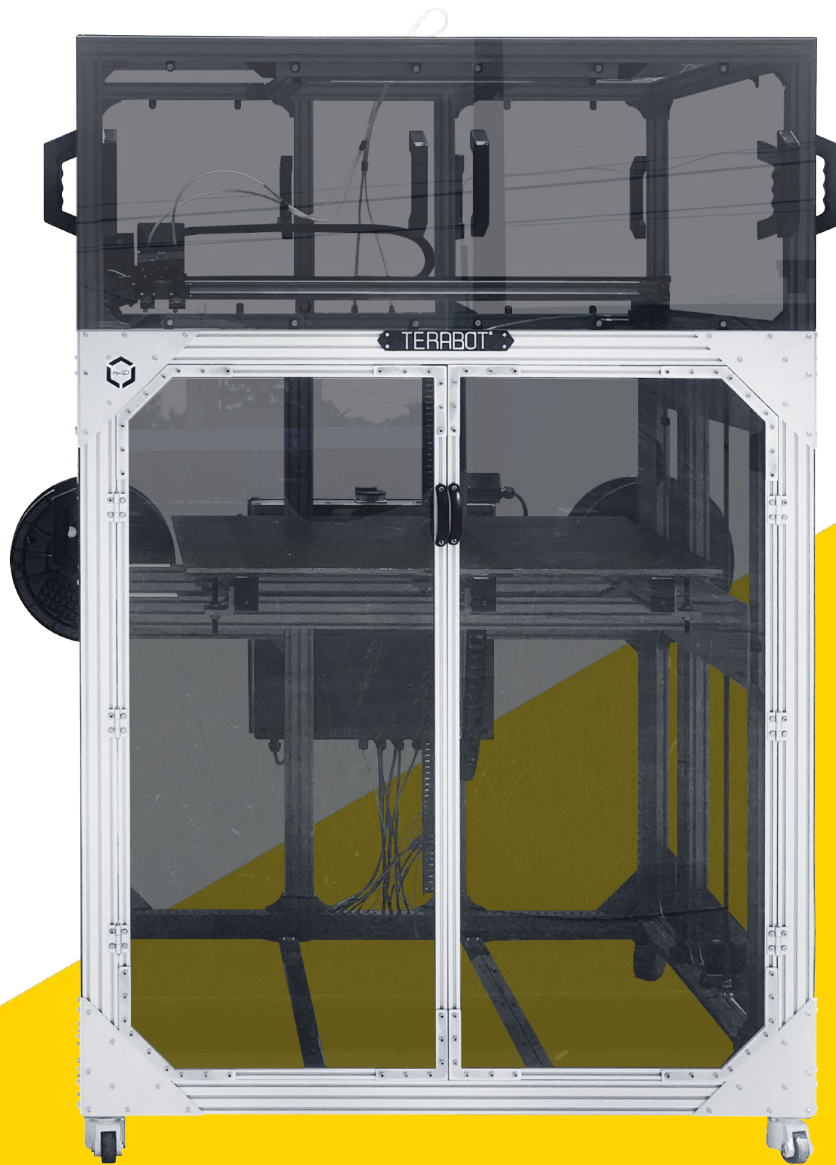# TERABOT
Getting Started Guide

Welcome

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

This guide will help get your Terabot® 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/

Sales, updates and events are announced in our monthly newsletter. Sign up at bottom of our main page at https://re3d.org/

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® 3+ 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 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.
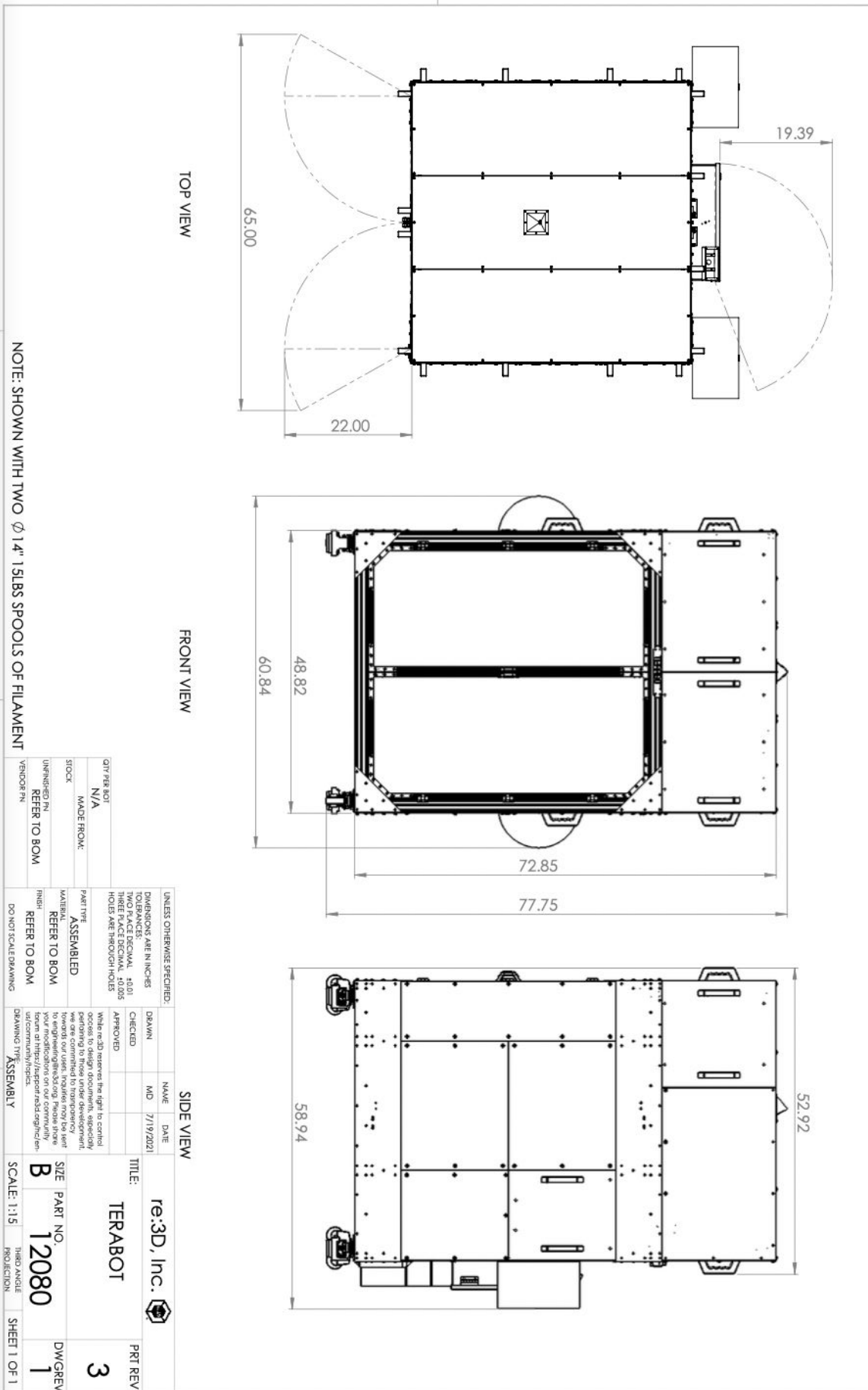
OVERLOADING

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.

Terabot Dimensions

TOP VIEW

65.00

19.39

22.00

FRONT VIEW

48.82

60.84

72.85

77.75

SIDE VIEW

58.94

52.92

NOTE: SHOWN WITH TWO ⌀ 14" 15LBS SPOOLS OF FILAMENT

QTY PER BOT	N/A	
STOCK	MADE FROM:	
UNFINISHED PN	REFER TO BOM	
VENDOR PN	REFER TO BOM	

UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN INCHES		
TOLERANCES:		
TWO PLACE DECIMAL: ±0.01		
THREE PLACE DECIMAL: ±0.005		
HOLES ARE THROUGH HOLES		
PART TYPE	ASSEMBLED	
MATERIAL	REFER TO BOM	
FINISH	REFER TO BOM	
DO NOT SCALE DRAWING		
DRAWING TYPE: ASSEMBLY		

NAME	DATE
DRAWN	MD	7/19/2021
CHECKED	
APPROVED	

re:3D, Inc.

While re:3D reserves the right to control access to design documents, especially pertaining to those under development, we are committed to transparency towards our users. Inquiries may be sent to engineering@re3d.org Please share your modifications on our community forum at https://support.re3d.org/inc/en-us/community/topics

TITLE: TERABOT

SIZE B

PART NO. 12080

SCALE: 1:15

PRT REV 3

DWG REV 1

THIRD ANGLE PROJECTION

SHEET 1 OF 1

Table of Contents

A | Receiving and Uncrating

Inside this crate is your Terabot®. 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 your fully assembled Terabot®, you will need a Phillips head screwdriver and a pair of diagonal cutting pliers to cut zip ties. You will also need 3mm and 4mm Allen wrenches which are provided with the printer.

Upon delivery of Terabot®, 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.

Terabot® runs on 110V as a standard unless you specified when purchasing that it would be preferable to use 220V. It will draw no more than 20A of power at 110V. The standard 110V version comes with a 6 foot 20A power cord with NEMA 6-20P plug to IEC C19 SJT.

A1

Before arrival, establish an appropriate space for Terabot® to be located during operation. Terabot® requires access to a dedicated 20A circuit, and it should be plugged into an uninterrupted power supply or a surge protector. A climate-controlled environment is recommended, but not necessary.

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 ratchet straps and plastic wrap covering Terabot®.

A4

Remove all zip ties, foam blocks, tape, bubble wrap, etc. from Terabot®. The foam blocks can be removed by using at least 3 people to carefully lift one side of Terabot® and pull out the foam blocks from beneath the printer. Once the foam blocks are removed, Terabot® will rest on its casters and can be rolled off the plywood crate base.

A5

Use a 4mm allen wrench to remove all 8 triangle braces holding the bed in place. Note that these are both above AND below the bed frame.

A6

Similarly, use the 4mm allen wrench to remove the 4 triangle braces that hold the Y gantry in place. There are two on each side.
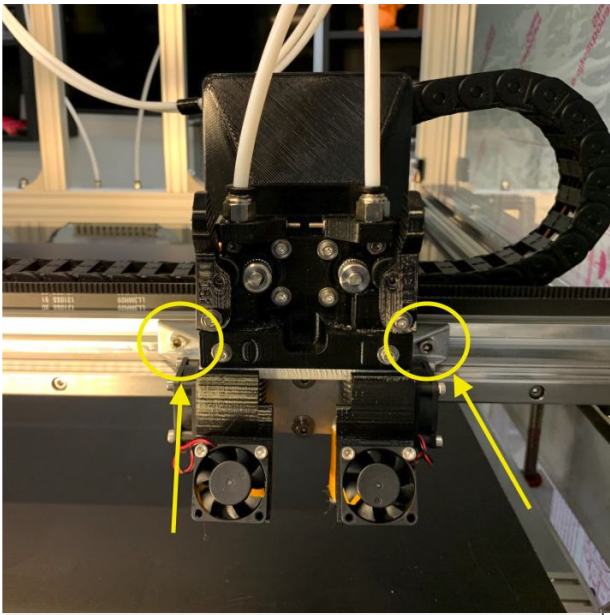
A7

Once again, use the 4mm allen wrench to remove the 2 triangle braces that hold the print head in place on the gantry. Store and keep all of these braces in case the bot needs to be shipped elsewhere in the future.

A8

Locate your power cable. Attach the female end in the socket underneath the electrical box. Insert the male end of the power cable into an outlet.

A9

The power switch is located at the back of Terabot® on top of the electrical box. It is a large red and yellow switch. Rotate it clockwise to turn on the printer!

B | Bed Leveling and Z-Home Position

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 Terabot® 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 Terabot® and recalibrate the Z height in case of movement during shipping.

Please follow the steps outlined in this guide to level the bed of your Terabot® 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 gage, to indicate the distance between the nozzle and the bed. You can find this touch-off gauge here: https://www.edgetechnologyproducts.com/pro-touch-off-gage/
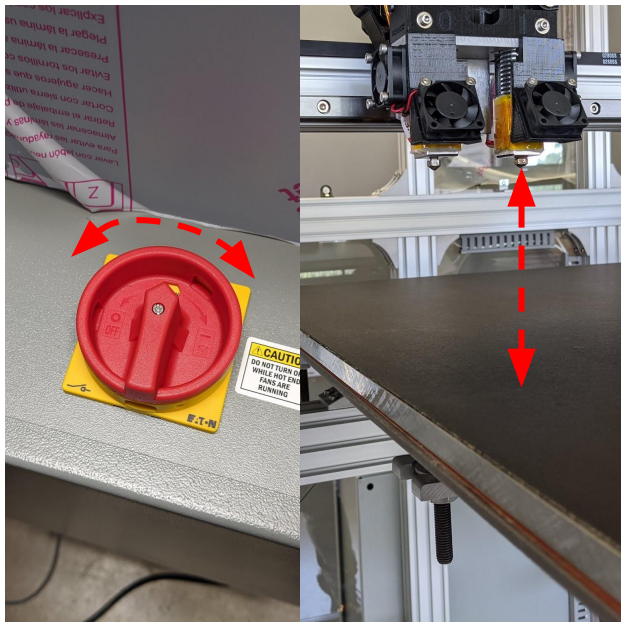
B1

With Terabot on,, refer to section D to learn how to start a .gcode file from the micro SD card. Use the provided micro SD card to run the file titled "Terabot Bed Level." This will automatically home the print head and bed, heat the hot ends, drop the bed to 101.6mm, then move the print head over each of the leveling points.
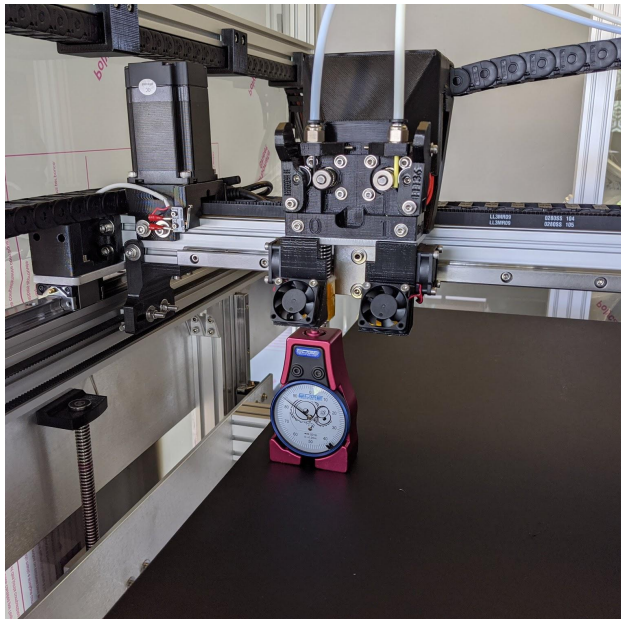
B2

Make sure that the bed is clean and clear of debris to ensure an accurate measurement. Place a [4" tool setter](#) on the bed between the bed and the **left hot end nozzle**. It is important to note that you need to use the **left hot end** for each measurement.
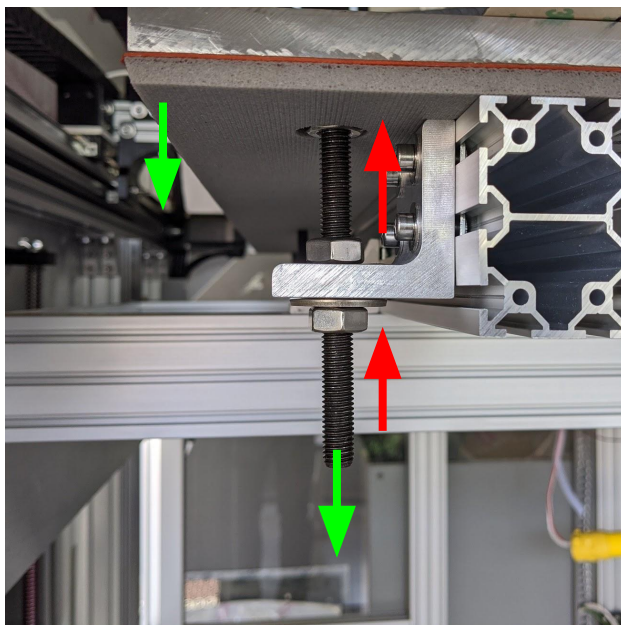
B3

If the dial indicator is to the right of zero, it means that the bed is too close. You will need to LOWER that point. Use the 17mm wrench to 1) loosen the upper hex nut, and 2) tighten the lower hex nut such that it draws that point down. **Adjust the bed level such that the dial indicator on the tool setter is reading zero (0).**

12
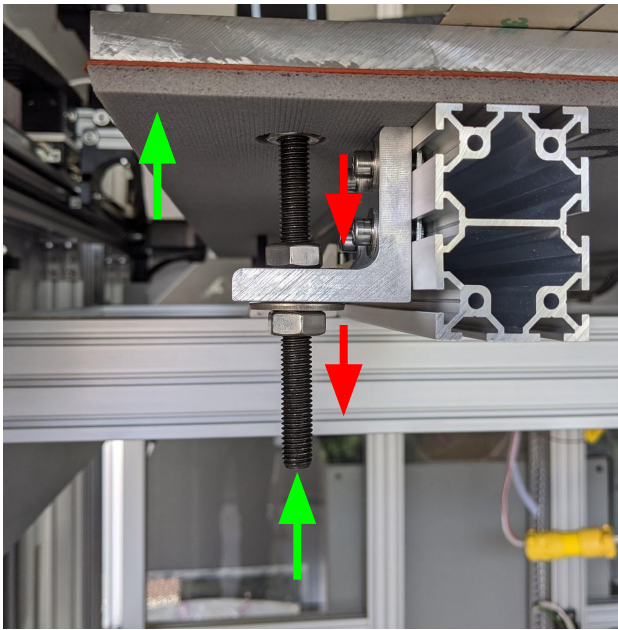
B4

If the dial indicator is to the left of zero, it means that the bed is too close, and you will need to RAISE that point. Use the 17mm wrench to 1) loosen the lower hex nut, and 2) tighten the upper hex nut such that it pushes that point up. **Adjust the bed level such that the dial indicator on the tool setter is reading zero (0).**
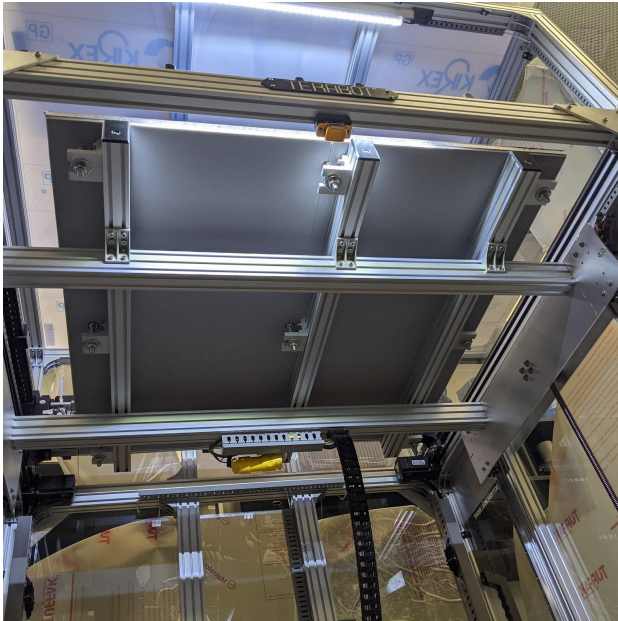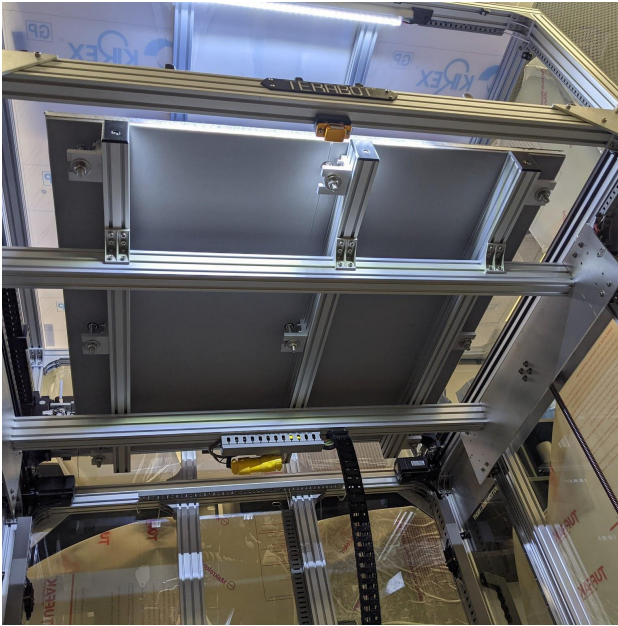
B5

After setting each point to the proper height, press the Viki button to advance to the next position. Repeat steps A5-A6 on all 9 bed leveling points.
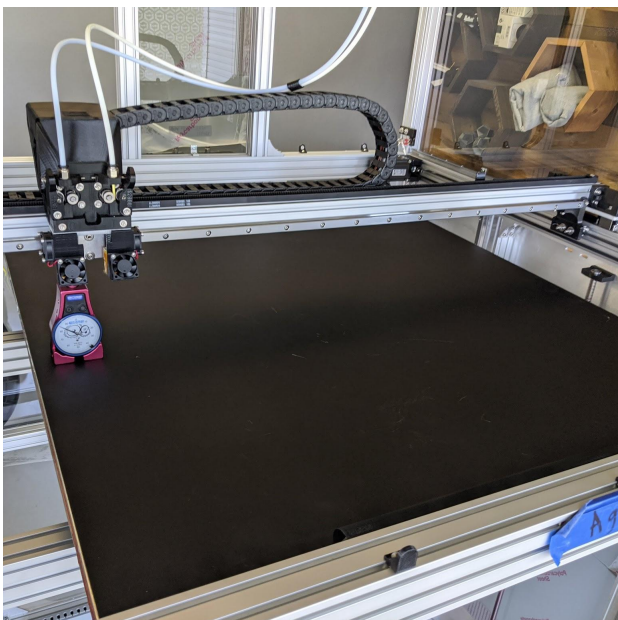
B6

Run the "Terabot Bed Level" .gcode file again. Use the tool setter gauge to check all 9 points again, adjusting them as needed. Repeat these steps multiple times around the bed as needed, with a deviation less than 0.01"

B7

Once you've verified that the level is good according to the tool setter, verify that all hex nuts have been tightened again so the bed does not move.

C | Loading and Changing Filament

Terabot® prints with 2.85mm diameter polymer filament. Thanks to the all-metal design of the hot ends, Terabot® can print virtually any 3D printing filament available on the market! Whether you are using Terabot® for utilitarian or artistic prints (or both!), your 3D printer needs filament loaded and inserted into the extruder to properly execute your vision for a 3D printed paradise. The following section demonstrates how to load filament into Terabot® prior to printing as well as how to change filament when needed.

For a video demonstration of loading filament similar to the following instructions, please read our article "GB3+ Filament Loading" on our Knowledge Base here: https://bit.ly/LoadingFilament

For a video demonstration of changing filament similar to the following instructions, please read our article "Changing the Filament Spool" on our Knowledge Base here: https://bit.ly/ChangingFilament

For updates on the full range of materials we have tested, see our website at: https://re3d.org/materials/

With your Terabot®, we have provided PLA filament. We recommend using this material for your first test print since it prints consistently, and we have developed optimized print settings for it that will be discussed in a future section.
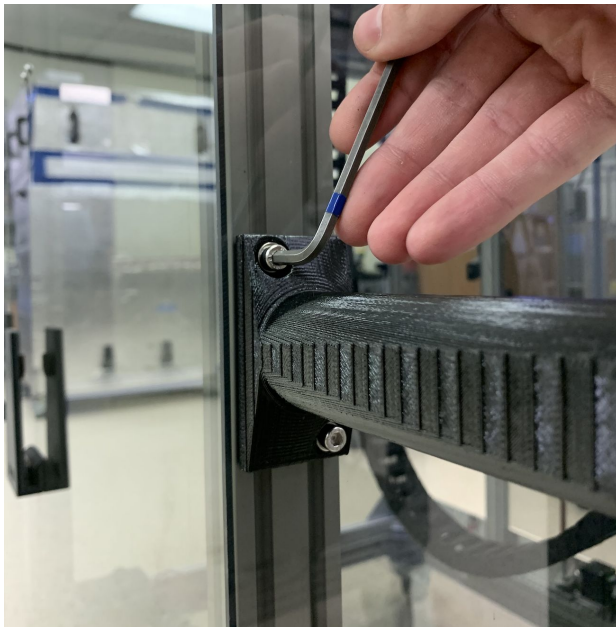
C1

Install the [10864] spool holders on the back of Terabot® with 2x M5 magic t-nuts, 2x M5 flat washers, and 2x SHCS M5x16 each. The spool holders should be on the far left and far right vertical rails, approximately 36 inches off the ground. The hardware to mount the spool holders may already be attached to the frame. Use a 4mm Allen wrench to fasten the hardware.
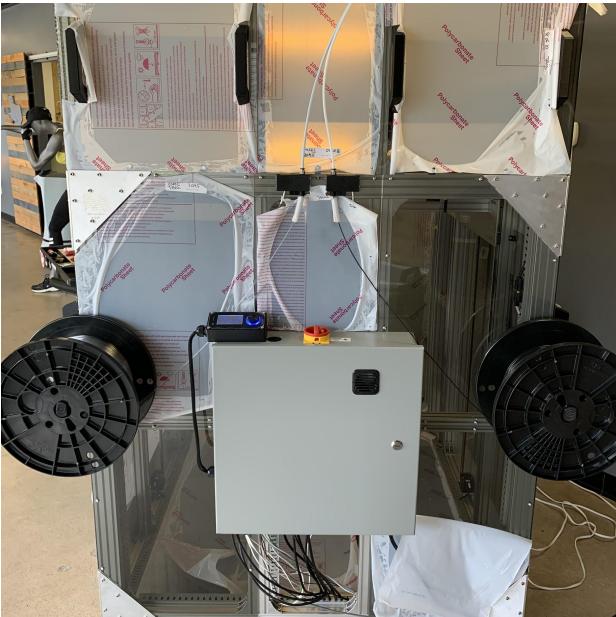
C2

Place the filament spool onto the spool holder. The filament should feed from below the spool and into the Filament Detection (FD) unit nearest to it.
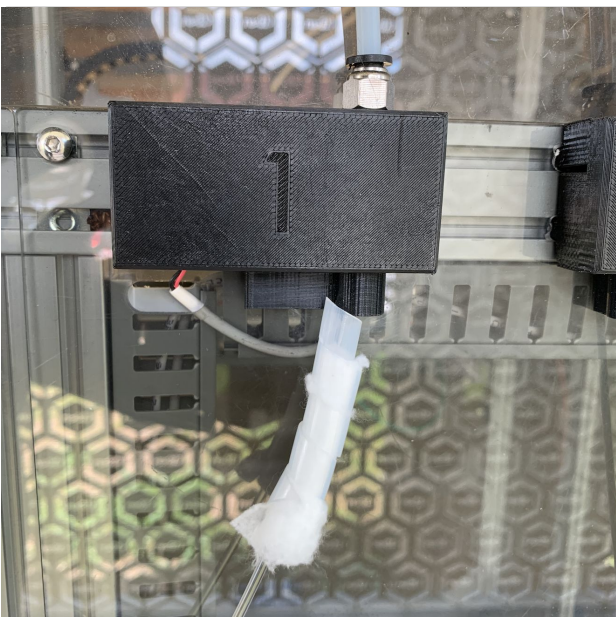
C3

Prior to inserting the filament into the guide tubes, use the dust cleaning cloth to clean it. Insert each filament into its tube, wrap a filament cleaning cloth around it just below the FD unit, and then secure it using the spiralite.
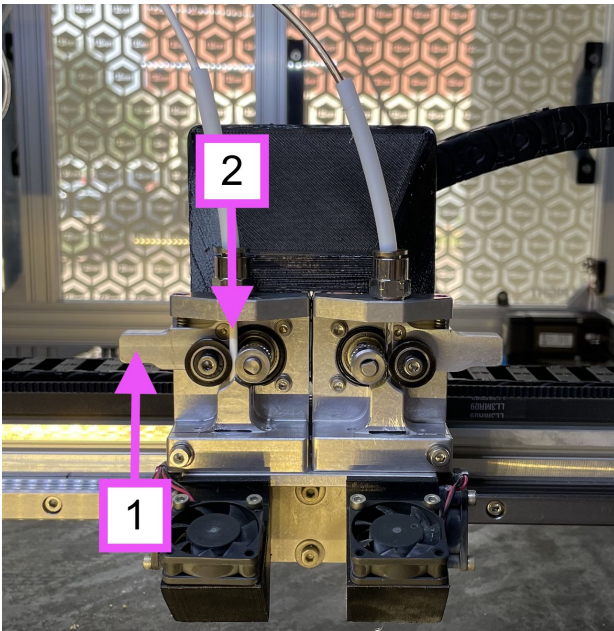
C4

To manually load the filament, set the filament temperature using the Viki controls (Prepare > Preheat PLA/PC, or Control > Temperature > set custom temperature). **(1)** Pull up on the tensioner arm **(2)** Insert filament into the hole between the idler bearing and the extruder drive gear. Keep inserting until plastic comes out the nozzle.

C5

To load the filament using the Viki, navigate to Prepare > Change Filament. You will still need to insert the filament into the hole of the extruder manually, but the extruder will push it through the nozzle.

D | Printing on Terabot®

You are almost ready, 3D printing ninja! There are two ways to make Terabot® print gcode; via USB or using a microSD card in the Viki LCD controller. Typically, we recommend printing via the microSD card. It's the most reliable method because it eliminates the possibility of a print stopping due to computer errors or power issues. The USB cable is also more susceptible to electrical interference which can disturb the serial communication to Terabot®. For your first print, you will print a "Moai" with a pre-loaded file on the SD card using the Viki LCD controller. Later in Section F we will show you how to generate your own gcode.

Prior to printing, prepare your Terabot® bed and enclosure according to the requirements of 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
- Can be main part material or support material with PETG in dual extrusion
- Filament removed from the filament tube when printing with a closed enclosure

PETG
- Glue stick on bed
- Can be main part material or support material with PLA in dual extrusion
- 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
- Uses itself as support material

The full "Material Printing Guide" is found on our Knowledge Base here:
https://bit.ly/MaterialPrintingGuide

Note that at the start of each print, Terabot® 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://bit.ly/re3Dshowandtell or tag us on social media using #Gigabot.

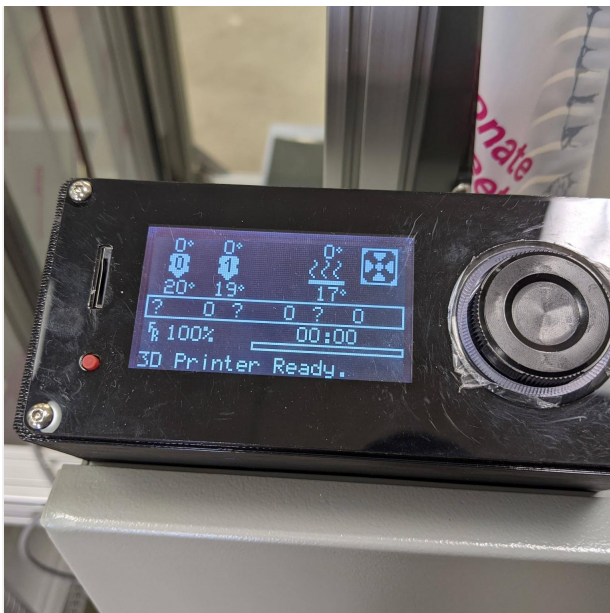Should you have any questions, please reach out to support@re3d.org.

D1

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

D2

Select "Init. SD card" or "Change SD card" and then navigate to "Print from SD".

D3

Select the .gcode file and Terabot® will begin heating the bed and nozzles. Once heated, Terabot® 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 your skills, a properly maintained Terabot®, and a well sliced 3D model. Simplify3D is our preferred slicing and printer hosting program. Not only does it lead the market in parameter customization and features like customizable support generation, but Simplify3D best handles the large print jobs that Terabot® users make on a daily basis. The factory file functionality also enables us to better support and troubleshoot with customers. We recommend this for any user looking for a robust and reliable software workflow.

Current installations of Simplify3D will not have the most updated printing profiles for Terabot®, so the following steps discuss how to import a new profile. For a quick video demonstration of these steps, feel free to watch our video on this process titled "Importing Profiles to Simplify3D" on our YouTube channel linked here:
https://www.youtube.com/watch?v=VUiiRQfaPjc

Terabot V1 with firmware 4.2.0 and above

- Mondo 0.4 nozzles
- Mondo 0.8mm nozzles
- Mondo 0.4mm left, 0.8mm right
- Mondo 1.2mm nozzles

Terabot V3

- Mondo 0.4 nozzles Single Material
- Mondo 0.4 nozzles Dual Material
- Mondo 0.8 nozzles Single Material
- Mondo 0.8 nozzles Dual Material

E1

Our newest profiles are readily available for download from our Knowledge Base at https://bit.ly/re3DSlicerProfiles. Be sure to select the appropriate profile for your Terabot according to its version and nozzle size. Version 3 was released in Spring 2020, and version 1 were those prior to that.

E2

In Simplify3D, import the profile you just downloaded. It will afterwards be available as an option in the process settings of each printing process. Again, feel free to watch our video on these steps if needed.
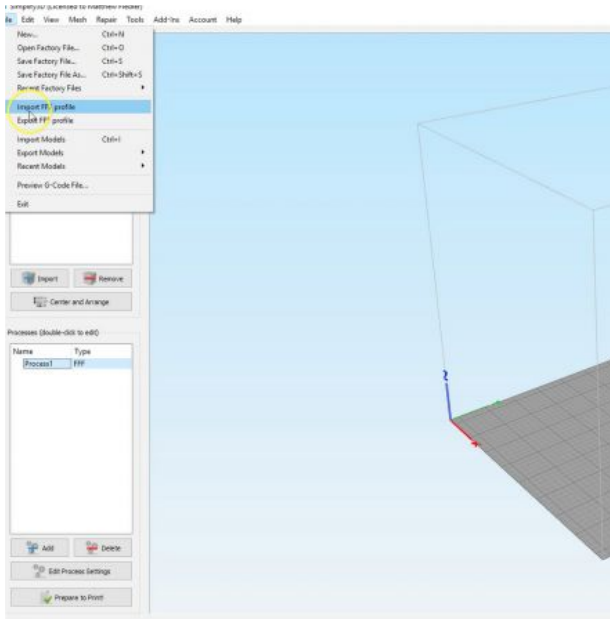
F | Preparing a Print

With your Terabot® profile imported into Simplify3D, you now have the power to create .gcode from which Terabot® will print your sliced 3D 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 should you choose a different software.

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 linked here: https://bit.ly/re3Dmakinggcode

For a more in depth printing set up, please read our Knowledge Base article titled "Material Printing Guide" which is linked here: https://bit.ly/MaterialPrintingGuide
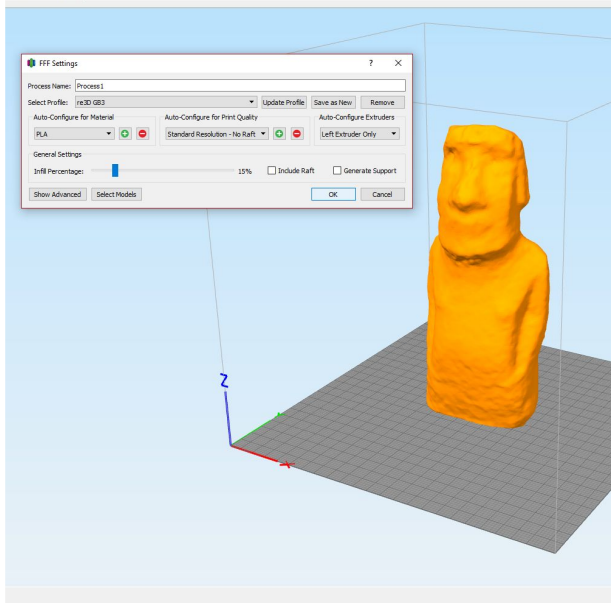
F1

Import your .STL file into Simplify3D. Orient the part as desired in the workspace. In the process settings, select the profile for your Terabot®, then choose the material, resolution, and extruder with which you are printing. When you are satisfied, click the "Prepare to Print" button.
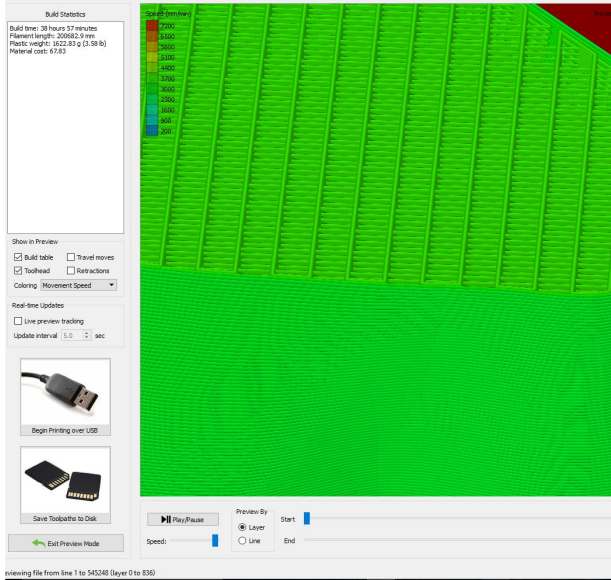
F2

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, following the steps in Section D. If needed, feel free to watch our video on this process.

Next Steps

Congratulations! You have completed your first print on Terabot®. 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:

- **Filament selection:**

  https://re3d.org/materials/

  https://re3d.zendesk.com/hc/en-us/categories/360001620911-MATERIALS

- **How to dry filament:**

  https://re3d.zendesk.com/hc/en-us/articles/360038462411-Drying-Filament

- **Material Printing Guide - Steps for Success:**

  https://re3d.zendesk.com/hc/en-us/articles/360051352491-Material-Printing-Guide-Steps-for-Success

- **re:3D supplied design files:**

  https://re3d.zendesk.com/hc/en-us/articles/360038554071-Downloadable-Design-Files

- **Common Terabot® extrusion issues:**

  https://re3d.zendesk.com/hc/en-us/articles/360038402291-Filament-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 Terabot®

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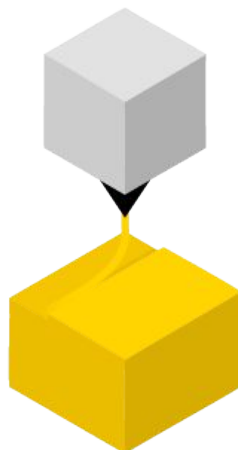
FORUM | https://re3d.zendesk.com/hc/en-us/community/topics

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 Terabot® 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 Terabot®. Reach out to us with what you are working on! Terabot® 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 Terabot®, 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