

# ~ FABRICATION ~



ELECTRONICS

## OPERATING INSTRUCTIONS

INTRODUCING



ELECTRONICS

*the*



# SOLDERING IRONS



### Soldering Irons

Access Level 1 (see Tech Workshop induction Guide on Access Levels)

Hot iron used to solder electrical components to printed circuit boards (PCBs) or copper strip board

#### PPE Basic

- Eye protection – generally marked to BS/EN166 (provided)
- Personal extraction units

#### What to do before use

- VISUAL check of the machine for signs of damage to machine and ESPECIALLY to the cable, which can suffer HEAT DAMAGE
- IF STUDENT, report any faults to any member of workshop academic/technical staff
- IF STAFF, log in via the Fault Reporting Log Book by machine – then email technical team to report if machine requires maintenance or servicing and whether the machine will be out of operation and for how long
- ADEQUATE overhead/natural/machine lighting? Lamps are available if lighting is poor
- Eye Protection SHOULD be worn when soldering
- Personal extraction units should be switched ON and pointing at the soldering area. To be EFFECTIVE, they should be placed no FURTHER than 50mm from the soldering area

## How to Use The Soldering Iron

- For ALL soldering operations:
- Plug in the soldering iron to a fused, 13-amp socket
- Switch the soldering iron ON and set to 350 degrees Celsius. Normal Tin/Lead solder melts at around 200C so we need to make sure the iron is hot enough
- Tinning a wire:
  - HOLD the single or multi-stranded wire in a set of helping hand (crocodile clips on a stand),
  - MELT a SMALL amount of solder onto the tip of the iron
  - PLACE the iron onto the stripped end of the wire
  - RUN the iron along the stripped end applying more solder, if necessary
- PCB or Copper strip board:
  - PUSH the legs of the component through the holes of the PCB or Copper strip board,
  - MAKE SURE the component is on the non-soldering side
  - MELT a small amount of solder onto the tip of the iron
  - PLACE the iron against the base of the leg of the component and the copper pad though which the leg is protruding,
  - AFTER a few seconds BOTH the leg and the pad will be hot enough to melt solder
  - APPLY solder carefully to the pad
  - the solder should form a CONE shape from pad to leg, if it does not it may be either a DRY-JOINT or not connecting the component to the board AT ALL
- If the soldering iron looks TARNISHED or has EXCESS SOLDER on it, CAREFULLY RUB the tip across the brass iron cleaning pad. This should be done BEFORE and AFTER soldering
- Place the iron back in its holder and switch OFF and unplug all equipment used

Date

I verify that I have read and understood the information detailed within this document

Name

Signature