# Why a Portable Generator Needs a Transfer Switch to Safely Power Your House

"It's not only less safe to run a generator without a transfer switch, but you'll limit the devices that your generator can power," says Dave Trezza, who oversees generator testing for Consumer Reports. "A transfer switch will let you power things on your circuit breaker panel, including hardwired appliances like a water heater or well pump."

Portable generators rated for 5,000 watts and above can connect to your home's circuit breaker panel with a transfer switch—a small board that looks a bit like a circuit breaker panel itself. (The advantage of home standby generators? They have a built-in transfer switch that automatically switches on when the power goes off.)

## How a Transfer Switch Works

Think of a transfer switch as a miniature circuit breaker panel that draws electricity from your generator instead of the power company. When electric service is out in your area, you plug your portable generator into an outdoor outlet that's connected, through the house, to a transfer switch inside.

The switch itself is installed by an electrician, usually alongside your main circuit breaker panel. The electrician can help you figure out which circuits you'll want to power in an outage. Heating and cooling equipment are essential, as are water heaters and well pumps.

Without this switch installed, you'll need to run outdoor-rated extension cords from your generator into the house. And yes, multiple cords: Because they can be overloaded, you'll need a dedicated cord for anything that draws a lot of power, such as a space heater or window air conditioner. Keep in mind, too, that without a transfer switch, you can power only electronics that have a standard plug. You won't be able to connect anything that's hard-wired to your circuit panel, like a furnace or AC compressor, and you're also out of luck if you have an electric range or dryer, because both use large, 220-volt, 4-prong plugs. A transfer switch allows you to power any of those—and skip the extension cords.

Plan on a cost of $500 to $1,500 for the switch, including installation, which usually takes less than a day. And plan early—even if you already have a generator, it's hard to find service pros when there's a big storm in the forecast.

## A Cheaper Option: The Interlock Device

An interlock kit is a less expensive alternative. The idea is similar: When the power goes out, you plug your generator into the same outdoor outlet. But rather than connecting to a transfer switch, the outdoor outlet connects directly to your existing circuit panel.

The interlock device itself is a metal bracket installed on your panel. When in place, the interlock covers your service panel's main cutoff switch, so you can't switch it on while the generator is running. Once utility power is back, you slide the interlock back to its usual position. Thus, power flows in only one direction.

An electrician can tell you whether an interlock meets local building codes and whether it will work with your electrical system. You'll have to pay $50 to $150 for the kit, plus another $400 to $800 for labor, which is a lot less than you'd pay for a transfer switch.

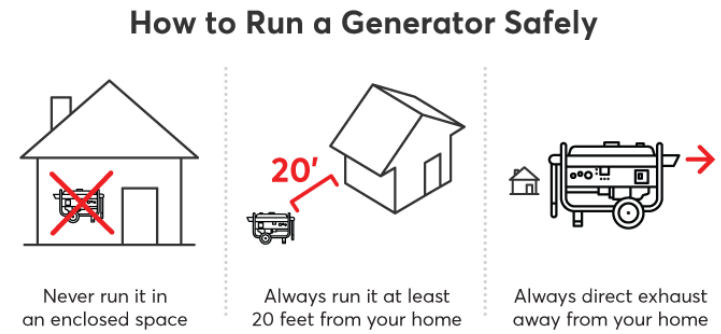
Technically, you can connect a generator to your circuit panel without an interlock, but it's dangerous, and in many cases, illegal. CR never recommends this approach for two reasons.

First, if you're powering your house with a generator and the power comes back on from the street, you can overload the wiring in your home and fry your electronics. Second, if you're running a generator to your panel without an interlock device, you can send electricity back into power lines as utility crews are working on them, potentially electrocuting those essential workers.

## New Portable Generator Safety Features

To reduce the risk of carbon monoxide poisoning, some new generators feature a built-in sensor that triggers an automatic shutoff if CO builds up to dangerous levels in an enclosed space; some also have engines that emit less CO in the first place. Test data from CR shows that these safety features are likely to save lives.

But our findings also reveal potentially life-threatening gaps that the automatic shutoff fails to address, reinforcing why it's critical for consumers to follow safety guidelines. Never operate a generator indoors. Position a portable generator at least 20 feet from your home with the exhaust directed away from your house, as well as any windows, doors, air conditioners, and other structures.

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