K1EL Kit Construction Hints and Safety Considerations

1. Find a good workspace.

It is essential that you have a good place to work on your kit,

You will need room to spread out your parts and have access to tools. Good lighting and ventilation is essential. A magnifying glass or visor is highly recommended.

2. Have the proper tools.

At a bare minimum you will need:

Small side cutters, flush cutters are a plus.

Small needle nosed pliers

Small flat blade & Philips head screw drivers

A good quality, 40-60Watt, temperature controlled Soldering Iron. The price has come down on these lately, you can buy a Weller WLC100 40W soldering station with adjustable temperature control for $40 on Amazon.

3. Read the Instructions First.

Read through the assembly instructions completely and have everything on hand before you start. Inventory the kit parts, make sure you have ALL of them.

4. Follow the assembly instructions in order.

Although not always obvious, the order in which parts are added to a board is important and should followed. Sometimes sections are installed and tested in order or there could be a mechanical clearance consideration.

5. Keep your Workplace Clean and Orderly.

Nothing spoils a kit building experience more than lost parts. Second to that is stray bits of dirt and metal that get into a printed circuit board assembly. Our PC boards are nicely plated and accept solder easily. There is no need to clean the board with steel wool before starting. A good rosin core solder will work fine. Lead free solder is recommended for health reasons.

6. Take your time.

There is no need to rush, enjoy the process and the end result will be much better. Moving too quickly or working when you are tired often leads to big mistakes which could be difficult if not impossible to fix.

Some Notes About Safety

Burns to your skin can be very painful and can lead to serious injury.

Burns to your eyes can be catastrophic.

Toxic fumes can cause serious harm.

Flying objects such as wire ends etc. can cause painful and serious injuries.

When building your kit please remember that Soldering Irons and Solder are used at High Temperatures !

Soldering Irons can remain hot for many minutes after being turned off. Never touch the tip to see if it is hot. Touch the tip to a wet pad to test for temperature.

Wear safety glasses to protect your eyes from flying objects.

Appendix C - Soldering Basics

1. Insert component leads into PCB holes and bend them back slightly to hold the part in place. You can either trim the lead now or wait till after the joint is soldered. I usually install several parts at one time and then solder and trim multiple leads.

2. Place a hot and clean iron tip against both the lead and pad as in Fig. A1.

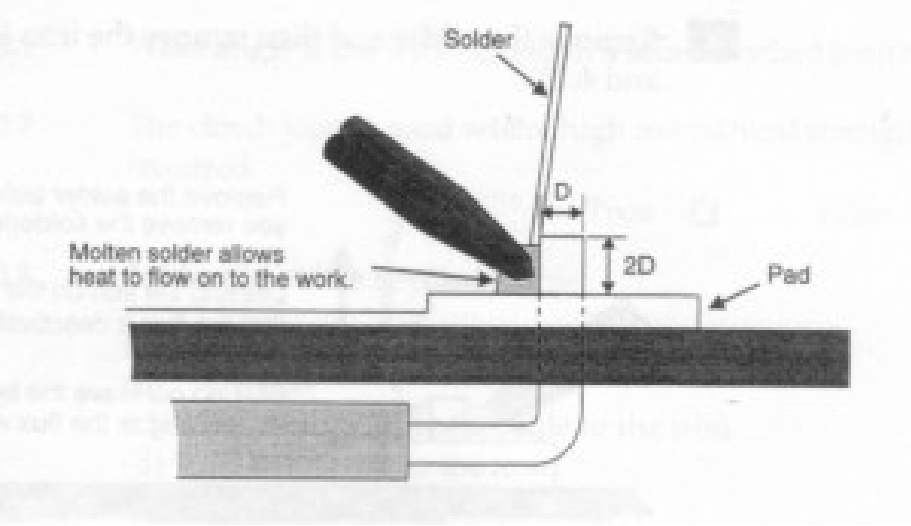

Fig. C1 - Form a heat bridge

3. Create a heat bridge between the lead, the PCB pad and the iron by placing a small amount of solder on the tip.

4. Apply solder around the outside edge of the pad as in Fig. A2. If the pad and lead are at the correct temperature, the solder will flow around the connection.

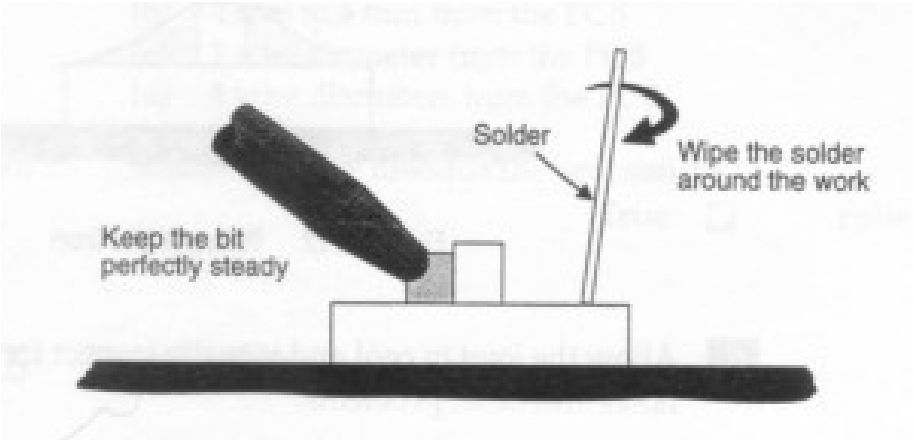

Fig. C2 - Spread solder around the work

5. Remove the solder and then remove the iron.

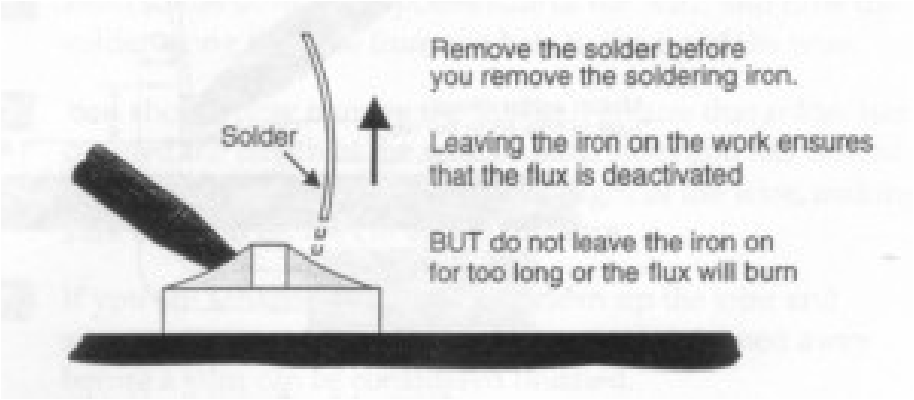

Fig C3 - Remove the solder

6. Allow the joint to cool and visually inspect for defects or other problems. You should have a solder joint with a bright shiny finish and a profile like that shown in the middle picture below.

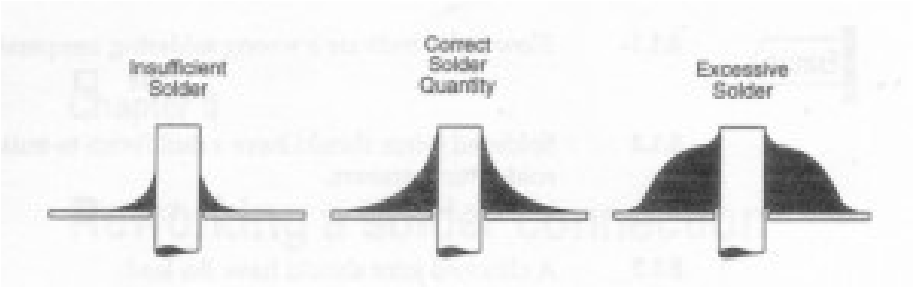

Fig. C4 - Solder quantity comparison