

## Preparing to Print!

While a print may fail for any number of reasons, the first step in minimizing the potential for failure is to make sure the printer is clean and prepared for printing. Before cleaning or performing maintenance the printer should be cool unless otherwise noted.

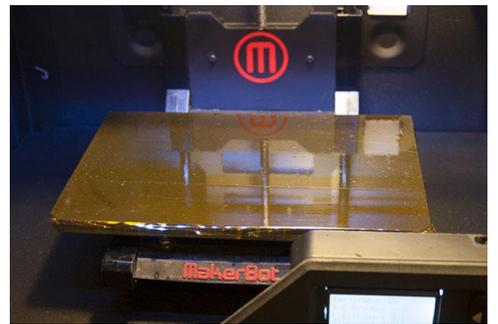
### Are the Extruders Clean?

If the extruder(s) are dirty the filament may not flow out of the extruder tip smoothly which could cause a bad quality and/or may clog. Examine the extruders. If there are black sooty deposits on the extruder tip, clean them off. Acetone works well as a solvent, particularly if ABS has been used. If there are bits of plastic stuck on or near the tip they may be dislodged while wiping the extruder with acetone. A nylon bristled brush or wood toothpick are useful for cleaning stuck bits of plastic from the hot-end of the extruder. The extruder tip itself is made of brass, so anything softer than the tip should be safe.



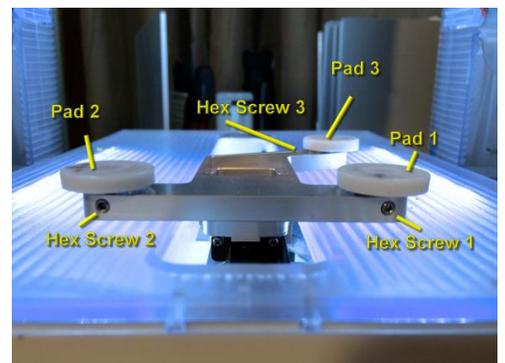
### Is the Print Platform Clean?

If the print platform is not clean or doesn't have a flat, even surface the model most likely will not stick, or if the model does stick at first it will likely detach sometime during the build. When printing with ABS the plastic seems to stick to either kapton tape or a clear glass surface best. When printing with PLA the plastic seems to stick to blue painter's-tape or a frosted glass surface the best. If the kapton or painter's tape is too badly marred or bubbled replace it. For ABS, with the platform cold, wipe down the surface with acetone. For PLA, 220-grit sandpaper works well for removing the waxy surface on the outside of the painter's tape.



### Is the Platform level?

If the platform is not parallel to the X and Y axes the plastic will extrude unevenly, resulting in things such as; models that will not stick to the platform, layers that will not adhere to one-another correctly, warping parts, extruders knocking over your print, etc.. Each printer has its own method of leveling the platform. Some printers have a feature that will self-level the platform. If everything else appears to be correct and your



prints are failing anyway, most times the platform will be either un-level or the extruder is too far from, or near to, the platform. Most times, re-leveling the platform correctly will remedy the problem. When leveling the platform allow the platform and extruders to heat to operating temperature.

## Is the Chamber and Platform the Correct Temperature?

**For ABS Plastic** it is important to run the print in a consistently warm environment. After Sealing and pre-heating the components, let the printer sit for a few minutes (5-20) to let the interior environment of the printer to heat up. While waiting for the printer to warm is a good time to load or change the filament as the extruder needs to be hot to load or unload filament. After the printer has become good and hot press 'Print' and stand back.

**For PLA Plastic** the final preparation process is much simpler than with ABS. Where ABS needs to be kept warm to achieve good results, PLA needs to be cooled. Before printing, all that is needed is to do is pre-heat the extruder. If the PLA filament is being loaded or changed putting a drop of a light oil, such as canola, is advisable to reduce the chances of the extruder becoming clogged. After the extruder has warmed up and adequate cooling has been provided for press 'Print' and stand back.

