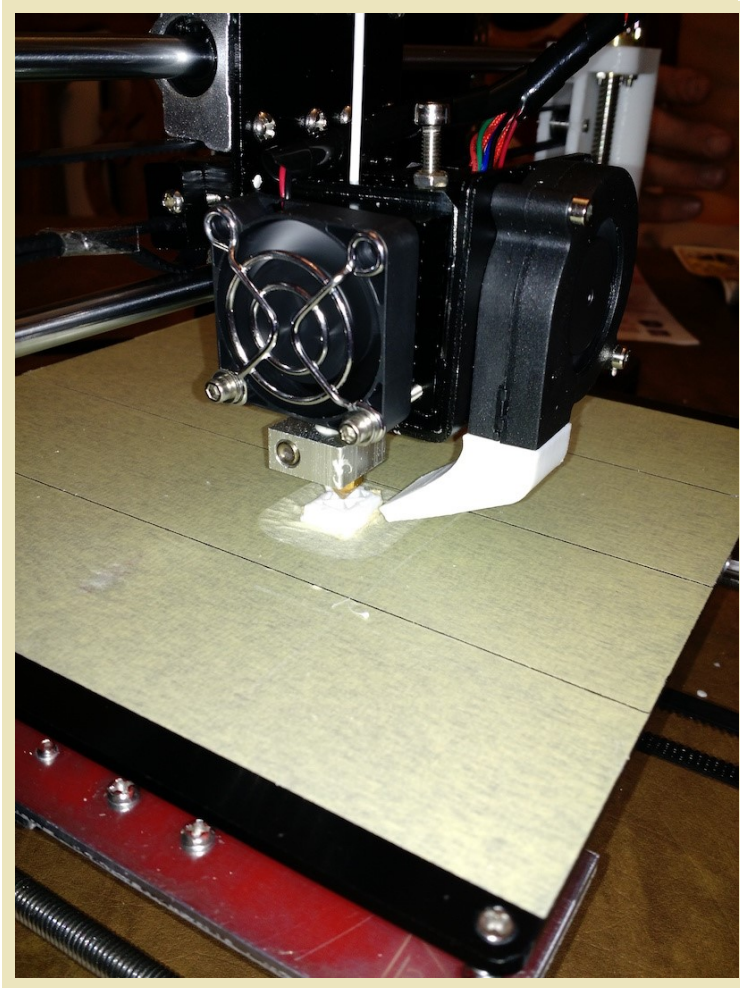


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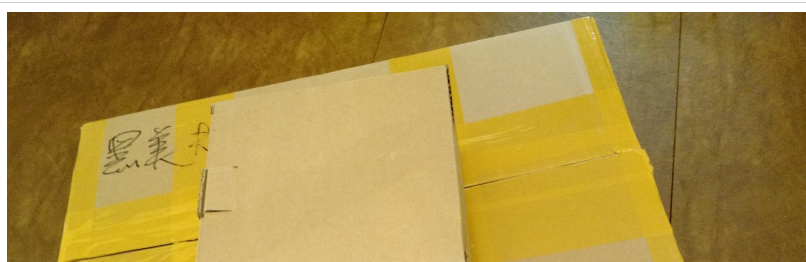
3D Printing – Anet A8 – Build Instructions

Published 2 years ago by Nick



So, I finally purchased a 3D printer... I am old enough to remember when the RepRap project started way back in the early 2000s. You know, before it became a commercialization race. So, I've been watching, waiting, and finally had the free time to start a new hobby. Well, not really. I've got some design work that needs prototyping.

China finally came online as a cheap manufacturing center for low cost consumer 3D printers. Distributed via the Amazon network with 2-day shipping, and presto I've got a box of parts that purport to be a 3D filament extrusion printer. The instructions are a silent video on YouTube. Nothing is labeled. And everything feels cheap. But the reviews are good.





3D Printer as Packaged from Amazon. This is an Anet A8 (sold as a Prusa i3 type). The top smaller box is the PLA filament. This is plastic extruder type. It has a 0.4 mm nozzle, uses a 1.75 mm filament, and can to an alleged 0.05 mm layer thickness.



Layer 1 of Printer Parts: Build Platform, wire covers, tools, screws, display assembly, power cable.

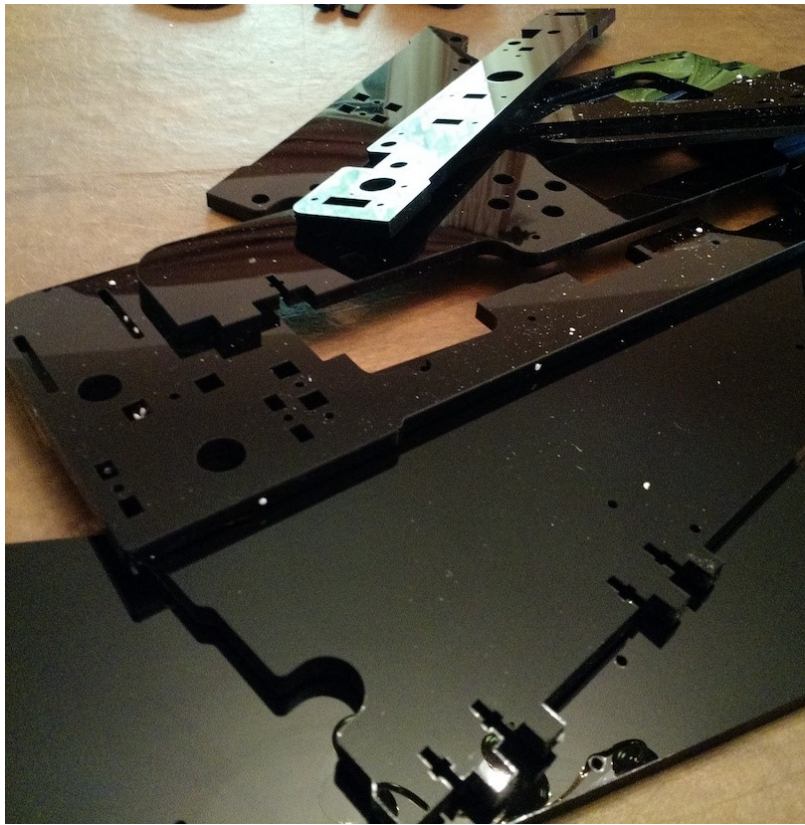


Layer 2 of Printer Parts: Frame parts, z-axis mounts, control board, cooling fans, usb cable.

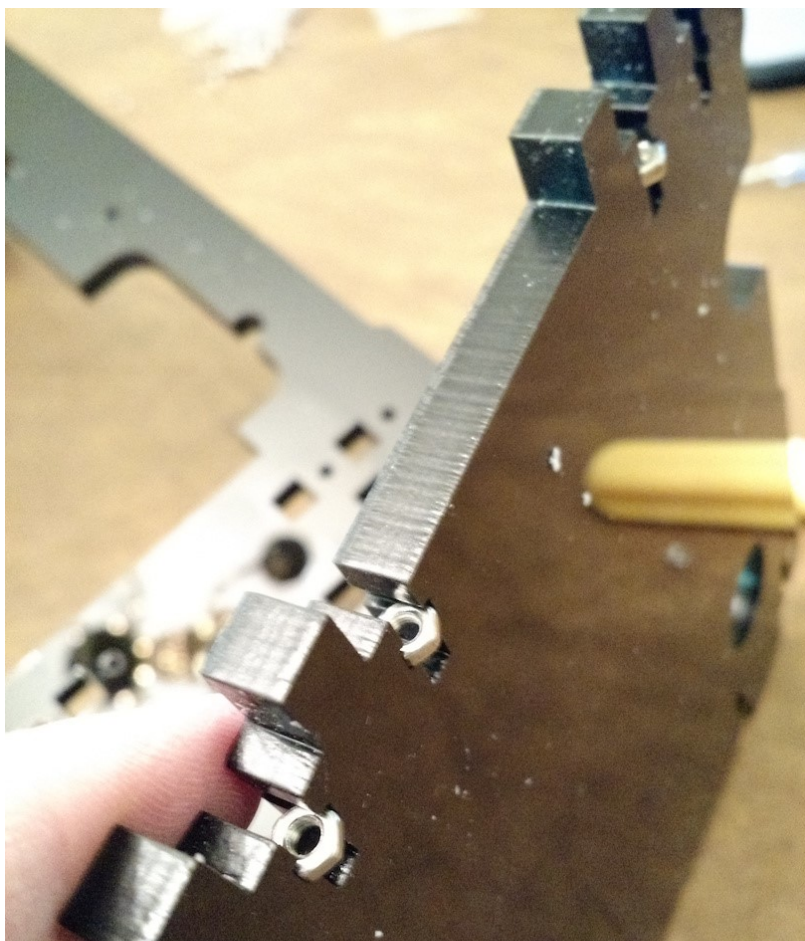


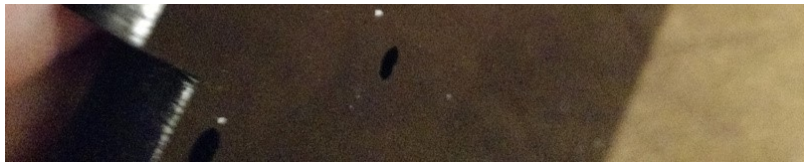
Layer 3 of Printer Parts: Frame parts, power supply, extruder, stepper drive motors, rails, linear bearings.





Remove protective paper from plastic frame... 1 hour of paper removal. No labels.

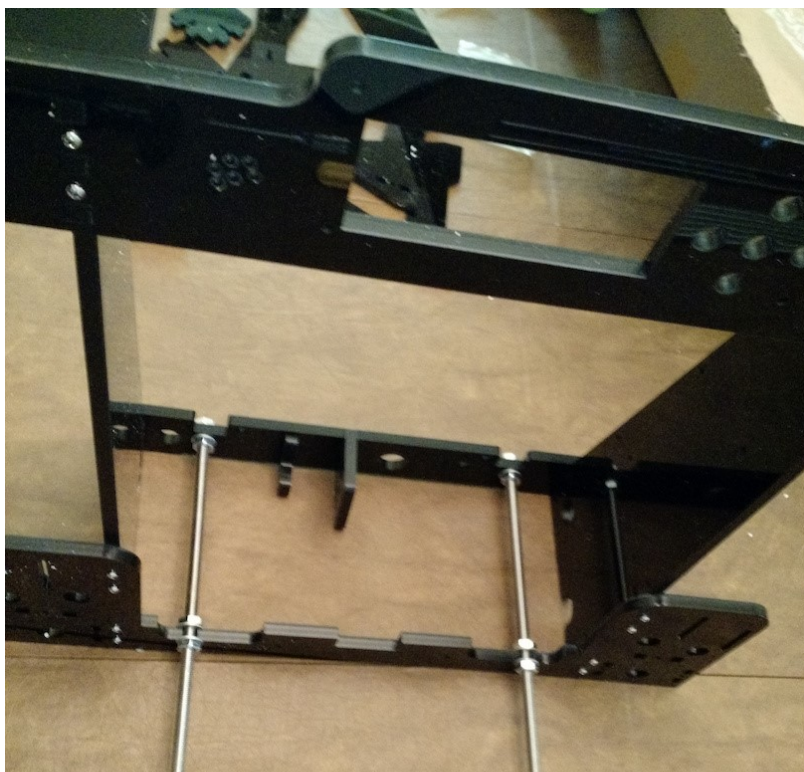


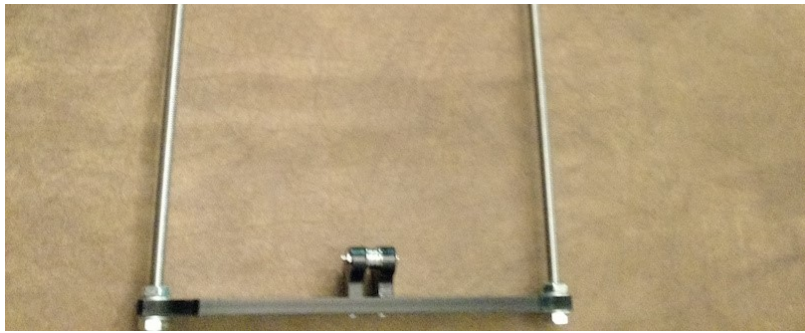


Interesting nut holder design. Where a screw holds the parts together. You need to hold these tiny nuts in the slot and press the opposing parts together and fasten with a screw.

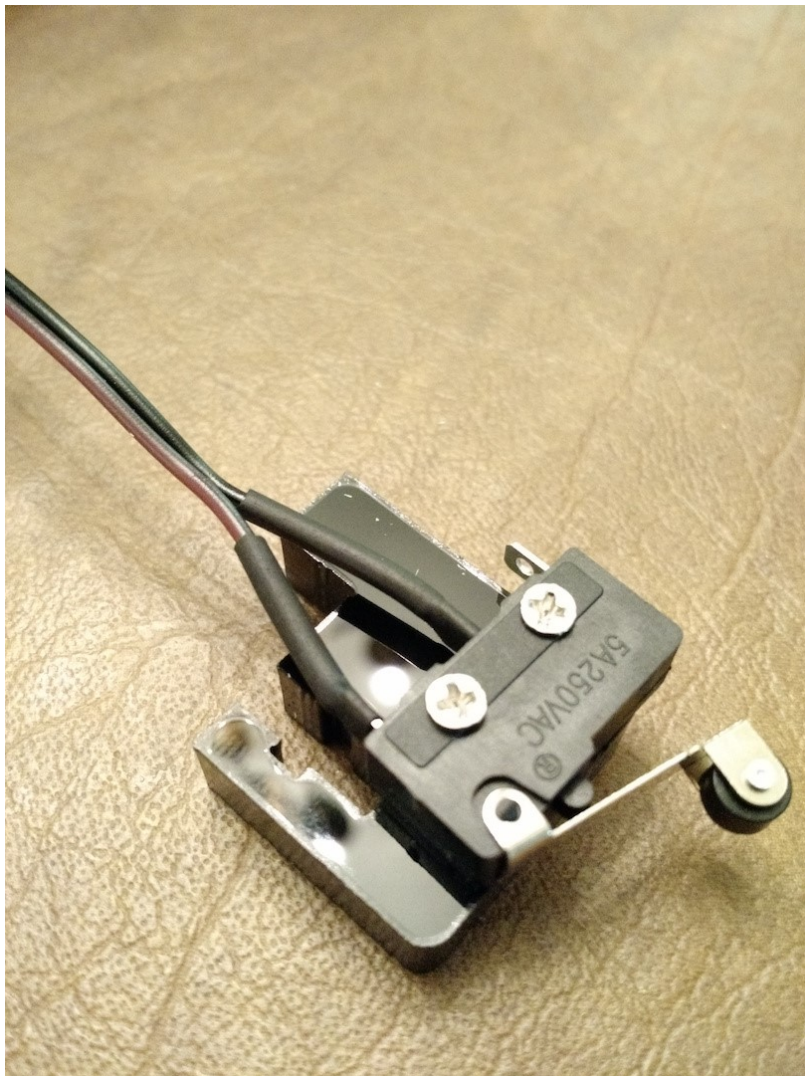


Assemble the frame by inserting the nut into the slot and then binding with screws... tedious is an understatement, especially when a nut falls out.

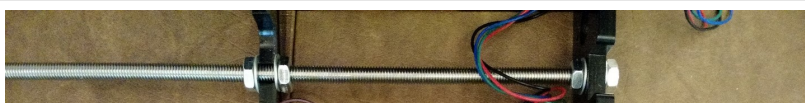


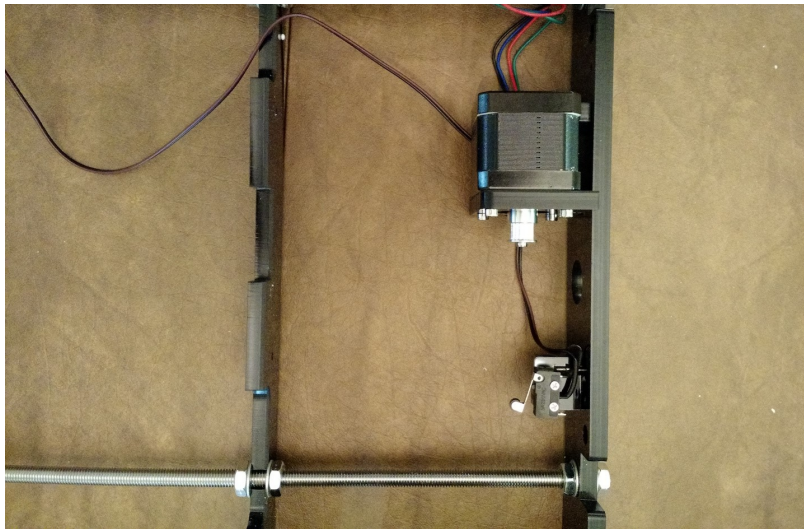


The bottom of the frame is held together with threaded screws and opposing nuts. Measure to make certain they are equally aligned. The front smaller frame unit has a roller bearing for a drive belt. In the back center, you have the motor mount.



The Y-Axis limit switch screws into a small holder. This will hold a nut and be screwed into the back lower frame.

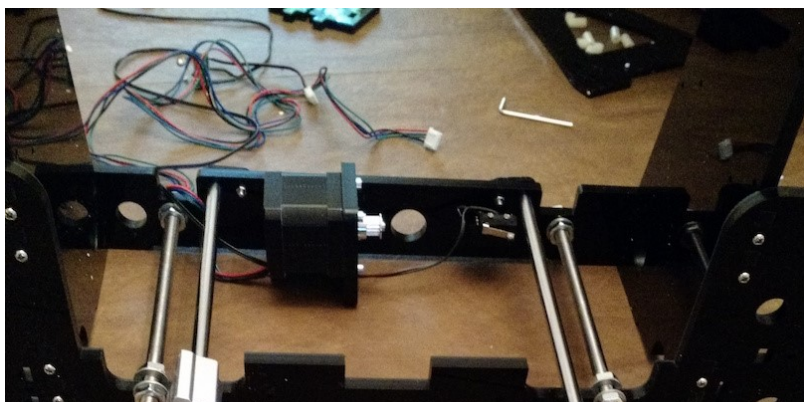


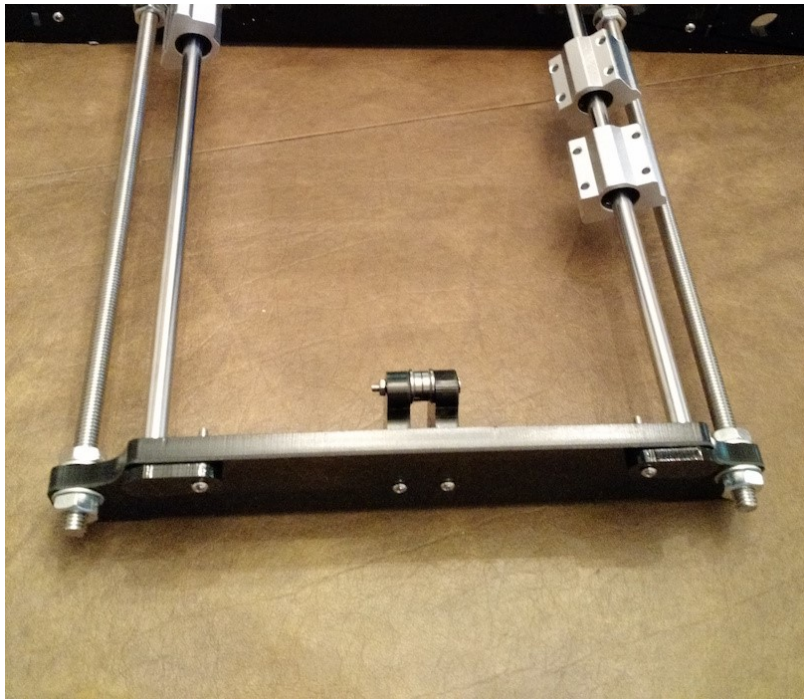


Y-Axis motor is mounted on a flat plate on the back bottom of the frame. The limit switch is also mounted here.

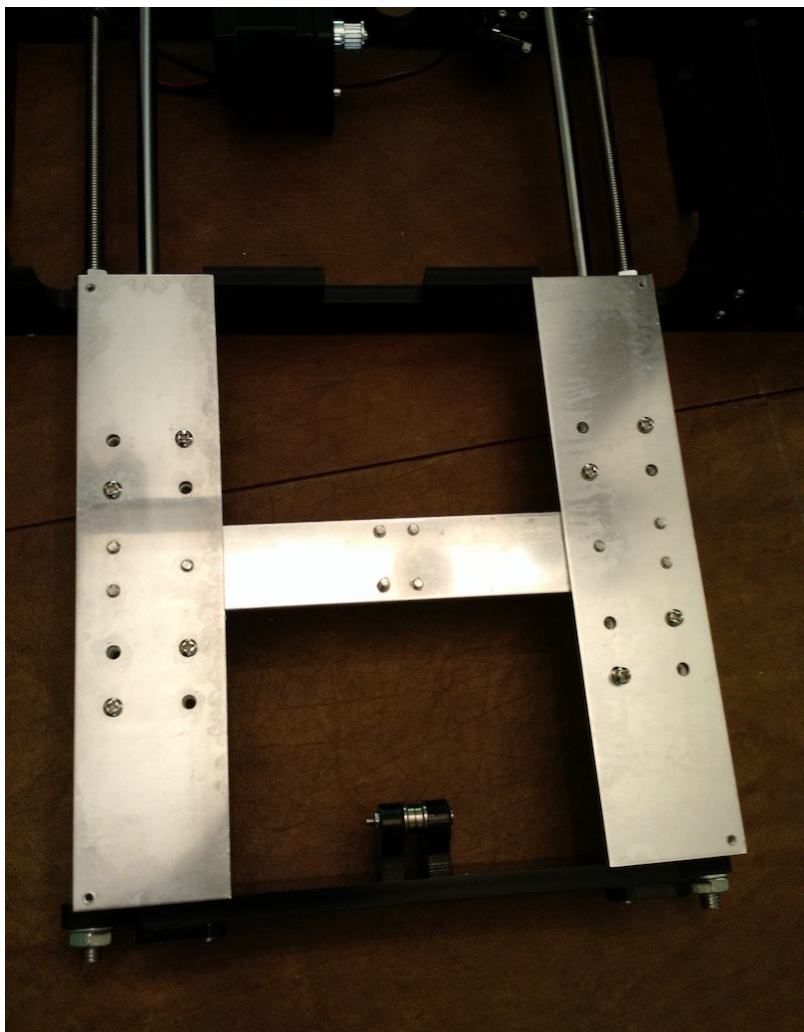


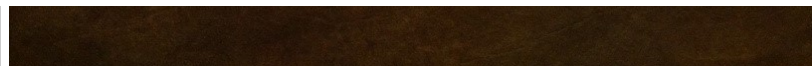
To the front and back of the lower frame, you attach these small keepers. A rail will be placed in the small hole that is under this keeper.



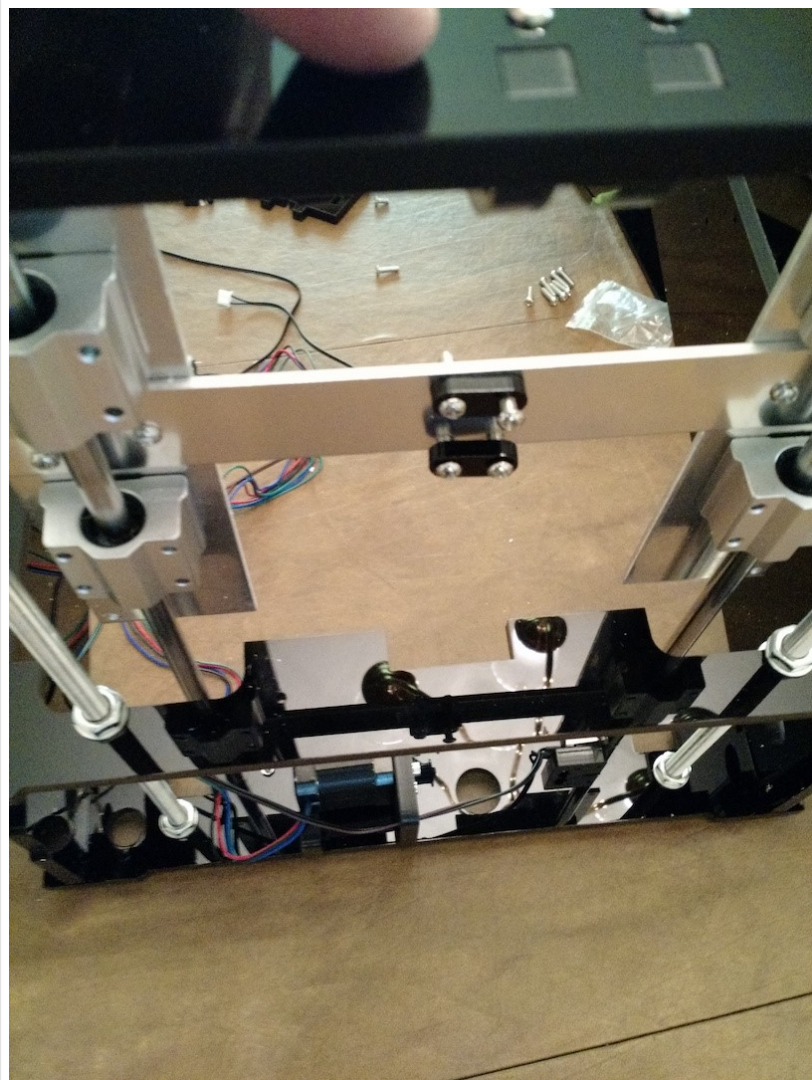


These two smooth rods are the Y-Axis rails. On each of them you put 2 linear bearings.
(Although, this picture shows only 1 on the left rail, that was corrected later).

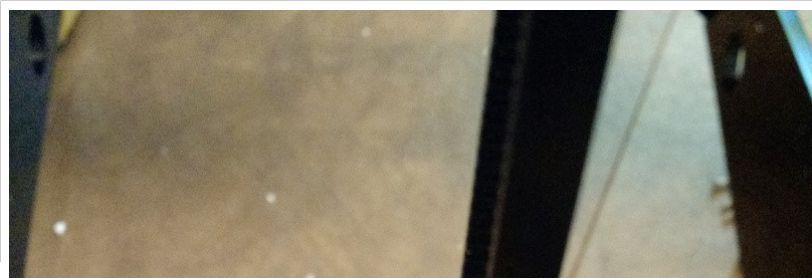


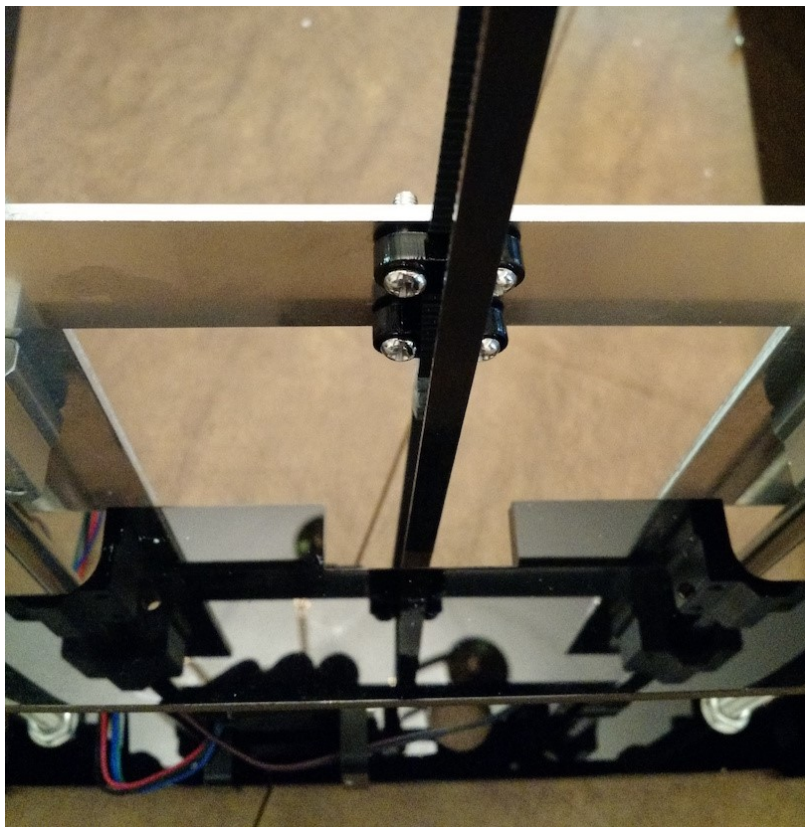


The build plate frame is held onto the Y-axis rails via the linear bearings. Each has 4 screws to anchor the 4 linear bearings to the build plate frame. Roll the plate a few times before tightening the screws. You might also need to adjust the lower screws on the frame to make certain the smooth rails are parallel.

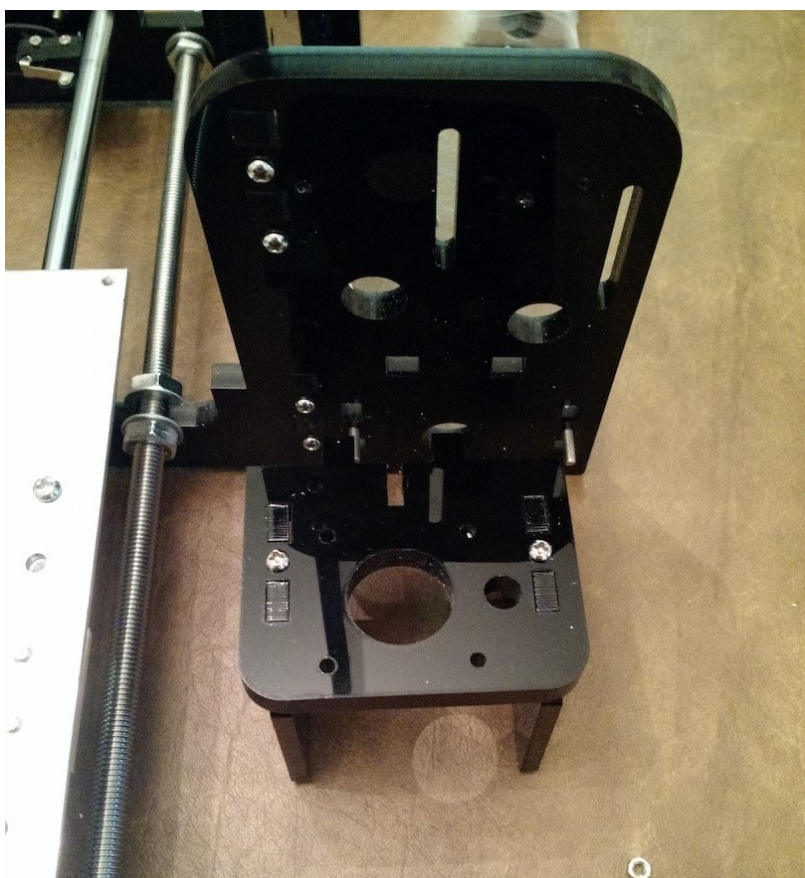


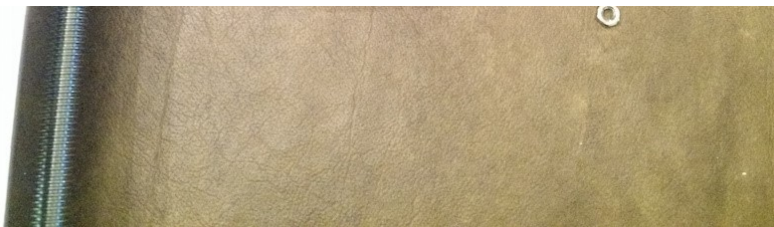
View from under the build plate frame. The Y-Axis belt holder is attached to the center of the build plate frame with two screws on each plastic spacer part. Here, you can also see the 4 linear bearings with the rails installed. The longer threaded rods on the outside edges are to hold the frame together and ensure the rails are parallel.



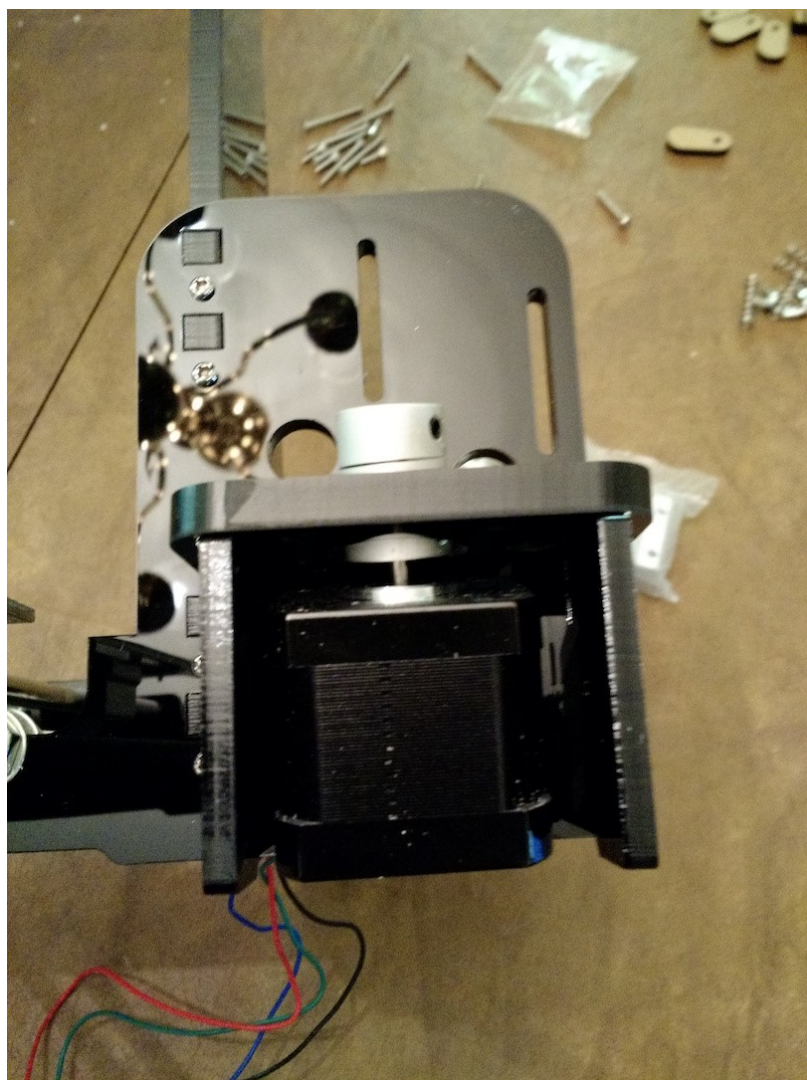


Looking under the build bed, attach a piece of drive belt from the motor at the back of the frame, through the roller bearing at the front and screw one loop side of the belt to the build plate frame center with the two mounting parts.



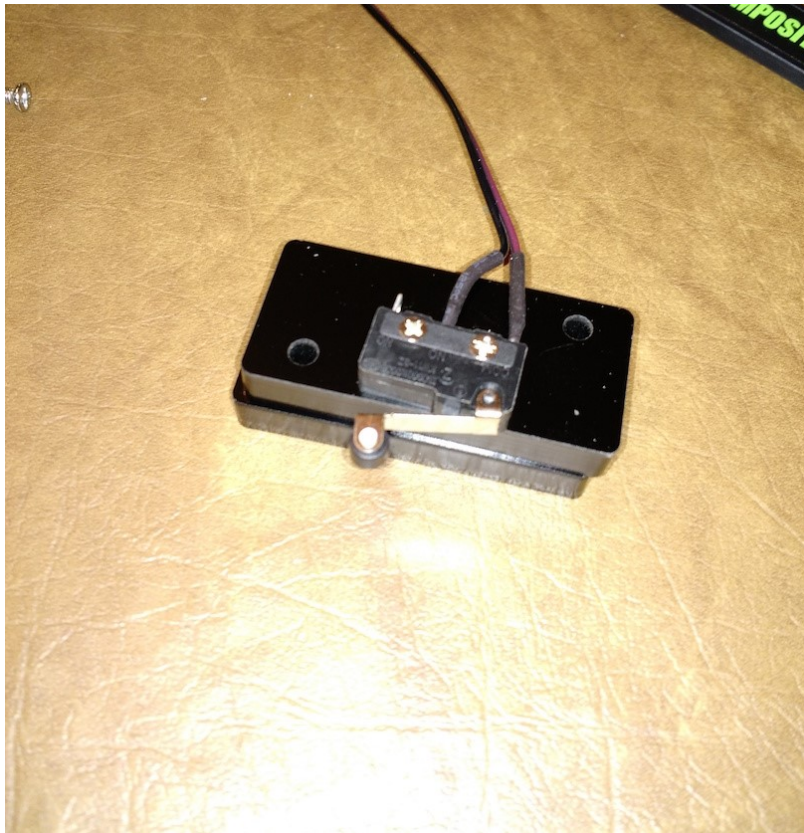


On each front side of the frame, build a small box that will hold the 2 z-axis drive motors.

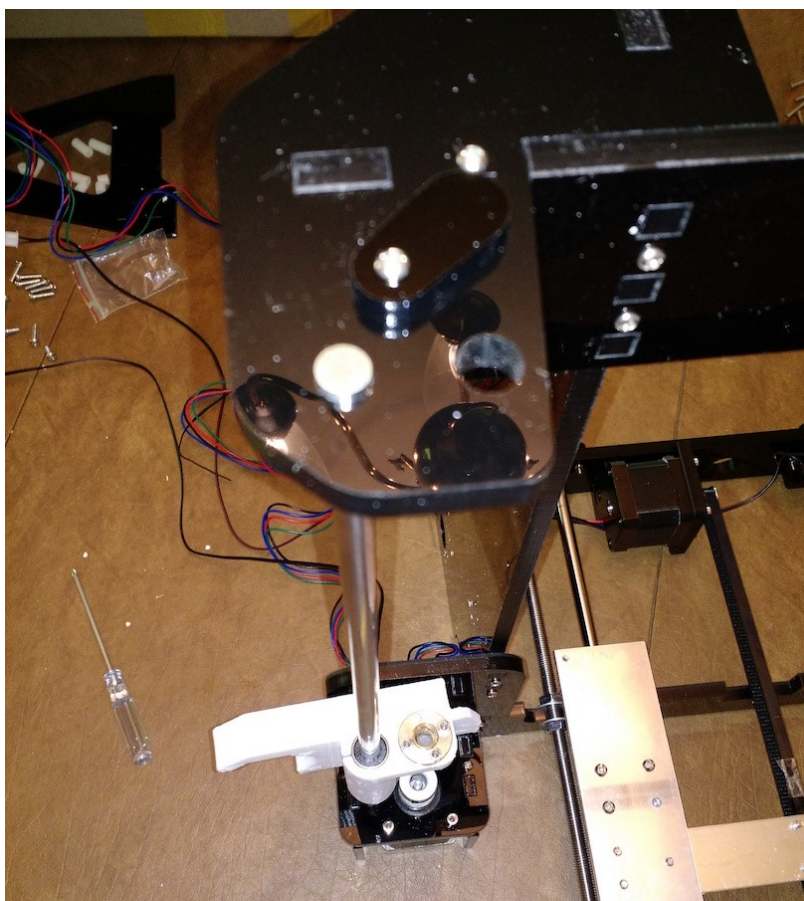


On both the right and left sides, install the Z-Axis stepper motors under the newly built support boxes. They screw in from the top.



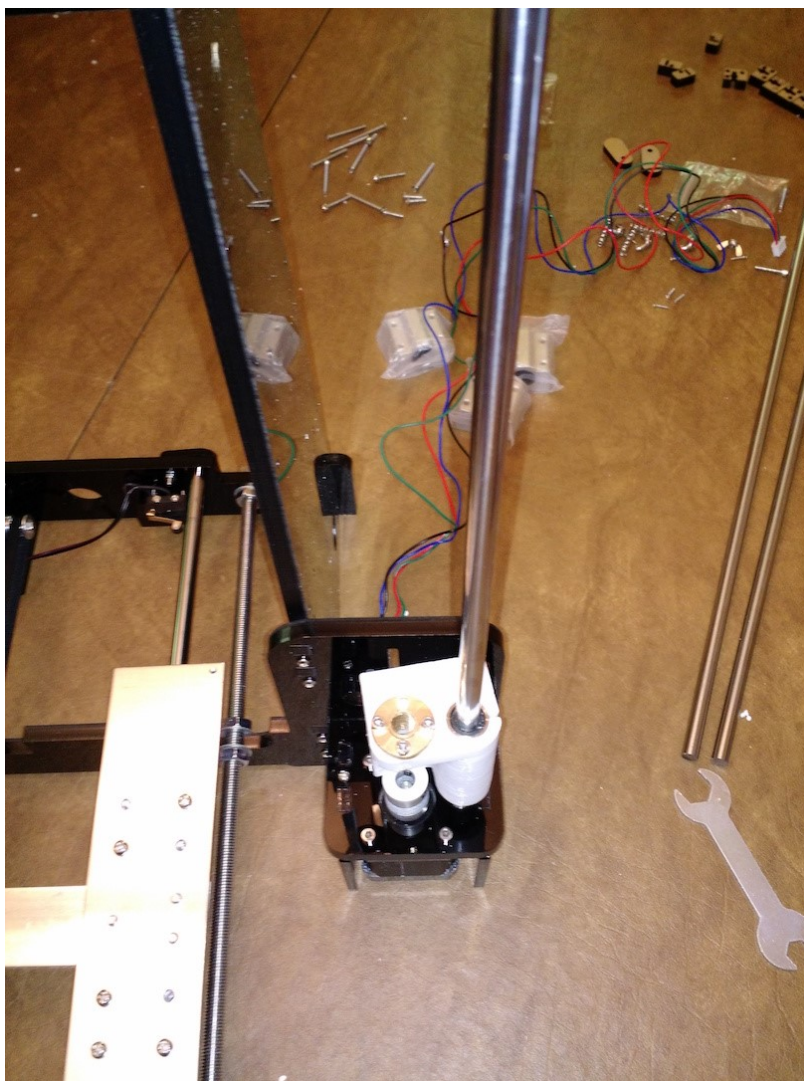


Assemble the z-axis limit switch with 2 plastic spacers and the switch. This is bolted onto the left frame side. Use the limit switch with the shortest wire.

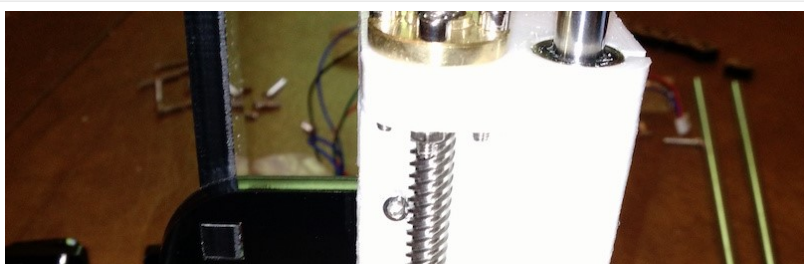


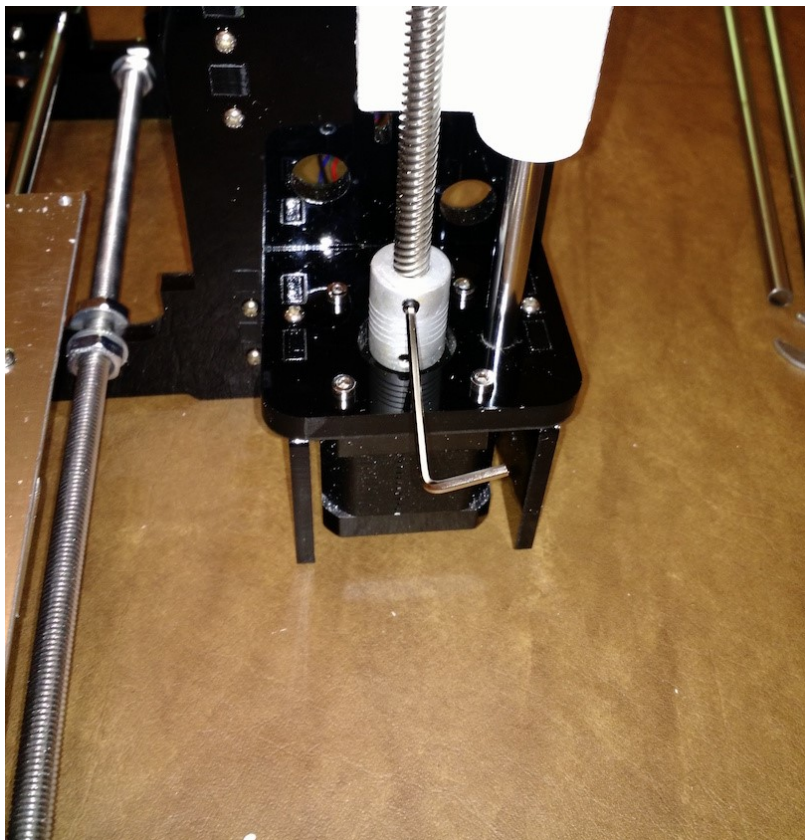


Install the left z-axis rail (smooth rod) and feed this rod through the x-axis motor mount holder – it is a white part that will hold two other x-axis rails and a motor.

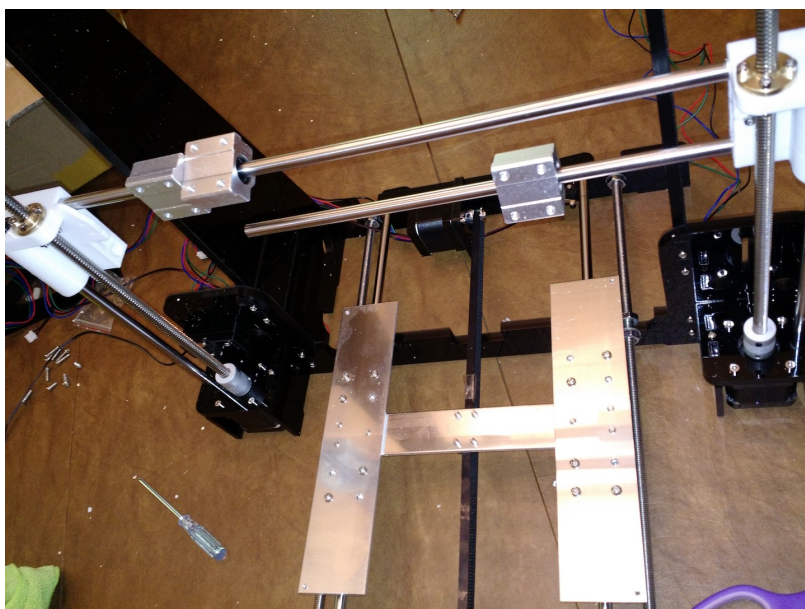


Insert the right z-axis rail (smooth rod) and x-axis mount. This mount will hold the x-axis rails. Hold these in place with same type of plastic keeps as in the y-axis bed rails.

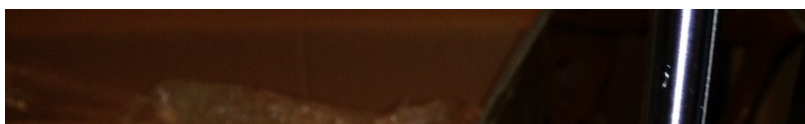


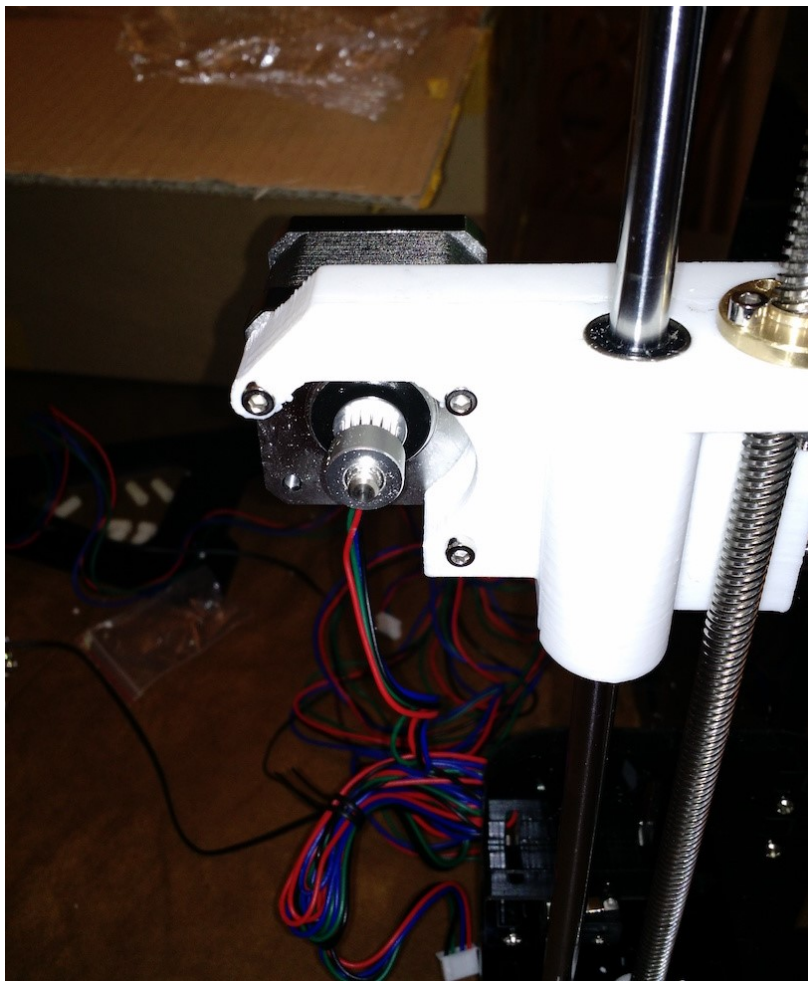


Install the left and right z-axis drive screws through the holes at the top of the machine and through the x-axis holders. Then fix them into the z-axis drive motors (located at the bottom).



Push the two x-axis rails through the white holders (located on the z-axis drive). Make certain they are parallel. Also place 2-linear bearings on the top rail and 1 on the bottom rail.

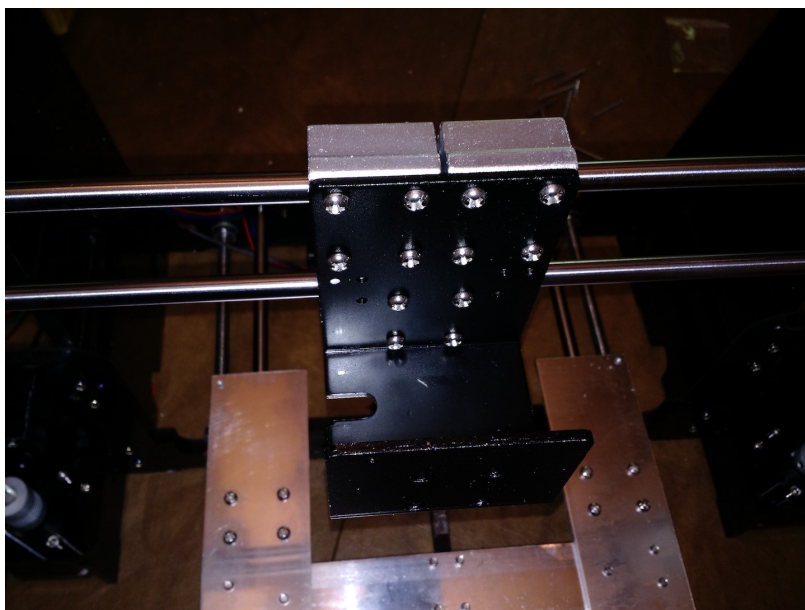




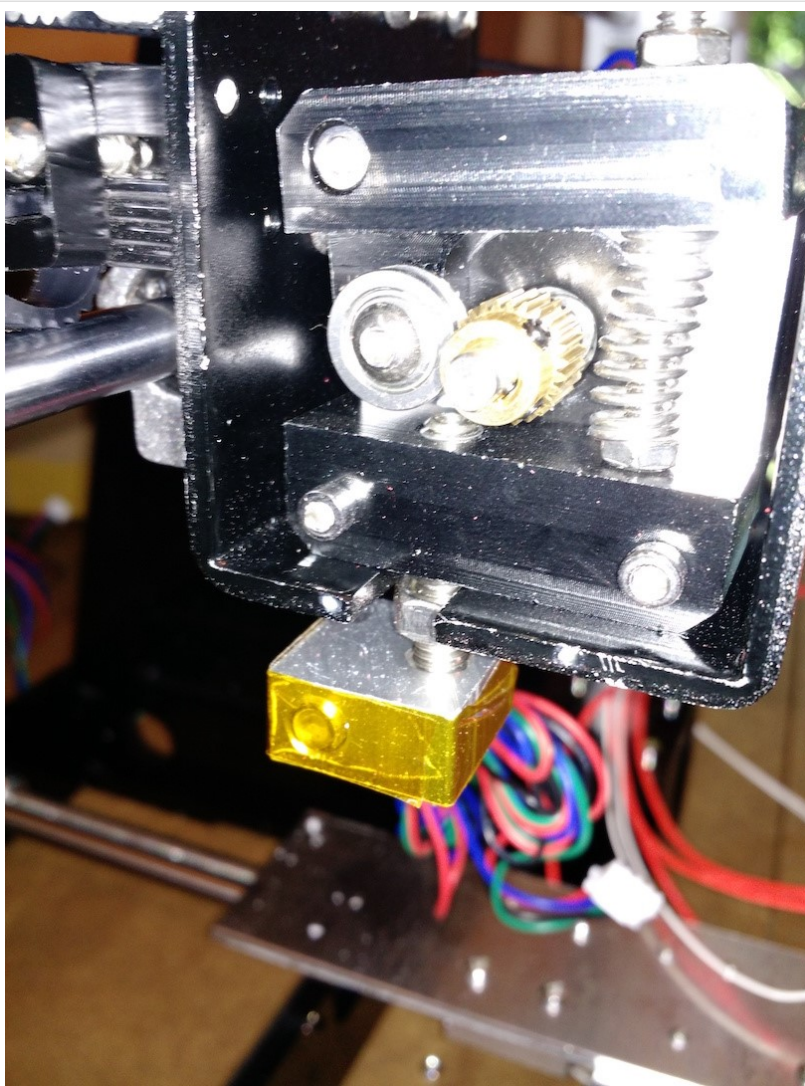
Install the x-axis drive motor on the left z-axis drive assembly (white part).



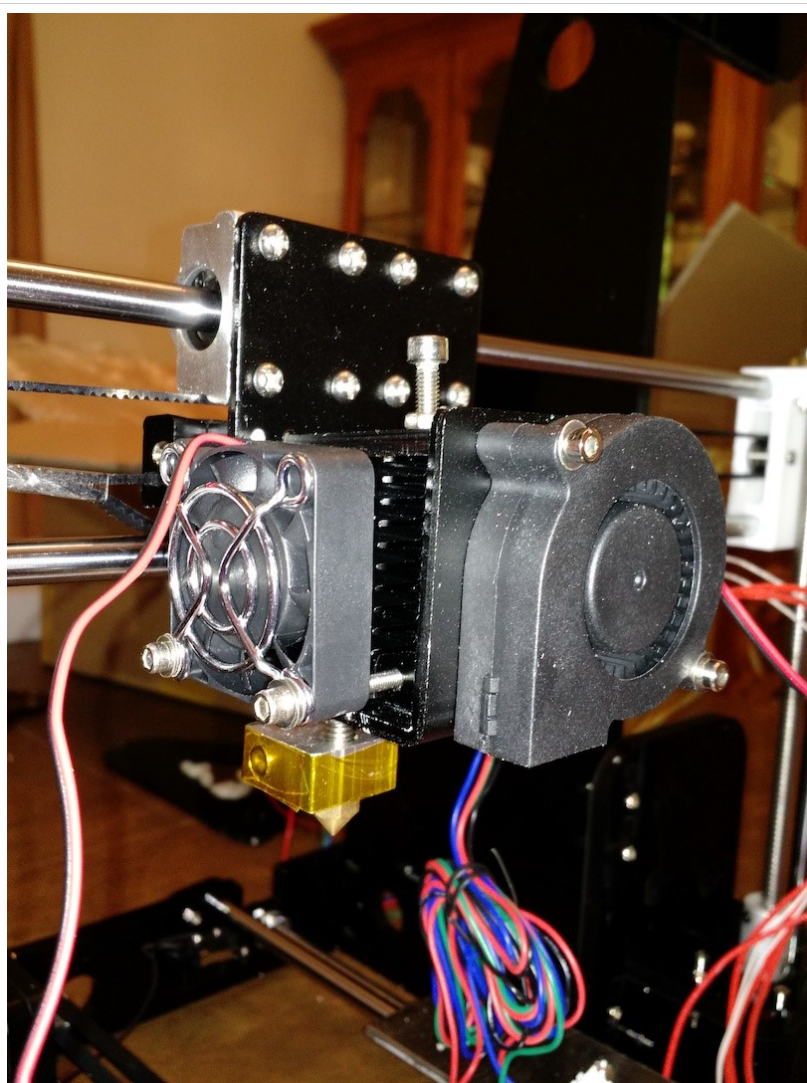
To the extruder's u-shaped carriage holder install two belt holders. These are double plastic parts with teeth to hold the belt.



Bolt the extruder u-shaped carriage to the linear bearings on the x-axis rods. Move the assembly a few times to ensure parallel movement before tightening.

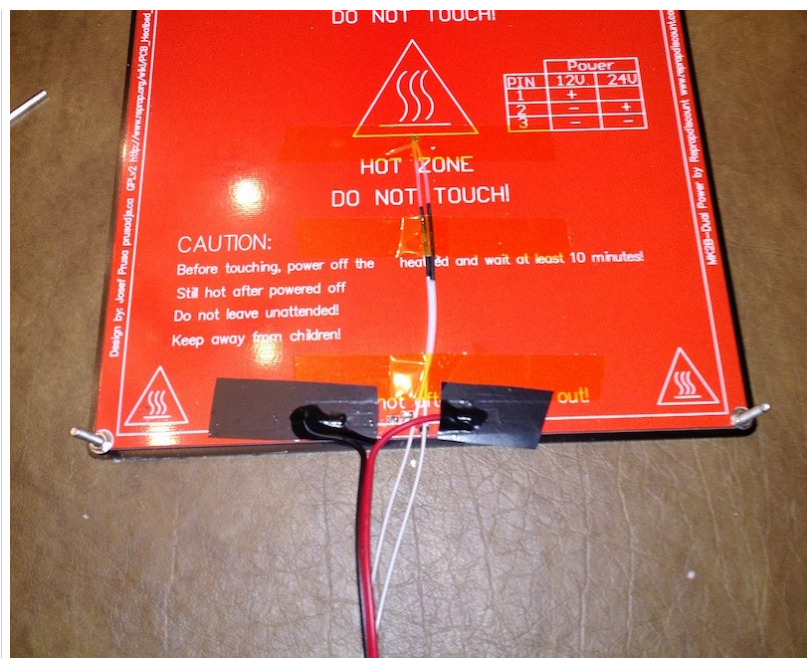


Bolt on the extruder into the carriage holder. There is a single screw on the bottom that holds the extruder in place. Tighten the nut on the feed rod between the lower heater assembly and upper feed motors and gears.



Bolt on the cooling fans. One with a heat sink on the left side (to cool the filament) and one on the front to freeze the deposited filament.

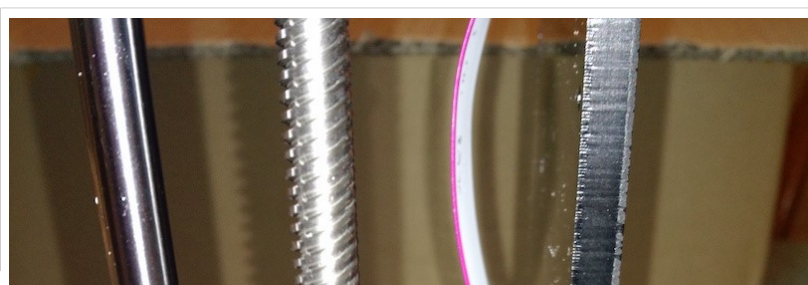


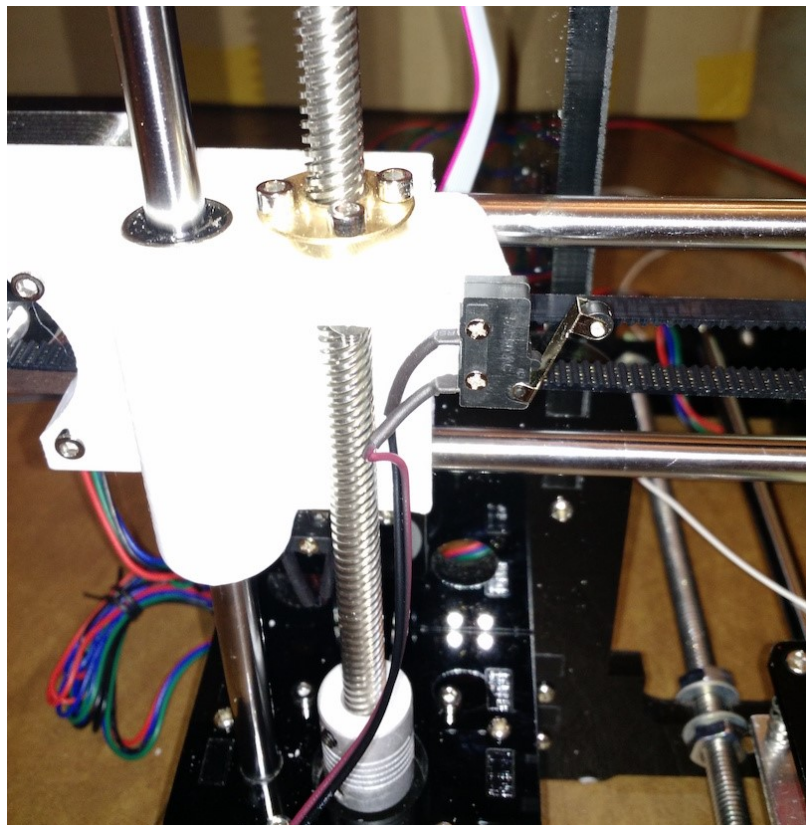


The heated build bed is made of the black aluminum sheet with tape, 4-screws and the heating board. Tape the contractors on heated board with electrical tape before assembly.

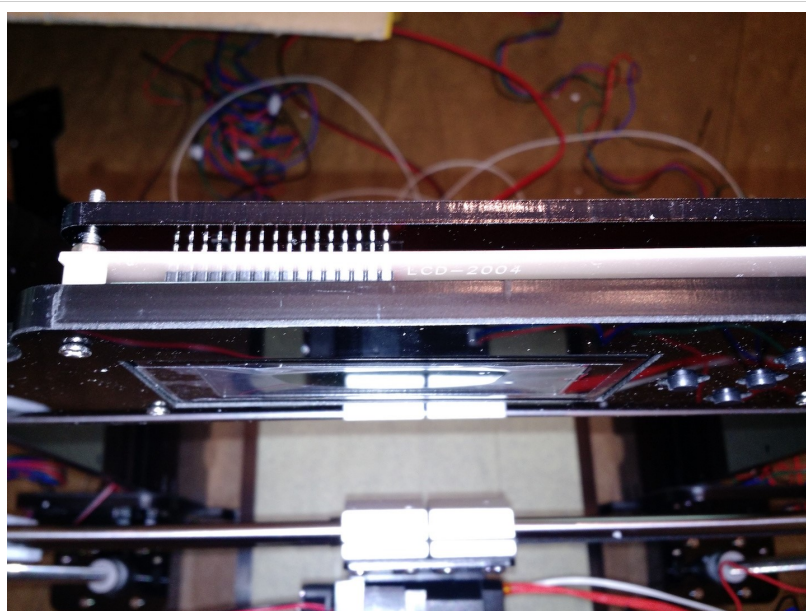


Install the build bed onto the build bed frame by using the 4 screws. You will later use these screws to level the build platform relative to the extruder nozzle (with 1 mm of spacing).

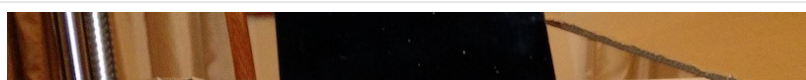


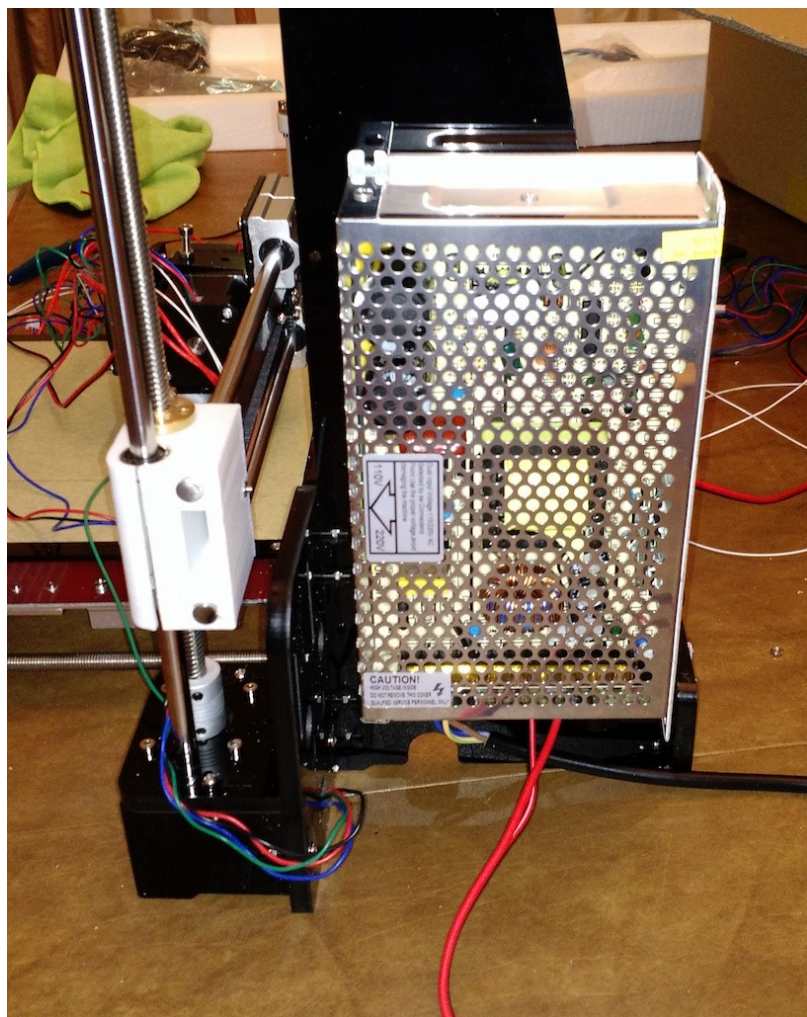


Install the x-axis limit switch by the x-axis drive motor. This is the longest switch wire. Also, feed the x-axis drive belt around the motor and the slip bearing on the right of x-axis holder. Tighten the belt to the belt holder at the back of the extruder carriage.

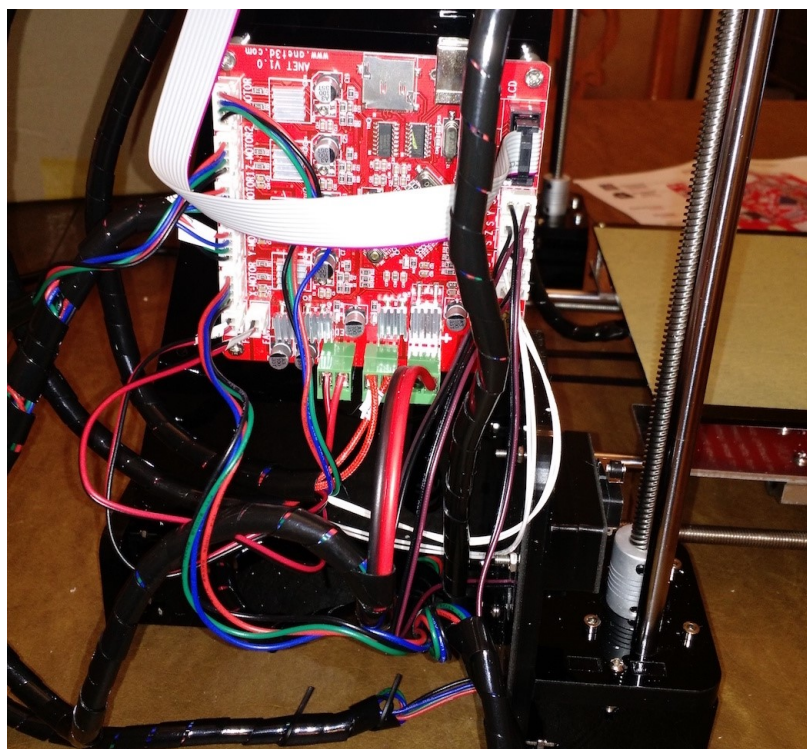


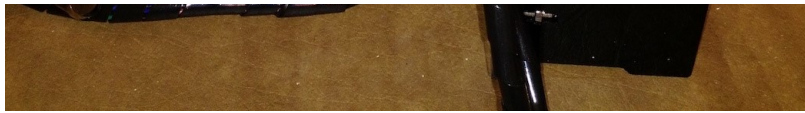
Install the control board at the top of the frame with 4 screws, 4 plastic spacers and a few leveling nuts. There is also a backing plastic sheet for protection.



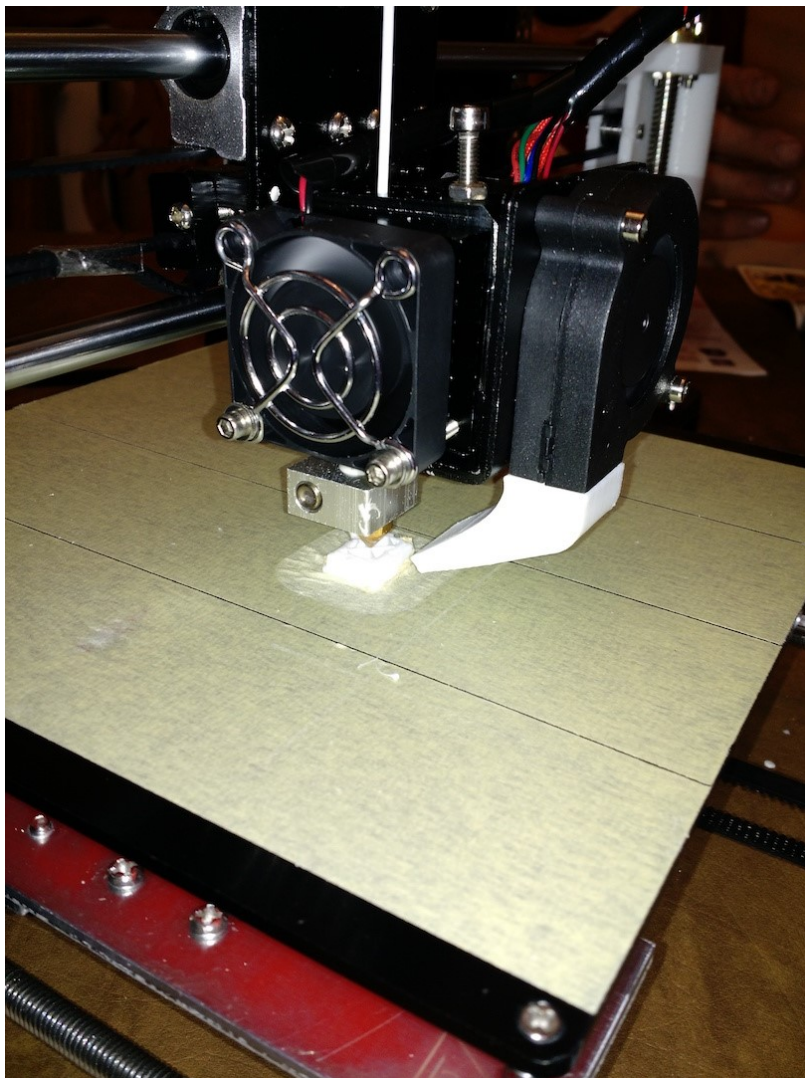


Connect wires to power supply and attach to right side of the frame.

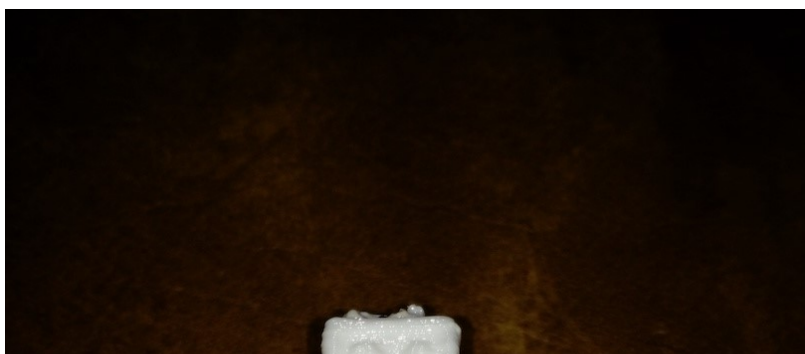




Install the control board to the left side of the frame. Use the wire wrap to tidy up the wires. Match the connectors and plug in everything.



The included Cura slicer software had a test part. A small toy robot figure. It seemed to work alright. The white air scoop is to direct cooling air at the part to help the plastic freeze.





The bed alignment was off, the hot extruder nozzle melted into and burnt the release tape. We also have a plastic leak at the top of the extruder. That will need to be fixed later.

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