

Soldering



# THE POSSIBLE ZONE

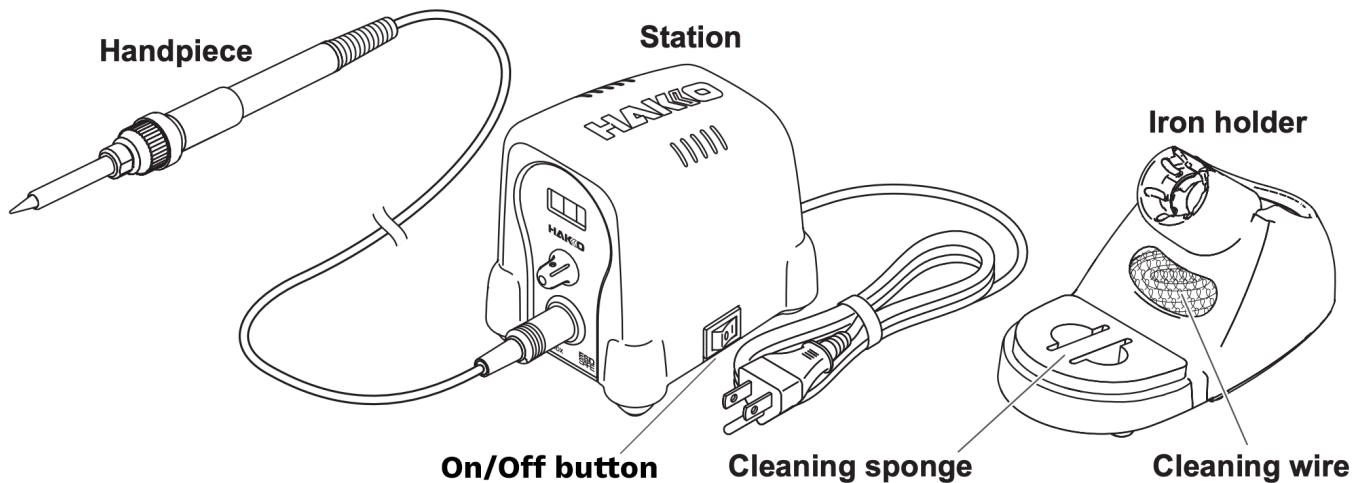


## Soldering

THIS GUIDE IS NOT A  
SUBSTITUTE FOR TRAINING OR  
FOR THE USER MANUAL. THIS  
GUIDE SERVES AS A REFRESHER  
ONLY. USERS MUST BE  
CERTIFIED TO USE EQUIPMENT  
INDEPENDENTLY.



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### THIS TOOL IS PRIMARILY FOR:

THE PRIMARY USE FOR A SOLDERING IRON IS TO JOIN ELECTRICAL COMPONENTS TOGETHER BY MELTING SOLDER (A FUSIBLE METAL ALLOY) TO CREATE A STRONG, CONDUCTIVE CONNECTION.

PROJECTS INCLUDE:

- ELECTRONICS REPAIR
- CREATING CIRCUITRY
- JEWELRY MAKING
- STAIN GLASS

### MATERIALS

- + Copper
- + Brass
- + Bronze
- + Nickel-silver
- + Tin
- + Zinc

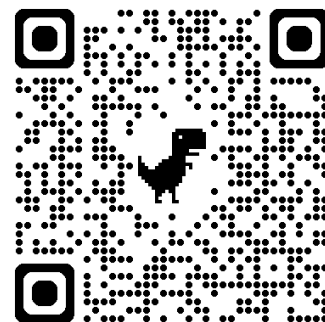
This 3 pager documentation is a reminder of the following soldering iron basics.

- Safety
- Set up
- Soldering practices

For full documentation on how to use the soldering iron scan the QR below.



For more information on soldering irons including full manual, additional tutorials and more check out the soldering iron page on our website or scan the QR code below.





# SOLDERING

KEEP IT SAFE

TAKE PROPER SAFETY PRECAUTIONS WITH OPERATING EQUIPMENT

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## Protection

- Before getting started make sure to put on safety glasses. This will avoid any solder splatter or other materials falling into eyes.
- At the end of any soldering projects make sure to wash your hands thoroughly.



## Caution Hot

- Soldering iron is incredibly hot!
- Soldering iron temperature can reach up to 650°F-900°F
- Keep hands away from tip of soldering iron.
- Only hold the soldering iron by the rubber grip.



## Exhaust

- Solder emits smoke when heated
- This smoke is a combination of solid particles and gases that can be harmful if inhaled.
- Ensure to turn on and have exhaust close to work area to draw away and filter smoke.

# SOLDERING

MACHINE OPERATION

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## SET UP

- Put on safety glasses
- Turn the soldering machine on and wait until it heats up.
- Clean the tip with the cleaning wire until soldering iron tip is shiny
- Grab your Printed Circuit Board and on the back, slide in the battery pack (with the curve facing up) and switch.



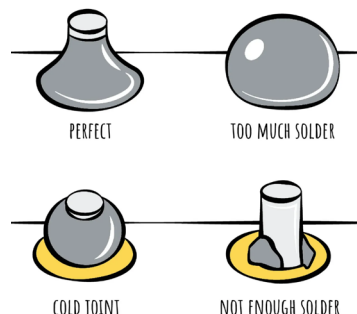
## SOLDERING

- Pick up the soldering iron by the rudder end on the hand piece only!
- Carefully make contact with the tip of the soldering iron to the base of the component pin on the metal pad or joint.
- Leave soldering iron on metal pad for 5-10 second to allow the metal pad to heat up
- Without breaking contact with the metal pad and the soldering iron add the soldering wire.
- Push the soldering wire where the soldering iron and the metal pad meet.



**DO NOT TOUCH THE METAL PART ON THE SOLDERING IRON**

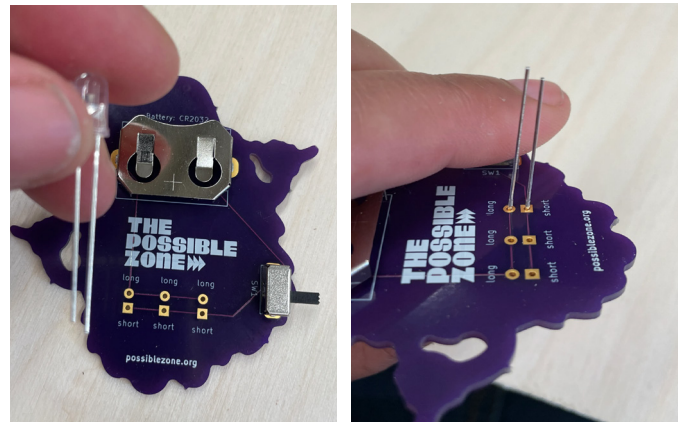
- When the solder meets with the hot metal pad and iron it will begin to melt
- Take a look at your soldering job; make sure that the solder is complete engulfing the component pin and the metal pad.
- Repeat these steps for all pins.
- **For the switch; Avoid soldering any pins together**





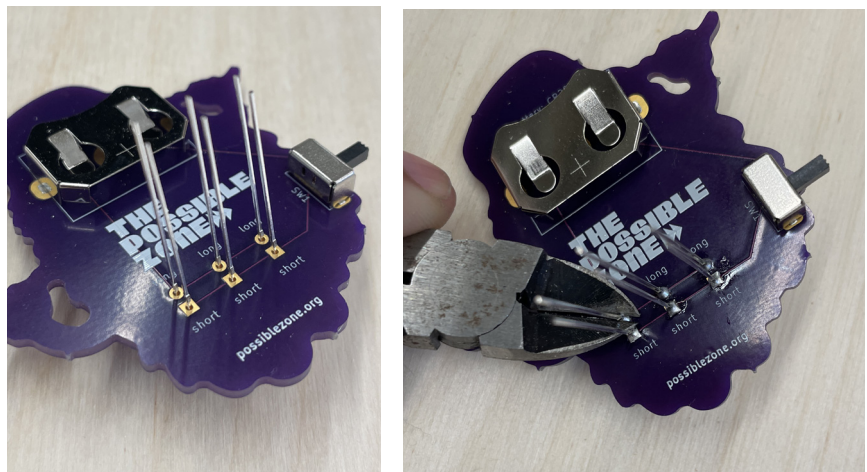
### LED

- Next we will add the LED (Light Emitted Diode)
- LEDs have a positive led (long) and a negative led (short)
- Slide the leads in from the front to back.
- Make sure that the long leg is in the circle hole and the short leg is in the square hole.



**LONG LEG FACING UP AND SHORT FACING LEG DOWN**

- Slide all three LED through the PCB
- Make sure the LED face is sitting flat against the PCB.
- Solder the LED leads following the same instruction as for the component pins.
- Use a wire cutter to trim leads down after soldering.



### BATTERY & CLEAN UP

- Once you are done soldering turn off the soldering iron and fan.
- Put back tools & clean your area
- Slide the battery with the + facing up and turn on the switch.
- Wash hands when finished.



**BATTERY SHOULD ONLY BE ADDED WHEN FINISHED**



### SET UP CONFIRMATION

USE THE FOLLOWING CHECK LIST TO INSURE THAT YOU HAVE SET UP THE MACHINE SAFELY AND PROPERLY.

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#### SELF CHECK

- Wear safety glasses
- Make sure to turn on exhaust fan and soldering iron
- Keep hands away from metal section of the soldering iron
- Keep soldering iron in station/ holder when not in use
- Make sure to work close to the fan so that the smoke can be picked up
- Use wire brush/ cleaning station to keep soldering iron tip shiny
- Make sure to give time for both components to heat up before applying solder
- Add solder to the base almost between the component and the soldering iron
- Make sure not to add too much solder or combine pins

#### CLEAN UP

- Turn off soldering iron and exhaust fan
- Toss any trash including remaining LED leads
- Wash you hands
- Put away any tools including eye protection and wire cutter

This Machine Training Curriculum derives from the framework developed by Autodesk Pier 9 and posted on [www.instructables.com/pier9/](http://www.instructables.com/pier9/) Many thanks to the wonderful people of AutoDesk Pier 9.