

# MOD-t™ & New Matter Store User Guide

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# INTRODUCTION

Congratulations on your purchase of the MOD-t 3D™ Printer! We are excited to welcome you to the New Matter community and help you on your 3D printing journey. To start printing, head over to:

<http://www.newmatter.com/setup> and follow the brief instructions.

If you have any questions or comments, please let us help by phone (866) 949-8722, email ([hello@newmatter.com](mailto:hello@newmatter.com)), or any of our social media outlets.

We look forward to hearing from you!

**The New Matter Team**

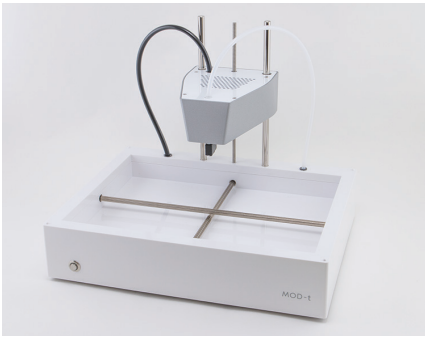
## MOD-t TECHNICAL SPECIFICATIONS

Print Specifications	
Process	Fused Filament Fabrication
Build Material	PLA filament, 1.75 mm diameter, 190–220 °C
Over Temperature Protection	Non-resetable Thermal Fuse
Build Envelope	150 × 100 × 125 mm (6 × 4 × 5 inches)
Print Speed	Up to 80 mm per second
Layer Resolution	Software selectable 0.1 to 0.4 mm
Nozzle Diameter	0.4 mm

Dimensions & Weights (without filament spool)	
MOD-t with Cover	383 × 340 × 295 mm
MOD-t Weight (3D Printer & Cover Only)	5.5 kg (12.5 lbs)

Software & Electrical	
Software	The MOD-t is operated via a browser-based interface at <a href="https://store.newmatter.com">store.newmatter.com</a> , accessible through most modern and updated desktop and mobile browsers.
Supported File Types	.STL & .OBJ
Setup	Mac OSX 10.7+, Windows 7+ (required for setup only)
Connectivity	Wi-Fi (802.11 b/g/n), USB 2.0
AC Power	100-240VAC, 50/60 Hz, 75W

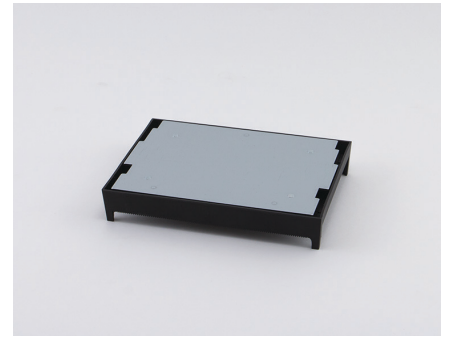
## WHAT'S IN THE BOX



MOD-t 3D Printer



Clear Cover



Build Tray Base



Print Surface Plate



Spool Holder



PLA Filament Spool (0.5 kg)



USB Cable



Power Supply



AC Power Cord

## Accessories



Wire Brush



Plastic Scraper Blades



Scraper Handle

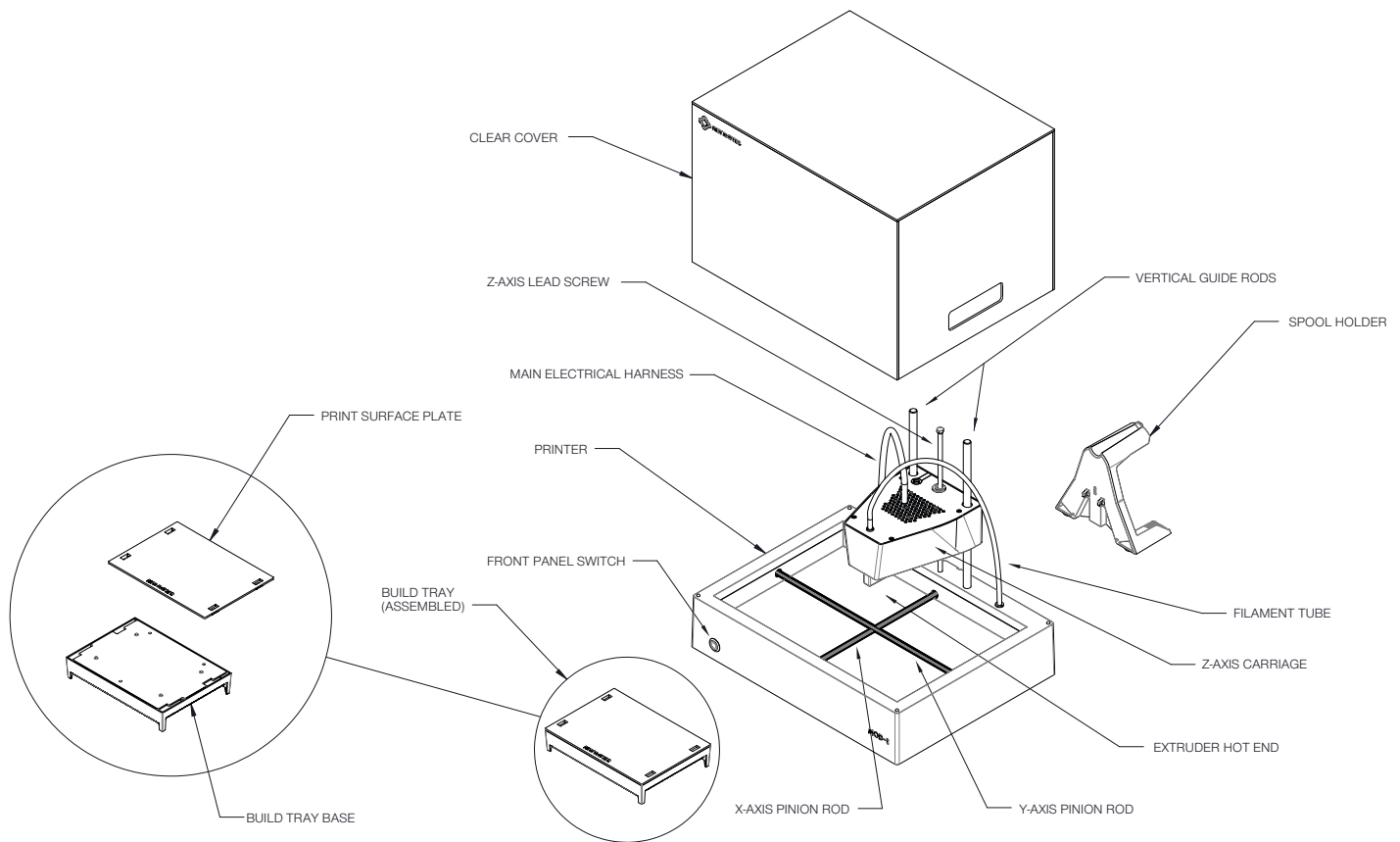


Clipper/Filament Cutter

After unboxing your MOD-t, confirm all items are in the package. The MOD-t 3D Printer requires initial setup using the USB connection, after which it can be operated entirely over the Wi-Fi connection. The New Matter Desktop App Installer will install the MOD-t Desktop App and go through the setup process.

The setup software and instructions are available at <https://newmatter.com/setup>.

## MOD-t DIAGRAM

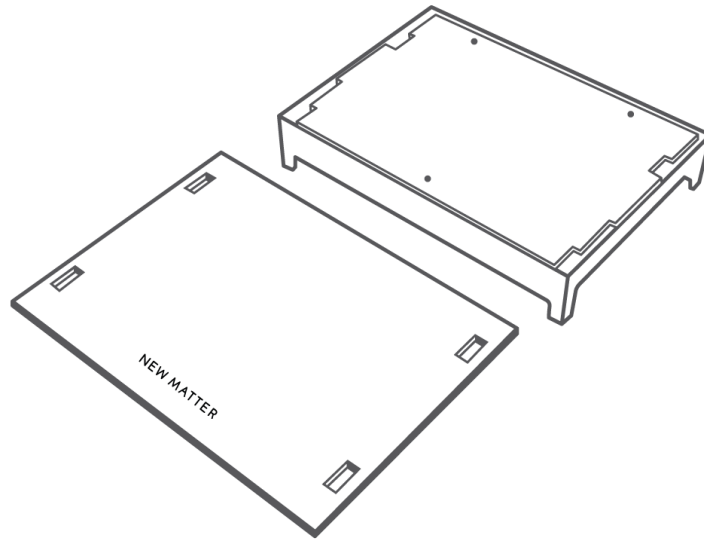


Part	Description
Build Tray Base	This has the X and Y-axis gear racks.
Print Surface Plate	This is an easily removable and replaceable print plate.
Build Tray (Assembled)	Comprised of the Print Surface Plate and the Build Tray Base, the Build Tray is what objects print on.
Front Panel Button	This button is used to initiate a number of actions by the user. it is also illuminated to give the user feedback by blinking.
Clear Cover	This is used to cover the MOD-t.
Spool Holder	This is used to hold the PLA Filament Spool.
Main Electrical Harness	This element carries power and signal lines to and from the carriage to the main electronics board inside the printer.
Filament Tube	This element guides the filament from the filament entry to the carriage.
Z-Axis Carriage	This is the part of the printer that moves up and down and houses the extruder, hot end, blower and Z-axis motor drive.
Extruder Hot End	This is the part of the printer where hot filament comes out of during printing.
X & Y-Axis Pinion Rods	These are the rods that the Build Tray is placed on. They control the X & Y motion of the Build Tray.
Vertical Guide Rods	These elements support and guide the Z-axis carriage.
Z-Axis Lead Screw	This element supports the Z-axis position of the carriage.

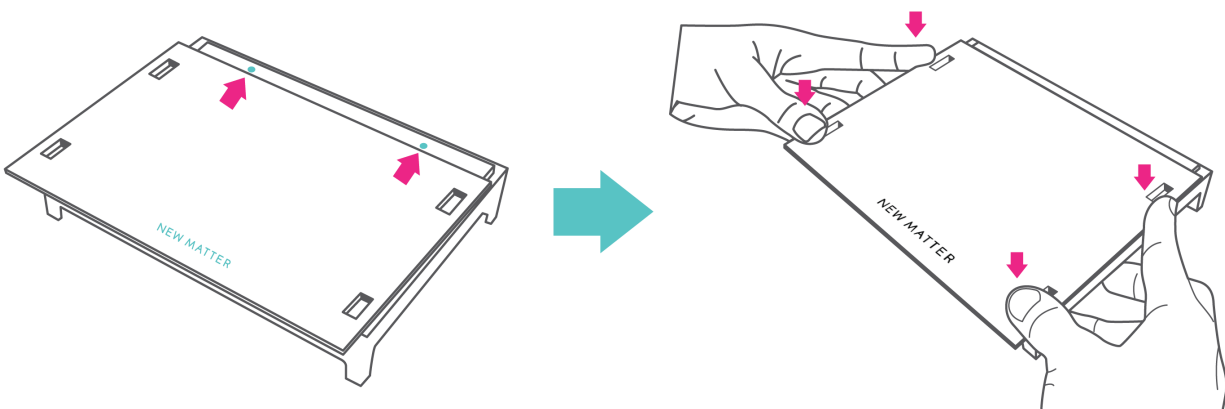
# MOD-t PREPARATION

## Build Tray Assembly

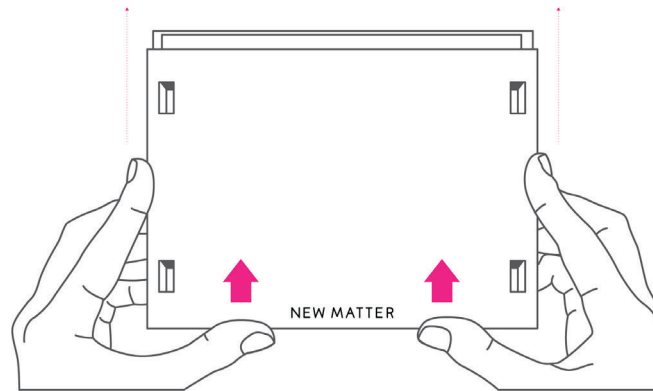
1. Gather the **Build Tray Base** and the **Print Surface Plate**.



2. Place the **Print Surface Plate** on the **Build Tray Base**.
  - a. **Note:** The pink arrows are indicators to align the plate with the tray.

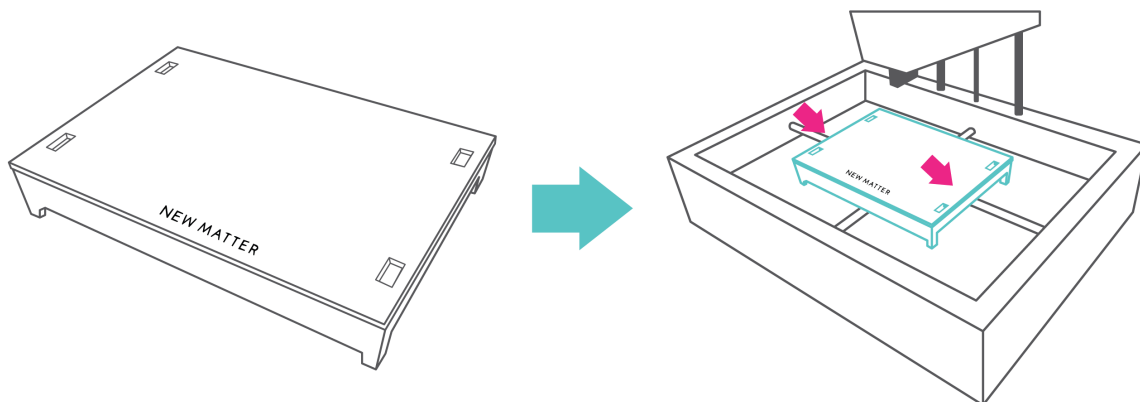


3. Press the **Print Surface Plate** down with both hands and slide it into place.



4. After the successful assembly, the **Build Tray** is now ready to use.

5. Place the **Build Tray** in the MOD-t with “New Matter” facing you. The **Build Tray**’s teeth should mesh with the pinion rods. An easy way to correctly place the **Build Tray** is to set it in one corner of the MOD-t and align it to the inner sidewalls. The MOD-t will automatically locate and center the **Build Tray** at the start of a print job. Take care to not bend the pinion rods. WARNING: Do not push down forcefully on the build tray. Do not apply excessive force onto the pinion rods.



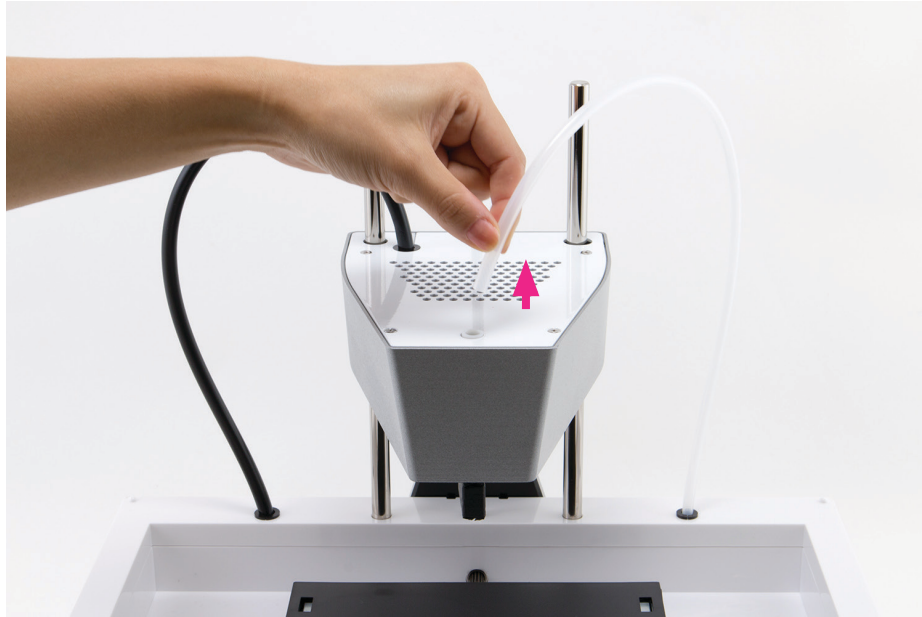


## Loading/Unloading Filament

Press the “**Load Filament**” or “**Unload Filament**” button on the **MOD-t Desktop App**. This will prepare the MOD-t to load or unload filament and will guide you through the process. Follow the **Desktop App**’s prompts for full guidance.

### Loading the Filament

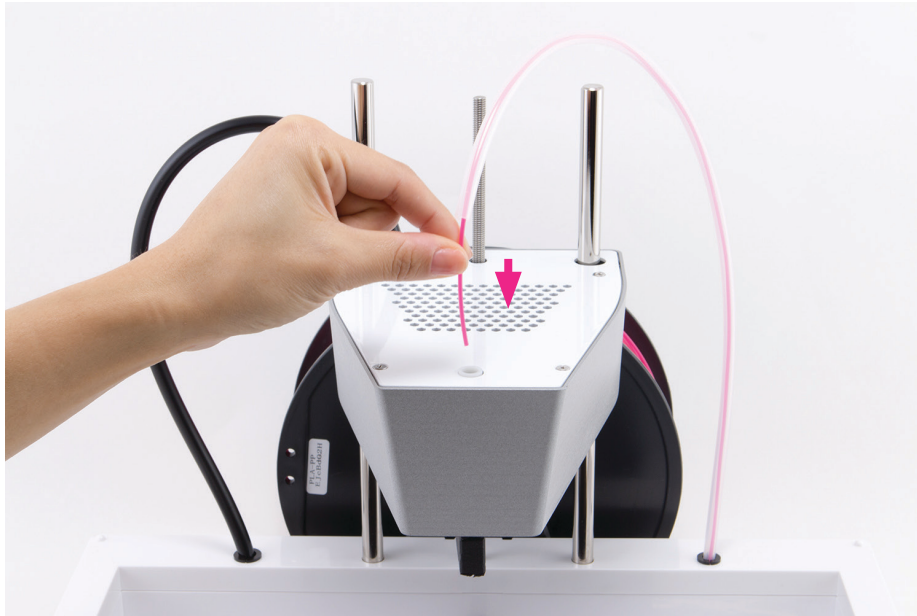
1. Begin by removing the filament guide tube from the filament entry hole on top of the **Carriage**.



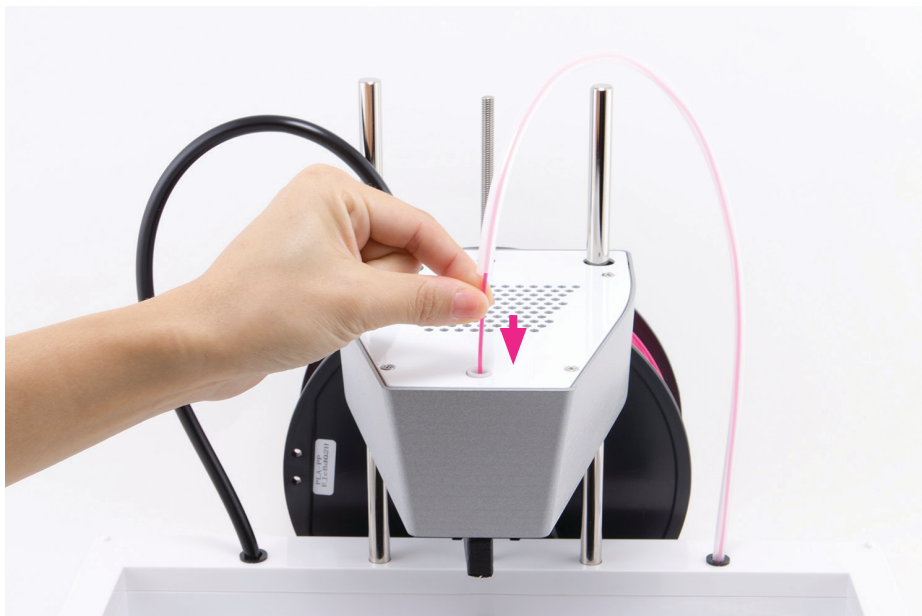
2. Feed the filament through the filament opening on the rear side of the MOD-t.  
The filament opening is to the left of the spool holder.



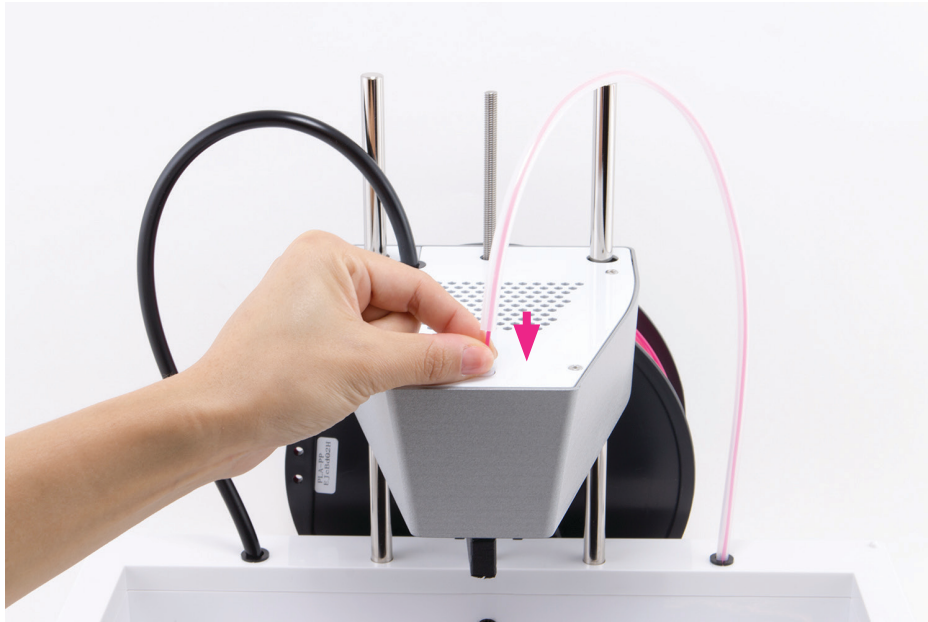
3. Push the filament through the guide tube until it is protruding from the end of the guide tube approximately 2 or 3 inches.



4. Initiate the filament load process through the **New Matter Store** and wait for the MOD-t's **Hot End** to reach the appropriate temperature. When prompted to load the filament, feed the filament into the filament entry hole until it stops.



5. Gently press the filament down by hand until the MOD-t begins pulling the filament in by itself.
  - a. **Note:** It may require more force than you would expect when pressing the filament into the filament entry.



6. Once the printer has pulled in the filament, press the filament guide tube back into the filament entry hole as it was initially.



# USING YOUR MOD-t 3D PRINTER

## How to Print Designs

### How to Prepare the Build Tray to Print a Design

1. Scrape any PLA residue from the **Print Surface Plate** using the **Scraper**.
2. Wipe the **Print Surface Plate** to clean off dirt and/or oil. Be sure to use microfiber or non-abrasive towels and non oil-based cleaners.
3. If the **Build Tray** is not already assembled, attach the **Print Surface Plate** to the **Build Tray Base** to do so (See Build Tray Assembly Section on Page 7.)
4. Place the **Build Tray** in the MOD-t with “New Matter” facing you. The **Build Tray**’s teeth should mesh with the pinion rods. An easy way to correctly place the **Build Tray** is to set it in one corner of the MOD-t and align it to the inner sidewalls. The MOD-t will automatically locate and center the **Build Tray** at the start of a print job. Take care to not bend the pinion rods. Warning: Do not push down forcefully on the build tray. Do not apply excessive force onto the pinion rods.

### How to Use the New Matter Store

In order to print on the MOD-t, head over to [store.newmatter.com](https://store.newmatter.com) to create an account. The New Matter Store is home to hundreds of designs, available to print both for free and at cost. Users may also upload their own .STL or .OBJ to their libraries to begin printing.

### Print a Design from the New Matter Store

1. Head to the homepage: <https://store.newmatter.com>. Browse and search for designs.
2. Choose a design.
  - a. Free Designs.
    - i. Click “**Add to Library**”.
    - ii. Click “**Send to Print**”.
  - b. Designs for Purchase.
    - i. Click “**Buy this Design**”.
    - ii. If you have not already done so, enter your payment information.
    - iii. Click “**Confirm Purchase**”.
    - iv. Click “**Send to Print**”.
3. Click “**Print Now**” to select a part.
  - a. Add the part to the queue or begin printing.
  - b. Follow your progress from the **Print Queue** or **Continue Shopping**.



## Print a Design from an External Source

1. Go to your **Library**.
2. Click the “**Upload**” button.
3. Choose a name, description, and tags (optional) for your design.
4. Click “**Next**”.
  - a. Choose the file(s) for your design.
5. Click “**Next**”.
  - a. Use the default settings or change the parameters of the print.
6. Click “**Print Now**”.
7. Users have the option to save designs to the **Library** to be printed later.

## Begin Printing

1. Ensure the **Filament** is loaded and the **Build Tray** is in place before printing.
2. It could take the **New Matter Store** several minutes to process a file. When processing is complete, the **New Matter Store** will send the design to the MOD-t.
3. The LED light on the **Front Panel Button** will blink once the MOD-t receives the design.
4. Press the **Front Panel Button**.
  - a. The MOD-t will calibrate the **Build Tray** position, then set the first layer height. After these automatic calibration steps are complete, it will begin printing.

## Pause/Cancel Printing

1. Go to the **Print Queue** in the **New Matter Store**.
  - a. The design that is currently printing is located at the top of the **Print Queue**.
2. To Pause a print, click . This option will temporarily stop the current print and permits the user to continue the job when ready.
3. To Cancel a print, click . This option will terminate the current print job.

## How to Remove Printed Design from the MOD-t

1. Remove the **Build Tray** from the MOD-t.
2. Remove the **Print Surface Plate** from the **Build Tray Base**.
3. Twist the **Print Surface Plate** to release the design.
4. Remove any supports on the print. Enjoy the newly printed design.
  - a. Note that thin, flat designs are harder to remove, and may require the **Scraper**.  
Twisting works for thicker printed designs.

# MOD-t MAINTENANCE

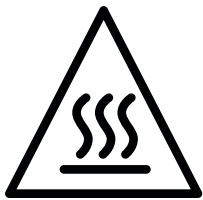
## MOD-t Maintenance

### How to Update to the Latest Firmware

The **New Matter Desktop App** automatically detects necessary firmware updates for the MOD-t.

1. Push the **Front Panel Button** when notified. Follow the prompts in the **Desktop App**.
2. The download process will begin after completion of recommended actions.  
Firmware updates may take a while.
3. The **New Matter Store** will send a notification when it's time to upgrade the MOD-t's firmware.  
Connect the USB to the MOD-t and use to the **New Matter Desktop App** to update.

### How to Change the Hot End



**HOT SURFACE HAZARD:** A HOT SURFACE IS ACCESSIBLE IN THE VICINITY OF THIS SIGN. AVOID CONTACT WITH THESE AREAS WHILE THE MOD-t IS ENERGIZED AND ALLOW TIME FOR THE HOT END TO COOL TO ROOM TEMPERATURE BEFORE SERVICING. HOT SURFACES CAN CAUSE SEVERE BURNS.

1. Unload filament by pressing the “**Unload Filament**” button on the **Desktop App** and follow the directions.
2. Unplug the MOD-t from the power source.
3. DO NOT PROCEED UNTIL THE HOT END COOLS TO ROOM TEMPERATURE.
4. Unplug the **Hot End** from the underside of the **Carriage**.
5. Provided with your replacement Hot End, hold the nut underneath the carriage still. Turn the **Hot End** counterclockwise until it fully unscrews and separates from the **Carriage**.
6. Insert the new **Hot End** into the **Carriage** and turn it clockwise until it begins to spin the nut of the carriage. Hold the nut still with the wrench and tighten the **Hot End** against the hot end carriage nut.
7. Align the **Hot End** so the wires point back towards the connector on the carriage by using the hot end servicing wrench and rotating the carriage nut.
8. Plug the **Hot End** into the **Carriage**.
9. Plug in and power-up the MOD-t.



## Cleaning the Acrylic MOD-t Cover

DO NOT use window cleaning fluids with ammonia (such as Windex™ or 409™), gasoline, denatured alcohol, carbon tetrachloride, or acetone, which will cause the acrylic to craze with minute cracks.

A mild solution of soap or detergent and water should be used instead. The use of a lint free cotton or microfiber cloth is also recommended instead of paper towels, which may cause fine scratches on the cover.

## Maintaining Print Surface Plate

The Print Surface Plate is a consumable part of your MOD-t and can easily be replaced when required. For best results, it is always important to start a print job with a clean Print Surface Plate. Keeping the Print Surface Plate clean and free of oils is important to promote adhesion.

It is recommended that you clean the Print Surface Plate every 3–5 builds with a no-residue, citrus-based oil-free cleanser. To remove the print shadow left behind by your previous builds, use the brass bristle brush (enclosed with your MOD-t) to even out the surface finish.

Remember to clean your Print Surface Plate after brushing to remove any debris. We recommend replacing your Print Surface Plate every 15–20 builds or when builds no longer adhere properly to the surface.

## CONTACT US

**New Matter, Inc.**

130 West Union Street  
Pasadena, CA 91103, U.S.A.

**p:** (866) 949-8722

**e:** [hello@newmatter.com](mailto:hello@newmatter.com)

**w:** <http://www.newmatter.com>

**Twitter Customer Support:** @newmatterhelp



# COMPLIANCE AND SAFETY WARNINGS

## FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the Federal Communications Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Safety Warnings



**CAUTION!** HOT SURFACE IN THE VICINITY OF THIS SYMBOL, IEC 60417-5041

The MOD-t 3D Printer generates high temperatures at the nozzle when operating. Avoid touching the **Hot End** nozzle, and ensure that the **Clear Cover** is in place when printing.

Allow the MOD-t to cool down for a few minutes before removing the finished printed object.

## Electric Shock Hazard

Use the Power Supply and the AC Cord that came along with the MOD-t 3D Printer. The use of other power adapters may damage the MOD-t and may cause a risk of fire.

## Fire Hazard

**DO NOT** place combustible materials or flammable liquids near the MOD-t when it is turned on or when the MOD-t is printing.

## Adult Supervision Required

Small MOD-t hardware or printed parts may pose as choking hazards around children. Adult supervision is highly recommended for users under the age of 18.

# USER AGREEMENT

## Disclaimers

Prior to using the MOD-t 3D Printer, you agree to read the MOD-t's User Guide, which contains (a) Compliance Notice, (b) Safety Warnings, (c) Warranty Terms, Repairs/Returns Policy, and (d) instructions on how to use the MOD-t to ensure understanding of the MOD-t scope of operations. In connection, New Matter will not be held responsible for any injuries that may occur as a result of using the MOD-t. In addition, New Matter will not be liable for any damages, including but not limited to loss of anticipated profits, business, and opportunities due to product performance, repairs, and business interruptions.

## Warranty Terms

This section defines the warranty replacement policy for New Matter products that have been determined defective by a New Matter Technical Support Representative within the 90 day warranty period. A like-new replacement will be sent in advance of receiving the customer's original, defective unit as long as the terms of the New Matter Warranty have been met. Warranty replacement requests must be administered by New Matter Technical Support. In order to receive a warranty replacement, the customer must allow a Technical Customer Support Representative to walk them through a complete diagnostic checklist. Once these conditions are met and the unit is determined to be defective, the Technical Customer Support Representative will initiate the New Matter return process.

## Warranty Terms & Conditions

- Warranty replacements will only be issued for a product that has been determined to be defective by New Matter Technical Support, within the 90 day warranty period.
- Original copy of the invoice/proof of order/validation of serial number may be required to validate warranty status.
- Technical Support will request a credit card number before any replacement unit is shipped. If payment information is already stored in the New Matter Store, we can use your prior payment information. Your card will not be charged as long as the defective unit is returned to New Matter.
- A like-new unit will be sent in advance of receiving the original defective unit. The defective unit will be packed properly in the replacement unit's packaging and returned to New Matter.
- If the defective device is not returned to New Matter within 30 days, New Matter reserves the right to both deactivate the serial number of the defective MOD-t and charge the customer's form of payment collected during the warranty process for the full retail price of a MOD-t unit.
- New Matter will pay all freight costs for the shipping of the replacement and the return of the defective unit.
- It is the responsibility of the customer to make sure the defective device is packaged as instructed. Customer is responsible for all damages incurred by incorrectly packaged units.
- Upon receipt, examination, and testing of the returned unit, if it is found not to be covered by warranty replacement guidelines (i.e. physical damage, issues with the device not originally reported to technical support, misuse, tampering with the device, etc.) New Matter reserves the right to charge the payment form collected by technical support before initiating the warranty process for shipping, repair charges, and/or the retail cost of a new unit.

## Limited Warranty for MOD-t 3D Printer (North America)

New Matter, Inc. (“New Matter”) warrants that this MOD-t 3D printer product (the “Product”) will be free from manufacturing defects in materials and workmanship for a period of 90 days (the “Warranty Period”) from the date of purchase by the original end user purchaser.

If your Product is defective in materials or workmanship during the Warranty Period, New Matter will, at its option, repair or replace the Product as provided in this Limited Warranty Statement (the “Warranty”). Please save your original sales receipt to validate the start of the Warranty Period.

When New Matter authorizes an exchange for the defective unit, New Matter will ship a replacement Product to you, freight prepaid, along with packaging to return the defective units. You are responsible for securely packaging the defective unit, using the packaging provided by New Matter and returning it within seven (7) days of receipt. New Matter requires credit card information for all warranty exchanges to secure your obligations to return the defective one. In the event that you fail to securely ship and return the defective unit, You will be charged the retail price of the Product. New Matter can only ship replacement Products to addresses in the U.S. and Canada (excluding Puerto Rico and U.S. Possessions).

This Warranty applies only to Products purchased and used only in North America and operated under normal installation and use conditions. Using this Product for continuous production or similar high duty purposes is not considered normal use and the damage, maintenance or service from such use will not be covered under this Warranty. This Warranty is not transferable, nor applicable to resold products. Warranty coverage will not apply to any damage or failure of the Product which New Matter determines is due to any causes other than manufacturing defects in materials or workmanship, including without limitation: (i) improper assembly, installation, operation or maintenance; (ii) use in environments or for purposes for which the Product was not designed; (iii) negligence, abuse, accidents, or other physical damage; (iv) unauthorized repairs or modifications; (v) use of any parts not provided by New Matter or use with components not intended or recommended for use with the Product, including use of filaments outside the specifications; (vi) wear and tear or cosmetic damage or maintenance work; and (vii) all causes beyond New Matter’s control including electrical surges, fire, floods, wind, freezing, power failure, generalized corrosion, biological infestations, unusual atmospheric conditions, or other unanticipated causes. Warranty claims cannot be made where the serial number on the Product has been altered, removed or cannot be confirmed.

The term “Product” does not include attachments, software, media, applications, programs, or non-branded parts and peripherals. While such are not covered by this Warranty, the suppliers or publishers may provide their own warranty to you. Refurbished or reconditioned Products are not eligible for Warranty service. This Warranty does not cover reimbursement of materials or services required for reprinting. No person or company is authorized to make any warranties other as provided herein.

If New Matter cannot replicate the claimed defect, You may be responsible for the costs of shipping and replacement. Any replacement product may be either new or like-new, provided that it has functionality at least equal to that of the product being replaced. Products may contain remanufactured parts, components or materials equivalent to new in performance. All returned Products and parts become the property of New Matter.

To the MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY STATES YOUR SOLE AND EXCLUSIVE REMEDY IN CONNECTION WITH THE PRODUCT AND IS IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, REPRESENTATIONS, OBLIGATIONS AND LIABILITIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE. NEW MATTER DISCLAIMS ALL OTHER WARRANTIES, INCLUDING WITHOUT RESTRICTION, ANY IMPLIED WARRANTY OR CONDITION OF QUALITY, MERCHANTABILITY, FITNESS

FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. SOME LAWS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES. IF THESE LAWS APPLY, THEN ALL EXPRESS AND IMPLIED WARRANTIES ARE LIMITED TO THE WARRANTY PERIOD IDENTIFIED ABOVE. IN NO EVENT WILL New Matter BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, LOSSES, OR EXPENSES HOWEVER CAUSED, INCLUDING LOST PROFITS, LOST SAVINGS OR OTHER ECONOMIC DAMAGES. IN THE EVENT THE ABOVE REMEDIES FAIL, OR FOR ANY OTHER CLAIM UNDER ANY OTHER THEORIES OF RECOVERY, New Matter's AGGREGATE LIABILITY, IF ANY, FOR DAMAGES, LOSS OR OTHERWISE IN CONNECTION WITH THE PRODUCT, SHALL BE LIMITED TO THE AMOUNT YOU PAID FOR THE PRODUCT THAT CAUSED THE DAMAGES.

For Warranty support, You must contact New Matter during the Warranty Period.

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**w:** [www.newmatter.com](http://www.newmatter.com)

## Repairs/Return Policy

### Defective on Arrival

This section defines the replacement policy for brand new MOD-t 3D printers that have been determined to be defective on arrival by a New Matter Technical Customer Support Representative. In order to receive a replacement for a defective on arrival device, New Matter Technical Support must be contacted and allowed to walk the customer through a diagnostic checklist. Once these conditions are satisfied and the MOD-t is deemed to be defective a replacement unit will be sent in advance of receiving the customer's original. All replacement requests must be administered by New Matter Technical Support. If a unit is sent back to New Matter without prior contact with technical support, a return of a replacement unit will not be guaranteed by New Matter.

### Defective on Arrival Terms & Conditions

- Defective on arrival replacements will only be issued for a new product that has been determined to be defective by New Matter Technical Support, out of the box at the time of installation.
- Original copy of the invoice/proof of order/validation of serial number may be required to validate warranty status.
- Technical Support will request a credit card number before any replacement unit is shipped. If payment information is already stored in the New Matter Store, we can use prior payment information. The customer's credit card will not be charged as long as the defective unit is returned to New Matter.
- A replacement unit will be sent in advance of receiving the original defective unit. The defective unit should be packed properly in the replacement unit's packaging and returned to New Matter.
- If the defective device is not returned to New Matter within 30 days, New Matter reserves the right to both deactivate the serial number of the defective MOD-t and charge the customer's form of payment collected during the warranty process for the full retail price of a MOD-t unit.
- It is the responsibility of the customer to make sure the defective device is packaged as instructed. Customer is responsible for all damages incurred by incorrectly packaged units.
- The replacement unit will be given a new full term product warranty.
- New Matter will pay all freight costs for the shipping of the replacement and the return of the defective unit.

## INTELLECTUAL PROPERTY



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