HOMEOWNER REPAIR GUIDE

GROUND-FAULT CIRCUIT INTERRUPTERS

For do-it-yourself or contracted repairs

Most people have a healthy respect for electricity—and for good reason. Electric shocks can cause severe injury, or even death. As we have become more dependent on electric-powered tools and appliances, however, a new form of protection has become part of the **National Electric Code**. Ground-Fault Circuit Interrupters (GFCIs) are now required in many locations where you might be using electrical devices in moist conditions: bathrooms, kitchens, basements, garages, and outside your home.

HOW GFCIS PROTECT YOU

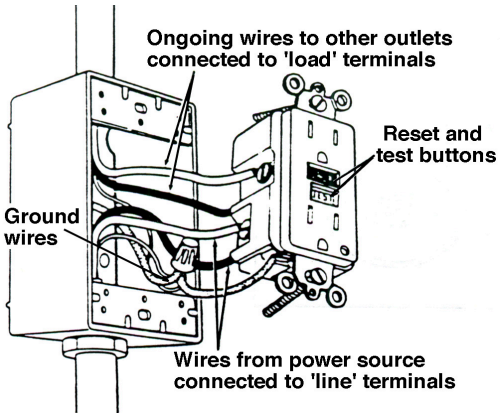
GFCIs protect you from electrocution by sensing minute leakages of current and shutting off the flow of electricity in 1/40th of a second. They go beyond the level of protection offered by the “ground wire” you may – or may not – have in your electric system.

TYPE OF GFCI	WHAT IT PROTECTS
GFCI outlet	A special outlet *(see illustration)* that you install in place of your existing receptacle, to protect that outlet and all other outlets “downstream” on the same circuit.
GFCI circuit breaker	A special circuit breaker that you can install in your service panel to protect all the outlets on a circuit.

GFCIs are now a routine part of updates to your electrical system (new construction or remodeling). But, because they provide such important protection, homeowners may be required to replace existing outlets with GFCIs in certain locations. Installing GFCI outlets is usually a simple procedure.

INSTALLING A GFCI OUTLET

1. First, make sure that the power to the circuit is off. (Test with an electrical tester.)
2. Remove the existing outlet, noting the “hot” wire (usually black) and the “neutral” wire (usually white).
3. Connect the feed wires to the terminals marked **LINE**, black to black and white to white.
4. If there are ongoing wires which continue to the next outlet on the circuit, connect them to the terminals marked **LOAD**, again black to black and white to white. (It’s important to maintain the correct “polarity” to prevent the GFCI from cutting out, even when you are not using an electric appliance.)
5. Splice together the ground wires (bare or green) and connect them with a pigtail to the screw at the back of the box.
6. When you have secured the GFCI to the receptacle box and restored power, check the device by pushing the “test” button, which simulates a leak in the current. The power should shut off. You can then push the “reset” button to restore power.



GFCI outlet wiring

NO GROUND WIRE?

GFCIs are designed to work with grounded systems, but they will provide some level of protection even if you don’t have a ground wire. (In fact, GFCIs are the *only* three-prong outlet that should be installed in a two-wire system.)

GFCI outlets and circuit breakers are more expensive than ordinary types, but the added cost is well worth their lifesaving potential.

Home Repair Resource center

Home Repair Resource Center empowers homeowners to maintain their homes for sustainable and diverse communities.

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