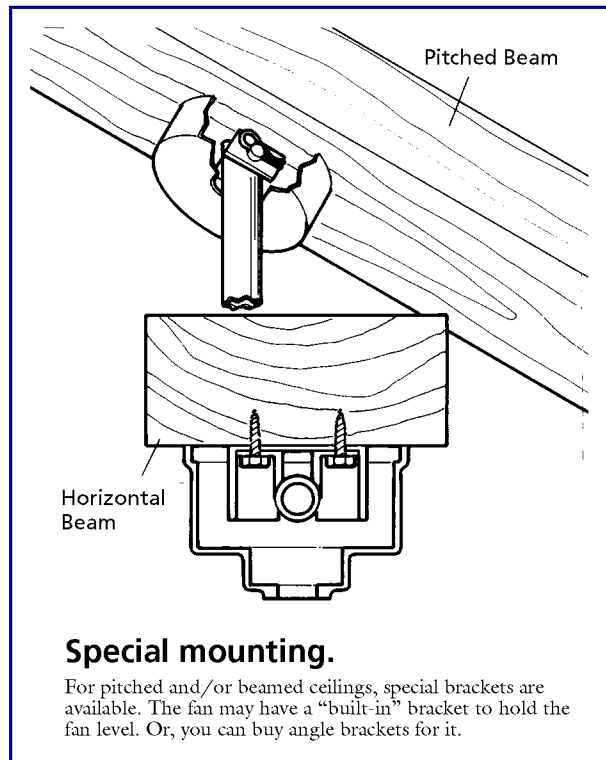
**ON EXPOSED BEAMS.** If the fan will be mounted on an exposed beam ceiling, such as in a room with cathedral ceiling, position the fan between the beams, using a 2x4 or 2x6-inch length of wood between the beams to hang the fan. You can use a fan with a ball-and-socket type (swivel) hanging device. Or, you can buy a "Hang-Fast" bracket (or similar bracket) for the installation. There usually must be 6 ins. of space for the bracket. Brackets also may be used where attic crawl space is not available for mounting and hooking up the ceiling fan.

The blocking between exposed beams can be spiked to the beams with 16d or 20d nails. If 16d, use finishing nails, countersink the nailheads, and fill the holes with a matching wood filler.



### J-Hook Mount.

Many fans are mounted to a framing member with a J-hook and bracket. Others use a ball-and-socket or swivel device. All devices are attached to the ceiling framing.



### Special mounting.

For pitched and/or beamed ceilings, special brackets are available. The fan may have a "built-in" bracket to hold the fan level. Or, you can buy angle brackets for it.

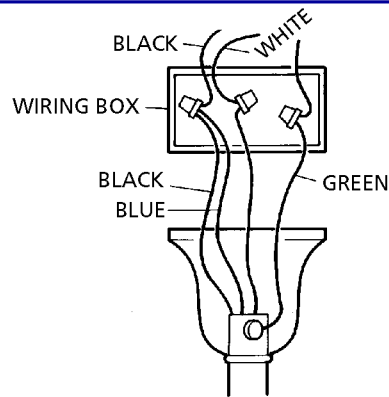
Then install a ceiling electrical box to the wood blocking. Knock-out the round plug in the bottom or side of the box to accept the power wire and the box connection. The knockout is also for the hanger, which is fastened to the blocking through the knockout. Do not fasten the hanger to the ceiling box. The ceiling box hanger will be covered by the ceiling escutcheon usually provided in the fan kit.

**ON FINISHED CEILINGS.** If the fan will be installed on a finished ceiling that has no outlet/wiring, find a joist or rafter behind the ceiling covering and cut a hole through the covering where you want the fan to be located. Make the hole a bit larger than the electrical outlet box that you must install.

With a saw, notch the framing member the width and depth of the box so the bottom of the box will be flush with the surface of the ceiling. Or, mount it on the side of the framing member so the bottom is almost flush with the bottom of the ceiling material.

Power wires (12/2 with ground) are "fished" between the joists or above them, if there is a crawl space above the ceiling. The power may be tapped from an existing circuit (turn off the power before working), or you can run a brand new circuit from the main electrical panel. Have a professional electrician make this connection. Since a ceiling fan doesn't require special electrical power, try to tie-in to the power on an existing circuit.

**PITCHED CEILING OR BEAM.** If the ceiling is slightly pitched or the fan will hang from a beam, it is recommended that you use either a swivel hanger or angle kit. These hangers permit the fan to hang level. The fan can be supported by a hook. You'll need a block of wood to support the hook and fan. Use a short length of 4x4. Pre-drill it and bolt it to the beam. The power wire can be staple-nailed along the top or bottom edge of a beam and then routed into the electrical ceiling box. You can paint or stain the cable so it matches the beam and doesn't show.



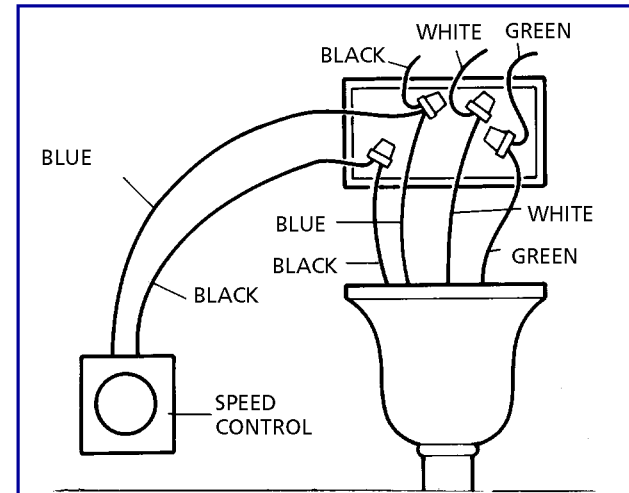
### Switch operation from fan.

Wiring hookup is for 3-speed pull chain. Wiring provides for optional light kit, which is operated independently of the fan by pull chain switch. Ground is green.

**5** If the fan has a light kit, remove the switch housing on the fan and the center screw. Screw the light kit onto the bottom plate. Have a helper hold the kit assembly in position while you connect the fan's blue wire to the light's black wire and the fan's white wire to the light's white wire. Use wire nuts for these splices and wrap them with electrician's tape (plastic type). Now screw on the bottom plate, light and attach the glass.

**6** Mount the bracket and put the blades into the holders. Now fasten the blades to the fan motor. The unit is assembled.

**7** Connect the fan to power. The white wire goes to white, and black to black. The ground wire connects to the ceiling box via a screw or clip. Or it is spliced to an incoming ground wire. Check to make sure that the fan operates in forward and reverse. If the fan has a light kit, test the lights at this point.



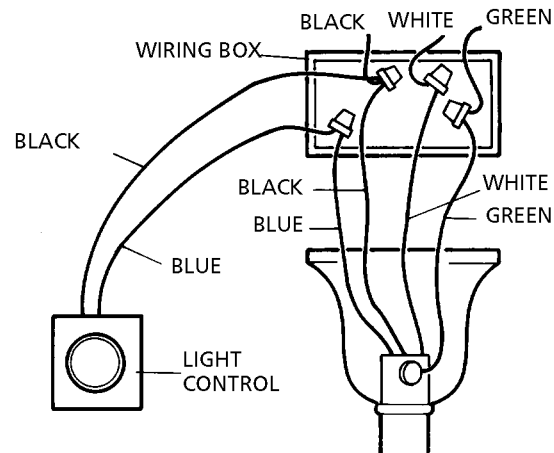
### To control fan

with 3-speed transformer and a standard wall switch or supplemental variable control, use this hookup. For variable speed, leave pull chain on the high speed setting.

## GENERAL FAN ASSEMBLY

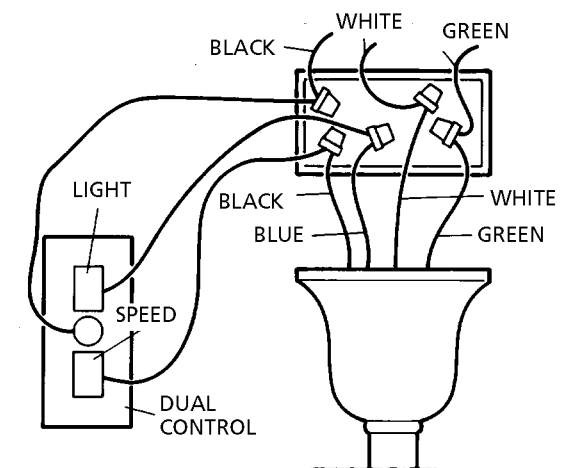
Most ceiling fans are assembled the same way. There may be slight variations between manufacturers, but the difference will be noted in the instructions in the fan package, if present. Here's the procedure:

- 1** Screw the hanger to a framing member, making sure the hanger and the framing member is securely fastened. The hanger may go "through" a knockout in the electrical box. It is never connected to the box.
- 2** Run the downrod through the canopy. Then run the three electrical wires from the fan through the downrod assembly.
- 3** Assemble the downrod into the motor stem. Attach the downrod to the motor stem, insert the bolt provided and insert and spread the cotter pin. Fasten the set screw so it is secure.
- 4** Lift the fan into position without the blades attached. Put the vaulted ceiling mount or swivel into the hanger bracket. Now connect the power wires as explained elsewhere in this Booklet.



### Wiring hookup

to control light from a wall switch. This connection lets you control the fan with the factory 3-speed control, but with a separate wall switch for an optional light kit.



### To control fan

and the light from a wall switch, this is the wiring hookup. Put the pull chain on high speed, although the chain can be put in any speed without damaging the motor.