

# Hardened PEEK in extruder

We're sorry to hear that there is hardened PEEK inside the machine, this can be a tricky problem to solve, but we'll help you the best we can.

It is a good idea first to check if you can save the machine by purging it. If this works, it can save lots of time. However, this is only possible if the extruder screw is still able to rotate.

Below is a guide to how you can get the PEEK out:

1. Remove the nozzle from the filament maker; this decreases the pressure once the machine has started.

The following link shows you the usual procedure for removing the nozzle (up to step 17):

[Nozzle replacement.pdf](#).

for BUT, an easier procedure would be to remove the nut from the knee and leave the nozzle now. Then, once some pressure is generated, it will push out the nozzle quickly (you can use up the manual in that case to step 8).

2. Remove the mesh/grid from the hopper, so the opening is accessible. Then, try to empty the hopper as much as possible (preferably with a vacuum cleaner), so the screw becomes visible. This is important because you'll have to keep an eye on the screw to see if it can rotate (even if it's just for a few seconds).
3. Set all heaters to 400 °C and press 'Start Extrusion.'  
Make sure you have some Devoclean High-temp at hand and a wooden stick to force the material into the hopper (preferably one that has roughly the shape of the extruder barrel feed-opening). Also, please do not walk away from the machine during this heating process. It is essential to be present from the exact moment the extruder screw starts rotating.
4. Once the machine reaches the temperatures and starts extruding, try forcing the Devoclean High-temp in with the stick. Don't hesitate to use some force while doing this.
5. After a couple of minutes of forcing in material, the PEEK and nozzle should come out of the machine. We recommend keeping this up until the PEEK is fully purged out. During this process, try increasing and decreasing the extruder RPM every couple of minutes (ranging from 2 to 15 RPM). The change in RPM creates different shear rates, which helps to remove contamination from the extruder.

There is a chance that you might not make it past step 3, and you'll get an error message saying: *extruder current limit reached*. In this case, you could try turning the machine on again and start extrusion and look closely at the screw to see if there are a few seconds in which the screw does turn. If this is the case, you could use these couple of seconds to apply some force to push out the PEEK, bit by bit. If this is not the case, and the screw does not turn, we'll have to find a different solution.