

## SAFE OPERATING PROCEDURE

### Task/Equipment Description: SOLDERING IRON / SOLDERING STATION



#### POTENTIAL HAZARDS AND RISKS






Low Risk Equipment when used correctly.

- Burns from hot materials.
- Hot element, surfaces.
- Electricity
- Trips and Slips
- Fire
- Inhalation of toxic fumes – lung irritation
- Eye injuries and irritation
- Skin irritation.

**DO NOT use this equipment unless you have been trained in its safe use and operation.**

Soldering irons are generally safe to use and pose a low risk. However, it is important to follow guidelines as there may be a small risk of harm if they're not used correctly and safely.

#### Required Personal Protective Equipment (PPE)

| PPE ✓ | Gloves especially when de-fluxing  | Eye Protection: Safety glasses when soldering or de-fluxing  | Closed Footwear  | Long and loose hair must be contained  | Clothing that covers arms and legs   |
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#### ALWAYS

Wear appropriate PPE for the task.

Wear safety glasses during soldering since air pockets or impurities can pop and scatter solder.

Wear non-flammable clothing that covers your arms and legs (long sleeved / long pants)

Wear closed toe shoes

Tie back long or loose hair.

Make sure the work area is clean, dry, and clear of flammable materials and loose cables.

Always assume that the soldering iron is hot

Remove asthmatics from the area, as exposure to the fumes may aggravate their condition.

Always WASH your hands after soldering.

## NEVER

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DO NOT EAT or DRINK in areas where lead soldering is performed.

Never use faulty equipment. Immediately report suspect equipment to an supervisor (adult).

Never use a soldering iron for anything other than soldering electronic components.

Never touch the soldering iron tip to an electrical cord.

Never flick the soldering iron to remove excess solder.

Never leave an unused soldering iron switched on – this will cause the tip to oxidise, reducing tip life.

### Safe Operating Procedure:

#### Pre-Operation – Safety Checks:

- Before use, examine the power lead and machine for damage.
- Ensure that the cord does not create a slip/trip hazard.
- Ensure the workspace is well ventilated to prevent fumes in the breathing zone e.g. open door / window, with fume extraction system.
- Select a fire-resistant surface to work at. The options include:
  - Masonite or Plywood board or a silicon work mat
  - a solid hardwood workbench (although this area will quickly become very dirty if used a lot)
- Check condition of soldering tip. Replace if damaged.
- Ensure tip is 'tinned' and free from waste build-up. Once the tip has warmed-up, wipe on a damp sponge to clean it.
- Leave the soldering iron in the stand when warming up.
- Never leave a soldering iron unattended when turned on or still hot. Leave unplugged when not required.
- Faulty equipment must NOT be used. IMMEDIATELY report suspect equipment.

#### Operation – Safety Procedure:

- Do not plug in and turn on until the tip element has been checked or replaced and tightened.
- Use a proper protective soldering iron stand that will protect you from accidental contact with the hot iron.
- Never touch the soldering tip. The soldering iron and newly soldered joints are extremely hot. Keep your fingers clear.
- Always wear safety glasses. Smoke and hot embers can often result when soft soldering.
- AVOID INHALATION! Avoid breathing fumes by keeping your head to the side of, not above, your work. Soldering often creates fumes that can be irritating.
- Avoid prolonged use. This could overheat the tip element causing it to fail or oxidise.
- Always allow the soldering iron to reach the desired temperature. This can take several minutes.
- Keep the cleaning sponge damp during use.
- If you should drop the soldering iron, do not try to catch it as you may accidentally grab the hot barrel. Instead, let it fall to the floor and then pick it up and place back into the stand.
- It is suggested that a third hand, tweezers, pliers or clamps are available to hold wires that are to be heated to avoid potentially receiving burns from objects that are heated.
- Ensure electrical cords are well clear of the soldering process. Do not touch electrical cords with tip.
- Wash your hands after using solder – many soft solders contain toxic lead products.
- Never leave the iron unattended when still switched ON or when switched OFF but still hot.
- In the event of a known allergy to rosin, avoid contact with rosin by wearing close fitting gloves (E.g., cotton gloves, NOT latex, PVC or other materials that would cause an additional hazard by melting if in contact with heat from the soldering iron).

**Post-Operation – Housekeeping:**

- Switch off, unplug and allow to cool down completely before storing.
- Leave the work area in a safe, clean and tidy condition.
- Wipe off tables where the soldering occurred with water or cleaning solvents after soldering is complete.
- Dispose of e-waste before leaving the work area.
- Wash your hands and forearms with soap and water after using solder – including scrubbing under the fingernails.

**SAFETY ADVICE**

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|-----------------------------|--|
| <b>Emergency Procedures</b> | If an accident occurs, report immediately to an adult. Seek medical attention as necessary.  |
| <b>Fire</b>                 | Always know the location of the nearest fire extinguisher. Use the fire extinguisher only if you have been trained and it is safe to do so.          |
| <b>Skin Contact</b>         | If there is a burn, immediately cool the affected area under cold water for 15 minutes. Do not apply any creams or ointments. Cover with a band-aid. |
| <b>Eye Contact</b>          | Using eyewash, flush eyes while holding eyelid open.   |
| <b>Inhalation</b>           | If irritating fumes are inhaled, immediately move to get fresh air.  |
| <b>Ingestion</b>            | Do not induce vomiting.  |

I have read and understood this Safe Operating Procedure (**SOP**)

| <b>Name:</b> | <b>Signature:</b> | <b>Date:</b> |
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