INSTALLING A CEILING FAN IS A GREAT WAY TO SAVE ON ENERGY BILLS. AIR CIRCULATES DOWNWARD TO COOL ROOMS IN THE SUMMER AND UPWARD TO DISPERSE HEAT IN THE WINTER.

PROJECT KNOW-HOW

Ceiling fans can improve your décor as well as your comfort level. Fans should have down rods long enough to position fan blades at least 10 inches from the ceiling, but no lower than 7 feet from the floor. Follow these simple guidelines to install your ceiling fan successfully.

SKILL SCALE
Hard

SKILLS
Basic electrical wiring and installation for the following: removing an old box, installing a fan box, attaching a fixture, striping and splicing wires, wiring a switch

TIME REQUIRED
Experienced: 2 hrs; Handy: 4 hrs; Novice: 8 hrs

MATERIALS
Fan
Fan-rated box
Down-rod extender
Light kit
Fan/light switch
(can be remote controlled)
Electrician's tape
Wire nuts

TOOLS
Drywall saw
Hammer & screwdriver
Voltage tester or multi-tester,
Combination strippers
Pliers: linesman's, long-nose, side-cutting
Crescent wrench
Reciprocating saw or metal-cutting keyhole saw

HANGING A CEILING FAN

STEP 1
REMOVE A CEILING BOX

First and most importantly, shut off the power. Sometimes, you can remove screws or nails and pry out the box. Or, you may have to carefully cut away drywall or plaster to get to fasteners. If the box is nailed to a joist, cut around the box to enlarge the hole, and tap the box loose using a piece of wood and a hammer. You may be able to cut through fasteners with a reciprocating saw or a metal-cutting keyhole saw. Take great care not to slice through any cable.

STEP 2
SCREW A FAN BOX TO A JOIST

If you have a joist in the middle of the hole (as may be the case if you removed a thin "pancake" ceiling box), you can easily attach a fan box from below. Buy a thin fan-rated box, and clamp the cable to it. Hold it in place and drill pilot holes; then drive in 2-inch wood screws. (Don't use drywall screws or all-purpose screws—they break too easily.)
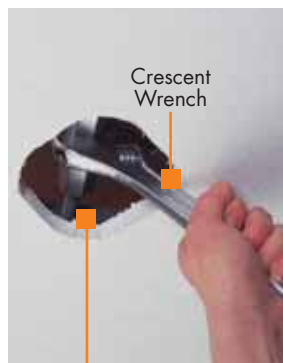
STEP 3
SLIP IN THE BRACE

Check the joist for any wiring or plumbing runs that might be in the way before you install the brace. Test-fit the box on the brace; then take it apart again. Push the brace through the hole and spread until it touches the joists on both sides. Make sure the the legs of the brace rest on top of the drywall or plaster.

STEP 4
TIGHTEN THE BRACE

Measure to make sure that the brace is centered in the hole. Position it on the joist at the correct height so the box will be flush with the surface of the ceiling. Use a crescent wrench or channel-type pliers to tighten the brace until it is firm.

Crescent Wrench

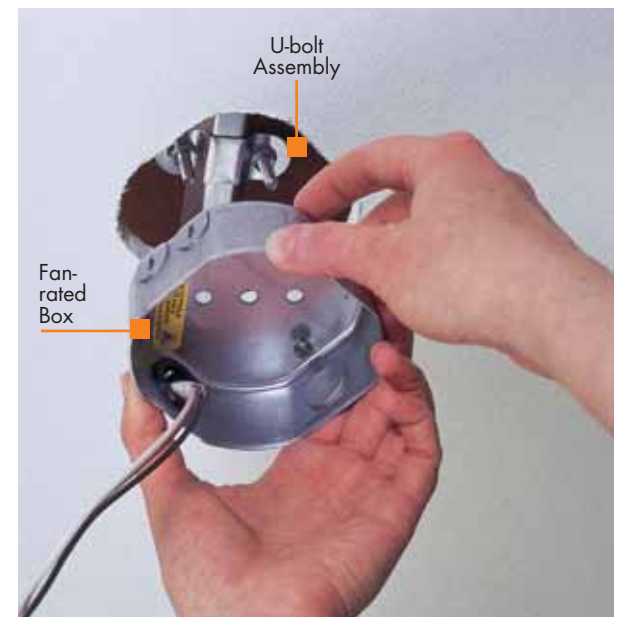Rotating the brace tightens it between the framing

STEP 5
ATTACH THE BOX

Attach the U-bolt assembly to the brace so that it is centered in the hole with bolts facing down. Thread cable through the cable connector and into the fan-rated box. Slip the box up so the bolts slide through it. Tighten the nuts to secure the box.

Before you install the fan brace, check for obstructions such as plumbing pipes or wiring runs that may be attached to the ceiling joist.

SEE STEPS 6-12 ON NEXT PAGES

U-bolt Assembly

Fan-rated Box

STEP 6
INSTALL THE MOUNTING PLATE

Thread the wires through the center of the mounting plate. If the box has mounting bolts that poke through the plate, fit the mounting plate over the bolts and fasten it with the nuts provided. If separate bolts are provided, push each one through the mounting plate as shown. When both bolts are in place, tighten the plate onto the ceiling.

STEP 7
ASSEMBLE THE DOWN ROD AND CANOPY

On a work table, ready the fan for installation, following manufacturer's instructions. Run the fan leads through the down rod (or down-rod extender), and tightly screw on the down rod. Remember to tighten the setscrews. Slip on the canopy, then install the bulb-shape fitting at the top of the down rod. It will rest in the canopy when the canopy is attached to the ceiling. Be careful not to mangle the wires. Do not attach the fan blades yet.

Canopy

Down Rod

STEP 8
WIRE THE FAN

Temporarily hang the fan from the hook on the mounting ring. Connect the copper ground wire to the green wire attached to the fan base. If you have only two wires, connect both the black lead (for the fan

motor) and the blue or striped lead (for the light) to the black house wire, and the white lead to the white house wire. If you have three-wire cable, connect black to black, white to white, and red to the blue or striped light lead. Check the manufacturer's directions. You may choose to install a remote control unit.

STEP 9
ATTACH THE CANOPY

Attach the canopy to the mounting plate. Use a helper to support the fan motor while you drive the screws. Push the wires and wire nuts up into the box to keep them from vibrating

against the canopy when the fan is running. Clip the canopy onto the mounting plate and tighten the screws.

STEP 10
ATTACH THE BLADES

If the brackets are not all of uniform shape, return them and get replacements. Screw a bracket to each fan blade. Make sure the side of the blade that you want to show

faces down. Attach each bracket to the motor with two screws. Drive the screws slowly to avoid stripping. Don't bend the brackets as you work.

HANGING A CEILING FAN

STEP 11
WIRE THE LIGHT KIT

When you remove the plate on the bottom of the fan, you may see a tangle of wires. Don't worry; just find the blue or striped lead and the white lead, and connect them to the light kit leads. Screw the light kit up to the fan. Some light kits require a spacer ring between the fan and the light. The spacer ring should come with the kit or the fan.

STEP 12
WIRE THE SWITCH

If power runs to the switch: shut off power to the switch. A three-wire cable usually runs from the fan to the switch, and a two-wire cable brings power to the switch. Follow the manufacturer's instructions; wire colors vary. Most likely you'll splice the black wire bringing power to the black switch lead, and splice the two white wires together. Then splice the black wire from the fan and the red wire from the light to the switch's fan and light leads.

If power runs to the ceiling box: if the switch box has only one cable—the one from the fan—then power runs to the ceiling box. Usually you'll find a black-marked white wire that brings power from the fan to the switch; however, the previous installer may not have marked it. If unmarked, wrap tape around its end and splice it with the switch's black lead. Splice the red wire (from the light) and the black wire (from the fan) to the switch's light and fan leads.

WORK SMARTER TIP

ATTACH A CEILING BOX TO A JOIST

When framing is accessible, attach a ceiling box to a joist. Install this type of box in unfinished ceilings or ceilings with a large hole. Drill pilot holes and drive in 1-1/4-inch wood screws to attach it to a joist.
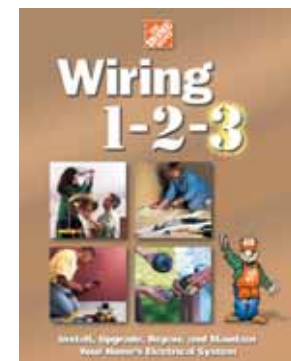
INSTALL A BRACED BOX FROM ABOVE

Buy a new-work ceiling fan box with a brace. Slide the box along the brace to position it. Tighten the clamp. Attach the brace by driving in 1-1/4-inch wood screws.

USE A FAN-RATED BOX. A ceiling fan box is different than an ordinary ceiling box in two ways: First, it's designed to attach firmly, either directly to a joist or with a support bar. Second, it's equipped with deep-threaded holes or strong bolts so that you can tightly clamp the fan to it. You'll never get this kind of strength from an ordinary ceiling box.

WIRING 1-2-3
YOUR STEP-BY-STEP GUIDE

For other projects like this, please refer to **Wiring 1-2-3.** Available at your local The Home Depot store.

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