



## Q & A

### GROUND FAULT CIRCUIT INTERRUPTERS (GFCIs)

#### **Q: WHAT IS A GFCI?**

A: GFCI stands for Ground Fault Circuit Interrupter. This small, inexpensive device can help prevent electrocution inside and outside the home. GFCIs are an effective means of preventing severe electric shock. They essentially monitor the flow of current through the circuit and if they detect any changes (such as occur with a ground fault) they quickly act to shut off the power fast enough to prevent serious injury from electrical shock. Like all products, however, GFCIs can be damaged (by lightning or electrical surges during storms, for example) and thus must be tested regularly. The Electrical Safety Foundation International (ESFI) and agencies like Underwriters Laboratories (UL) recommend you test your GFCIs once a month to verify that they are working properly.

#### **Q: WHAT IS A GROUND FAULT?**

A: "Ground faults" occur when the electrical current in an electrical appliance or other product strays outside the path where it should normally flow. Ground faults are often the result of damaged appliance cords or when consumers allow electrical products to come in contact with water, metal or other conductors in places such as the bathroom, kitchen and laundry room or on swimming pool decks. If a person provides a path for the live current to the ground, he or she may be severely shocked or even electrocuted. GFCIs act quickly to interceded and shut off the flow of electrical current through the circuit (and a person), helping to prevent injury or death.

#### **Q: HOW SHOULD A GFCI BE TESTED?**

A: GFCIs should be tested once a month following these simple steps:

- Plug an ordinary nightlight or similar device into the GFCI outlet.
- Push the "Reset" button of the GFCI receptacle to prepare the unit for testing.
- Turn the light on. The light should now be ON.
- Push the "Test" button of the GFCI. The light should go OFF.
- Push the "Reset" button again. The light should go ON.

If the light remains lit when the test button is pushed, the GFCI either is not working properly or it has not been correctly installed and does not offer shock protection. Immediately contact a qualified electrician to check the device and correct the problem.

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## **GFCI Q&A...ADD ONE**

### **Q: CAN CONSUMERS INSTALL THEIR OWN GFCIs?**

A: Consumers are encouraged to use a qualified electrician to install circuit breaker-type GFCIs. These are GFCIs installed in homes with a panel box to provide protection to selected circuits -- shutting off the electricity when there is a ground fault, but also tripping when a short circuit or electrical overload occurs. People with strong knowledge of electrical wiring practices who can follow the instructions accompanying the GFCI may be able to install receptacle (wall-type) GFCIs. Otherwise, you should have an electrician or other knowledgeable person do the work. Portable GFCIs require no special knowledge or equipment to install.

### **Q: WHAT IS A CIRCUIT BREAKER OR PANEL-BOX GFCI?**

A: In homes equipped with circuit breakers rather than fuses, a circuit breaker GFCI may be installed in a panel box to give protection to selected circuits. The circuit breaker GFCI serves a dual purpose -- not only will it shut off electricity in the event of a "ground-fault," but it will also trip when a short circuit or an overload occurs. Protection covers the wiring and each outlet, lighting fixture, heater, etc. served by the branch circuit protected by the GFCI in the panel box.

### **Q: WHAT ARE THE TEST STEPS FOR A CIRCUIT BREAKER GFCI?**

A: Follow these simple steps to test a circuit breaker-type GFCI:

- Locate the circuit breaker box (usually in your basement, garage or utility room).
- Verify that the breaker toggle is in the ON position.
- Press the TEST button on the circuit.
- The toggle switch should snap to the TRIPPED position.
- RESET and return the toggle to the ON position. The power will be restored.

If the circuit breaker fails to TRIP when the test button is pressed, have it checked by qualified electrician.

### **Q: WHAT IS A PORTABLE GFCI? CAN I USE IT IN PLACE OF A REGULAR GFCI?**

A: Where permanent GFCIs are not practical (for example, at construction sites or when using electrical tools, mowers, trimmers, saws and similar devices in an outdoor setting), portable GFCIs may be used. They should not be used as a permanent alternative to regular GFCIs. These portable or temporary GFCIs should be tested prior to every use.

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## **GFCI Q&A...ADD TWO**

**Q: IF I HAVE AN APPLIANCE (SUCH AS A COFFEEMAKER OR BLENDER) AND I ACCIDENTALLY KNOCK IT INTO A SINKFUL OF WATER, WILL A GFCI PROTECT ME?**

A: If the GFCI is properly functioning, yes. GFCIs are designed to protect against severe electrical shock or electrocution in such cases. However, they are a back-up safety device, not a replacement for common sense and prudent behavior when using electrical products. Wherever water and electricity are present, consumers need to use extra caution and should follow the safety instructions that came with the appliance. Avoid situations where "water and electricity don't mix," such as when using electric appliances near water in the bathroom, laundry room or kitchen.

To retrieve the appliance:

- Shut off the circuit supplying power to the outlet feeding the appliance.
- Be sure you are not standing in or touching water, metal or other conductive surfaces and unplug the appliance.
- Drain the water.
- Retrieve the appliance.
- Reset the circuit to ON.

Don't use the appliance again until it has been properly inspected by a qualified electrician.

**Q: HOW EFFECTIVE ARE GFCIs IN SAVING LIVES OR PREVENTING SEVERE ELECTRICAL SHOCK?**

A: By installing and monthly testing of GFCIs in every home in the United States, the U.S. Consumer Product Safety Commission (CPSC) estimates that more than two-thirds of the approximately 200 accidental residential electrocutions that occur each year in the United States could be prevented. The advantage of using GFCIs is that they detect even those minute amounts of electricity too small for your fuse or circuit breaker to activate and shut off the circuit. However, like all products, GFCIs can be damaged or wear out and thus monthly testing is critical.

**Q: HOW CAN I FIND OUT MORE ABOUT GFCIs?**

A: To find out more about GFCIs, how to test them and their use and other safety tips, contact the Electrical Safety Foundation International (ESFI) at 703-841-3229 or log on to [www.electrical-safety.org](http://www.electrical-safety.org) or [www.ul.com](http://www.ul.com). For a brochure on electrical safety in the home, including GFCI testing, send a stamped (60-cent) self-addressed envelope to: the Electrical Safety Foundation International, 1300 North 17<sup>th</sup> Street, Suite 1847, Rosslyn, VA 22209.

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