Gigabot X

Getting Started Guide

Welcome

Congratulations on your Gigabot® X purchase. We can't wait to see you print huge!

This guide will help get your Gigabot® X set up and ready to print. Should you have any questions, please reach out to support@re3d.org.

HELPFUL LINKS
Here are some additional links to help you along the way:

- KNOWLEDGE BASE | https://re3d.zendesk.com
- COMMUNITY FORUM | https://re3d.zendesk.com/hc/en-us/community/topics
- SHOP | http://shop.re3d.org/
- WEBSITE | https://re3d.org/
- THINGIVERSE | https://www.thingiverse.com/re3dprinting/designs
- CULTS3D | https://cults3d.com/en/users/re3D/creations
- YOUTUBE | https://www.youtube.com/re3Dprinting

FOLLOW US
Stay updated on re:3D activities! We regularly post content on the following accounts:

- FACEBOOK | https://www.facebook.com/re3Dprinting/
- TWITTER | https://twitter.com/re3Dprinting
- LINKEDIN | https://linkedin.com/company/re-3d
- INSTAGRAM | https://www.instagram.com/re3dprinting/

New users are included in our monthly newsletter, but anyone can also sign up at bottom of our main page at https://re3d.org/

Revision: 11

Revision export date: May 27, 2022

Safety Instructions

READ INSTRUCTIONS
All the safety and operating instructions must be read before the printer is operated.

RETAIN INSTRUCTIONS
The safety and operating instructions should be retained for future reference or accessed on our Knowledge Base here: https://bit.ly/gigabotguides

HEED WARNINGS
All warnings on the product and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS
All operating and use instructions should be followed.

CLEANING
Unplug this product from the wall outlet before cleaning. Compressed air and vacuums can be used for dust or particle removal. Only water and isopropyl alcohol may be used to damp a lint-free rag to wipe off dust and bed surface adhesives.

ATTACHMENTS
Do not use any attachments or enhancements not recommended by the product manufacturer as they may cause hazards.

WATER AND MOISTURE
Do not use Gigabot® X near water such as a sink or other water source. The relative humidity of the environment should ideally be between 0%-50%. Feedstock should be stored in dry boxes if the environment is too humid or if the material is moisture-sensitive.

PLACEMENT
Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Place the product only on stable surfaces recommended by the manufacturer, or sold with the product.

VENTILATION
Slots and openings in the enclosure are provided for ventilation to ensure reliable operation of the product. To protect it from overheating, these openings must not be blocked or covered. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

Safety Instructions

POWER SOURCES
This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home consult your appliance dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

GROUNDING
This product is equipped with a 3-wire grounding type plug. The 3-wire grounding type plug will fit into a grounding type power outlet. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. The grounding pin is a both a safety feature and critical component for proper function of the machine. Do not defeat the purposes of the grounding type plug.

POWER-CORD PROTECTION
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

LIGHTNING
For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges. Plugging the machine into a surge protector or an uninterrupted power supply (UPS) can prevent damage to the machine as well. In the case of the UPS, it will allow the machine to keep running for a short period of time to prevent loss of progress in out-of-power scenarios.

OVERLOADING
Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

OBJECT AND LIQUID ENTRY
Never push foreign objects of any kind into this product through openings as they may touch dangerous voltage points or mechanical components that could result in a fire, electric shock, or broken components. Never spill liquid of any kind on the product.

Table of Contents

A | Receiving and Uncrating

Inside this crate is your Gigabot® X. We know you want to start printing,, but your new 3D printer needs a little attention before your power it on. It's currently wearing extra pieces that protect it during shipping, but wreak havoc if left on during the printing process. Follow these receiving and uncrating instructions first, and we'll get you printing soon!

To uncrate a fully assembled Gigabot® X, you will need a Phillips head screwdriver and a pair of diagonal cutters to cut zip ties. You will also need a 4mm hex driver and an 8mm wrench, which are provided with the printer.

Upon delivery of the Gigabot® X, inspect all packages for damage prior to signing for the delivery. If there is any damage, record it and report to our shipping manager within 24 hours at shipping@re3d.org.

For a video demonstration similar to the following instructions, feel free to watch our video titled "GB3+ Uncrating" on our YouTube channel at https://www.youtube.com/re3Dprinting/.

Gigabot® X printers configured for 110VAC power run at 60Hz and comes with a Type B power cable. It requires a 20A circuit. Gigabot® X printers configured for 220VAC power run at 50Hz, and you will need to provide your own power cable.

Gigabot® X operates best in a climate-controlled environment at a temperature of 15.5°C (60°F) to 29°C (85°F) and at a humidity of 0%RH to 80%RH non-condensing.

A1

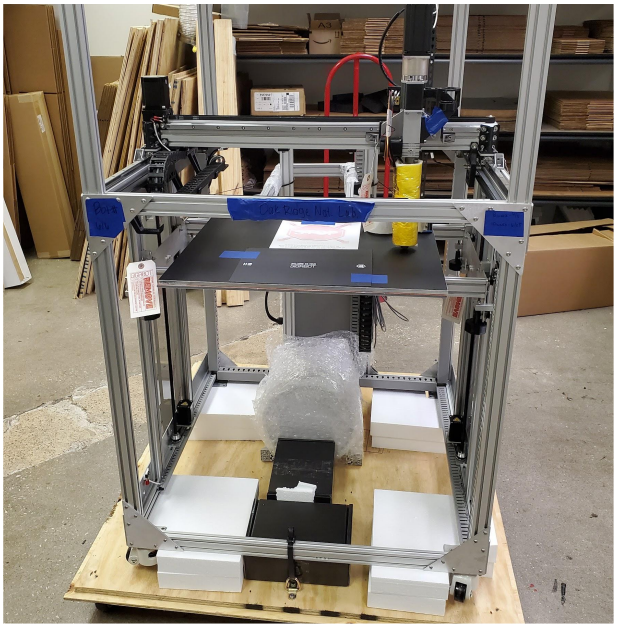
Before arrival, establish an appropriate space for the Gigabot® X to be located during operation. Gigabot® X requires access to a dedicated 15A circuit, and should be plugged into an uninterrupted power supply or a surge protector. A climate-controlled environment is recommended, but not necessary. Gigabot® X operates best at a temperature of 16°C (60° F) to 29°C (85°F) and at a humidity of 0%RH to 80%RH non-condensing.

A2

Upon arrival, check the Tip n' Tell and Shockwatch indicators for indication of mishandling. Check the crate for damage. If any damage is observed, or the indicators are tripped, record and report to shipping@re3d.org within 24 hours.

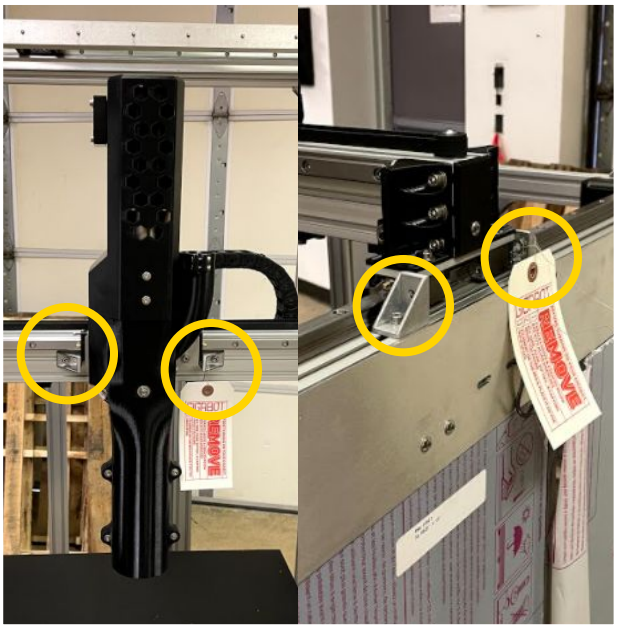
A3

Using a Phillips head screwdriver, remove the wood lid and panels of the crate. Remove the plastic wrap covering Gigabot® X.



A4

Remove all zip ties, foam blocks, bubble wrap, etc. from Gigabot® X.

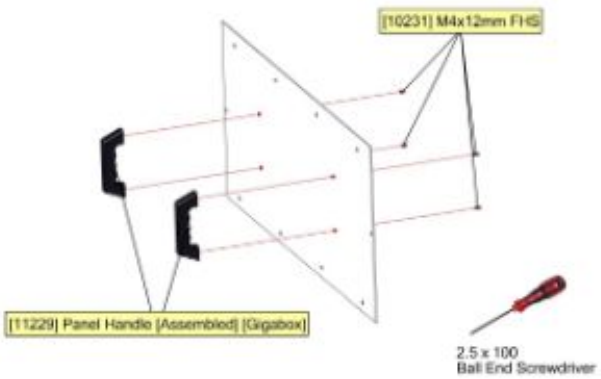


A5

With a 4mm hex screwdriver, remove the triangle braces securing the pellet extruder and the X carriage. There are six triangle braces total: two for the pellet extruder, and two on each side of the X carriage.

A6

Remove all 8 bed locks using the 8mm wrench. Note that these are both above AND below the bed frame.



A7

If your Gigabot® X includes an enclosure, you will need to attach [11229] Panel Handles to the Hood Panel Front, both Hood Panel Sides, and Front Panel Top prior to use. Fasten using [10231] M4 x 12 FHCS and 2.5mm Allen Wrench.

A8

Insert the socket end of the power cable into the electrical box. Check that the connection is secure.

A9

Insert the plug end of the power cable into an outlet.

A10

If you are looking at the back of your Gigabot® X, the power switch is located on top of the electrical box. It is a large red switch; rotate it clockwise to turn it on.

B | Bed Leveling and Z-Home

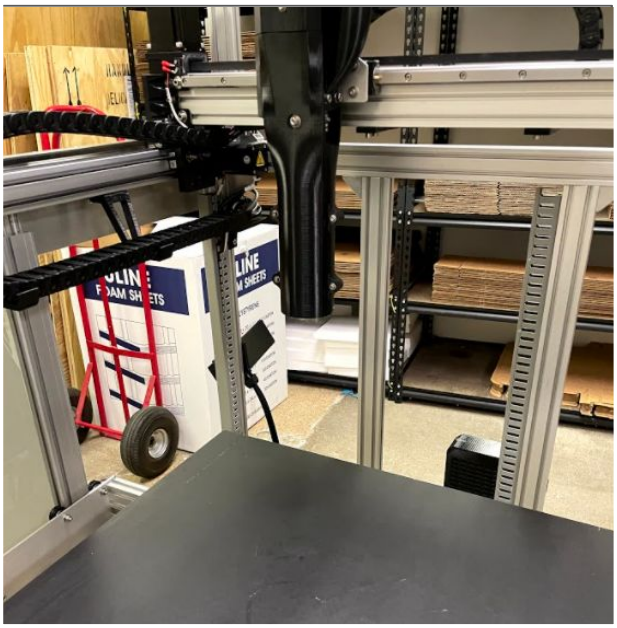
A level bed is the foundation for all your 3D prints, and laying down a successful first print layer is the difference between a beautiful new creation and a messy blob. Read on to discover more steps on your path towards becoming a 3D printing ninja.

Before shipment, all Gigabot® X printers are calibrated to have a leveled bed and correctly gapped nozzle Z heights (the distance between the nozzle and the bed). The following instructions outline the steps to level the bed of your GBX and recalibrate the Z height in case of movement during shipping, and for continued maintenance of Gigabot® X.

Please follow the steps outlined in this guide to simultaneously level the bed of your Gigabot® X and set the proper gap between the bed and the nozzle (Z-Home Position).

These steps recommend and demonstrate the use of a 4 inch touch off gage, or tool setter to indicate the distance between the nozzle and the bed. You can find this touch-off gauge here: https://bit.ly/touchoffgauge. Users may opt to use a shim stock as well. It is also acceptable to level the bed with something like a 1-2-3 block or a piece of aluminum extrusion, but users will have to set the Z home position afterward.

If using a shim stock, select a shim stock with a thickness of 0.3mm.



B1

Push the extruder back until the nozzle is past the back edge of the bed. If the motors are engaged and the extruder doesn't move, use the Viki to disable the steppers. To do this, press the dial to reach the menus, scroll clockwise to select and click "Prepare", then scroll and press the dial to select "Disable Steppers".

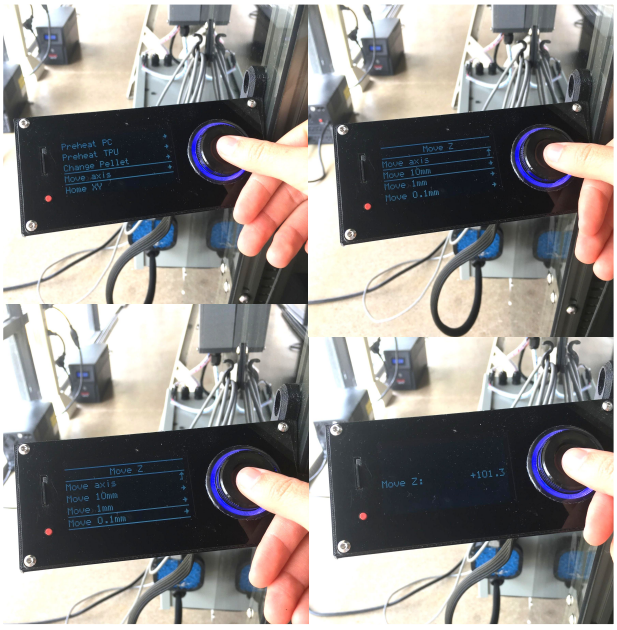
B2

With the nozzle still hanging off the back edge of the bed, use the Viki to Home Z. To do this, navigate to the "Prepare" menu, then "Home Z".

B3

Use the Viki to preheat the extruder and the bed to the preset temperatures for PLA. To do this, navigate to the "Prepare" menu, click "Preheat PLA", and click "Preheat PLA All".

Note: If the Gigabot® X extruder is loaded with a material that is prone to degradation at high temperatures, adjust the preheat temperatures to the material.



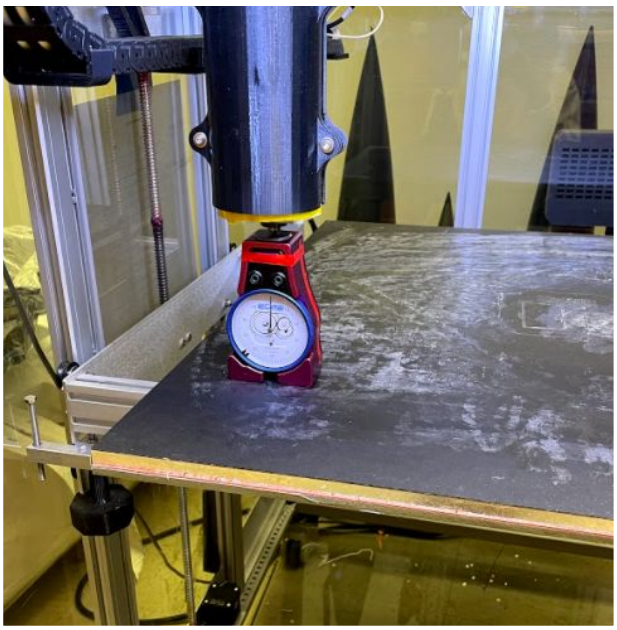
B4

Using the Viki LCD controller, move the bed down 101.3mm, or the height of your tool setter minus 0.3mm. To do this, navigate to the "Prepare" menu, then "Move Axis," then "Move Z," then "Move 10mm," and finally turn the dial clockwise until it reaches 100mm. Navigate back to "Move 0.1mm" and move the bed down until it reaches 101.3mm.

Note: if using a shim stock, skip this step.

B5

Ensure that the back left quadrant of the bed is clear of debris and place a tool setter in the back left quadrant of the bed, above the cross rail holding up the bed. Move the extruder over the tool setter and check if the value is zero.



B6

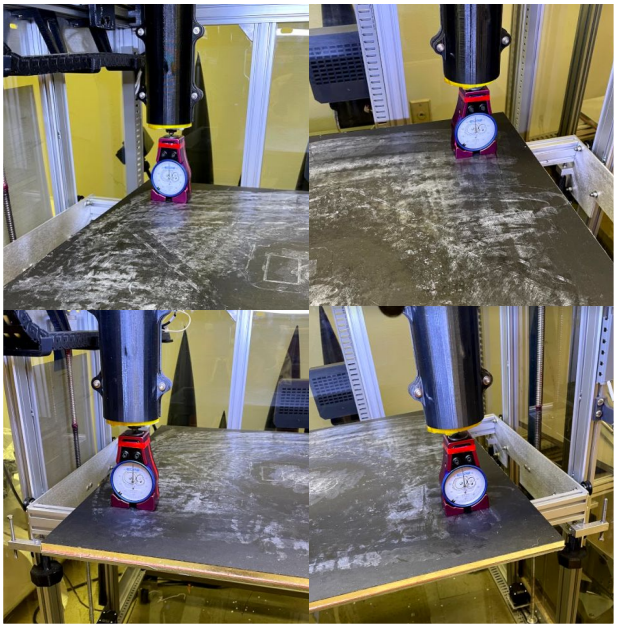
Move the tool setter to the front left quadrant of the bed, above the rail that holds up the bed, again ensuring that the bed is clear of debris where the tool setter is placed. Check if the tool setter reads zero. Repeat at the front right and back right quadrants of the bed. If the tool setter reads zero at all quadrants, the bed is level and the z gap is correctly set, and you can skip to section C.

B7

If all the quadrants have a value other than zero, then the Z height must be adjusted (otherwise, skip to B10). To do this, move the tool setter to the back left quadrant. Use an 8mm combination wrench to adjust the [10245] M5 x 70 HHCS on the upper Z limit switch leveling block (on the right side of the machine). Turning counterclockwise when viewed from above will increase the Z height, and clockwise will decrease the Z height.

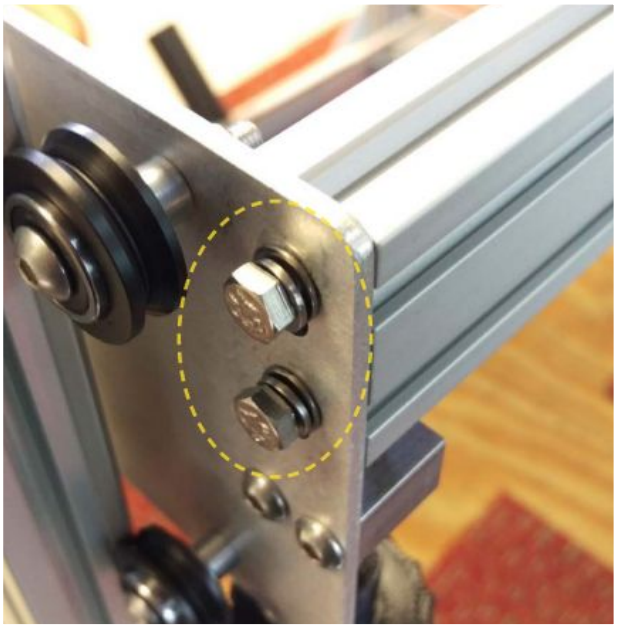
B8

Repeat steps B1 to B5 until the tool setter reads zero. The Z height is now set correctly in relation to the back left quadrant of the bed.



B9

Recheck the Z height at each quadrant. If the tool setter reads zero at all quadrants, then the bed is level and you can skip to Section A. If the tools setter does not read zero at any quadrant, the bed is not level.

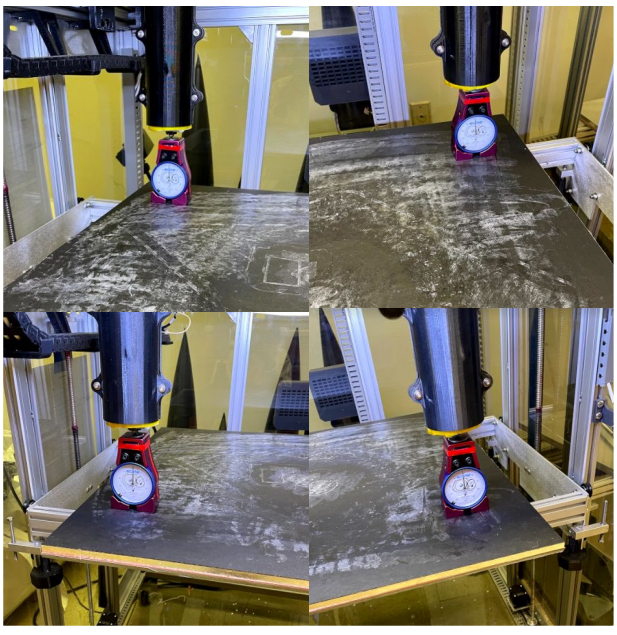


B10

To level the bed, identify the quadrants that need adjusting and use the 8mm combination wrench to loosen the 2 [10540] M5 x 12 HHCS that fasten the bed side plate to the bed cross rails. These need to be loose enough so the ends of the rails can move vertically in the slots of the side plates.

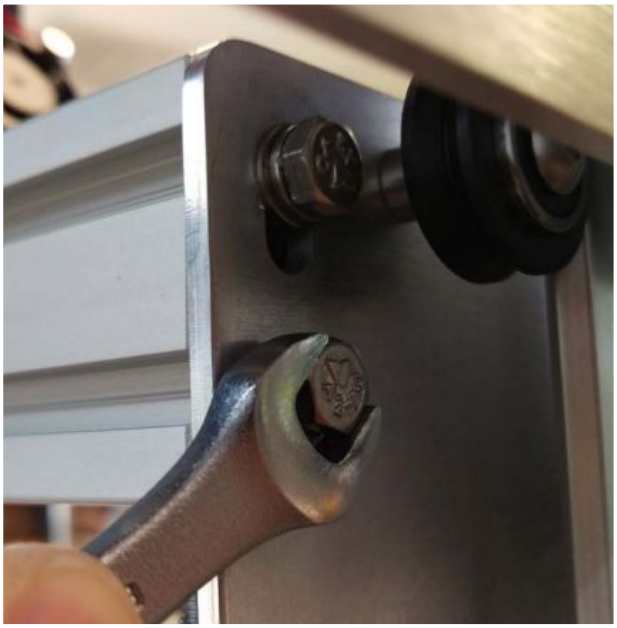
B11

When viewed from below, turning the knob clockwise will raise that quadrant, and counterclockwise will lower it. Turn the leveling knob to raise or lower the bed until the tool setter reads zero.



B12

Repeat this process at all quadrants of the bed until the tool setter reads zero at all quadrants. The rails may need multiple adjustments since adjusting the positioning of one bed quadrant may affect other quadrants.



B13

Use the 8mm combination wrench to gradually tighten the [10540] M5 x 12 HHCS at each quadrant. Periodically use the tool setter to check the bed level, since tightening the hardware on the rails may slightly move them.

B14

After the final tightening, the bed will be level and securely held in position. Relevel the bed as needed for maintenance. If you have any questions or concerns, please do not hesitate to contact our support at support@re3d.org.

C | Loading Printing Material

Gigabot® X prints with plastic pellets, regrind, or flake. Whether you are using Gigabot® X for utilitarian or artistic prints (or both!), your 3D printer will need printing material properly loaded to execute your vision for a 3D printed paradise. To avoid feeding and extrusion issues, we recommend some general guidelines for choosing materials to print with Gigabot® X. Printing material would ideally have the following properties:

- Particles measuring between 1 to 5mm in any dimension
- Particles that are uniform and close to spherical in shape. While flake and irregularly-shaped particles are often printable, materials with more uniform and more spherical particles are typically easier to print.
- Plastic polymers are recommended. Plastic mixed with other materials (carbon fiber, wood, copper, fiberglass, basalt) may also be printable.

We are still in the process of testing various materials for printing with Gigabot® X. At re:3D, we commonly print with:

- rPET (Ultrafuse pellets)
- rPETG pellets
- rPLA (re:3D regrind flake)
- rPolycarbonate (re:3D regrind flake)

For updates on the full range of materials we're testing, see our Pellet Extruder topic on our forum at: https://re3d.zendesk.com/hc/en-us/community/topics

With your Gigabot® X, we have provided blue Ultrafuse pellets made from recycled PET. We recommend using this material for your first test print since it prints consistently, and we have developed optimized print settings for it. Before printing, the material must first be dehydrated to ensure print quality.

For additional technical data on Ultrafuse rPET:
https://www.ultrafusefff.com/wp-content/uploads/2016/06/Ultrafuse_rPET_TDS_EN_v3.2-1.pdf

The following section demonstrates how to load printing material into Gigabot® X prior to printing.

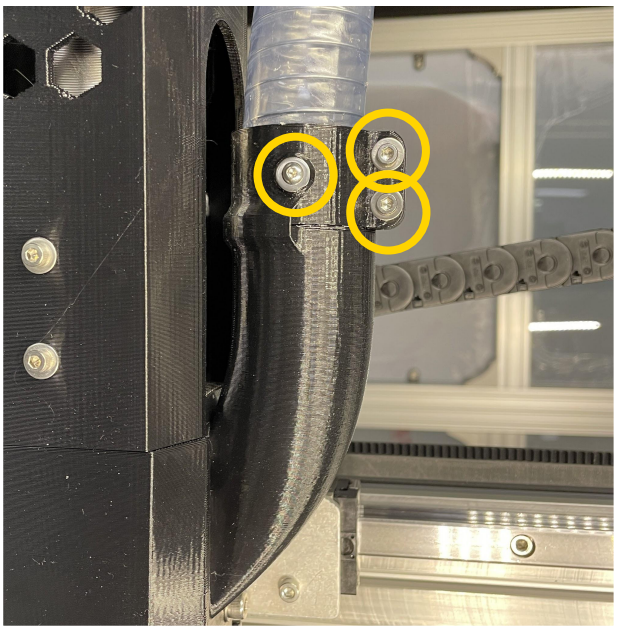
C1

Set the [11484] GBX hopper on top of the hopper trolley by first inserting the feed tube through the center of the hopper trolley from above.

C2

Attach the [11484] GBX hopper to the hopper trolley by using a 3mm hex screwdriver to screw 4 [10242] M5 x 35 FHCS up through the bottom of the hopper trolley and into the underside of the hopper.

Note: if the screws aren't lining up with the heat-set inserts on the underside of the hopper, rotate the hopper by 90 degrees.



C3

Insert the feed tube into the top of the feed throat until it comes to a hard stop against the inner ridge inside the feed throat. Clamp the feed tube in place by using a 2.5mm hex screwdriver to tighten the two screws on the feed throat clamping section. Then use a 2mm hex head screwdriver to tighten the two [11005] M3 x 8 BHCS into the front and back of the feed throat (only the front is pictured here).

C4

Use a ladder to reach the hopper and rotate the hopper lid to remove it. Pour the provided blue Ultrafuse rPET pellets into the hopper. Replace the hopper lid by screwing it back on.

Note: The Ultrafuse pellets provided are not dehydrated. To ensure printing quality, dehydrate the pellets before loading them into the hopper.

D | Printing on Gigabot® X

You are almost ready, 3D printing ninja! There are two ways to make Gigabot® X print gcode; via USB or a web browser. This section will cover how to print via USB. For instructions on how to set up printing via web browser, see Section G.

For your first print, you will print a pre-loaded file on the USB drive using the touchscreen and the provided Ultrafuse rPET pellets. Later in Section F we will show you how to generate your own gcode.

Gigabot® X requires certain preparations to be made with the heated bed and enclosure before printing in order to properly print the material you are using. Examples of common materials and their necessary preparations are listed below:

PLA

- Enclosure open (remove at least 2 enclosure hood panels)
- Bed clean or thin layer of glue stick or Magigoo Original

PETG

- Glue stick on bed
- Enclosure optional

ABS

- Very clean bed surface. Clean bed with damp rag (water) then isopropyl alcohol
- For large parts: Very clean surface as above, then apply Magigoo Original
- Enclosure fully shut

The full “Material Printing Guide” is found on our Knowledge Base here: https://re3d.zendesk.com/hc/en-us/articles/360051352491-Material-Printing-Guide-necessary-preparations-to-ensure-successful-printing

Note that at the start of each print, Gigabot® X will heat the bed and nozzle(s), and then home each axis. Be sure to share what you print in the "Show and Tell" section of our forum, at https://re3d.zendesk.com/hc/en-us/community/topics/200275793-Show-Tell.

For more information, feel free to consult any of the sources below. Should you have any questions, please reach out to support@re3d.org.

D1

Insert the provided microSD card into the Viki controller. Your Gigabot® X will come pre-loaded with a gcode file. This file is preconfigured for you to immediately print.

D2

On the Viki, push in the dial to access the menus. Scroll to "Init. SD card" or "Change SD card", and push in the dial to initialize the SD card. Then navigate to "Print from SD", and push in the dial.

D3

Select the .gcode file and Gigabot® X will begin heating the bed and nozzles. Once heated, Gigabot® X will begin to print. You can load the SD card with your own gcode files to print with later.

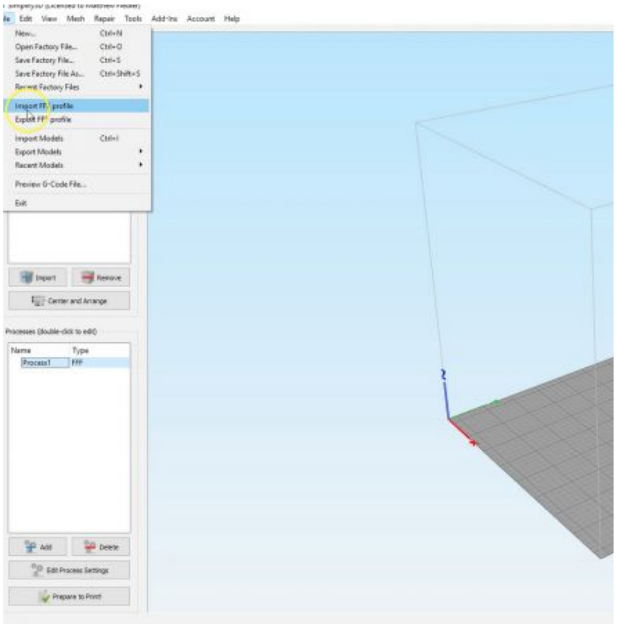
E | Software Setup

To achieve the best 3D prints, it will take a combination of a properly maintained Gigabot® X and a well sliced 3D model. Gigabot® X is an open source platform that can print gcode generated by your slicer software of choice. However, Simplify3D is our preferred slicing program due to its many advanced print setting options. We have created and validated Simplify3D profiles so you can print materials with minimal testing. Simplify3D's factory file functionality also enables saving printer settings in a single file, which helps us better support and troubleshoot with customers. We recommend this for any user looking for a robust and reliable software workflow.

Every Gigabot® X is shipped with a USB that includes a factory file and fff file with the most updated printer settings at the time of shipment. As print profiles are improved, we provide the updated print profiles for download on our Knowledge Base. The steps in this section show how to use the profile on the USB, and how import a new profile downloaded from the Knowledge Base. For a video demonstration of these steps, watch our video on this process titled "Importing Profiles to Simplify3D" on our YouTube channel "re:3D Printing" linked here: bit.ly/ImportingProfiles

E1

Our newest profiles are readily available on our Zendesk page at https://re3d.zendesk.com/hc/en-us/articles/360037613411-Gigabot-Printing-Profiles-Simplify3D-Slic3r-Cura-. Be sure to select the appropriate profile for your GBX nozzle size.



E2

To import a new profile in Simplify3D, go to File > Import FFF profile and select the fff file downloaded from the Knowledge Base. It will afterwards be available as an option in the process settings of each printing process. Feel free to watch our video on these steps at bit.ly/ImportingProfiles.

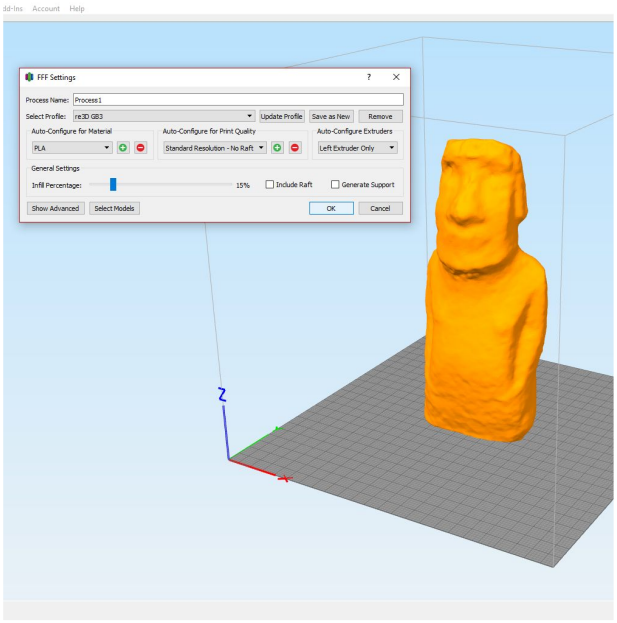
F | Preparing a Print

With your Gigabot® X profile imported into Simplify3D, you now have the power to create .gcode from which Gigabot® X will print your sliced models. For those who have used open source slicing programs, you may notice one of the best features of Simplify3D; it slices objects much faster--especially when it comes to large and/or multiple objects.

The general steps for preparing .gcode will be the same for Simplify3D as they would be for other slicing programs, if users choose not to use it.

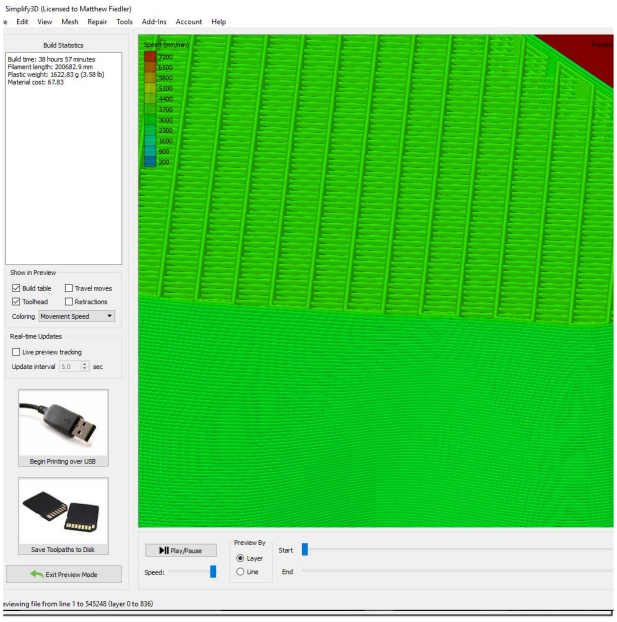
For a quick video demonstration of these steps, feel free to watch our video on this process titled “Making Gcode for Gigabot with Simplify3D” on our YouTube channel at https://www.youtube.com/user/GigaBot3D/.

For a more in depth printing set up, please read our Knowledge Base article titled “Material Printing Guide” which is linked here: bit.ly/MaterialPrintingGuide



F1

Import your .STL file into Simplify3D. Orient the part as desired in the workspace. In the process settings, configure your profile, material, resolution, extruder, etc. When you are satisfied, click the "Prepare to Print" button.



F2

Use the Preview Mode to analyze the .gcode for potential printing errors. There are also useful approximations Simplify3D can generate such as print time and material usage. Once satisfied, export the .gcode to a microSD card for printing, or print directly via USB. If needed, feel free to watch our video on this process.

H | Next Steps

Congratulations! You have completed your first print on Gigabot® X. From here, you now have the foundation to print your own models with whatever material you want. Below are a series of helpful articles from our knowledge base that will help you as you explore different 3D models and materials:

- **Material Testing Procedure for Pellet Extrusion:**
  https://re3d.zendesk.com/hc/en-us/articles/4411545823764-Material-Testing-Procedure-for-Pellet-Extrusion
- **Choosing materials to print with:**

  https://re3d.zendesk.com/hc/en-us/articles/360044313292-Choosing-Gigabot-X-Print-Materials
- **re:3D supplied design files:**

  https://re3d.zendesk.com/hc/en-us/articles/360038554071-Downloadable-Design-Files
- **How to dry materials:**

  https://re3d.zendesk.com/hc/en-us/articles/360044313152-Drying-and-Storing-Materials
- **How to change materials on Gigabot® X:**

  https://re3d.zendesk.com/hc/en-us/articles/360044762031-Loading-and-Changing-Gigabot-X-Material
- **Common Gigabot® X extrusion issues:**

  https://re3d.zendesk.com/hc/en-us/articles/360044070972-Gigabot-X-Extrusion-Issues
- **3D Printing Tips and Tricks:**

  https://re3d.zendesk.com/hc/en-us/articles/360037449772-3D-Printing-Tips-and-Tricks

High Five !

You have now completed your first print on Gigabot® X

We are confident that you will find this to be a high quality machine, but please do not hesitate to contact us for any further issues or questions. Feedback on instructions, support, and other aspects of your experience are welcome. Reach out to us at:

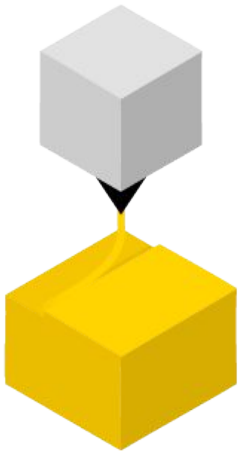
FORUM | https://re3d.zendesk.com/hc/en-us/community/topics

KNOWLEDGE BASE | https://re3d.zendesk.com/

EMAIL | support@re3d.org

PHONE | 512.730.0033

HAPPY PRINTING!



Share Your Prints with Us!

re:3D offers multiple ways to earn discounts toward future purchases by sharing your work!

PRINT FOR CREDIT: The showroom in our Houston factory is filled with examples displaying the innovative, creative and problem-solving 3D prints made by Gigabot® Gigabot® X, and Terabot® owners from around the world. All of our 3D printer owners are eligible for our print for credit program. Send us a picture of your original prints or products and we will review it to add to the collection. We provide re:3D store credit for parts and services in exchange for your print to help you continue to push the boundaries of 3D printing.

CUSTOMER STORIES: As a Gigabot® X owner using our 3D printers to enhance your business, further your cause, or re-imagine your industry, you are the best person to tell that story. In the Applications section of our website (https://re3d.org/applications/) you can find videos featuring owners just like you who are taking 3D printing to the next level. We want to help you share your work and show off how you use your Gigabot® X. Reach out to us with what you are working on! Gigabot® X owners receive $300.00 USD store credit for participating in one of our customer story features.

TAG #GIGABOT, GET CREDIT: We know you will be proud of the work you produce on your new Gigabot® X, so go ahead; share those prints! For each newsletter, we select one photo to be featured and include a link to your company as well as a description of the print. To be eligible, tag a 3D print photo on Twitter, Instagram, or Facebook with #gigabot. We'll put all submissions in a drawing to receive $95.00 USD store credit.

READY TO SUBMIT A PRINT FOR CREDIT OR CUSTOMER STORY?

EMAIL | info@re3d.org

Notes

re3D.org | support@re3d.org