- Pre-Print 01: Mech-a-tronics Check

What's up with Pre-Flight check?
If the printer hardware is not set up correctly, you will get bad results at best and damage your printer at worst :-(

Pre-Flight Checklist
- ☐ Z homing offset
- ☐ Zip ties with linear motion
- ☐ Set screws
- ☐ Belts tight
- ☐ Nuts and bolts in extruder
- ☐ Hotend fan spinning
- ☐ (Nozzle fan)
- ☐ (Proximity sensor)

Check out pages below for **video walkthroughs!**

We're going to check the hardware and make sure the printer is well assembled and ready to print. You absolutely have to do this if you just finished assembling the Jellybox, but you can also treat this as a basic preventive and even corrective maintenance checklist. In other words, these are the main, but not all, prerequisites for the printer to operate correctly, hardware wise.

1. X homing offset. ALERT. If you don't check this, you could drive your nozzle right into the build plate!
   a. With the LCD controller, go to Setting > X homing offset, and set it to 10. That's it! Done.
2. Zip ties. The printer should be rigid, with the zip ties nice and tight. Special attention should be paid to zip ties related to the linear motion itself - that is ties holding the bearings and smooth rods   and out of these especially the X assembly bearing zip ties. Zip ties don't come loose so once you check this, all should be well.
3. Set screws in pulleys and drive gear. If you have set screws in pulleys loose, you will get misaligned layers. Bad print quality fast and easy. If you get loose set screw in the drive gear, you get under extrusion and what's worst inconsistent extrusion. So make sure all these are tight and that at least one set screw is always aligned with a flat side of the motor shaft. Since Jellybox 1.1 we have been shipping set screws with nylon patches that are resistant to loosening, but checking does not hurt.
4. Belts. On X and Y axis, make sure the pulleys and idlers are on an even plane with the belt running smoothly in between. The idlers should rotate freely, but must not be loose at all. If the belts are too lose, they can skip when motors accelerate fast. If they are too tight, you are putting unnecessary strain on the motor and you could even be compromising the printer geometry by slightly bending the parts. The range of tightness that works well is quite large. Simply put, when you pluck the belt, you should hear tone - like so.
5. Nuts and bolts. Bolts can come loose over time due to vibrations. Check all the bolts around the printer - even the ones with serrated washers underneath. Pay special attention to the extruder.
6. Hotend Fan. When you plug the extruder in and turn the printer off, the led strip under the hot end fan should lid up and the hotend fan start spinning. The hotend fan must be spinning whenever you heat up the hotend or it will clog up.
7. Nozzle Fan. Please refer to the "Nozzle fan height set up" guide.
8. Z Probe/ Proximity sensor. Please refer to the "Z probe height set up" guide.

PS: Drivers. Drivers have adjustable current. If the current is set too low, the drivers will not get enough power and your motors could skip steps. If the current is too high, your motors will run hotter, and the driver lifespan will be shorter. The drivers come pre-set from us at about 1.2 A.