

Installing Your Ceiling Fan

Ceiling fans make a real difference in your home's climate, both for cooling and heating at a far lower cost and operating expense than almost any other item. The installation begins with choosing where the fan should be located. In almost all homes, the fan is installed in the center of the room, replacing a central light fixture. This spot provides a smooth airflow to most of the room. Since a fan draws about the same power as a ceiling fixture, the electrical circuit shouldn't be overloaded. But if your fan includes lights, be sure the circuit it's on has enough extra capacity to handle the load. If not, you must run a new circuit with a new circuit breaker from the house main service panel or sub-panel to the fan. If there is no central light fixture, you'll have to create a place to hang the ceiling fan. Then, you'll need to bring electrical power to it. You can tap into an existing circuit to do this. If this is beyond your capabilities hire a professional!

Before You Begin Follow Proper Electrical Safety Guidelines

- Use extra care when working with electricity. The circuit you are working with can be lethal.
- All wiring should conform to local electrical codes as well as to the current National Electrical Code (NEC). You can probably find a copy of the NEC at your local library.
- Never trust a light switch to render a fixture "dead," because sometimes the power enters at the fixture, even when the switch is located in the circuit beyond it.
- Turn off the circuit you're working on by switching off a circuit breaker or by unscrewing a fuse (the house main switch should be off when handling fuses). Then padlock the panel if you can.
- Make sure the circuit is truly "dead" before touching any wires or terminals. Check with a high-voltage circuit tester. Test from the black wires to a grounded metal box or other good ground, then to the white wires. Also test from the white wires to a ground. Since there may be more than one circuit inside an outlet box, before you take off a cover, see that all of its circuits are off. Also, be sure your tester is functioning by first trying it in a live receptacle.
- Test your finished work with the power on using the circuit tester. Check black to white and black to a ground. It should light. Test white to ground. It should not light.
- If you aren't knowledgeable about working around electricity, call in a professional.

Tools & Materials That May Be Needed

Lock washers

Patented support unit

Cable

Outlet box

Switch

Wire nuts

Switch cover

Bonding screw

Circuit Tester

No. 2 Phillips screwdriver

Hammer

Stud locator

Ladder

Electrician's pliers Wire-stripper

Swag kit (if applicable)



Check the Blade Clearance



A ceiling fan should be no lower than 7' from the floor - the higher the better. Also, it needs at least 12" between the blades and the ceiling.

Check the floor-to-ceiling height of the fan blades. You can do this by measuring the floor-to-ceiling distance and subtracting for the part of the fan that will extend below the ceiling down to the lower blade surface. An absolute minimum height of 7' is recommended. *Building codes in your area may require this.* If the floor-to-ceiling distance is too little, use the flush mount option for your fan, most manufacturers provide a down rod and flush mounting hardware right in the box. Remember, you need at least 12" between the ceiling and the tops of the fan blades for proper airflow. Having 18" is better if the space is available. If all else fails follow the recommendation of your fan's manufacturer in the instruction booklet that is packaged with your fan.

Mounting Your Ceiling Fan

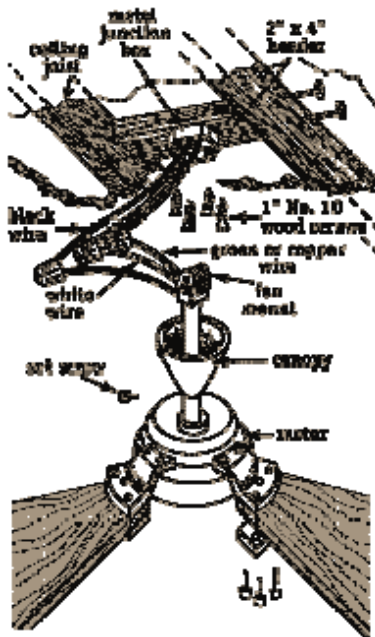
Step 1: Read all of the installation instructions that come with your fan, this will familiarize yourself with the proper steps to hang your fan. Be sure to read all of the electrical safety tips as well, taking these few extra minutes will save you time and trouble in the long run.

Step 2: Turn off the POWER to the light's circuit breaker or fuse, if you are hanging your fan to an existing fixture. Only then should you remove the light fixture, double check the circuit with a circuit tester or power meter. You can use a simple circuit tester that is available at most hardware stores and is simply a light that illuminates when power is present, use it! Failure to do so **CAN RESULT IN *SERIOUS INJURY* DUE TO AN ELECTRICAL SHOCK!**

Step 3: If there is no central light fixture, measure from opposite corners of the room to find its center. Determine whether the lines cross exactly below a ceiling joist. If they do, move aside just far enough between the joists to fasten the side of the fan's new junction box

directly to the joist, you must use a ceiling box that is FAN RATED or an ordinary plastic nail-on or metal ceiling box that has been reinforced with either the [FAN-EZE™](#) or the N-FORCER™ our Patented ceiling box reinforcement products and system.

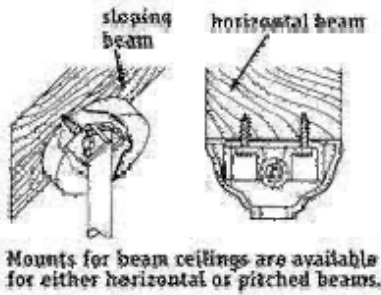
WARNING: DO NOT USE A REWORK OR OLD WORK BOX, they only have small plastic or metal fingers that grab the drywall and will NOT support your fan!



These are the parts of a typical ceiling fan mounting.

Step 4: Cut a hole large enough for the ceiling box to be installed, it is best to cut the drywall between the joists or truss and about as wide as the distance between the joist or truss. In most cases this will either be 16 inches square or 24 inches square if you hang your fan between trusses. If you have complete access to the joist or trusses (no drywall) you could install your ceiling box as shown in the illustration. Installation between joists is OK, too. Fasten the box to a 2" x 4" header nailed between the joists. Then, patch the hole to close it again, or use some of the commercially available decorative ceiling covers. View the image on the right for a typical fan mounting where there's access above the joists or truss for header nailing.

Again you have the option of mounting an ordinary plastic or metal ceiling box and reinforce it with FAN-EZE™ or the N-FORCER™ our Patented ceiling box reinforcement products and system against the joist, in which case you would be done in about 2 to 5 minutes time.



Step 5: Mounting to a beamed or sloped Ceiling, You'll use a special beam mount when mounting a fan to a beamed ceiling. Use one kind for a horizontal beam, another for a sloped ceiling. You may need an extender to lower the fan to the proper level. Be sure to follow the manufacturers instructions when mounting a ceiling to sloped ceiling the have specific minimum clearance and pitch requirements for a safe installation.

Caution:

The average ceiling box whether it is metal or plastic is rated for only a **50-pound load**, some are rated for only **35 pounds**. The ceiling fans will vibrate slightly, even the best fans will do this. This causes a dynamic load to be placed on the ceiling box, unless the proper step are taken to secure these loads your box could fail and your fan could come down with it.

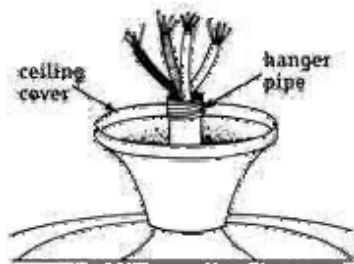


[Click this hyperlink for instructions on using our Products](#)

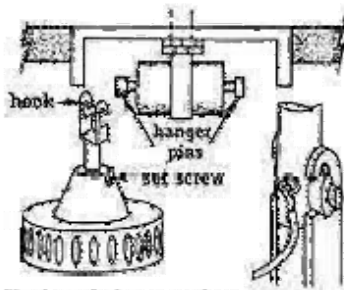
Assemble the Fan

Fan assembly varies from make & model. Be sure to follow the specific instructions that came with the fan that you purchased, this should be a breeze because you read the manufacturers instructions as directed in **Step 1**.

Step 6: Install the specific hardware that is provided with your fan, in most cases you have the option of using a down rod or a flush mount for your fan. The installation in most case is about the same so your individual preference on mounting the fan only varies slightly again following the manufacturers instructions! Several different methods of hanging a fan is shown below, the first illustration shows a typical down-rod installation, the hook style hanger. I know you are tired of hearing this, just follow the manufacturers instructions for their products.



Turn the motor so its wires are on top, and place the ceiling cover onto the hanger pipe.



Hook-style hangers fasten over pins that are attached to the ceiling.

Tip: Just be sure to tighten all screws and hardware securely

Step 7: Assemble the fan blades, most fan blades are attached to the mounting arms with screws, just follow your manufacturers directions. Just make sure to not over tighten the screws you can crush or crack the fan blades.

Mounting the Fan to the Ceiling Box

Depending on what features your fan has and the accessories that you may have purchased, dimmer switches, remote or wall fan controls may require slightly different wiring connections, follow the instructions from your manufacturer. As general rule white (neutral) will be connected to your neutral wire in the fan, it is usually white but double check your fans wiring may even have labels on the wires for easy connection identification. Black (power), this is the wire that carries the current so be careful and make sure when you connect this wire that it is securely fastened to the corresponding black or power cable. Use wire nuts to makes these connections, just make sure that they are tight and do not have any exposed wire that is not covered by insulation outside of the wire nut. If you see any exposed wire either remove the wire nut and shorten the cut ends or use electrical tape to cover the exposed wires. Ground wires are either green or bare copper, just check you fan and make sure you know what color scheme your fan uses for the power, neutral and ground cables.

Step 8: Install the hanger bracket on the box with screws that were provided with your fan and lock washers. It is a good idea to use lock washers so if you were not provided any, buy some at your local hardware store it is cheap insurance that the hanger bracket screws will not loosen over time.

Tip: The hanger bracket may accept either a half-ball hanger or a hook-type hanger or other types, two of which are shown in the illustrations above, depending on which kind your fan uses, the hanger is carefully slipped into the bracket, your motor is now hung.

Step 9: Connect the power cable to the fan, NOW is not the time to find out you have not turned power off at the fuse or breaker, double check before handling any house wiring, you may have turned the wrong breaker or fuse off! Connect the wires as instructed in your manufacturers instructions, if you feel the smallest amount of discomfort about wiring your fan hire an electrician or another professional to assist you, better to be safe than sorry.

Step 10: Ground the Fan- The fan should be electrically grounded to both the metal box and the fan. The grounding wires will be either green or bare copper. A green grounding pigtail attached to the box by a bonding screw will make your work easier. Wire nut the ground wires from the box the fan and the power together.

Tip: If the fan wobbles when it runs, its blades may be unbalanced. To correct this, try interchanging two adjacent blades. If that doesn't work, use a fan balancing kit just follow the detailed instructions that come with it, most manufacturers are putting them in the box with all of the other hardware. So check your hardware package for this item.

Problem Fans!



A hardwood plywood panel will cover the large hole in the ceiling made in building a secure mounting system.

When nothing else works for fan mounting, use a piece of good-looking hardwood plywood as a fan-mount. It should be large enough to extend over two joists. The size may be 18" x 18" or 26" x 26", or any variant that does the job.

Alternate Step 1: Attach to Joists - Use brass screws in pilot-drilled holes to attach the plywood to the ceiling joists. The screw length will vary, depending on the thickness of the plywood and plaster or plasterboard ceiling below the joists. Use one screw every 6".

Tip: The plywood will have an access hole of proper size cut in its center, and will serve as the main mounting member for the junction box above it.

Step 2: Finish the plywood with an outside corner molding, mitered at the corners for a neat appearance. Or, you can get a surface-mounting fixture box along with a surface conduit wiring system that meets electrical codes. This allows you to do the wiring installation on the ceiling and wall, rather than behind it.

Tip: You may wish to wire your fan through a fan speed control so you can set operating speed easily.

Problem Fans Revisited, Swag Kits

Swag kits are available if you wish to have a super-easy installation and a degree of portability in a ceiling fan. These replace the above-ceiling wiring job. In this case, though, the hanger bracket is screwed directly into a ceiling joist.

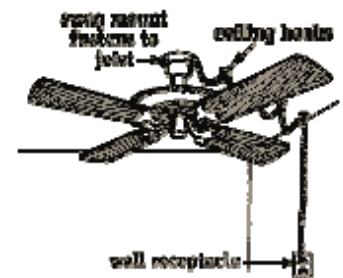
Alternate Swag Step 1: Assembly and Wiring, the swag kit is wired into the fan, and the fan assembled as described earlier. Then slip it into the hanger bracket.

Alternate Swag Step 2: Power for the Fan, the chain and cord are hung from hooks carried across the ceiling, toward a wall and down the wall, where the cord plugs into a handy receptacle.

Alternate Swag Step 3: Mobility of Use, a swag-mounted ceiling fan can be taken down in a few minutes and moved to another location for greater convenience.

Caution:

Failure to follow the instructions or directions that accompany your fan could lead to serious electrical problems and a fan that may fail and fall from the ceiling! The instructions on this page are for informational purposes only and give a generic overview on the installation and wiring of the average ceiling fan. For specific information on your fan follow the manufacturers instructions found in the carton or is provided by your dealer. The use of this information by anyone should not be construed as definitive directions for any particular fan and the publisher is to be held harmless for the use or misuse of this information.



A swag kit lets the fan wiring run across the ceiling and down to a convenient wall receptacle.