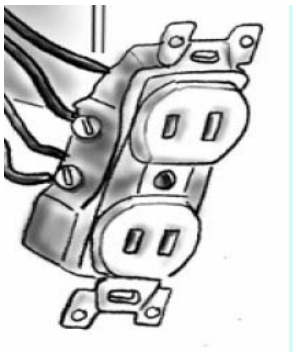
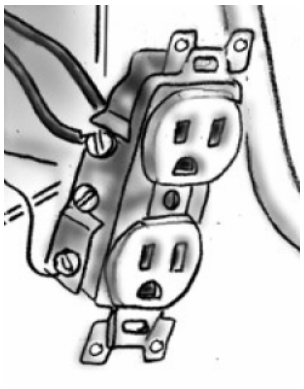
Grounded Outlets and GFCIs

One of the most common write-ups on inspection reports is the lack of grounding and/or the lack of GFCI-protected outlets. I would like to discuss a little bit about these two items.

Grounded outlets and GFCI-protected outlets (short for Ground Fault Circuit Interrupters) have been required by the National Electric Code (NEC) for a number of years. The purpose of both grounding and GFCIs is to improve the safety of a home's electrical system.



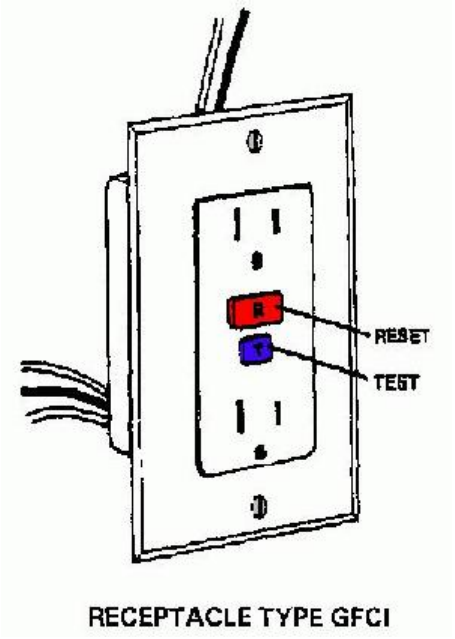
Grounded outlets are the outlets with three slots (as opposed to ungrounded outlets which only have two slots). They improve the safety of the electrical system in a couple of ways. First, the home's grounding system provides a safe path for an electrical surge (such as one caused by a lightening strike) to be safely discharged into the ground via the ground rod which is buried in the ground. Without grounding, a dangerous electrical arc and serious damage could occur in the home in the rare occurrence of a lightening strike or other electrical surge. Grounded outlets also allow an electrical fault to be cleared (a breaker to be tripped) if a loose hot wire comes into contact with the outer metal frame of something such as a refrigerator or washing machine. Without grounding, someone who touches the appliance (with a hot wire touching the frame) could receive a dangerous electrical shock.



That being said, are ungrounded outlets unsafe? They can be. But most items (TVs, stereos, lamps, vacuum cleaners, alarm clocks, etc) normally only have two prongs, so the grounding slot is not even used when these two-pronged devices are plugged into them. Items that typically have a ground prong are refrigerators, freezers, washing machines, computers, etc. Plugging these items into an ungrounded, three-slotted outlet or into a two-slotted outlet by using an adapter creates a situation that is not as safe as plugging the item into a grounded outlet. In fact, an ungrounded, two-slotted outlet is not against code, but an ungrounded, three-slotted outlet is a violation of code. In order to improve the looks of their home, many homeowners buy new, clean three-slotted outlets and install them where there was only a two-slotted outlet. This should not be done since it can give people a false sense of security by making them think it is a grounded outlet.

GFCIs

GFCI-outlets are required in kitchens along countertops, in bathrooms, outside, in garages (except on dedicated outlets such as for the garage door opener, a freezer, etc.), and around pools and hot tubs. Some people have the mistaken idea that they are the same thing as a circuit breaker. This is not the case at all. While they can kill the power to an outlet like a circuit breaker does, they do not provide over-current protection like a circuit breaker.



RECEPTACLE TYPE GFCI

What do GFCI outlets do? GFCI outlets “measure” the amount of current leaving the outlet and the current coming back to the outlet from the load such as a hair dryer. If it detects any difference in the two currents, it “assumes” that this current is going through a person and then immediately shuts off the power to that outlet – thus preventing the person from receiving a harmful or fatal shock.

What if my electrical system is ungrounded – can I still install GFCI outlets? Yes, a GFCI outlet will work even on an ungrounded electrical system. Although the ideal situation is to have GFCI-outlets and a grounded electrical system, GFCI outlets on a nongrounded system is a safer alternative than not having GFCI outlets at all.

Any questions can be directed to Mike Morgan at (325) 998-4663.