

Soldering Equipment

Equipment

- Soldering station/tips
- Solder
- Tip cleaner (cleaning ball or sponge)
- Flux
- Solder wick
- Something to hold your project in place
- Flush cutters
- Fume mitigation



Soldering Irons and Soldering Stations

A **soldering iron** is the fundamental piece of **handheld equipment** used in the process of soldering. Soldering irons heat up to melt solder around electrical or mechanical connections; as it melts, solder flows into the spaces between and around two components. Once bonded, the solder is left to cool and harden, creating a permanent and conductive joint; it can melt back into liquid form by reheating enough the joint. The process of reheating and separating a previously soldered joint is called **desoldering**.

Brass and Conventional Sponges

Use either a **wet sponge** or a **brass sponge** to remove debris from the tip of the soldering iron. This will help keep soldering iron tips clean by removing oxidation (oxidated tips will get black and not accept solder). **Brass sponges** removes debris in tips better; they have a smaller thermal shock and they don't need water as conventional sponges.

Solder

Solder is a **metal alloy** that melts to create a permanent bond between electrical parts or components. Solder comes in both lead and lead-free presentations, also in different diameters; the most common diameters used are 0.8mm and 1.5mm. Inside the solder core a material known as **flux** helps improve electrical contact and mechanical strength of solder.

Helping Hands/Clamps

A **helping hand/clamps**, also called "third hand," is a device that can assist you while soldering by holding the parts or components you are trying to solder, leaving your hands free to work.

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