

MAFES Dawg Tracks



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Enhanced Safety with GFCIs



One of the most important safety devices in our shops, offices, and homes is a very simple electrical device called a Ground Fault Circuit Interrupter (GFCI). Estimates show that the installation of GFCIs has saved hundreds of lives and prevented thousands of injuries in the U.S. over the past 30 years. If GFCIs were installed in all the shops, offices and homes, it is estimated that 70 percent of the approximately 400 electrocutions that occur each year in the home and shop areas could be prevented. GFCIs are designed to protect people from severe or fatal electric shocks.

HOW DOES THE GFCI WORK?

The GFCI constantly monitors electricity flowing in a circuit, to sense any loss of current. If the current flowing through the circuit differs by a small amount from that returning, the GFCI quickly switches off power to that circuit. The GFCI interrupts power faster than the blink of an eye to prevent a lethal dose of electricity. You may receive a painful shock, but you shouldn't be electrocuted or receive a serious shock injury.

EXPLANATION OF THE THREE TYPES OF GFCIs:

- **Receptacle Type** – The receptacle type is used in place of the standard duplex found throughout the shops, offices and homes. It fits right in the receptacle box and protects against “ground faults” whenever an electrical product is plugged into the outlet.
- **Circuit Breaker Type** – In areas that are equipped with circuit breakers instead of 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 the electricity in the event of a ground-fault, but it will also trip when a short circuit or an overload occurs. This type protects the wiring and each outlet, light fixtures, and heaters that are served by the branch circuit in the panel box.
- **Portable Type** - In some applications, permanent GFCIs aren't practical, so portable ones can be used. One type contains the GFCI circuitry in a plastic encio-sure box with plug blades in the back and receptacles in the front. It can be plugged into a receptacle, then the electrical product is plugged into the GFCI. Another type is an extension cord equipped with a GFCI. It adds flexibility in using receptacles that aren't protected by GFCIs.

In most buildings built since 1973, The National Electrical Code requires GFCIs to be installed in areas where moisture will be present. In our inspections on the campus and off-campus sites, we are requesting that GFCIs be installed to replace the old conventional three-prong ground outlets. Although we haven't suggested or requested it, the GFCI circuit breakers would certainly be a safety enhancement in areas where they can be changed out. The cost is insignificant compared to the savings if an electrical shock occurred and caused an injury to a person or loss of property.

A GFCI should be used when you are operating any type of electrically powered yard or garden equipment, like mowers, hedge trimmers, leaf blowers or edge trimmers. The same protection enhancement is available for use around shops, both home and farm when using electric tools like saws, drills, grinders and sanders, etc.

INSTALLING GFCIs:

Circuit breaker and receptacle type GFCIs may be installed in shops, homes etc. by a qualified electrician. Receptacle type GFCIs can be installed by knowledgeable consumers familiar with electrical wiring who also follow the instructions accompanying the device. If there is some doubt about the installation, obviously, you should contact a qualified electrician for more advice. A portable GFCI needs no special knowledge or equipment to install.

TESTING GFCIs:

- All GFCIs should be tested monthly to make sure that they are working properly and are protecting you from a critical or fatal shock. They should also be tested after installation for proper functioning.
- To test a receptacle GFCI, plug a nightlight or a lamp into the outlet. The light switch should be on - then press the TEST button on the GFCI. The GFCI's RESET button should pop out, and the light should go out.
- If the RESET button does not pop out, the GFCI has been wired improperly. Contact an electrician to help you correct the problem.
- If the RESET button does not pop out, the outlet is defective and should be replaced.
- If the GFCI is functioning properly, and the lamp goes out, press the RESET button to restore power to the outlet.