

Soldering electronic components like “a pro” is a skill acquired after many failures. Among the casualties are ruined parts, burn marks on your workbench and a burnt finger or two. This primer won't make you an expert. But it can get you started with some helpful hints.

Soldering Irons: The smaller the item to be soldered, the smaller the iron required. An iron in the range of 40-60 Watts does well for electronics work. You can make your tip last a bit longer with a temperature control stand. Various tips are available for your preference and for the job. I prefer a small “blade” type tip but also use a “conical” tip for printed circuit work.

Solder Types: Eutectic solder is 63% tin and 37% lead. The solder roll and package will be marked with a “63/37”. This mix has the lowest melting point, just 360 degrees F. It works well for beginners due to its instant “phase change”. That is, it is either molten or it is solid, there is no “plastic” or fluid state. It's solid as soon as you remove the soldering iron. A compromise is a “60/40” mix which needs a slightly higher temperature and has a short plastic state. The “50/50” mix requires even more heat and stays plastic (fluid) even longer. It's not recommended for electronics work. Movement while cooling can result in a bad solder bond. Lead free solders have been developed for electronics. These contain various other metals including silver but have melting points near and above 400 degrees F.

Solder sizes: Depends on what you are soldering. I use .031 inch diameter for printed circuits.

Flux: This is liquid or paste deigned to coat the part to be soldered. It cleans the part's surface and prevents it from oxidizing while being heated. Solder needs a clean non-oxidized surface in order to bond well. Electronics work requires a rosin type flux. This can be applied to the part directly or by way to the solder itself. “Rosin core” solder contains flux within its hollow core. Acid flux is designed to eat into the metal of plumbing pipes. NEVER use acid flux for soldering electronic components.

Cleanliness: Oxidized metal residue (slag) will coat your iron's tip over time. You should frequently wipe it off with a damp cloth or sponge. The tip of your iron should be shiny bright when soldering. Some soldering iron stands come with a place for a sponge. A clean iron makes a clean solder joint.

Tinning: Tinning is preparation of the soldering iron tip prior to soldering. It coats the tip with a thin layer of tin. A small can of compound, the size of a silver dollar, lasts a long time. Dip the tip of your iron in the compound frequently to keep it shiny and bright.

Solder Removal: Solder removal requires reheating the bond. A “solder sucker” can then suck up the molten solder. A small copper braid called “Solder Wick” can also be used to remove molten solder.

Soldering the part: This you learn by actually doing it. Don't breathe the smoke. Use a small fan to clear the area. Generally, pre-heat the parts which are to be soldered together. When they appear hot enough (experience tells you this) you touch the solder to the parts and iron's tip at the same time. Solder should flow over the parts smoothly. Don't jiggle the work. Remove the iron. Practice makes perfect.

