Anet a8 3d printer diy i3 manual

Sometimes the center of the bed is not the actual center. When printing large prints, the skirt, hem or object itself is printed outside the heated bed. For bed center offset calibration please read: Video on some updates Part Description Where to buy? Belts GT2 6 mm Belt (recommended reinforced glass fiber) ebay Heater Block Aluminary Heater Block aliexpress Mainboard Anet V 1.0 Anet 3d mainboard printer Banggood PSU 12 V, 20A, 240W Power Supply Unit aliexpress Throat throat with PTF tube inside. M6 Thread, 30 mm ebay nozzle 0.4 mm MK8 nozzle for 1.75 mm filament ebay Estruder MK8 Extrusion aliexpress Linear bearings LM8UU ebay Bearings Linear Update Igus RJ4JP-01-08 ebay Heatbed Upgrade MK3 ebay Thermistor for Heatbed NTC 3950 Banggood Blower fan Anet 5015 aliexpress Last week, we looked at the Anet A8 printer. We believe it has brought the cost of 3D printing so low that every true hobbiest now owes itself to look at owning one. During the process of building and customizing our A8, we took a ton of notes in the hope that it might prove useful for others. In this article, we're downloading our build guide, setup guide, and upgrade guide in a huge write. For those of you who have recently purchased an Anet A8, we hope this will help you get started! Anet A8 Build Log with Pictures The printer is equipped with a digital manual accessible on the SD card that comes with it. I was actually quite impressed with the quality of the manual. Just like the manuals you get from Ikea, he expressed the whole process pictorially and I generally found it quite easy to follow. It was, however, missing a section and really needing a few more images in places. To alleviate this, I used a video released by the Anet team in tandem with written instructions. Here's the first part of that video: I took photos of the construction process of my Anet A8, which you can find by expanding the section under this paragraph. I want to note that this was my first 3D printer to build and I messed up in some places (which I documented). I would not like to use the images below as the only source of information for the construction of this printer. Click here to view my full build log Basics: Screws and nuts are bagred in neatly labeled bags. I advise you to keep them sausages and just pull them out if necessary. The screws are attached to blind nuts that are held in place by cracks in the wooden frame. During assembly, it is recommended before inserting the nut into the slot, then pushing the screw through the hole and screwing. Doing so in this order has greatly accelerated my construction. Go and understand, I ruined the first My top plate is facing the wrong way, which would have made the display upside down. See step 23 for what it should look like. One of the parts was not drilled, I drilled it myself using the other pairing part as a model. This is where things start to get a little more challenging I started by finding all the parts depicted in Before assembly assembly of the wooden parts were found in a bag with an assortment of small wooden parts labeled A8 The boundary switch has a long wire labeled Y Endstop connected to it. Self-tapping screws are used to fix the switch. It draws on wood. I never had them tighten much, but they were safe. I would recommend using some hot glue to adherent so that it can not move. I don't know if the engine connector is mounted in the correct direction in the image. No comment. N/C Threading all the dice on the rods is a pain, here are some tips: You can thread several dice along the rod at once by inserting them next to each other and twisting the barrel. Make sure you have the washers installed in the right order! You can pre-thread most of the nuts on the barrel before actually putting the rods in the assembly. Measure the length of the rod between each assembly for each rod segment and try to bring them as close as possible to each other to true the structure. After installing these rods, you should play with the position of the dice from step 6 until there is no game in the rods. They should be held tight against their retaining caps. Note: The belt guide at the bottom of the image above is facing the wrong way. It is fixed in step 9 below. The screws are too long for the parts they are staring at - this is intended. Once the bed plate is attached to the rods, you should once against testing your alignment by sliding it back and forth. It should slide smoothly without binding or additional pressure on one side or the other. The binding indicates some misalignment with step 6. Get the tightest belt possible (by hand). Don't cut your belt. Cut a couple of centimeters in length (there is 20cm spare between the two straps you need to cut) and have excess hanging out of the anchoring area. When installing the bed, the screws should thread into the bed support plate mainly. Completely compress the springs to begin with. The alare nuts are only there for support (jam nut). The bed was installed incorrectly in the photo. The connector must go to the y-axis motor. This issue was resolved in step 25 below. This step is not very well documented in the written manual. Here are some tips: Assemble the z-axis support plate and fixed plate into a box before screwing into the main frame. Install the wires in the engine and have harness attach through the hole in the frame where the engine is installed. Looking from the front, the motor on the left gets the short wires labeled 1, the right gets 2. The tras instructions leave out the hardware needed to install the Limit. You will need 2 M3x30 screws, 2 M3 nuts and 2 M2x12 screws. See the image for more details on what it should look like installed. When you install the z-axis boundary switch, move it to the top of the adjustment area. THAT'S NOT HOW HE'S DEPICTED. This step was not present in the instructions. I found it on a later page of the manual. Page 31 on mine. It's quite simple -- you've mounted the X-axis motor. As with the Y-axis, Y-axis rods, make sure these rods are safe without play. There were no instructions to attach the X-axis switch to the plastic component from step 13 using M2x12 screws. I used a bit of glue too since this application was not safe at all. Few tips: I had to paddle out the hole in one of my elastic mates to get the jackscrew to sit in it. You should be able to fix it by at least an inch. I had to move the elastic coupling to the engine to get the jackscrew to stay inside the wooden hole at the top of the frame. I used loctite on all the set screws to secure them in place. An unknown problem has occurred. I used a layer from a smartphone app to level the rods with the rest of the frame before hammering them into the plastic bit on the other side. It was a very tight fit – I suspect because some plastic production parts stayed in the guides for both ends. Note N/C: Only two screw holes are used – a bit hokey but it works. If you have thermal paste like the type used in computer builds, installing it between the extrur's head and the heat sink would be a good idea. Directions do not specify where to use all spacers. I simply used two of them as washers for the screws I used to tighten the assembly together. N/C Image N/C combined with #18 N/C Helped use a partner to perform this step. Nuts are to provide reinforcement for screw wires when tensioning the belt - it should be as tight as possible! N/C Check the input voltage switch on the power supply! Mine was shipped as a 120V unit, but the switch was in 240V mode. I'm not super impressed with having to plug things in for wall power - this is a big no-no for consumer electronics. Triple control everything is wired correctly before connecting anything or completing this step. N/C I wired the controller in three steps: I connected all the fixed wires to the controller and looming them together using wire wrappers. These wires were: X, Y power wires, X, Y, N1 limit switching cables, No. 2 motor cables, power line visualization wires Go under the printer side. There are two slots that you can power through under the printer. I initially wired the extrusion wires into a long frame that tower over the 3D printer. Right now, I've finalized the wiring for the extrur. This involved screwing the extrur into place, tightening the lock nut, feeding the heating cylinder into it and setting it in place with the lockscrew, and ensuring that the thermocoil has been inserted into its slot. When screwing the extrur into place, make sure the tip extends one millimeter or more beyond the underside of the fan duct. Otherwise, the fan duct will drag your prints, ruining them! Don't screw the extrur too far! In this way the screw binds the bearing that feeds the plastic to the extrur and the printer will not work. (This is solvable, you'll just have to disassemble the extrur to do it) do it) and check three times for the thermocouple to be inserted into the extrur. This is perhaps the most important component of the printer because it is responsible for adjusting the heat of the printer's testula. The operation of the printer with a lost thermocouple can go up in flames! I wired the bed wires and power wires on to their frame under the printer. The wires of the bed were given enough play to move the full bed forward and aft. Fully wired: Setting up the Anet A8 for the first print Instructions end with a completed printer, but provide no guidance on how to perform the first configuration so you can perform the first print. I find this quite unforgivable - at this point you still have a considerable amount of set-up work to do! Anet provides a pretty practical debugging video that covers most of these steps, which you can find here: I'll also write down exactly what I did after building my printer: Bed cover material The A8 printer bed comes from the factory with a brown adhesive tape covering it. This is not just for shipping - Anet intends to print on this! In fact, the painters tape is one of the best bed printing materials for beginners. Let's hope you, unlike me, didn't remove this tape. Another material that you can use is called Kapton tape, which is a tape that remains sticky in a wide range of temperatures. This will provide a probably better print surface. Luckily for me, I had some Kapton tape that we used with our Lulzbot around so I put on my Anet A8 print bed. The best solution for bed covering material is to buy a small glass block to sit on top of the bed. This is discussed later. Whatever bed material you use, be sure to have it fixed and applied before continuing with the next steps. Each time the material is modified, it is necessary to re-level the bed at least. The alignment of the z-axis rod alignment of the z-axis rods must be completed first. Z-axis motors should always move together and maintain this alignment, so basically you set it now and check after every few hours of use. Misalignment here can cause the same symptoms as an uns leveled bed. Also, whenever this is messed up with, you need to re-level the bed (and possibly set the z-axis limit switch). Setting the z-axis boundary switch Limit switches are used to indicate to the printer where his home is. This location is then used as the relative point from which all the rest of the printout begins. Of all the limit switches, z-axis limit (vertical motor) is the most important. It is used to indicate to the printer where the extrur's head is just slightly above the bed. This boundary switch will need to be adjusted. To make this adjustment: Upgrade the printer and access the main menu. Go to Quick Settings->Home All. The printer head should move to all boundary switches. Disable engines by going to Quick Settings->Disable Stepper Motor. Move the X-axis of the printer head and and Y-axis bed so that the head is above the bed. Measure the distance between the tip of the extrur and the bed. Subtract 2 mm from that distance and lower the z-axis limit switch down that amount. Repeat step (2) to re-center everything with respect to the boundary switches. Repeat step (3) and check the extrur's head. Now it should be within 2 mm of the bed, but do not touch it. Continue leveling the bed. Leveling the bed leveling the bed is probably the most important calibration you can do. The procedure allows you to configure the printer so that the tip of the extrur is at a distance set from the bed at all points in the bed. This allows the printer to accurately print the plastic base layer that forms the basis for everything you print. Level the bed on the A8 must be made at the first set-up, every 5 or so prints after that, and every time you move the printer or otherwise adjust it. In most cases, the process should only take about 5 minutes, so don't worry too much. If the prints have problems where the base layer not properly adhering to the bed - particularly if it is only an area of the bed that is having this problem - leveling the bed is most likely the problem. Power the printer and go to the main menu. Heat the bed and extrusion to PLA settings by going to Quick Settings->Preheat PLA. Don't touch the tip of the extrur after completing this step! It's going to be extremely hot. The bed will also be warm, but touchable. Go to Quick Settings->Home All. The printer head should move to all boundary switches. Disable engines by going to Quick Settings->Disable Stepper Motor. Move the printer head along the X-axis and the bed along the Y-axis so that it is above the near-left corner of the bed relative to you. Adjust the screw of the printer bed until you can simply mount a piece of wallpaper (measuring 0.2 mm wide) between the bed and the tip of the extrur. You want the tip to hit the cardstock but I don't press it in bed. You can test this by moving your head with the board under the tip. If the paper moves with your head, it's great. You don't want it to be difficult to move or to make scratch noises while dragging on paper though. You should be able to insert and remove the board easily. Repeat (4) and (5) for the other 3 corners of the printer bed. Repeat the entire process again, noticing any errors. If you made changes in step (7), repeat the process again. Keep repeating until you check all four angles without errors found at all. Screw and tighten the nuts of the wings that fix the leveling mechanism of the Repeat the leveling process again - sometimes the day nuts can throw it away. Your first leveled bed print, you're ready to attempt your first 3D printing. Before you do this, however, you need to understand the different types of printer input files and how to generate them. STL 3D printing generally starts with an STL file. This type of file describes a 3D part as a set of triangles from a CAD modeling program such as Sketchup, Blender, Solidworks, etc. These are also the types of files downloaded from open source online 3D printing sites like Thingiverse, Yeggi and others. To learn more about how to find or create your own STL files, check out our article on using 3D printing for drones. However, GCode 3D printers cannot print an STL file. As sophisticated as they may seem, they're actually controlled by pretty stupid little computers. These computers can only follow a very simple set of commands - such as moving the X-axis motor to the left 1mm, filament extrusion .5mm, turning the extrudor temperature to 210 degrees, etc. These types of simple commands are exactly what make up .gcode files. One important thing to know about gcode files is that they are compiled for the printer. A .gcode file created for our Lulzbot Mini, for example, should not be used with the Anet A8 built in this article. It can work - but more likely it's just going to make a waste, dangerous plastic string mess. Slicers – Converting STL programs to GCode Slicer fills the important middle way of converting STL files that you can download from the Internet into the gcode instructions your printer needs to create a template. The Anet A8 SD board is equipped with two slicer programs: Cura and Repetier. We recommend using Cura in this guide as we are more familiar with it (it is the slicer of choice for our other 3D printer). Print your first gcode For people who have never done a 3D print in their lives, I recommend you start by printing one of the pre-compiled gcode files that is located on the SD card that came with your A8. There are several options to choose from, no matter which one you choose. The goal is to see if the printer is properly put together and can print something fundamental that has already been designed for it. The process of printing a .gcode file is a simple step: Put the file on the root of your SD card. Insert the SD card into the Anet A8 printer. Go to the main menu by pressing the middle button and select SD Card->Mount. Go to Print File. Select the .gcode file that you want to print. The head and bed of the extrudor will begin to warm up immediately. Once they are up to temperature, the printing process will begin. Watch carefully for the first few minutes to ensure that the first layer is properly laid on the bed and sticks well. If it is, you're free to leave. If not, you are in for some troubleshooting. Print some STL files This is the real reason why you probably have a 3D printer - you wanted to turn some camera media or other quadcopter parts from STL files into real plastic bits that you can Use. In this section, I'm going to guide you through how I printed my first STL files on my Anet A8. Care As mentioned above, I will use Cura as my slicer – the program that will convert STL files to .gcode files the printer can use. I recommend using Cura 14.07 with the Anet A8. A8. it's almost a year old at this point, but I was able to make it work very quickly. Version 14.07 of Cura should be available on the SD card that comes with the printer. You can find it under A8, A8, A8, Software, Cura 14.07. You can also download the cura versions here. We strongly recommend downloading Cura 14.07. I tried briefly to get the latest version of Cura – 2.5.0 – working, but was unable to because of some printing issues with the settings I was using. I will continue to try to get this job and update this guide if I understand. Honestly, though, unless you're trying to make some pretty advanced prints, Care 14.07 should be more than enough for your needs. I have yet to find a template that could not be printed. Setting up your printer in Cura Configuration of Cura is quite simple. When you start the application for the first time, you will be prompted to create the Machine Creation Wizard. Click Next to access the first configuration page. In the next step, select Custom. Finally, copy the settings seen on this screen to the next page: page: