

**Knowledge Domain: Electrical Simple**  
**Unit: Connections**  
**Skill: Desoldering**

**Tools and Parts Required:**

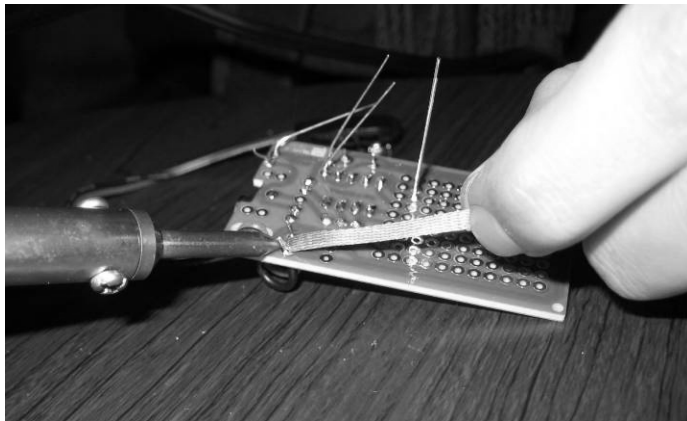
- 1) Soldering Iron
- 2) Soldering Iron Stand
- 3) Solder
- 4) Damp Sponge
- 5) Sand Paper (optional)
- 6) Pliers
- 7) Test circuit (for removing components)  
(you may use circuit boards from unusable equipment)
- 8) Desoldering braid (must have flux)
- 9) Desoldering bulb or Solder Sucker
- 10) Solder picks, 1 set

**Introduction**

Desoldering is the process of removing solder. Desoldering is essential to the processes of soldering, troubleshooting equipment, and replacing parts. Excess solder may cause bad electrical connections. Excess solder may also lead to cracks in the joint. Desoldering will always be necessary for fixing your work or others' work.

**Example**

Below is a picture of someone removing a component from a circuit board using a desoldering braid.



**Identification and Diagnosis**

To disassemble a circuit or soldered joint, solder must be removed. You may need to remove solder often as you learn to solder. If a defective component must be removed

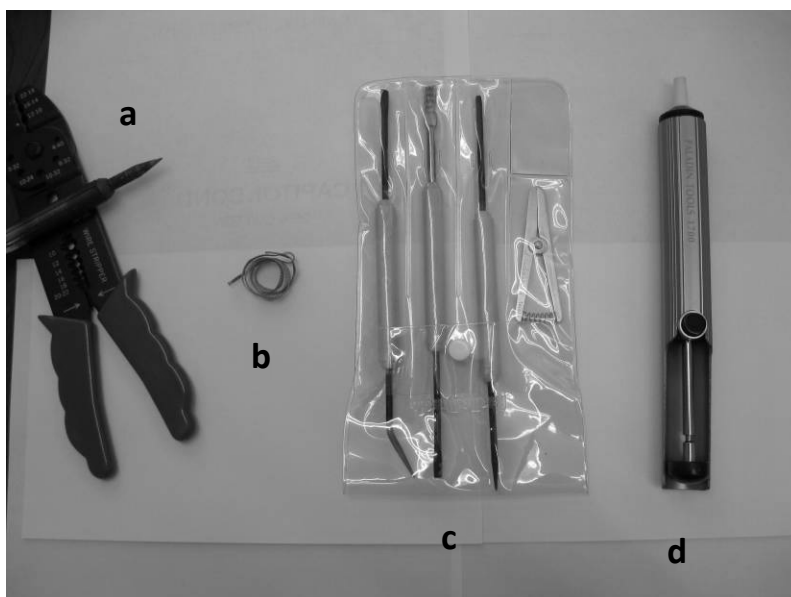
from equipment, you will need to desolder the joints. A “cold joint” will need desoldering before repair. A cold joint is a joint with a bad electrical connection.

### Procedure

1. First, plug in the soldering iron.
2. Place the soldering iron on the stand. The soldering iron will get very hot. Do not place it directly on the table. A large wrench can substitute for a stand.



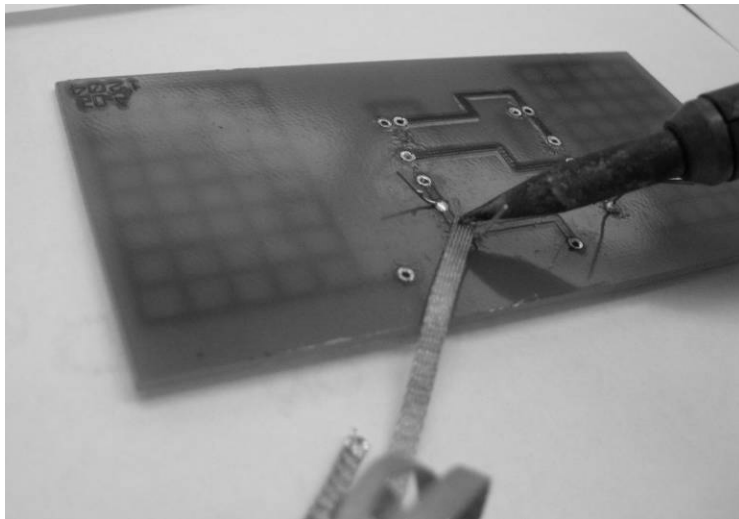
3. If the tip of the iron is dirty, use the damp sponge or sandpaper to remove dirt and debris. You may clean the tip with a damp sponge even when the iron is hot.
4. Coat the tip of the iron with a thin layer of solder. This process is called tinning. Tinning helps heat transfer from the iron to the wire connection.



Tools used for desoldering: (a) soldering iron, (b) desoldering braid, (c) solder picks, and (d) solder sucker.

### ***Desoldering Braid:***

1. Place a small amount of desoldering braid directly on the joint to be removed.  
Always use the *end* of the braid. Never use the middle of the braid.
2. Place the soldering iron on the braid. The iron will heat the joint and melt the solder. The braid will suck up the melted solder. Use caution, since the braid gets hot while in use. Use pliers or gloves to prevent burns. If you hold the braid with your hand, be sure to hold the braid at least 15 cm from the joint.
3. Repeat as necessary until all solder is removed.



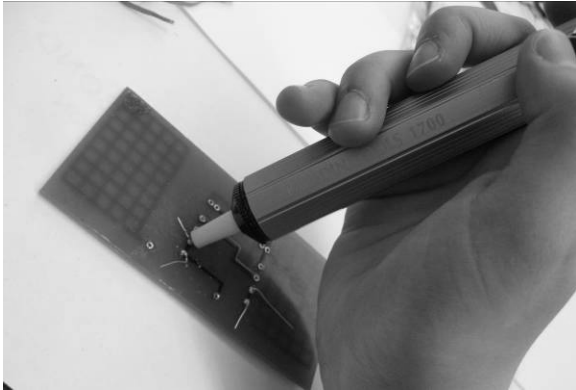
4. When the solder has been removed, cut off the used braid. Desoldering braid cannot be reused.



Example of a used desoldering braid before and after detaching the used section.

### ***Solder Sucker:***

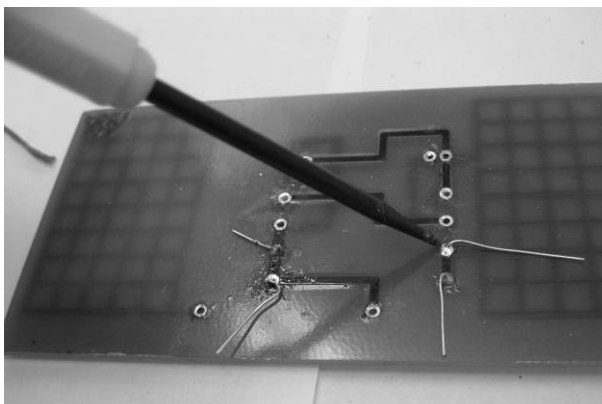
1. Place the soldering iron directly on the joint to be removed. Place the tip of the solder sucker at the joint. The tip of the solder sucker is made of heat resistant material. Contact with the soldering iron will not damage the solder sucker.
2. Wait for the solder to melt. (Do not apply heat for more than 5 or 10 seconds at a time. Excess heat can damage electrical components.)
3. When the solder is melted, use the switch to activate the solder sucker.



4. You may need to melt the solder and apply suction multiple times. The solder hardens quickly, making removal difficult. Ask your instructor to demonstrate proper use of the solder sucker.

### ***Solder picks***

Solder picks can be used with desoldering braids or solder suckers. Remove small beads of solder with solder picks.



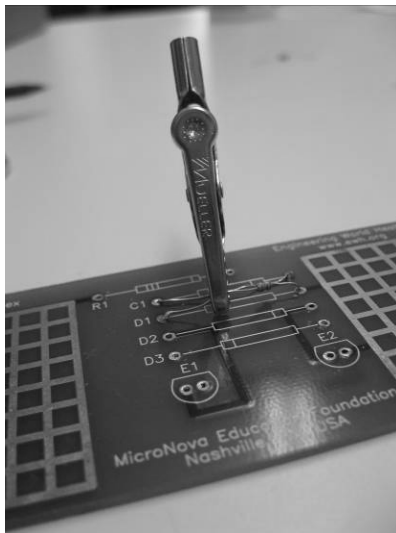
## Exercise

Your instructor will give you a circuit board. Remove all the components. Use each desoldering technique at least once. Do not use a circuit that you assembled yourself.

Your instructor must verify your work before you continue.

## Preventative Maintenance and Calibration

The soldering iron will work best when it is clean and not oxidized. Oxidized metal appears dull, dark, and dirty. Tin the tip of the iron when not in use to prevent oxidation of the tip.



Always calibrate every medical device before returning it to use.