Electronic Tool Tip #21 – Hair-Thin Rosin-Core Solder

As a departure from my normal topic type in this column, I am presenting something here that, while not strictly speaking a “tool” tip, is nonetheless a tip that can make your electronics “life” much simpler.

Figure 1 - 0.012" rosin-core solder

In recent years, the advent and then wide-spread use of surface-mount technology (SMT) components has made installation of some components into a considerable challenge for technicians and hobbyists alike. However, there is a really easy way to make the task much less of a hardship, and that is to use a wire solder that is more suitable for the task at hand.

We are all aware of the recommendation that rosin-core solder be used for all electronics work. In addition, when mounting SMT components, especially those with high pin densities, an application of liquid rosin will also help to ease the burden of soldering such components to a board. I have found another way of doing things that very often does not require the use of liquid rosin flux when installing many SMT components. That method involves the use of a eutectic blend rosin-core solder having a wire diameter of only 0.012” (0.3mm). When used in conjunction with a fine-tipped soldering iron, most SMT packages can be soldered cleanly and easily.

Suppose you need to mount a 16-pin SOIC package IC. Start by lightly tinning all of the sixteen pads that comprise the footprint for this IC. Then, place the IC into position on top of the tinned pads and hold it securely in place while simultaneously heating a pin at each of two corners along the edge of the IC opposite that from which you are holding the device in place. That will “tack” the IC in position on the board. Inspect its placement to be sure that all sixteen pins align properly with their pads. Then, using a sweeping motion along the pin, from the IC body outward, and while applying a bit more solder to the joint, solder each of the remaining pins along the tacked edge to the board, ending up by adding some solder to the originally tacked corner pins. Next, repeat the soldering on all of the pins on the opposite edge of the IC. If the tip of the iron is narrow enough, and if the 0.012” solder wire is used, a professional appearance will be the result in the completed solder job. If you happen to slip a bit and form a bridge between two adjacent pins, remove some of the solder using some solder wick, and then re-solder those pins.

When installing discrete devices like resistors, capacitors, diodes, transistors, and so forth, start by tinning one pad of the footprint. Then, place the component onto the footprint, aligning it properly to the pads. Next, while holding the component in place, heat the tinned pad to tack the device to the board. Then solder the remaining pads under the device, and finish up by properly soldering the original tacked pad. You will be amazed at how rapidly you will be able to mount these common SMT devices, and how clean the finished job will be.

This solder is available online from Amazon, at a price of $8.99 (USD) for a 1.75-ounce roll, plus shipping if you are not an Amazon Prime member. Of course, the government has to get its share, so tax will also be applied. Point your browser to https://www.amazon.com/gp/product/B08M5XDKFG if you want to investigate this item for yourself.

