

Thank you for your purchase of the **Nozzle Maintenance Kit**.  
You are going to love cleaning and maintaining your hot-end with this kit of select tools!

### Included in the Nozzle Maintenance Kit:

- Ø3.80 Nozzle Cleaner
- Ø1.75 Nozzle Cleaner
- Set of 5 pieces of 0.4 Nozzle Cleaning Needles
- 2 Meters of Cleaning Filament
- Pneumatic Depressor
- Mini Slap
- Set of 3 Nozzle Wrenches: 10mm, 7mm, and 6mm
- Tool Organizing Magnet

### Steps for Cleaning a Hot-End if There is a Clog, follow each, one by one, until resolved:

1. Heat up the hot-end to about 10° over your current filament recommended print temperature.
2. Remove the PTFE tube from the hot-end, if there was one.
3. Attempt to pull out any filament that may be sticking out.
4. Try dislodging the clog with the Nozzle Cleaner Tools by pushing the shaft down from above.  
If this hasn't resolved the clog continue to next step.
5. Try dislodging the clog with the Nozzle Cleaning Needles by inserting the needle from the hole in nozzle. If this hasn't resolved the clog continue to next step.
6. Execute a cold pull, and repeat if necessary. See full explanation on other side of page.

Hopefully this has resolved the issue.

If your clog persists you may have to disassemble your hot-end and clean the parts separately.

### Steps for Disassembling and Cleaning your Hot-End:

1. Heat up the hot-end to about 10° over your current filament recommended print temperature.
2. Remove the PTFE tube from the hot-end, if there was one.
3. Use the Nozzle Wrench to loosen the nozzle from the hot-end while it is hot.
4. Cool down the machine and switch it off.
5. Work on a clean flat surface, preferably a Slap Mat
6. Disassemble the hot-end from the machine, pay attention to the order of disassembly and take pictures if necessary.
7. Disassemble all subcomponents from the hot-end until you are left with separate components. Make sure heater cartridge and thermistor are also removed.
8. Inspect the inner passages of each; heater block, heat throat, cooling block and nozzle for clogs or material. Carefully heat each part with a small torch or heat gun and use our tools to dislodge any plastic remaining. You can also use a Q-tip to push out material from the inside of the heat throat and cooling block.
9. Once the parts are clean, reassemble in same order and pay attention to have a good mate of the nozzle to the heat throat. For more information on assembly see the cults article on our support page.

### More Resources:

Please see our support page for in-depth videos, articles, and other helpful materials on cleaning and maintaining your hot-end: [whambamsystems.com/support](http://whambamsystems.com/support)

Support QR link:



### Support and Help:

If you are still looking for more info after reviewing our support page and FAQ's, please contact our technical support team directly at: [technical@whambamsystems.com](mailto:technical@whambamsystems.com)

### Use of Each Component:

**Ø3.8 Nozzle Cleaner:** filament may pool between the heat throat and the PTFE tube or between heat throat and the nozzle and create a clog and affect the quality of your prints or block the extrusion. To resolve this, with hot-end heated remove your PTFE tube from the hot-end, insert this tool down from the top to push any stuck filament out of the heat throat. *\* Attention, this tool may not pass through from above if you have a direct drive which may not allow a straight pass down. \**

**Ø1.75 Nozzle Cleaner:** this tool will reach down into the nozzle. To use it, with hot-end heated remove your PTFE tube from the hot-end, insert the tool down from the top to push any stuck filament down out of the nozzle. May be used in conjunction with the Cleaning Needles.

*\*Attention, this tool may not pass through from above if you have a direct drive which may not allow a straight pass down. Also be careful with specialty nozzles like the Ruby or DiamondBack, not to push down too hard, to avoid damaging the tips of the nozzles. \**

**0.4 Nozzle Cleaning Needles:** with the hot-end heated above the temperature of last filament used, carefully push the needle into the nozzle from below to clear the opening. Wipe off the needle end after removing the clog.

**Cleaning Filament:** when you switch filament types with large differences in print temperatures, you may be creating clogs if you have remnants of the high temp filament in the nozzle while printing at lower temps. You may also get carbonized chunks from plastic stuck inside the nozzle for long periods. You should flush your hot-end between changes of filaments that have very high print temperature differences. Our Cleaning Filament has a wide melt range of 160-260°C. To use it, set the hot-end to the highest temperature of the filament you are using, and run a bit of cleaning filament through your nozzle. Then remove the cleaning filament and set nozzle to desired temperature of the new filament and load new filament and flush.

You can also use this filament for cold pulls if you still have clogs after following the other steps. Heat your hot-end to 240°C, remove the PTFE tube and insert one end of the Cleaning Filament into the hot-end from the top. Push it down well and use the machine interface to lower the hot-end temperature to about 100°C while keeping constant downward pressure on the cleaning filament. Once the temperature has reached 100°C give the free end of the cleaning filament a strong upward pull. This should dislodge any trapped filament which will now be stuck on the end of the cleaning filament. Cut the dirty area away and repeat if needed until it comes away clean.

**Pneumatic Depressor:** this is a handy tool to push the pneumatic coupler locking ring down to remove a PTFE tube, even when the coupler may be in a hard-to-reach area.

**Mini Slap:** place this below your hot-end on your build surface when doing any maintenance to ensure that the build surface does not get damaged. Also, it is very handy for keeping screws and small parts in place while assembling and disassembling components.

**Set of 3 Nozzle Wrenches 10mm, 7mm, and 6mm:** these wrenches should fit most every standard nozzle. To remove a nozzle, heat up the hot-end, grip the heater block with a set of pliers or adjustable wrench (\*pay attention not to touch the exposed heater cartridge wires or you may short and damage your main board\*), put the Nozzle Wrench over the nozzle and carefully unscrew it from the heater block. Do not use excessive force or you can break the nozzle threads off and ruin the heater block.

When reassembling the hot-end, screw the nozzle into the heater block while cool and be sure it makes definitive contact with the heat throat. Be sure there is about 2mms of space between the nozzle collar and the heater block once tightened. Heat up your hot-end and use the Nozzle Wrench to further tighten the nozzle while the components are heated.

**Tool Organizing Magnet:** hang this on any clean and smooth surface. Allow the 3M glue to cure for 48 hours before use. Use this to organize loose tools around your workplace.

**Wham Bam thanks you man!!!**

**Support QR link:**

