



DIYELECTRONICS PRESENTS:

# HOW TO UNCLOG A 3D PRINTER NOZZLE

We at DIYElectronics are eager to share our knowledge. We hope these guides will allow you to get the most out of your 3D Printers and electronics.

## NEEDLE METHOD

The most common cause of a full or partial clog is cold filament that gets stuck to the inner surface of the nozzle. If it is not properly cleared it can affect print quality and lead to full blockages. A simple yet effective method to clear a nozzle is to use an acupuncture needle or nozzle cleaning needle.

Firstly heat the hotend to the printing temperature of the last filament used. Carefully insert the needle upwards into the nozzle and wiggle it around slightly to try to loosen any stuck filament. When you remove the needle any dislodged filament should flow out.

## ACETONE METHOD

If the nozzle has clogged while printing with ABS then try this method. It does require a bit more knowledge of 3D Printers as it requires removing the nozzle from the hotend. To remove the nozzle heat the hotend to around the max temperature, secure the heater block with a tool, and then use a small wrench to remove the nozzle.

Once the nozzle has cooled place it in a tub with a lid and add a bit of acetone. Let it sit for a few hours and move it around a few times to help loosen the filament. You should now be able to use a needle to clear any filament left behind.

## ATOMIC / COLD PULL METHOD

The cold pull / atomic pull method is a popular way to remove any debris that may be in the nozzle but is only recommended for a Bowden setup. Do not attempt this method if you have a ruby nozzle as it may cause damage.

Heat the hotend to 250°C. Insert the chosen cold pull filament, we recommend Nylon or ABS, until you encounter resistance. Cool the hotend to room temperature. Once it has cooled heat the hotend to 120-130°C. When the hotend reaches the set temperature pull out the filament with a jerk. Check for debris and repeat as necessary.



# HOW TO PREVENT CLOGS IN YOUR NOZZLE



## CLEAN THE NOZZLE OFTEN

Keeping the nozzle clean both internally and externally helps you achieve the best print quality possible and also helps prevent clogs. How often you check you nozzle and clean it depends on how often you are printing, what filaments you use, and how often you switch between filament types.

To clean the exterior use a metal or brass brush to carefully remove any residue and dirt on the nozzle. To clean the interior of the nozzle use cleaning filament to check for, and possibly remove any debris build-up.



## KEEP PRINTING AREA CLEAN

This tip is not only good practice to prolong the life of your 3D Printer but also a good way to prevent clogs. Dirt and debris can build up on your 3D Printer and if not cleared it can lead to a variety of issues. If the dirt builds up on the extruder body it may get pushed into the hotend by the filament. This debris will prevent proper extrusion and may cause a build-up of debris inside the nozzle.

To avoid this we recommend you keep your 3D Printer in a clean space or enclosure. If you are unable to keep your 3D Printer in a suitable space then regularly clean and wipe down your printer.



## STORE FILAMENT CORRECTLY

Incorrectly stored filament can gather dust and absorb moisture which can be detrimental to print quality and cause clogs.

There are various ways to store filament from store-bought containers to homemade ones. We recommend making your own using airtight containers with a layer of desiccant gel or bags in the bottom to remove any moisture and keep your filament free of dirt. You can also use a filament dryer to remove any moisture before printing. If you have multiple rolls of filament then keep them in the vacuum-sealed bag they come in until needed.

