

Soldering / Soldering Irons – Basic Information / Notes

There are several types of Soldering Irons used by Audio Technicians:

1. Regular - Plug and Heat (no temperature control). Just plug it in and wait for it to heat up.
2. Soldering Stations (controlled temperatures). There are also more expensive Pro versions.
3. Butane Type – These are great for when you need to solder “in the field” and quickly!

[Video Clip!](#)



1. Regular Plug and Heat



2. Soldering Station - Controlled



3. Butane Type Iron

Soldering Tools and Accessories

Solder There are different sizes / types of solder – one popular size of solder would be #60/40 with a diameter of .031 (tin-lead type solder is the most common for audio connectors).



Vice – Using a small vice helps make soldering easier and smoother, it’s like having a second pair of hands (holding the connectors firmly in place).



Safety Glasses
A must for all soldering tasks! It is highly recommended that you use safety “glasses” anytime you solder.



Solder Sucker
A very handy tool when you need to remove solder quickly. Also comes built-in on some soldering stations.



[Video Clip!](#)

Ventilation: – It is highly recommended that you purchase a Solder Fume Extractor / Smoke Absorber or a Small Fan to assist with keeping the “Solder Fumes” away from your face (Do not Inhale the Fumes). You should use This mandatory safety device every time you solder. No exceptions!

Soldering Tip Cleaners – Keeping the soldering tip clean throughout the soldering process is extremely important. Two popular types are shown below:

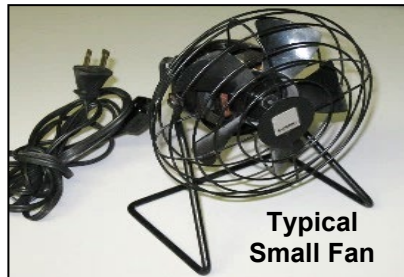
Brass Sponge Cleaner

Wet Sponge Cleaner



[Video Clip!](#)

Solder Fume Extractor



Typical Small Fan

[Video Clip!](#)

Soldering Basics – Important Notes

1. A good soldering iron heats up quickly, and at the right temperature – read the user manual for temperature specifications and settings.
2. Flux – What is that stuff? Metals will oxidize rapidly at soldering temperatures, and since solder won't stick to oxidized metals, flux helps remove oxidation from metals – hence allowing the solder to stick properly.
3. Always keep the “tip” of the iron clean (using a wet or brass type sponge).
4. Use a Small Fan or a Solder Fume Extractor to help keep the “Fumes” away from your face so you don't inhale the Fumes! Solder contains lead, and it's not healthy to inhale.
5. Always use safety glasses anytime that you are soldering – No Exceptions! This is to keep any solder from getting in your eyes or burning your face. Trust me, solder flick happens on a regular basis.
6. Butane Soldering Irons are very useful when you need to repair / solder a connector out in the field. This type of Soldering Iron heats up very quickly, and can help get a system back up and running fast!

Dos and Don'ts of Soldering in the Audio World

1. **Don't - Leave the Soldering Iron tip on the Solder / Wire / Connector Leads too long:**
 - The usual result from leaving the tip of the soldering iron on the solder / wire too long is that the wire jackets will start to melt, exposing bare wires (the wires can melt together and short out). [Video Clip!](#) Experience comes with practice, and experience will assist technicians with understanding how long to heat up the solder / wires. Always check the cable after soldering for any signs of melted wires.
2. **Do - Clean the Tip often:**
 - A clean soldering iron tip ensures that the heat transferred from the tip will stay at the desired temperature. If you don't consistently clean the soldering tip this can affect its ability to transfer heat. Burnt residue from oxides and flux can also keep the solder from sticking to the soldering tip properly. A clean tip can help to assure a quality soldering connection.
3. **Do – Use the Proper Solder:**
 - Lead solder has always worked best for soldering audio connections. In the old days, solder was “lead heavy” but that has changed due to the “lead vapors” that were being emitted into the environment.
 - 60/40 Blend is made of 60% Tin, and 40% Lead with a melting point of 183C, and 63/37 Blend is made of 63% Tin, and 37% Lead and has a higher melting point of 217C. Both are common for soldering audio connectors, and are considered “Lead Free” types of Solder.
 - Solder with a diameter of .031 is a common size for soldering audio connectors / electronics.
 - Don't ever use “Acid Core” Solder as this type of solder is only intended for “plumbing” use!
4. **Don't – Flick Solder off the Soldering Tip:**
 - One of the more dangerous things inexperienced technicians do is try to “flick” solder off the tip. Heated solder is very hot and in liquid form. If you “flick” solder, expect it to go wherever it wants. On several occasions, I've witnessed technicians getting burnt from not cleaning the tip and attempting to “flick” the solder off. One technician got a severe burn just under his safety glasses. It's not worth it; follow the protocol and clean the soldering tip on a Brass or Wet Sponge - Don't Flick!
5. **Do – Tin the Wires on all Audio Related Connectors:**
 - Tinning makes for a cleaner, smoother soldering process. See Notes / Example below.

What is Tinning?

Tinning is a procedure that helps prepare a wire or connection for final soldering. A wire is usually tinned to keep all the strands together, and a connector lead is tinned to allow the wire to easily solder to it. Tinning helps to create a smoother, more reliable, and professional soldering process.

[How to Tin Low Voltage Wires - Video Clip!](#)

