



Altair³ Quick Start Guide





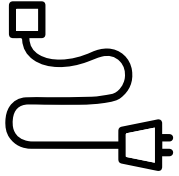
Founder, Mark Jaster was frustrated with not having the tools available to rapidly prototype his inventions. PrintSpace 3D™ was formed in 2013 and based on the belief that all people have the ability to create something great. The PrintSpace 3D™ team created Altair for people just like Mark who want to create.

At PrintSpace 3D™ we believe in giving people their own “space” — a space to dream, and a space to rapidly create. We give customers the space to use their talents and imagination, and the tools to make their ideas a reality.

Altair transforms ideas into physical products and is used to prototype and create three dimensional models and end-use products.

What will you create?

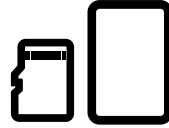
In the Box



Power Cable



Part Removal Tool



Micro SD & Adapter



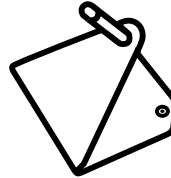
Tweezers



Business Card



Filament



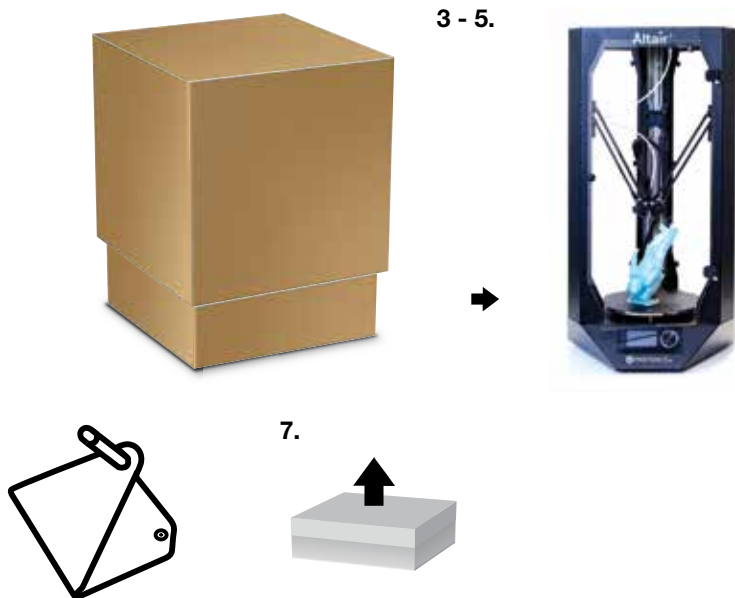
Spool Holder



Printer

Note: You will need a surge protector.

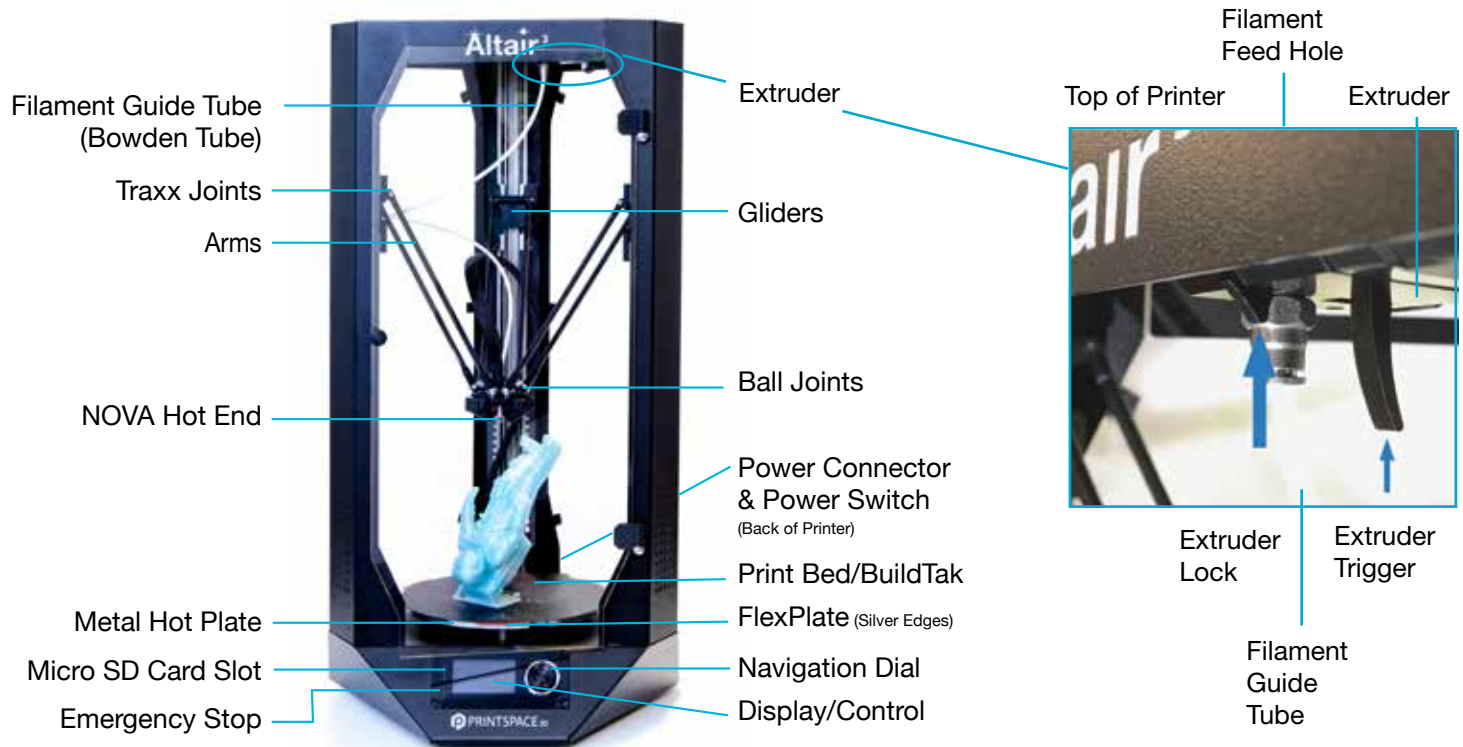
Unpacking



1. Set the box upright and cut the tape at the top of the box to open it up.
2. Pull out the top foam and the box kit.
3. Grab printer by the handles and pull straight up. It can be pulled with a twisting motion to help free it from the bottom foam.
4. Stand Altair on its feet.
5. Remove any shrink wrap and twist ties.
6. Unwrap the USB cord.
7. Pull out the loose filament. Set on spool holder.
8. Unwrap and remove the box that contains the Part Removal Tool, AC Power Cord and Micro SD Card and SD Card Adapter.

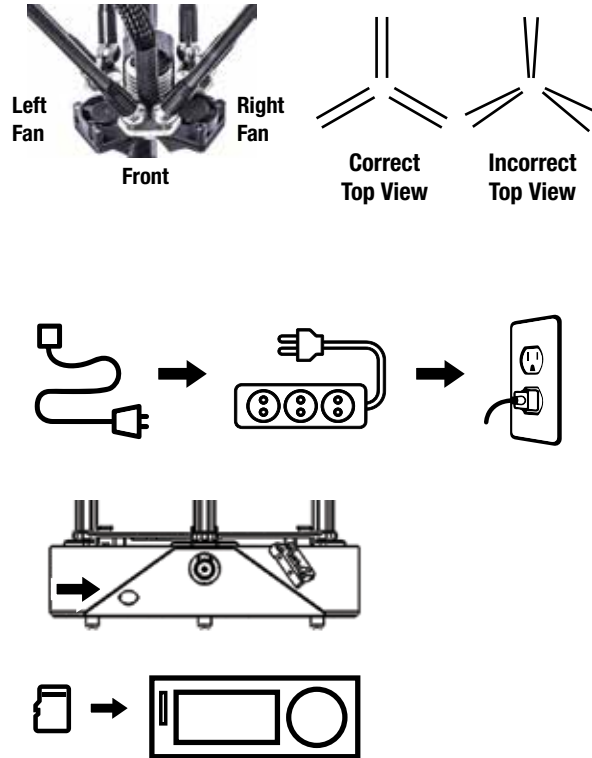
** Save all packing materials, inserts, documents, and the box in case you need to ship your printer.*

Overview of Altair³



Setting Up

1. Attach the Arms to the Ball Joints on the NOVA Hot End. The black fan duct on top needs to face the rear of the printer and the left and right fan will face the front of Altair. The Arms then attach magnetically to the ball joints and should be parallel || when mounted properly. When mounted improperly, the Arm pairs will form a V shape and the Hot End will fall off while printing.
2. Plug the power cord from the printer into your own surge protector (mandatory to protect the printer from power surges) and then to the wall outlet.
3. Turn on the Altair Power Switch which is located next to the Power Connector on the back of Altair.
4. Insert the included micro SD card into the SD slot on the Display Panel.



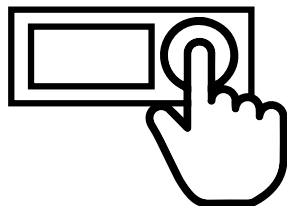
Note: Don't move the gliders with your hands when the printer is powered on. This can damage the controller. Make sure your printer work space is clear of anything that could obstruct the movement of the printer, and that there are no flammable fabrics or liquids near the printer surface. Do not leave Altair in extreme temperature environments.

Calibrating the Printer

Altair has a unique calibration process that is fully automated and very accurate. The aluminum heated bed uses a conductive calibration process. Calibrating will increase print success and save time.



FlexPlate



VERY IMPORTANT: *Remove the FlexPlate each time before calibrating. Make sure Altair is not connected to your computer through the USB port during the Auto-Calibration routine. If the computer tries to access the printer (which it often does automatically) it can disturb calibration. Do NOT touch the nozzle as it heats up during calibration – it will be VERY hot.*

1. Press the Navigation Dial on Altair's console to bring up the main menu.
2. Rotate the Navigation Dial clockwise until the arrow is pointing at the "Custom" menu. Press the Dial to select and open the custom menu.
3. Select "Calibrate Bed" and press the Navigation Dial. Altair will start running through its calibration sequence which takes about three minutes. The bed height is set during this sequence. Once it is done you are ready to get printing. (Make sure the nozzle is clean and free from oozing filament or the calibration will not be accurate.)

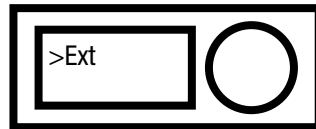
Note: Although rare, it is possible that the printer can freeze during calibration. If this happens simply turn the printer off, power it back on and then try calibrating again. We recommend calibrating if the printer gets moved to a new location or if you encounter any prints that don't work successfully.

Getting the First Print

The printer comes with a small amount of PLA filament to get you printing quickly with our test print. **When printing, we do not recommend printing files directly over USB.** If your computer has any issues (or auto updates) the updates will likely ruin large prints. To get printing:

1. Insert Filament. Start by locating the extruder underneath the top of the printer. Pull the trigger on the extruder and push the lock into place. Next, feed the filament in the hole through the top of the printer until it can be seen in the bowden tube. Then pull trigger to disengage lock. Use the navigation dial on the control panel to select custom > insert filament and the extruder will load the filament.
2. Press the Navigation Dial, then rotate the Dial to “Play” and select by pressing the Navigation Dial.
3. Select “SD” (indicating the external micro SD card).
4. Select TwistedVase_PLA.gcode (or other print of your choice).
5. The NOVA Hot End and Print Bed will start heating up. The object will begin printing when the target temperature for the NOVA Hot End is reached.

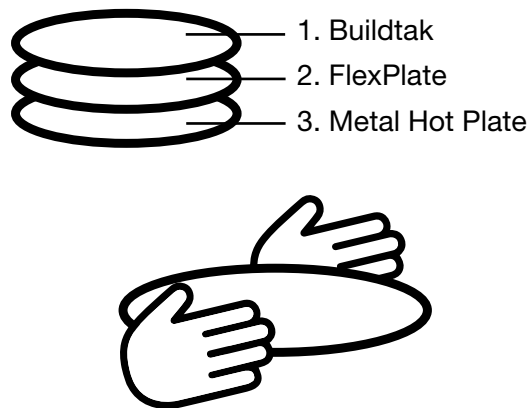
Note: The speed of the print can be adjusted in real-time by rotating the Navigation Dial until the desired speed/quality of print is reached (typically a lower speed will increase resolution).



WARNING: The NOVA Hot End and Bed get **VERY HOT**. Do not touch the NOVA Hot End or Print Bed until they are completely cooled or this may result in injury.

Removing a Print from the Bed

1. When the object is done printing, wait for the bed to cool and is safe to touch. Verify the bed temperature by looking at the display. It must be below 30°C before touching.
2. There are three parts to the heated bed. The top piece is a BuildTak surface on top of the FlexPlate. The FlexPlate is magnetic and easily snaps on to the Metal Hot Plate. When the temperature on the screen reads below 30°C, remove the FlexPlate. Slightly flex, rotate the flexplate, and flex again until the part comes free. (Excessive flexing may cause the bed to permanently deform.)
3. If needed, use the Part Removal Tool to lift the part from the bed surface with one hand, and place the other hand on the bed so the bed does not move. Do not use any other sharp objects as they will deform the BuildTak surface.



Note: the black BuildTak surface on top of the flex plate is a consumable and should be replaced after extended use. Wiping down the BuildTak with an alcohol pad between prints will help prints stick better to the bed while increasing the life of the BuildTak. Replacement BuildTak can be ordered at www.printspace3d.com/store.

3D Printing Process



1. Create a Model

Use any program that creates 3D graphics and supports .stl file formats. After drawing or editing a model, the final format will need to be exported as a .stl file.



2. Use Slicing Software

Slicing software prepares your .stl file for 3D printing. It lets you choose print settings and select the materials for your print.



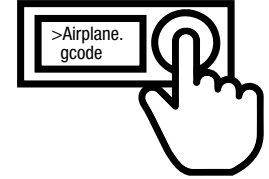
3. Transfer the Model

When your file is prepared in the slicing software, save the .gcode file onto the micro SD card and insert it into the slot on the front navigation panel of the printer.



4. Insert the Filament

Choose the appropriate filament for the object you are making. Load filament into the extruder (see page 9 for instructions).



5. Begin Printing

After the micro SD card is inserted into the printer, a model can be chosen for printing by selecting it with the control dial.

Software

You will need a model in an .stl or .obj file format in order to print on Altair. Most CAD and 3D modeling software supports exporting to these formats. After you have created or downloaded an .stl or .obj file, the file will need to be converted to .gcode so Altair can read it. This requires another kind of software other than CAD software – it is often referred to as slicing software. Altair comes with powerful Simplify3D slicing software.

Getting Started With Simplify3D Software

1. Go to www.printspace3d.com/support > **Software/Firmware** > **Simplify3D** > **Simplify3D Quick Start Guide**
2. Check your email (or spam folder if you don't see it) for your Simplify3D license, follow the instructions in the email for downloading and installing the software.
3. Follow the tutorials to learn how to use the software at www.printspace3d.com/support > **Software/Firmware** > **Simplify3D**.
4. Simplify3D comes loaded with presets for Altair, but you will need to install the appropriate preset for your printer. We also update our presets as we add new materials. This update allows you to get the latest and greatest in print settings. Go to www.printspace3d.com/support > **Simplify3D** > **Install Updated Profile Settings**

Filament Options

PrintSpace 3D™ sells filaments that are superior quality. We have carefully tested many filaments and chosen those that have the highest printing success rates due to jam-free technology, excellent heat resistance, and tight and consistent tolerances. For these reasons, we support and recommend to our users the filaments we sell in our online store. Shop www.printspace3d.com/store



Our filament line up includes:

PLA

Best beginner filament. Biodegradable, free of harmful chemicals.

ABS Replacement

Print at low temperatures and get the strength of ABS. Minimal degradation and warping.

WoodFill

A wood mimic printing material.

Nylon

Excellent surface bonding, pliable, strong, high thermal durability.

PETT

FDA approved for direct food contact or industrial applications.

Carbon Fiber PLA

Has a beautiful finish, and is stiff and lightweight.

Flexible

Flexible material in various colors.

And More!
Shop now:



Accessories & Consumables

If you would like extra accessories or replacement consumables, shop our store at www.printspace3d.com/store



Various Nozzles and Sizes

- Low Profile
- Standard
- Wear-Resistant
- High Lubricity
- Fine Detail
- Faster Printing



BuildTak



NOVA Hot End



Spool Holder

Support & Warranty

Online Support:

Check out our support articles and get additional information and tips at www.printspace3d.com/support

If you still have a question, submit a ticket at www.printspace3d.com/support and get an answer within 24 hours.

Give us a call:

Our customer service technicians in Rexburg, Idaho provide on-call support 9-5pm MDT to answer your questions. Call us at 208-557-1886.

Warranty Information

PrintSpace 3D™ warrants its printers and its parts against defects in materials or workmanship for Six (6) Months from the original delivery date. This limited warranty extends only to the original purchaser. During this period, PrintSpace 3D™ will repair or replace defective parts with new or reconditioned parts at the option of PrintSpace 3D™, without charge to the original purchaser. This repair is limited to parts and labor at PrintSpace 3D™ facilities only. The original purchaser must pay all shipping fees to PrintSpace 3D™ during the warranty period. To register your warranty, go to www.printspace3d.com/support > sign up.

Extended service plans are also available. For more information on the warranty, or to purchase an extended service plan please see <https://www.printspace3d.com/warranty-information/>

Note: The warranty does not cover issues that may arise from leaving a printer in extreme temperature environments. Hacking or otherwise changing the safe operating limits of the printer will void the warranty.

Operation

Fully Automatic Bed Calibration: for optimal adhesion of first layer ensuring reliable prints every time

PrintSpace 3D NOVA Hot End: All-metal, high-heat, prints at high speeds without jamming, heats up rapidly, max temp 300C

Nozzle: .40mm standard universal nozzle (can switch out to other nozzle sizes available at www.printspace3d.com/store)

Magnetic Arms: for easy hot end or nozzle change out

Physical

Frame: Powder coated aluminum

Printer Dimensions: 27.75" by 15.5" by 15.5" (705mm by 393mm by 393mm)

Weight: 16.8 lbs (7.6kg)

Build Surface

Instant-on Heated Bed: heats up in less than 90 seconds

Flexplate: By slightly flexing, prints are easily and safely removed from the flexplate

BuildTak Bed Surface: for optimal adhesion with multiple materials

Software

Comes with Simplify3D. Also compatible with other slicing software.

Control

Brain: 32 bit controller

LCD Front Panel Control: allows you to print, calibrate, control print settings, and view print progress

Front Panel Micro SD Card: for untethered printing

USB Connectivity: compatible with Mac, Windows, and Linux

Printing

Print Volume: 7" diameter by 10" high with enclosure (177mm diameter by 254mm high) or 8.5" diameter by 10" high without enclosure (205mm diameter by 254mm high)

Supported Materials: Over 25+ materials including PLA, ABS, Carbon Fiber ABS, Nylon, Polycarbonate, PVA, HIPS, PETT, TPU, PETG, Metallic fill, "Tough" PLA, Flexible PLA, Carbon Fiber PLA, and more (purchase at www.printspace3d.com/store)

High Speed Positioning: up to 300mm/s

Print Tolerance (X, Y): 100 micron (0.1mm)

Layer Thickness (Z): 40 micron (.04mm) or better (material dependent)

Supported Filament: 1.75mm

Electrical

Power Requirements: 100-240V AC, 50-60Hz

Standard 110V input (220V available upon request)



www.printspace3d.com