

HAKKO 808 Desoldering Tool Maintenance and Usage Notes

Please send any comments/corrections/hints & kinks to:

n0ss@arri.net <= the '0' in the address is a ZERO, not an 'oh'

1. When you are finished using your desoldering gun (for the day, or for a while), run the cleaning tool (looks like a long, thin wire with a spring on one end) through the complete solder path to ensure that nothing is clogging the passage. Do this BEFORE you put the device away, or DAILY, whichever is applicable...

Not only can solder accumulate, but the most damage comes from burnt rosin which builds up inside the heating tube. Since this is already burned, it will no longer melt (to be readily sucked into the catch tube the next use) and thus it can quickly clog up the tube. If not REGULARLY cleaned out (every 30 or so joints cleaned, especially if there's a lot of rosin residue on the joint) it can build up to the point that it is VERY difficult to clean out.

I used my DremelTool to grind the end of the nozzle cleaning rod down to a screwdriver-like tip. This allows me to twist the rod, as I run it in, to more easily loosen accumulated residues. It works almost like a drill bit.

Of course, you can also use a wire-gauge high-speed steel drill bit in a pin vise as well. This works VERY well for stubborn build-ups.

2. Be aware of the temperature setting of your desoldering gun. Sometimes, as they come from the manufacturer, the temperature may be set quite a bit higher than required. To the point of doing damage to PC boards if left on the joint too long.

I normally set my heat range so that I can effectively clean out a plated-thru hole in about 2-3 seconds (max.). If my gun heats the joint too slowly, I turn it up a bit. Sometimes GROUNDED pads (because they can 'sink' heat away more quickly) may require either a bit more heat or a slightly longer dwell time on the joint before it is thoroughly melted.

My desoldering gun was received with the TEMP control set to a bit over '3'. I found this to be MUCH too hot for general double-sided PC board work and reset the control to slightly lower than '2'. This has worked well for me since then.

DO NOT MISTAKE THE CALIBRATION POT (also located in the handle of the Hakko 808) FOR THE TEMP CONTROL. DO NOT ADJUST THE CALIBRATION POT.....!!!

3. When using a desoldering gun, once the tip is on the joint and the joint is molten, hold the tip flush against the board and 'circle' it around the tip of the component lead AS you press the trigger.

What I mean by 'circle' is NOT to spin the gun, but to hold the gun in the same position, but move the tip just so that the component lead circles around the inside edge of the nozzle. This causes the component lead to be moved away from the sides of the plated-thru hole and exposes all of the hole to the vacuum.

4. Keep your solder catch tube clean. This is the device which holds all of the solder you've removed from the PC board. After a period of time, the solder (and the vaporized rosin) will build up to the point that it begins to effect the gun's ability to sustain a usable vacuum.

Clean out the catch tube (and any filters, if applicable) each day's use, BEFORE you put it away. On Hakko guns, you can pop out the catch tube, pull out the aluminum pre-filter, and pop off all of the stuck-on solder. At the same time, take your finger (or a smooth-edged/dull) knife blade) and lightly scrape away any bits of solder which have adhered to the inside of the catch tube.

5. The final (ceramic paper) filter at the back of the Hakko 808 catch tube becomes heavily covered with the residue of the rosin which is vaporized as you suck each solder joint clean. After cleaning a few hundred solder joints, this (originally white) filter is not either very dark gray or even black. You would normally throw it away and replace it with another one.

However, you can gently rinse it out in denatured alcohol and then in a small amount of CLEAN alcohol, allow it to dry, and then replace it for further use.

Don Brown (KD5NDB) adds, "Been using Hakko desoldering guns for 20 years and I have found WD-40 works quite well to clean the glass tube, denatured (wood) alcohol will work also as you have found out."

I suspect there's a limit to the number of uses one can get from this filter, but it should be good for at least another 5-6 rounds of use.

When you rinse the filter out, be careful to only squeeze it between its flat sides, to ensure that it stays together and does not fall apart.

BE SURE TO ALLOW THE FILTER TO DRY COMPLETELY before you reinstall it...! You certainly do NOT want liquid alcohol present in the vacuum pump!!!

6. The Hakko 808 includes a cross-shaped pre-filter just ahead of the ceramic paper final filter. This cross-shaped filter is nothing more than a piece of aluminum designed to catch (and hold) the majority of the actual solder which is sucked up.

After a period of time, and depending upon how heavily soldered the joints you are cleaning are, you will have to eventually remove the solder catch tube and clean the accumulated solder from the pre-filter.

It's a snap to get the catch tube out of the gun, and to remove and clean the pre-filter, but it can be a pain to reinstall the pre-filter once it's been reinstalled in the rubber gasket at the back of the catch tube. This is because the four 'fingers' of the 'cross' part of the pre-filter will not allow the rubber gasket to compress much at all. This lack of available compression of the rubber gasket can cause the thin sides of the gasket to fold back and bind as you attempt to reinstall it into the catch tube.

I tried a number of 'lubricants' on the outside edge of the catch tube, to assist in allowing it to slide in more easily. A very thin coating of silicone grease seemed to work best, but it also tended to cause the gasket to attract dust and dust as well.

I finally solved my problem by using a fine-grained metal file to take about two (2) light passes over each of the four 'fingers' of the cross portion of the pre-filter. This allowed the pre-filter to be easily (and securely) installed into the gasket, but also allowed the gasket to be reinstalled with NO significant effort whatsoever.

If you do file the fingers of the pre-filter, start with only a single pass of the file. You can always take more off, but you can't put it back once you've gone too far.

7. Hakko provides (in it's 'kit' of desoldering gun parts) what looks to be a terribly long, thin screwdriver... well, it DOES have a screwdriver tip... This device is another cleaning rod, but specifically for use in the heating tube of the gun ONLY. It will not fit through the nozzle itself.

Use this device every 50-100 desoldered joints by first removing the nozzle and then passing the rod through the length of the heating tube. You may have to heat the gun in order to use this device. But DO NOT leave the gun plugged in for a long time. It heats VERY quickly (20 seconds without the nozzle attached) and will retain this heat more than long enough to clean out the heater tube.

8. DO NOT, UNDER ANY CIRCUMSTANCES grab hold of EITHER of the cleaning rods right after they've been passed thru the heating tube... bad things (and bad words) will happen...! Been there, done that... won't do it again... until the next time I forget.
9. Note that Hakko offers several different nozzle sizes and styles, a couple of which I bought for "special occasions":

A1007 - Similar to the 1.0mm (.039") diameter tip supplied with the gun, but with a 1.6mm (.062") diameter hole. this addresses many of the larger leads and lugs found in Elecraft kits. Though I did not purchase it, the model A1396 nozzle offers a 2.3mm (.09") I.D. orifice as well.

A1394 - A very long and slender nozzle with a 1.0mm (0.04") inside diameter and a 2.1mm (0.083") outer diameter tip. This allows me to get to those

components which are mounted from the BOTTOM of the PC board and which cannot be easily accessed with the 'fatter' (original equipment) nozzles. Gets down between adjacent components with ease, AND without 'frying' adjacent components. This tip is not cheap, running about \$13 (US), NOT including shipping. So if you are about to buy the Hakko 808, I'd suggest you order this tip (and any others you feel you might need) at the same time, to save additional shipping.

10. Hakko offers 'drill bits', and a pin vise holder for use when you REALLY have an immovable accumulation of junk in the nozzle or heating tube. There are different bits for each I.D. of nozzle. This having been said, these bits and pin vise are pretty 'pricey' if purchased from Hakko. But you can just as easily find the pin vise and the drill bits 'wire gauge' (also metric and inch dimension) diameters at both hobby and some of the better hardware stores for a LOT less cost. If you can't find anything suitable, try:

<http://www.micromark.com/>

click on "Power Tool Accessories", then, in the inner menu, click on "Drill Bits & Accessories". This vendor offers wire-gauge drill bits, 6/pkg. (avg. \$1.35 US), in sizes #60 thru #80. They also offer a 20-bit set (#61- #80) for about \$13 (US).

Wire-gauge drill bits are also offered by McMaster-Carr:

<http://www.mcmaster.com/>

11. Get to 'know' your desoldering tool. LISTEN to what it's saying as it works. Soon, you'll be able to hear whether it's working properly or not. The sound is different when it's clogged or when the joint hasn't been thoroughly heated or cleared.

Sometimes, if you can't readily clear a hole, ADD a little more solder to the joint and then try again. Often it's nothing more than a case of there not being enough solder available for the nozzle to heat and transfer that heat the the rest of the joint. Of course, if the problem hole is GROUNDED, you may require a bit more heat, or a slightly longer dwell time before you hit the button.

12. Having owned my Hakko 808 desoldering gun for about a year now, I've found that it's just about impossible(!) to see into the (once) clear plastic 'catch' tube, which becomes badly clouded by rosin fumes and all sorts of other 'crud' from desoldering.

I'd originally tried to (gently) scrape away the solder bits and darkened residue which covered the inside of the tube, but I didn't have much luck at all, and I didn't want to exert much force because the LAST thing I wanted to do was to scratch the inside of the tube, thus giving the crud an even better place to attach to.

I SOLVED my problems completely!!! And it was a LOT easier than I'd have ever thought it would be...

I was cleaning some heavy deposits of burnt rosin from the bottom of a PC board I was servicing. I used denatured (wood) alcohol to dissolve the rosin and then wash it (with more alcohol) off the board. I decided to dampen a piece of paper towel and see if there was any chance at all that I could do the same trick with the 808's solder catch tube.

WOW! What results.

Almost instantly, I was able to clean off ALL of the residue on the inside of the catch tube. It looks like new! I had a couple more stubborn spots, so I left the alcohol-saturated paper towel laying against these two spots for about 20 seconds and then I wiped... off they came, and with no effort whatsoever.

I suspect that Isopropyl (rubbing) alcohol would work as well, though I have not tried it.

13. TINNING THOSE PESKY TOROID LEADS. This tip comes thanks to Don Brown (KD5NDB):

The Hakko 808 is still the best way I have found to strip toroid leads. Just stick it lead into the nozzle add a little solder wait about 20 seconds and pull the trigger. Works every time.