Extruder clogged

Warning：Please be careful for human electrostatic especially in winter when touching the motherboard or extruders or laser. The easiest way to solve this problem is that we can touch the metal part nearby by hand first before touching the motherboard or extruders or laser. So the electrostatic usually will be gone before touching the motherboard or extruders or laser.

Clog is what happens when debris such as dirt develops in the hot end, or when PLA or ABS plastic gets too hot and hardens in a semi-permanent way, which binds to the extruder.

There are many causes for this problem. Please kindly do the following things to reduce the clog risk:

1. **Do not leave the extruder heated for long time**, just stay with the printer for heating. The filament might decompose after leaving it at high temperatures, leaving a layer of contaminants behind in the hot-end nozzle, and **the extruder will be clogged .**
2. Choose the **good and suitable filament** for the printer. Usually you can buy the filament from us. Our store is here: https://www.aliexpress.com/store/2212001 . Bad filament with recycle material will let your extruder be easily clogged. Please also don't try the filament not mentioned in the online shop's product details, as they have more risks to let the extruder be clogged. **If you experience the clog repeatedly, please change other brand filament. This filament may be not suitable for our printer, though may be suitable for other brand printer.**
3. **Printing PLA not more than 200 degree, usually 180-190 degree is the best.** Setting a printing temperature above 230-245degree for PLA is starting to get into bad territory as the plastic will start to change properties if left in the nozzle for too long and can cause clogs.
4. **Keep the filament be clean**. This is important. You can do this by letting it run through a piece of sponge before it enters the extruder. You will be surprised how much dust will accumulate during a 5 hour print. That would have all entered the hot-end and formed a layer of contaminants, which would interfere with the heat going into the filament.
5. When change filament, please **preheat the extruder according to the former filament first**. For example, after printing ABS, you want to print PLA with the same extruder, you have to preheat the extruder to 230-240 degree according to ABS (PLA is 200 degree.) If preheating in low temperature, it is hard to load the former filament as extruder clogged. **After loading the filament, please cool down the filament at once (High temperature for PLA will let the extruder be clogged).**
6. When the printing is done, **please do not turn off the printer at once until the nozzle temperature be under 50 degree Celsius**, or the extruder will be jammed.
7. **Fast printing speed, low printing temperature** or some other not suitable slicing settings such as **retraction** will let the extruder be clogged too.
8. Switching Filaments. When you are **switching filaments a lot**, there's a higher probability of jams. Not all filament is created equal and sometimes those diameters or other properties are slightly off. Also, different filament requires different settings. When you are changing filament and settings, there's usually some residual material left during the change. If you can, have a few go to filaments that you know work and stick with that. However,

experimenting is fun. If possible, try and keep filament types standardized with the 3D printers you are playing with (this assumes you have more than one 3D printer). Alternatively, read on to see how to fix the jams when they happen.

9. **Filament Storage**. Ambient moisture get absorbed in PLA and a lot of other common thermoplastics that are 3D printed material. I would recommend storing your filament in a ziplock bag with a small thing of Cat litter or desiccant (any moisture absorbers will work). I then keep it in a big tupperware container. It's a little bit of overkill, but better safe
10. **Wrong slicing settings** such as retraction settings or dual extruders switch settings**.** Please kindly use the newest slicing software settings here (have solved some bugs):https://drive.google.com/file/d/0B76TjeOkslHlZ2VBLXBSdzJYdms/view?usp=sharing&resourcekey=0-boJmBv7vQyKVocbp8qtJRw

How to solve this problem when the extruder is clogged? There are many tips on the internet when you google this problem as it is very common in 3D printing.

1. You can preheat the extruder in a higher temperature than normal such as 240 or 250 degree, then push down the filament or the metal stick to the heated extruder again and again. Usually it will work.
2. If the first step not work, you can check another document named Dredge the clogged extruder here: https://drive.google.com/file/d/0B76TjeOkslHlcWMxS3huUklNY28/view?usp=sharing&resourcekey=0-_Fn4C6z5gxoXmWQ-zkyOmg

3. Check this link may be helpful to you. https://www.3dhubs.com/talk/thread/preventing-and-fixing-jams-tips-tricks