Sometimes, viewer asked me this or that about the tools I use. This is why I picked today a few not so well known tools and show you, why I use them.

Of course, I do not begin with my Swiss Army knife, because everybody already has one of these and know all its advantages…

Let’s therefore start with the one I use most: The wire Stripper. I went through many of them, and ended with the most simple and cheapest one. Why? Because it works! It cuts, not as most of the other designs, the insulation only on two sides. This one cuts them around the whole wire. And it needs no adjustment, because you just choose the right hole. And in addition, it is very lightweight and suits also for lefties. It works from the thickest wire I have in my lab to the thinnest one. I got mine from Aliexpress, but I do not provide a link, because the one I bought is no more listed and I only provide links to tested sources.

The next tool has also to do with wires: What do you do with stranded wires, if you cut them? For years I tinned them with my soldering iron until I detected a new way: Ferrule terminal connectors. You select the right color (according the diameter of your wire, insert the wire into the terminal, insert the terminal into the self-adjusting crimper, and crimp. Done.

These terminals have a few advantages over tinning: First, they are much better looking and can be inserted easier into the block connectors than a tinned wire. Second: crimping gives a better contact than soldering. And third: I do not need to heat-up my soldering iron just to tin one or two wires. I got this set from Bangood. It contains the necessary crimper and an assortment of ferrule terminals in different sizes from 23AWG - 10AWG. It will take a long time till I need replacement terminals. By the way. You know, that I am Swiss and I like the metric system. But for stranded wires, I adapted the American AWG system, because it is easier to keep in memory than the European mm2.

Let’s stick with the “real” tools: after a few bad experiences, I bought myself a set of prying tools for different applications. I use them for example to open my standby mobile if I need to change the SIM card for my next journey abroad. Then, I use it to create a hotspot for my other devices and, because I use a local SIM card, I avoid roaming cost.

For sure, I will not use all shapes, but I do not know now, which ones I will never use… You will see in a future video, that I anyway love assortments.

Let’s continue with a tool I do not use in my lab, but on my other workbench: Step Drill Bit. I use it quite often for two reasons: 1. For holes bigger than 10mm, because I only have normal drills up to this size. And second, for all my 3D printed parts. I try to use as much as possible things with round mounting holes for my devices. For me, this is easier to mount and usually, it also looks better. Now, with 3D printing, my holes do not always get round and in exactly the right size, especially not, if I have to print them vertically. This is, why I usually print them smaller and use this tool to expand them to exactly the right size. Of course, it only works for soft materials like plastic and not for steel.

The last “real” tools I want to show to you are tweezers. I bought a cheap set of them, but was never completely happy. Then, I heard, that Hakko produces a really good pair of tweezers, the Hakko CHP 3-SA and I only can agree. They are much more expensive, but also much better for small parts and thin wires. Shame on me, but for the moment, I do not find them. This is probably, because I use them quite often… The second pair of tweezers I want to show you are self-closing. This is a very good feature if you have to solder SMD parts by hand. Then, you can concentrate on the soldering hand and forget about holding the part, because the tweezers take care of that.

Now, we continue with the liquid section: Three liquids are very important in my lab: Flux, Isopropyl alcohol, and super glue.. The alcohol is mainly used to clean the PCBs after soldering, but it can also be used to clean other things. My escalation of alcohol is acetone, but I have that on my other bench, not in the lab. I store it in a small bottle with a hollow needle on top. You can get these hollow needles in various diameters and they fit also on syringes, for example for SMD solder paste. If you use a thin one, you do not need to close the bottle, because the alcohol nearly does not evaporate.

Flux is quite important for soldering and many times, it makes a big difference. Beginners sometimes forget to add flux and confuse it afterwards with lack of soldering skills… I use it in two forms, as a liquid KESTER 186, also in a small bottle with a hollow needle on the top, and as a pen. The pen is very handy and easy to use. The liquid one is for places, which are not reachable by the pen.

In the past, I purchased super glue in our retail store until I discovered, that they charge too much for a very small amount of material. Since then, I order it in China…

Now I go on to the more “electronic” tools and start with two sorts of PCBs: Firstly, I do not buy anymore through hole chips, I only buy the SMD version. Then, I use these ready-made small PCBs and solder one or two of the purchased component on this PCB. Together with pin headers, they perfectly fit on the breadboard, and later, if I do a PCB for my devices, I still can use the SMD version. So, I can purchase only one set instead of a through hole and a SMD version. Pay attention, that you get these PCBs with the proper silk screen, otherwise you always have to mark the pin 1 with a pen…

They have two different sides for two different chip sizes, and they come in many different sizes. I bought a few of the sizes I most often use.

The next sort of PCBs are prototype PCBs without any connections between the holes. I use them to build small devices or sensors with only a few parts. And at the end, I cut it out using a jigsaw. If the device consists of many parts, I usually mill a PCB.

Now, last but not least, I show you a thing called “transistor tester”. This is one of the most used tools, because I cannot reliably read the code of the more precise resistors. Sometimes, these colors are hard to distinguish. So, I use this device to be sure about the real value. But it is also helpful if you get a shipping from china and you want to make sure it is not a fake. Or you forgot to properly name a part before storing it away.

I have it in two versions. And I have given both of them a small 3d printed home. In addition to transistors, diodes, resistors, and capacitors, the newer one also measures inductivity. This is, why I bought it as a second device. But I still use the first one, because sometimes, one or the other does not display results for components like large capacitors. Then, I try the second one. But if you buy one now, the new one is sufficient.

The last tool I would like to mention is my Brother p-touch label printer. I use these labels everywhere, on my bins, my project boxes, even on my ESPs. And because brother uses the HP printer pricing model, where you get the printer cheaply and pay for the expense cartridges, I did not pay too much for it. I even bought the more expensive one with a USB interface. So, I can create the labels on the PC.

And since I can buy knock-off cartridges, this is a really good deal. These cartridges do not have the same quality as the original, but for my purpose, they are ok.

That’s all for today, I hope, this video was useful or at least interesting or you. Bye.

In this video, I present some not so well known tools which I use in my lab.

Links:

Ferrule Terminal connectors

http://www.banggood.com/23AWG-to-10AWG-Self-Adjusting-Ratcheting-Ferrule-Crimper-Plier-Tool-with-800pcs-Connector-Terminal-p-1074842.html

Prying Tools: https://www.aliexpress.com/item/Best-6pcs-Dual-Ends-Metal-Spudger-Set-For-iPhone-iPad-Tablet-Mobile-Phone-Prying-Opening-Scraper/32618321470.html

Step Drill:

http://eu.banggood.com/Wholesale-Warehouse-HSS-Triangle-Shank-Pagoda-Step-Drill-Bit-from-4-124-204-32-wp-Eu-970563.html

Cheap tweezer set:

https://www.aliexpress.com/item/Free-shipping-high-qualit-VETUS-BGA-Precision-ESD-Tweezers-8pcs-set-ESD-10-17-stainless-steel/32272706365.html

Hakko tweezers:

https://www.amazon.com/gp/product/B00FZPEWI6/ref=oh\_aui\_detailpage\_o00\_s00

Self closing tweezers:

https://www.aliexpress.com/item/New-BEST-BST-F12-5F-Non-slip-Stainless-Steel-Tweezer-Cross-Lock-Self-Closing-Reverse-Action/32329830387.html

Bottles:

http://www.banggood.com/30ml-Needle-Dispenser-Bottle-for-Rosin-Solder-Flux-Paste-11-Needles-p-940008.html

http://www.banggood.com/Booster-Flux-Bottle-Alcohol-Liquid-Container-with-Funnel-and-Needle-p-926452.html

http://www.banggood.com/200ml-Empty-Nail-Polish-Remover-Liquid-Press-Pump-Dispenser-Bottle-p-908106.html

Alcohol:

http://www.ebay.de/itm/1-x-1L-1000ml-Isopropanol-Isopropylalkohol-IPA-2-Propanol-99-9-/171232805104

Kester 186 Flux:

http://www.ebay.de/itm/KESTER-186-RMA-FLUX-for-SMT-BGA-Rework-No-Clean-60cc-/110852193367

Flux Pen:

https://www.aliexpress.com/item/HOT-SALE-Kester-951-Flux-Pen-Low-Solids-No-Clean-for-Solder-PV-Solar-Cell-Process/32269169322.html

Super Glue:

https://www.aliexpress.com/item/High-Quality-502-Super-Glue-20g-EVO-BOND-Multi-Function-Glue-Genuine-Cyanoacrylate-Adhesive-Strong-Bond/32663330311.html

Adapter PCBs:

https://www.aliexpress.com/store/product/FREE-SHIPPING-100PCS-LOT-SO8-MSOP8-SOIC8-TSSOP8-SOP8-turn-DIP8-IC-adapter-Socket-Adapter-plate/326522\_32365596069.html

https://www.aliexpress.com/item/FREE-SHIPPING-50PCS-TSSOP14-SSOP14-MSOP14-SOP14-TURN-DIP14-14pin-IC-adapter-Socket-Adapter-plate-PCB/1853633589.html

https://www.aliexpress.com/item/FREE-SHIPPING-20PCS-TSSOP16-SSOP16-MSOP16-SO16-SOP16-SOIC16-turn-DIP16-1-27MM-0-65MM-IC/1853583023.html

Prototype PCB:

http://www.banggood.com/40Pcs-FR-4-Double-Side-Prototype-PCB-Printed-Circuit-Board-p-995732.html

Transistor tester:

https://www.aliexpress.com/item/Mega328-Transistor-Tester-Diode-Triode-Capacitance-ESR-Meter-MOS-PNP-NPN-L-C-R/1908731704.html

Brother Printer:

http://www.brother-usa.com/Labeling\_Solutions/ModelDetail/7/PTP700/Overview

Brother labels:

http://www.banggood.com/Black-on-White-Label-Tape-For-Brother-P-Touch-Label-Maker-12mm-TZ-231-p-952215.html