

Name: _____

Date: _____

Subteam: _____

CougarTech Training Module

Electrical Safety – Soldering

Note: This module provides a basic walkthrough, which does not instruct on soldering technique. Instead, please find a complimentary tutorial or work with a mentor to develop soldering skills.

Learning Material

Please read and watch the following

Soldering Procedure:

1. Put on safety glasses and make sure appropriate attire is being worn. In this case, all dangling sleeves and accessories should be avoided, while long hair should be put up.
2. Ensure the soldering iron and stand are in a safe location
 1. Must not be in contact with flammable materials
 2. Must not be likely to be bumped into or knocked over
 3. Must be in a well-ventilated area to disperse toxic fumes
3. Acquire and dampen a soldering sponge, used to clean the tip of the iron.
4. Turn on the soldering iron and allow several minutes for it to heat up. Solder will not melt effectively until an appropriate temperature is reached.
5. When connecting wires, it is likely that the finished connection will need to be covered with heatshrink. If so, slide heatshrink over one of the unconnected wires before connecting them.
6. If possible, clamp the wires being soldered in a pair of helping hands (pictured at right). This prevents the wires from moving during the soldering (resulting in a better connection) and allows focus to remain on using the iron safely.
7. After connecting the wires, use a heat gun to tighten the heatshrink over the exposed connection.
8. Use the soldering sponge to prevent excess solder from building up on the tip of the iron.
9. Most importantly, **always turn off the soldering iron** when finished and when leaving it unattended for more than a few minutes. Regardless of onboard switches, **unplug the soldering iron** when finished.



As an important and oft-used electrical tool, soldering irons must be well understood and used safely. Although not immediately alarming, the fumes released during soldering are toxic and should not be inhaled. For this reason, working in an open air space or alongside a ventilation fan is important. Many types of solder contain lead, a substance known to be highly toxic if inhaled or ingested (usually from its presence on skin). Regard the hand-washing step seriously. While cooling, solder has a tendency to “spit,” resulting in the need for safety glasses.

Disposal of soldering waste requires some care and extra effort. Bits and pieces of solder should be collected in a container for recycling, while used solder sponges should be properly disposed of as hazardous waste.

If burned seriously by a soldering iron, run the burn under cold water for 15 minutes before applying a bandage.

Watch the following instructional video:
<link forthcoming>

Material Quiz

Answer the following questions

1. What accessory tools should be used to make the soldering process safer?
2. List the important location factors which should be considered when soldering.
3. What state must a soldering iron be when stored or left unattended?
4. What should be done with waste solder?

Practice/Assessment

Find a qualified mentor and follow the procedure under observation

Task: Work with someone who has experience in soldering to safely and securely connect two pieces of electrical wire.

Mentor name: _____

Signature: _____

Date: _____