

Location _____ Trainer _____ Date _____

GROUNDING ELECTRICITY

Many people think that "household" voltage, 110-120, which is common in almost every workplace, is not particularly dangerous. Well, it is! It's not voltage alone that determines the danger; it's a combination of voltage, amperage and resistance to the flow of the current and duration of contact. Electricity must have an uninterrupted path, or circuit, to follow. If your body becomes part of that circuit, electricity will pass through it.

Even with "household" voltage, if your body's resistance to the flow is lowered by wet hands or feet, for example, enough electrical energy can flow through your body to kill you. This is especially true if the electricity passes through vital organs, such as the heart or lungs.

Electricity ALWAYS follows the path of the LEAST resistance. That's why it is so important to provide an easy path for the current to follow. This is called a ground. For example, let's say you are holding a drill that has developed a short. Your hands are dry and you are standing on a dry surface. The drill has a ground wire. This means the current will follow the ground wire -- not you! Dry hands and feet offer considerable resistance to household current, but the resistance drops rapidly in the presence of moisture.

Portable electric power hand tools are used for many different kinds of work. Unless you are using an acceptable double-insulated electric power tool, you must be absolutely sure that the noncurrent-carrying parts are properly grounded. Usually a three-prong plug in a three-hole outlet provides a proper ground. However, if you are not sure that the ground is effective, have it tested. Attaching the third wire to a pipe that does not go to the ground, or to a nonconductor, is not an effective means of grounding; you might as well not have it at all. Don't take a chance - always have it checked out.

For your safety:

- Don't attempt to make electrical repairs unless you are an electrician; it's better to send a defective tool back to the manufacturer. This is especially true of double-insulated tools, which must be repaired by the manufacturer.
- If you have wet hands or are standing in water, don't use an electric tool.
- Always disconnect the tool before cleaning or adjusting it.
- Don't use water to put out an electrical fire.
- Make absolutely sure that the electrical power tool you are using has a true ground or is double-insulated.