

Soldering Station Quick Reference Guide

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 **UnleashSpace**

1. Getting Ready to Solder

First grab a pair of safety glasses from the box placed near the entrance of the Create Space. There are bigger ones available for people wearing glasses.



Figure 1: Power switch in the "On" position

- i.) Once seated at the soldering station put your safety glasses on and then securely attach your component board to the soldering clamp as shown in **Figure 2** below.

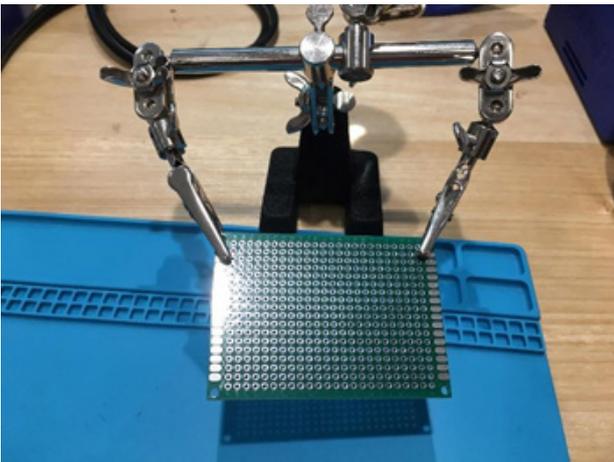


Figure 2: Component Board securely attached to the clamp

- ii.) Once the component board is securely attached put the extraction unit on by switching its power button on. Then rotate the knob below it and set it to high for maximum extraction as you do not want to



Figure 3: Extraction Unit switched on with maximum extraction settings.

- iii.) Switch the Soldering iron on by pressing the button on top of it and rotate the knob to set the temperature ideally between 320 °Cas- 350 °Cas, which is shown in **Figure 4** below. Once the required temperature is reached the red light starts flashing once per second.



Figure 4: Soldering iron switched on and desired temperature set

- iv.) Clean the tip of the soldering iron on the Brass Pad before you begin soldering as shown in **Figure 5**.





Figure 5: Cleaning the Soldering Iron tip



Figure 8: Component Leads bent back to hold them in place.

2. Basic Through-Hole Soldering

While holding one of the leads of the components with pliers, gently push the component body until the lead is bent at a 90 degree angle as shown in **Figure 6**. Repeat this for the other lead. If the component leads are already at 90 degrees for example a capacitor shown in **Figure 7** the above process is not required.

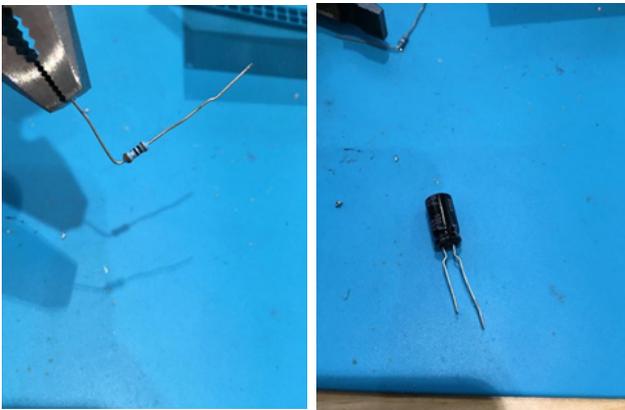


Figure 6: Pliers used to bend a resistor lead.
Figure 7: Capacitor Leads need not be bent.

- ii.) Solder the part by first applying heat to the joint. Then apply solder wire to the joint till it is filled up by molten solder, after which remove the wire and then the soldering iron. This is shown in **Figure 9** below. Make sure to solder on the underside (where the leads are bent back) of the component and not the top side as it would be very close to it and may damage the component.
- iii.) Let the joint cool and then inspect the joint if it is a good solder. Bad and good solder joints are shown in **Figure 10** below. Trim the leads and make sure to cut on top of the cone at the joint if the joint is bad the best thing to do is desolder the lead and solder it back again.



Figure 10: Bad and good solder joints

- i.) The component leads should then be bent back to hold the component in place and it should be made sure the component lies flat on the PCB. This is shown in **Figure 8** following.



3. Desoldering Through-Hole Components

Once the Component board is securely attached to the clamp and the extraction unit turned on switch the desoldering station on by pressing the power button at the back of it and wait for it to heat up to 350 °C as shown in **Figure 11**.



Figure 11: Desoldering Station powered up

- i.) Once the Desoldering gun is heated up, first clean the nozzle on the brass pad as shown in **Figure 12**. Then place the nozzle on top of the component lead to desolder as shown in **Figure 13**.

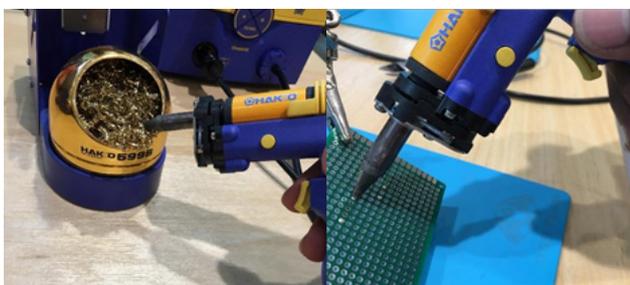


Figure 12: Cleaning the Desoldering gun nozzle

Figure 13: placing nozzle on lead

- ii.) Wait for the solder to melt and then press the button on the gun handle as shown in **Figure 14**. This will suck up the solder and the lead should fall out easily as shown in **Figure 15**.



Figure 14: Using the Desoldering gun

Figure 15: Desoldered Component

4. Cleaning Up

Once you have finished soldering or desoldering your desired components, make sure to switch off the soldering iron or the the desoldering station and the extraction unit by switching off their power buttons as shown previously in Figures 4, 11 and 3 respectively .Make sure that the nozzle of the desoldering gun and the soldering iron tip is cleaned after use on the brass pad. Return the safety glasses to the box near the entrance of the Create Space as well, shown in figure 1. All component scarp is to be picked up and disposed in the bins as well.

References

FX-950 Instruction Manual (2015-05-01). Retrieved from https://doc.hakko.com/download.php?_gs=on&l=en&kp=fx+950&d=4959

How to Solder a Through-hole Component (n.d.). Retrieved from <http://www.instructables.com/id/How-to-Solder-a-Through-hole-Component/>

