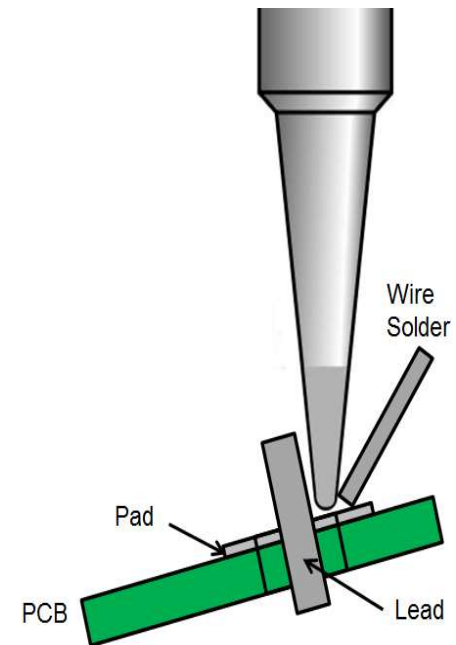
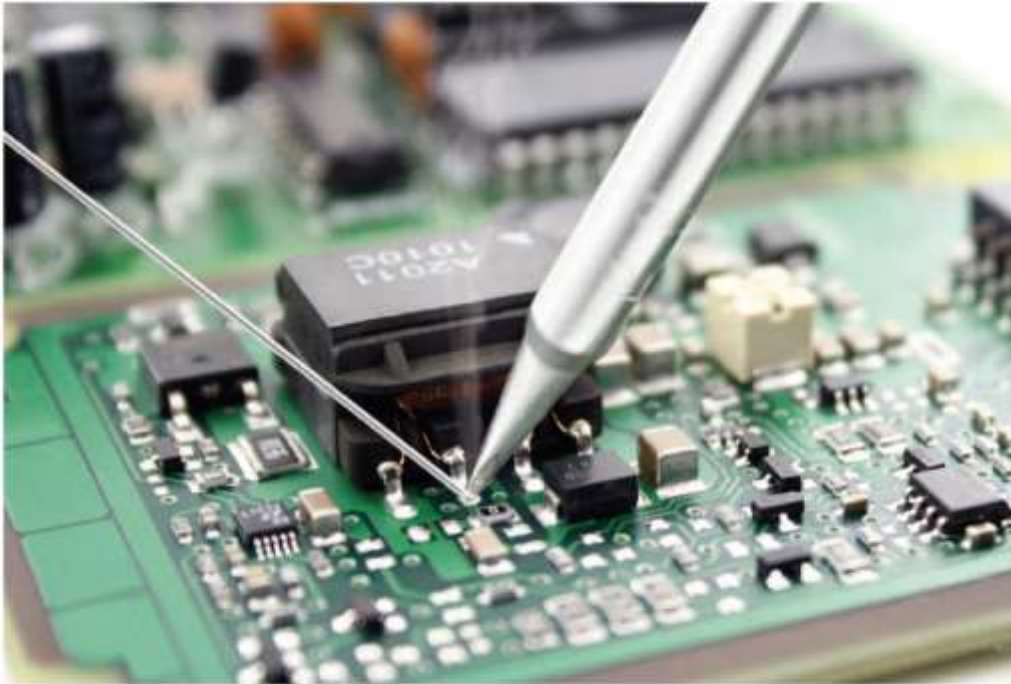
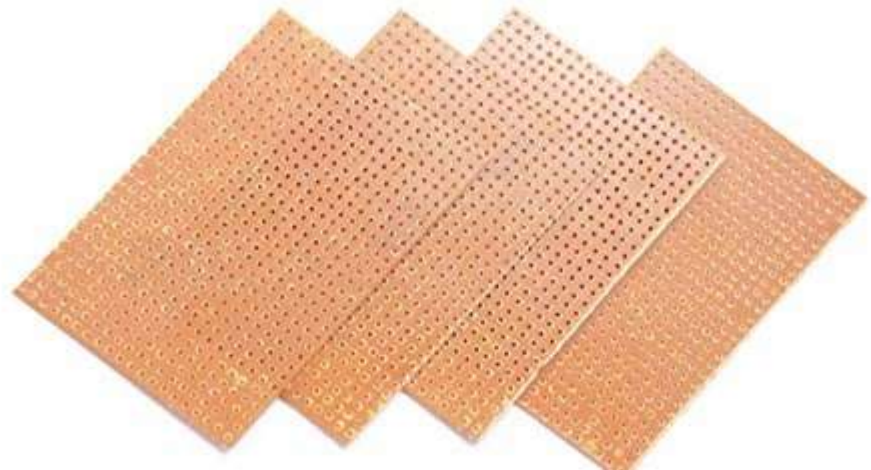


# Introduction to Soldering and PCB



# Zero PCB [Printed Circuit Board]

**Zero Printed Circuit Board** refers to an all-purpose & conventional **PCB** that embeds the circuits arbitrarily to ensure the continuous functioning of the hardware. The layers of general purpose circuit board are coated with copper as to allow appropriate soldering of the components of **PCB**.



# What is Soldering?

- Soldering is a process in which two or more metal items are joined together by melting and then flowing a filler metal into the joint—the filler metal having a relatively low melting point.
- Soldering is used to form a permanent connection between electronic components.



# Soldering Station

A **soldering station** is a multipurpose power soldering device designed for electronic components soldering. This type of equipment is mostly used in electronics and electrical engineering.

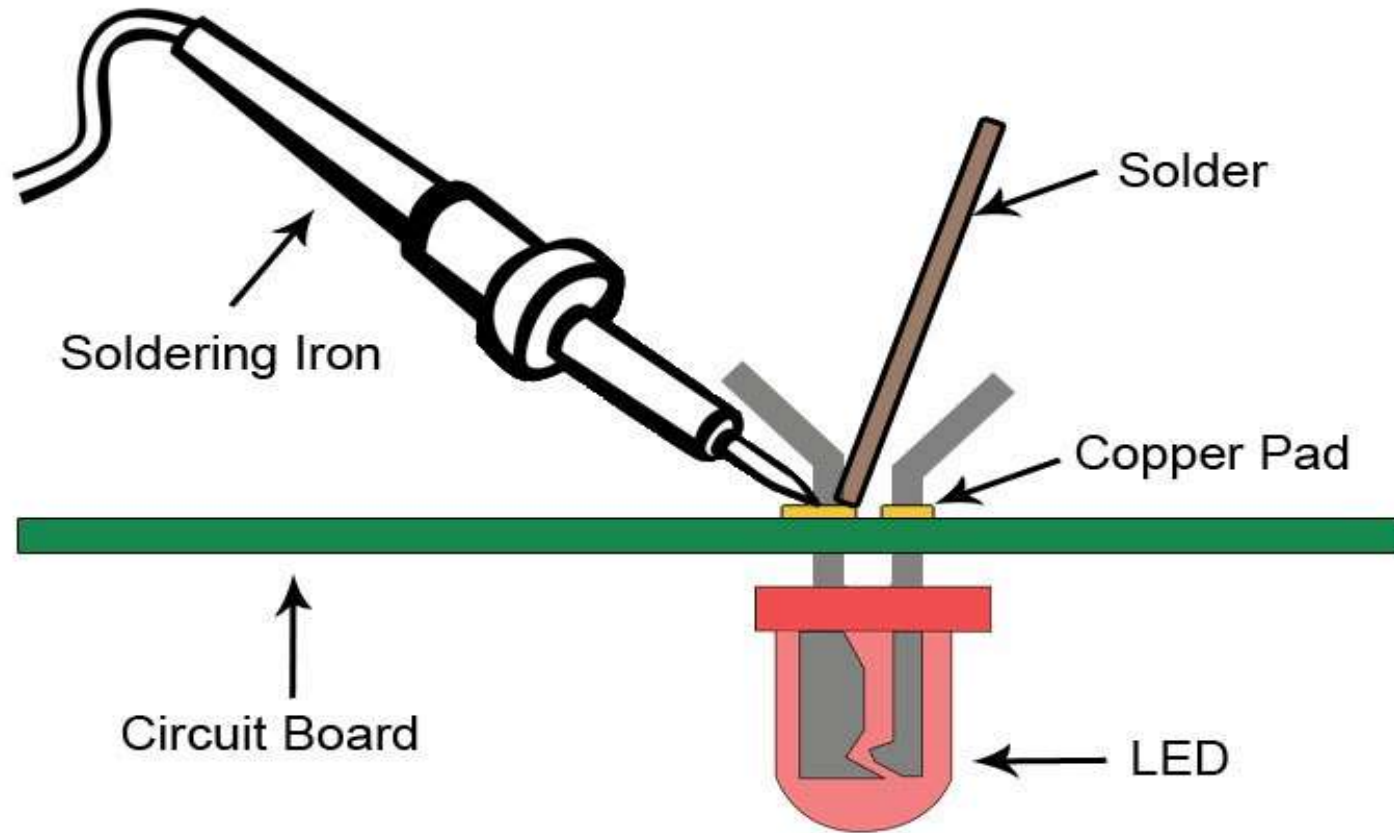
Soldering station consists of one or more soldering tools connected to the main unit, which includes the controls (temperature adjustment), means of indication, and may be equipped with an electric transformer.

It may include some accessories –

- Holders and stands
- Soldering tip cleaners



# How To Solder



# Solder Iron

A **soldering iron** is a hand tool used in soldering. It supplies heat to melt solder so that it can flow into the joint between two workpieces.

A soldering iron is composed of a heated metal tip and an insulated handle. Heating is often achieved electrically, by passing an electric current (supplied through an electrical cord or battery cables) through a resistive heating element.



# Soldering Wire

Soldering filler materials are available in many different alloys for differing applications. In electronics assembly, the eutectic alloy with 63% tin and 37% lead (or 60/40, which is almost identical in melting point) has been the alloy of choice.





# Soldering Flux

While soldering the metals, flux is used as threefold purpose, as it removes the oxidized metal from the surface to be soldered. Some fluxes are corrosive, so the parts need to be cleaned with damp sponge or other absorbent material after soldering to prevent damage.





# Desoldering Pump

A **desoldering pump**, colloquially known as a **solder sucker**, is a manually-operated device which is used to remove solder from a printed circuit board.



# Safety Precautions

- Never touch the element or tip of the soldering iron. They are very hot (about 400°C) and will burn.
- Hold wires to be heated with tweezers or clamps.
- Keep the cleaning sponge wet during use.
- Always return the soldering iron to its stand when not in use.
- Turn unit off or unplug it when not in use.