MAFES Dawg Tracks

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Safety Tips: Why Use Ground Fault Circuit Interrupters?

What is a GFCI?

A ground fault circuit interrupter (GFCI) is a fast-acting circuit breaker which senses small imbalances in the circuit caused by current leakage to ground and, in a fraction of a second, shuts off the electricity. The GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "coming" or returning by about 5 milliamps, the GFCI interrupts the electric power within as little as 1/40th of a second.

Ground Fault Circuit Interrupters are designed to protect people from severe or fatal shocks, but because a GFCI detects ground faults, it can also prevent some electrical fires and reduce the severity of other fires by interrupting the flow of the electric current.

What is a Ground Fault?

- It is an unintentional electrical path between a power source and a grounded surface.
- They most often occur when equipment is damaged or defective, such that live parts are no longer adequately protected from unintended contact.
- If your body provides a path to the ground for this current, you could be burned, severely shocked or electrocuted.

How do They Work?

✓ A GFCI constantly monitors current flowing through a circuit. If the current flowing into the circuit differs by a very small amount (as little as .006 amperes) from the returning current, the GFCI interrupts power faster than a blink of the eye to prevent to prevent a lethal dose of electricity.

✓ GFCIs are designed to operate before the electricity can affect your heartbeat.

✓ A GFCI works even on two-slot receptacles.

DANGER NEVER TAKES A VACATION

<>BE SAFE<>

ELECTRICITY CAN TURN YOU OFF!!!

A Prime Example of GFCI Use-

✓ A bare wire inside an appliance touches a metal case. The metal case is then charged with electricity. If you touch the appliance with one hand while another part of your body is touching a grounded metal object, such as a water faucet, you will get shocked.

✓ If the appliance is plugged into an outlet protected by a GFCI, the power will be shut off before a fatal shock can occur.

Installation of GFCIs

- Circuit breakers and receptacle-type GFCIs may be installed in your home, shop or barn by a qualified electrician.
- Receptacle–type GFCIs may be installed by consumers with adequate knowledge and skills to conform to proper electrical wiring practices and the instructions accompanying the device.
- If you are in doubt about the proper procedure contact a qualified electrician; do not attempt to install it yourself.
- A portable GFCI simply gets plugged into a receptacle, like any other cord-and-plug-connected device.

3 Types of GFCIs-

- A circuit breaker with a built-in GFCI may be installed in a panel box to add protection to the circuits it supplies.
- Protects against both a ground fault and a circuit overload.
- Protects the wiring and every outlet, lighting fixture or appliance on the branch circuit that it supplies.

Locations for Their Use-

The circuits that require protection are designated by t**he** *National Electrical Code (NEC):*

~ Outdoors (since 1973) ~Bathrooms (since 1975)
~ Garages (since 1978) ~Kitchens (since1987)
~ Wet bar sinks (since1993) ~Laundry/Utility sinks (since 2005)
~ Crawl spaces & unfinished basements (since 1990)

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