

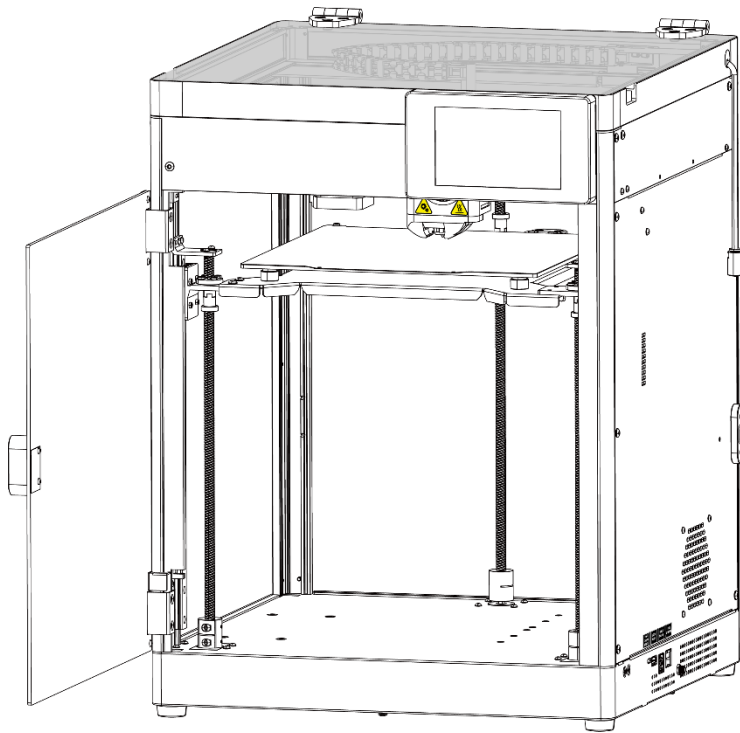
IMPORTANT

1

READ BEFORE USING



3d printer



**DREMEL®**

3PI Tech Solutions Inc.  
5600 River Road, Suite 800, Rosemont, IL 60018  
[www.3PItech.com](http://www.3PItech.com)

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**⚠ WARNING** Read all instructions in this manual and familiarize yourself with the Dremel 3D50 before set-up and use. Failure to comply with the warnings and instructions may result in fire, equipment damage, property damage, or personal injury.

## READ ALL INSTRUCTIONS SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### Work Area Safety

**Keep work area clean and well lit.** Cluttered or dark areas invite accidents.

**Do not operate the 3D50 in the presence of flammable liquids, gases or dust.** 3D50 creates high temperatures which may ignite the dust or fumes.

**Store idle 3D50 out of reach of children and other untrained persons.** Injury can occur in hands of untrained users.

### Electrical Safety

**Always use the 3D50 with a properly grounded outlet. Do not modify 3D50 plug.** Improper grounding and modified plugs increase the risk of electric shock.

**Do not use 3D50 in damp or wet locations. Do not expose 3D50 to rain.** Presence of moisture increases risk of electric shock.

**Do not abuse the cord. Never use the cord for pulling or unplugging the 3D50. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

**Avoid using this product during an electric storm.** There may be a remote risk of a power surge from lightning that may result in electric shock hazard.

**In case of emergency unplug the 3D50 from outlet.**

### Personal Safety

**Stay alert, watch what you are doing and use common sense when operating a 3D50. Do not use 3D50 while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating 3D50 may result in personal injury.

**Use personal protective equipment.** The use of protective equipment such as heat-resistant gloves and safety glasses will reduce the risk of personal injuries.

**Dress properly.** Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothing, jewelry or long hair can be caught in moving parts.

### 3D50 Use and Care

**Before every use check the 3D50 for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the 3D50's operation. If damage is suspected, have the 3D50 repaired by an authorized service center before use.** Use of 3D50 when damaged may result in poor quality of object creation, further equipment damage, property damage or personal injury.

**Do not touch the extruder tip or heated build platform during 3D50 operation or until it has cooled down to at least 60°C (140°F).** Contact with the extruder tip or build platform during or after operation before tip and build plate has cooled may result in personal injury.

**Set up the 3D50 in a well-ventilated area. Place 3D50 printer on flat nonflammable surface and away from flammable material. Provide at least 8 inches of unobstructed spacing around 3D50.** 3D50 melts plastic during building. Plastic odors emitted during 3D50 operation may irritate eyes and airways. Locating

3D50 close to surrounding objects prevents proper ventilation.

**Do not reach inside the 3D50 while it is in operation.** Contact with 3D50 moving parts during operation may result in poor build quality, equipment damage or personal injury.

**Always monitor the 3D50 during operation.** Use of 3D50 by persons unfamiliar with these warnings and instructions may result in equipment or property damage and personal injury.

**Use only Dremel filament.** Use of 3<sup>rd</sup> party filament not authorized by Dremel may result in equipment, property damage, or personal injury.

**Do not adjust extruder/nozzle setting to exceed the maximum rated temperature of the filament type being used.** Heating filament above recommended range can cause emissions that may result in personal injury.

**Ensure small objects created by Dremel 3D50 are not accessible to young children.** Small objects are potential choking hazards for young children.

**Do not create illegal or inappropriate objects using Dremel 3D50.**

**Do not use Dremel 3D50 to create objects intended for use with candles, liquid fuels, and other heat sources.** Plastic may melt when exposed to fire or other heat sources. Such use of objects created by Dremel 3D50 may result in fire, property damage and personal injury.

**Do not use Dremel 3D50 to create objects intended for food or drink applications such as preparation, decoration, storage, or consumption.** Such use of objects created by Dremel 3D50 may result in illness or personal injury.

**Do not use Dremel 3D50 to create objects intended with use with electrical components or housings of electrical components.** Dremel filament is not suitable for electrical applications. Such use of objects created by Dremel 3D50 may result in property damage and personal injury.

**Do not put plastic objects in or around your mouth.** Dremel filament is not suitable for food or drink preparation and food utensils. Such use of objects created by Dremel 3D50 may result in illness or personal injury.

**Do not use Dremel 3D50 to create objects intended for chemical storage.** Dremel filament is not suitable for chemical storage. Such use of objects created by Dremel 3D50 may result in property damage and personal injury.

**Do not modify Dremel 3D50 or alter factory settings.** Modifications may result in equipment and property damage, and personal injury.

**Do not expose Dremel 3D50 to temperatures exceeding 70°C (158°F).** Dremel 3D50 may become damaged. Dremel 3D50 is intended to operate in temperature between 16-29° C (60 - 85° F).

**Do not move or bump Dremel 3D50 or the extruder during operation.** The object may build incorrectly. Always ensure printer is on a stable support to reduce movement or vibration.

**Do not change filament spool unless the building process is completed, stopped, or paused.** Changing the filament during building will cancel the object and may damage the extruder.

**Do not pull the filament out.** Doing so may damage the extruder.

**Use extra care not to damage the extruder tip when clearing debris.** Dremel 3D50 will not work properly with damaged extruder tip and will require replacement.

**Be aware of your body position when using hand tools to remove objects from the build platform.**

Sudden tool slip and improper body position during object removal from the build platform may result in personal injury.

**Avoid scratching the build platform when removing objects.** Scratches in the build platform will result in improper object creation.

**Dremel is not responsible for structural integrity or utility of objects created using Dremel 3D50.**

Structural models created by inexperienced designers may result in property damage and personal injury.

#### Service





**Always unplug Dremel 3D50 from its power before performing any service procedures.** Failure to do so may result in personal injury and equipment damage.

**Have your Dremel 3D50 serviced only by an authorized Dremel service center using only Dremel replacement parts.** This will ensure that proper operation and safety of Dremel 3D50 is maintained.

**Use only Dremel approved components.** Use of components other than genuine Dremel components may void warranty.

**Use only Dremel approved filament.** Damage to the product resulting from use of filament other than Dremel approved filament is not covered under warranty.

**IMPORTANT:** Some of the following symbols may be used on your 3D50. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

| Symbol   | Designation / Explanation (verify with back sticker markings) mike   |
|--|--|
| V  | Volts (voltage)  |
| A  | Amperes (current)  |
| Hz   | Hertz (frequency, cycles per second)   |
| Ø  | Diameter   |
| 0  | Off position   |
| ~  | Alternating current (type or a characteristic of current)  |
|   | Hot surface hazard symbol. Contact may cause burn. Allow to cool before servicing.   |
|   | Alerts user to read manual.  |
|   | This symbol designates that this tool is listed by Underwriters Laboratories, to United States and Canadian Standards.   |
|  | Moving part hazard symbol. Unplug this equipment when not in use for an extended period of time. Keep body parts away from moving parts. Disconnect the power source prior to defeating or by passing the equipment safeguard. Restore the equipment safeguard before restoring power. |

## Additional Safety Warnings

**⚠ WARNING** This product contains one or more chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

## Connection Speed

Network connectivity requires a high-speed internet connection. Internet service provider charges may apply. Remote printing requires a compatible mobile device and data plan. Carrier charges may apply.

**FCC COMPLIANCE****FCC Statement:**

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the 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 receiver.
- Connect the equipment into 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.

**INDUSTRY CANADA (IC)**

This device complies with Innovation, Science and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with ISSED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

L'appareil est conforme aux limites d'exposition aux rayonnements spécifiées par la ISSED pour les environnements non contrôlés. La distance entre le radiateur et le corps doit être d'au moins 20 cm lors de l'installation et du fonctionnement de l'appareil.

The Dremel 3D50 is intended for 3D printing objects from digital files that you create or own or have the right to print using the Dremel 3D50. When making objects using the Dremel 3D50, it is your responsibility to ensure that you do not infringe any third-party intellectual property rights or violate any applicable laws or regulations, such as U.S. or foreign intellectual property laws.

The Dremel 3D50 may not be used to make objects protected by intellectual property rights owned by third parties without such third parties' permission. Using the Dremel 3D50 to do any of the following may require the permission of third parties: to make a duplicate or facsimile (in whole or in part) of any object not created by you, to make an object from a digital file you do not own, or to make an object from a scan of a physical

object that you did not create. It is your responsibility to obtain such permission. In some cases, you may not be able to obtain such permission. Where such permission cannot be obtained, you should not 3D print such object, or you do so at your own risk. You may not modify, reverse engineer, decompile, or disassemble the Dremel 3D50 or its software or firmware, except as permitted by applicable law.

If you use the Dremel 3D50 in any way other than as recommended and described in these Operating/Safety Instructions, you do so at your own risk. Using the Dremel 3D50 to make objects that infringe any intellectual property rights owned by third parties could result in civil or criminal prosecution and penalties, and you could be liable for money damages, fines, or imprisonment.

## BUILDING

Extruder: Single extrusion  
 Extruder Temperature: 300C -572F  
 Build Plate Temperature: Up to 110 C (230F)  
 Screen: 5" full color IPS touch screen  
 Maximum Build Volume: 10" x 10" x 10"  
 (256mm x 256mm x256mm)  
 Layer Thickness: 50-280 microns using 0.4mm nozzle  
 Filament Types and Colors: See [www.3pitech.com](http://www.3pitech.com) for choices  
 Internal Storage: 8GB  
 External Storage: USB flash Drive

## WEIGHT & DIMENSIONS

Weight 47.4 lbs. (21.5 kg)  
 Dimensions: 15.75" x 16.9" x 21.6" (400mm x 430mm x 535mm)

## FILAMENT

Works with Dremel 1.75mm filament

## FILAMENT STORAGE

All polymers degrade with time. Do not unpack until filament is needed. Filament should be stored at room temperature: 16-29° C (60-85° F) and in dry conditions.

## SUPPORTED OPERATING SYSTEMS

- Mac® OS® 11 (Big Sur) or newer
- Windows® 10 or newer
- Linux Ubuntu 20.04 LTS or newer

## SOFTWARE

Dremel 3D50 comes with complimentary file slicing software for Windows and Mac OSX. This application converts your 3D digital files into buildable files.

## MINIMUM SYSTEM SPECIFICATIONS FOR DESKTOP SLICER

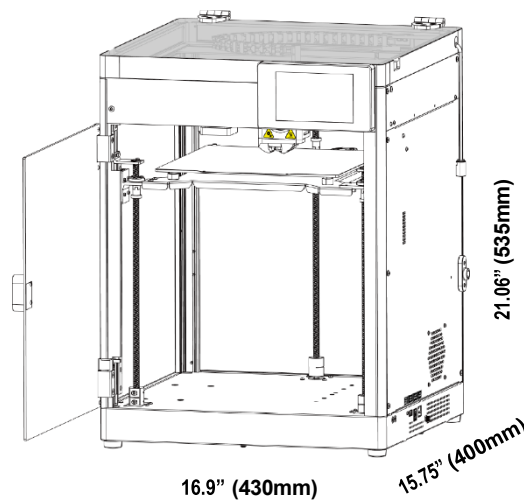
- CPU: 64-bit processor
- Memory: 8 GB +
- Disk space: 2 GB +
- Graphics: Needs to support OpenGL version 2.0 and newer
- Pointing Device: three-button mouse

## ELECTRICAL REQUIREMENTS

3D50 input rating: 100-240V, 50/60Hz, 4.5 Amps

## OPERATING ENVIRONMENT

Room Temperature: 16-29° C (60 - 85° F) Level and workspace  
 Dry workspace environment





| Resource                   | Description  | Location   |
|----------------------------|--|--|
| Quick Start Guide          | Provides illustrated walkthrough of how-to un-box your 3D50 and start building out of the box. | The Quick Start Guide is located on the USB flash drive included with the printer. It's also available on <a href="http://www.3pitech.com">www.3pitech.com</a> |
| 3PI Tech Website           | Provides the latest 3D50 software, product information and customer support.                   | <a href="http://www.3pitech.com">www.3pitech.com</a>   |
| Dremel 3D Customer Support | Contact Dremel for product support, maintenance, and service.                                  | 1-844-437-6533<br>(8AM - 5PM CT M to F)  |
| Slicing Software           | Allows you to upload, edit, and build 3D files.  | Install from <a href="http://www.3pitech.com">www.3pitech.com</a> USB flash drive provided with the Dremel 3D50.   |

## GLOSSARY OF TERMS

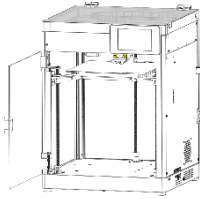
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| FEATURE                 | DESCRIPTION   |
|-------------------------|---|
| Auxiliary Fan           | A larger side cooling fan for high-speed printing.  |
| Build Platform          | The flat surface used by your Dremel 3D50 to build objects.   |
| Build Volume            | The three-dimensional (3D) amount of space that an object will use once it is completed. Your Dremel 3D50 has a maximum build volume which means that objects with a larger build volume cannot be built unless they are resized or broken into sub-objects.          |
| Front Door              | Your Dremel 3D50 has a door located on the front panel. This allows for easy access to the build platform, extruder, filament, and your objects. This door is transparent so you can monitor the progress of your objects while keeping the build environment stable. |
| Ethernet Port           | A local area wired networking technology that allows electronic devices to communicate.   |
| Extruder                | An assembly that uses gears to pull filament through the extruder intake, heat the filament to the build temperature, and push the heated filament out of the extruder tip.   |
| Extruder Fan            | A fan used to cool the outer assembly of the extruder and gear motor.   |
| Extruder Fan Baffle     | A plastic piece that directs air from the extruder fan onto the build platform to assist in cooling the active build.   |
| Extruder Intake         | An opening located at the top of the extruder where filament is inserted for building.  |
| Extruder Lever          | A lever located on the side of the extruder that is used to loosen the grip of the extruder gear motor.   |
| Extruder Tip            | A nozzle located at the bottom of the extruder where heated filament is forced out for building.  |
| Filament Guide Tube     | A plastic tube that guides the filament from the spool holder to the extruder of the printer, preventing any snags.   |
| Filament                | A threadlike strand of plastic material. Dremel offers the following filament types which can be used with your 3D50. These include ECO-ABS, PETG, PLA, Nylon, TPU. Find more details on 3PITECH.com.   |
| Filament Run-out Sensor | Filament Runout Sensor A sensor in the extruder intake that pauses your printer if it runs out of filament during a build.  |
| Filament Spool          | A cylindrical piece on which a long strand of filament is wound for storage and continuous use.   |
| .g, .gcode and .g3drem  | Buildable file formats compatible with your Dremel 3D50.  |
| Leveling Sensor         | A sensor that detects the height of the build platform and assists in proper leveling.  |
| Top Door                | Your Dremel 3D50 has a pivoting lid on the top. This allows for more access to the build platform, extruder, filament, and objects when necessary.  |
| Needle Nose Pliers      | Common tool used to hold small objects and to grab excess material that may be too hot to touch directly.   |
| OBJ File                | A common digital file format used in a wide range of 3D model software. This file is created in 3rd party 3D software or downloaded from <a href="http://www.3pitech.com">www.3pitech.com</a>   |
| Spool Holder            | A plastic tube located on the outside right of your Dremel 3D50 which is designed to hold a filament spool.   |
| Spool Door              | A removable door which locks the filament spool to the spool holder.  |
| Stepper Motor           | A brushless DC electric motor used to drive the guide rails and extruder gears.   |
| .STL File               | A common digital file format used in a wide range of 3D model software. This file is created in 3rd party 3D software or downloaded from <a href="http://www.3pitech.com">www.3pitech.com</a> .   |
| Touch Screen            | Full color display that is touch activated. It allows you to monitor your Dremel 3D50 and objects while also providing commands directly to your Dremel 3D50 without the use of a computer.   |
| USB Flash Drive         | A portable memory card used on a wide array of devices.   |

|                    |  |
|--------------------|--|
| WIFI               | A local area wireless networking technology that allows electronic devices to communicate.   |
| X-Axis Guide Rails | A set of rails on either side of the extruder that allow a stepper motor to move the extruder to the left or right side of the build area. |
| Y-Axis Guide Rails | A set of rails on either side of the build area that allow a stepper motor to move the extruder to the front or back of the build area.    |
| Z-Axis Guide Rails | A set of rails located at the back of the build area that allow a stepper motor to move the build platform up or down.                     |

## KIT CONTENTS

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Dremel 3D50



Instruction Manual  
(on USB flash drive)



Quick Start Guide  
(on USB flash drive)



Filament Spool\*\*



Power Cable



USB Flash Drive



Nozzle



WIFI Antenna Filament



Spool Holder



L-shaped screwdriver  
1.5/2/2.5/3

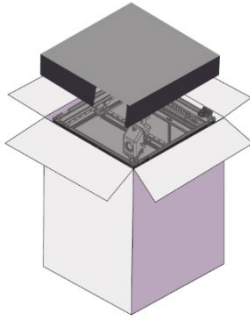


Cross Socket Wrench

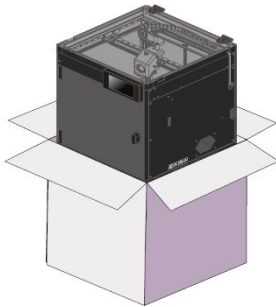
## UNBOXING

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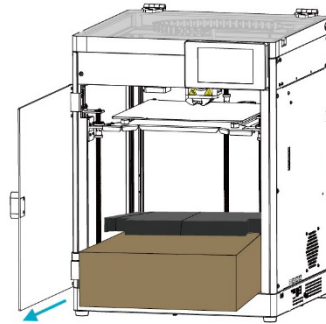
1. Place box on table, cut tape, and open.
2. Remove top insert.



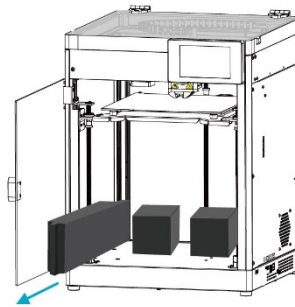
3. Remove 3D50 from the carton and place on table.



4. Open door and remove the box insert.

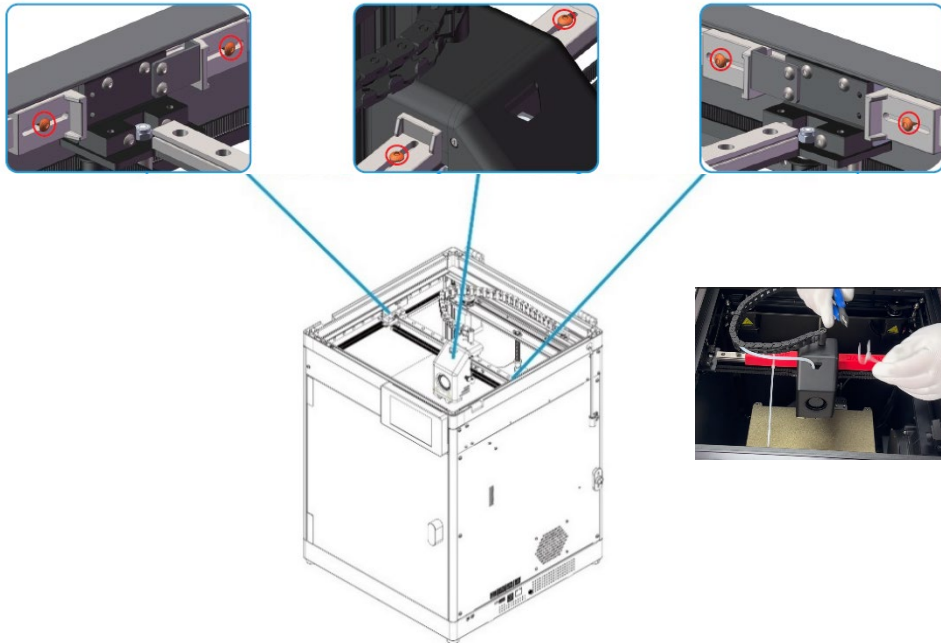


5. Remove the foam insert.



Note: Keep packaging for future transportation and storage.

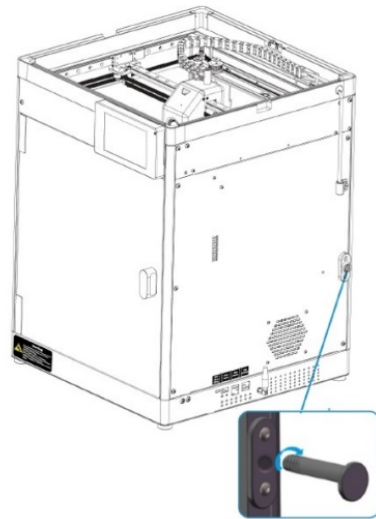
6. Remove XY rail fasteners and screws using the Allen wrench provided. Cut off the cable tie and remove the red silicon buckle. After removing the fasteners, push the printer head to check whether the slide is smooth. This is a key step to ensure the proper operation of the printer

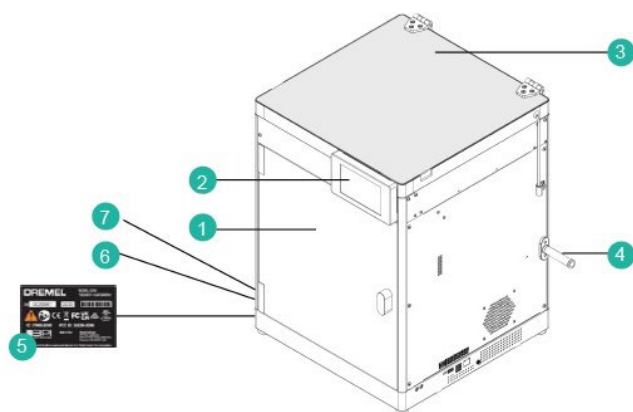


7. To install the WIFI Antenna, tighten clockwise.

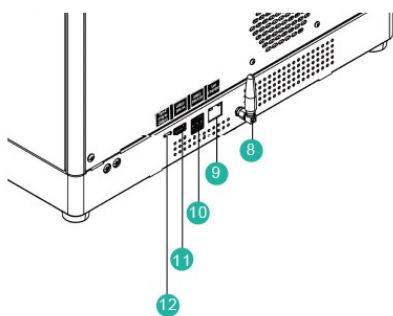


8. Thread the Spool Holder on the right side of the 3D50 printer.

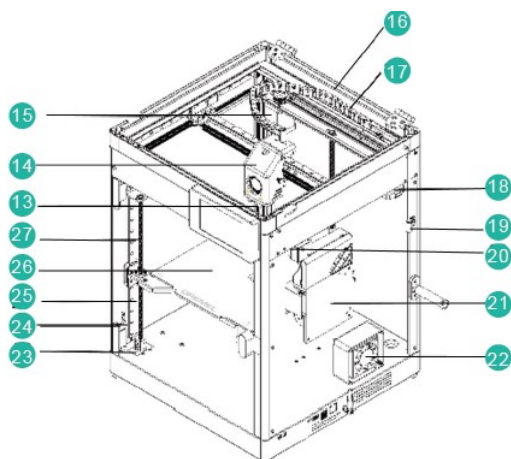




1. Front Door
2. Touch Screen
3. Top Door
4. Filament Spool Holder
5. Name Plate
6. Power Cord Input
7. Power Switch



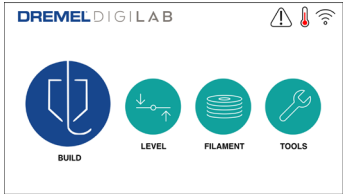
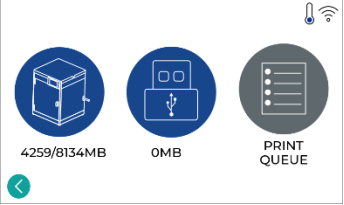
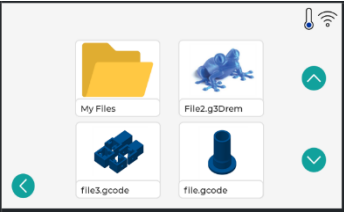


8. WiFi Antenna
9. Ethernet LAN Port
10. USB 2.0
11. USB 3.0
12. USB-C



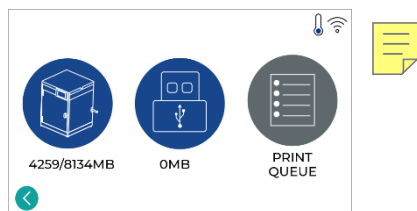
13. Nozzle
14. Extruder
15. Stepper motors (A & B)
16. Top Door Sensor
17. Cable Chain
18. Stepper motors (A & B)
19. Filament Guide Tube
20. Camera
21. Auxiliary Fan
22. HEPA Filter
23. Linear Rail Bearings
24. Front Door Sensor
25. Z Screws
26. PEI Build Plate
27. Linear Rail

Using your Dremel 3D50 is easy with the onboard software and full color touch screen. Before building your model we want to familiarize you with the touch screen menu structure and options.

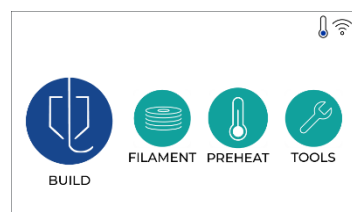
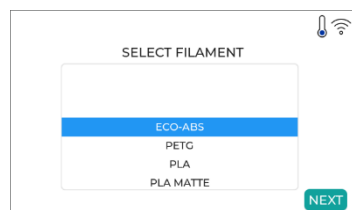
**⚠️WARNING** Observe all provided warnings and safety instructions when using the Dremel 3D50. Failure to do so may result in fire, equipment damage, property damage or personal injury.

|   |   |
|---|---|
|    | <p><b>BUILD</b></p> <p>Select a 3D model and begin BUILD to begin the printing process. (<a href="#">Page 25</a>) for detailed build instructions)</p>  |
|    | <p><b>BUILD MENU</b></p> <p>Tap Printer, USB Flash Drive, or Print Queue (Print Queue only available if connected to Cloud Slicer) to choose the destination of your desired file.</p>  |
|  | <p><b>MODEL MENU</b></p> <p>Tap to select the desired model or use arrows to scroll through pages to find your model.</p>   |
|  | <p><b>FILE DETAILS</b></p> <p>Nozzle and platform temperatures settings referenced for the current build.</p> <p><b>BUILD</b> – Tap to begin build process.<br/> <b>DELETE</b> – Tap to remove model file from on-printer storage or USB flash drive.<br/> <b>COPY TO PRINTER</b> – From USB flash drive, tap to COPY MODEL file to on-printer storage.</p> |
|  | <p><b>BUILD STATUS</b></p> <p><b>PAUSE/PLAY</b> – Tap to pause or resume the current build process.<br/> <b>Pause</b> – Allows you to access the filament button.<br/> <b>STOP</b> – Tap to cancel the current build process.</p>   |

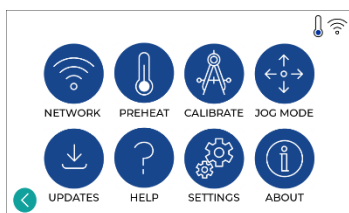


**FILAMENT**

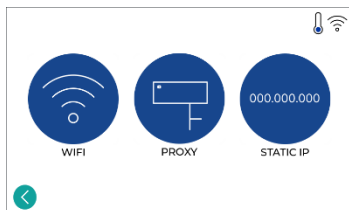
Tap to begin heating and start filament load/change process. (See page 23 for instructions on filament load/change process)

**TOOLS**

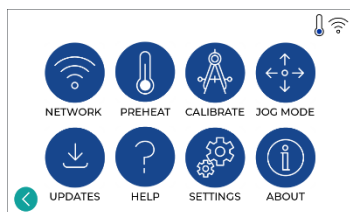
Tap to access the following individual printer functions and settings.

**NETWORK**

Tap to enter Network menu to connect or disconnect WiFi and Set Proxy.

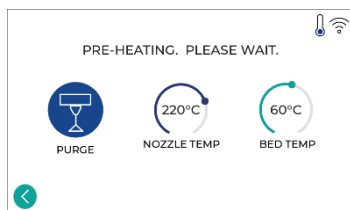
**CONNECT WIFI**

Tap to connect to WiFi. SET PROXY – Tap to set manual proxy. SET STATIC IP – Tap to setup static IP.



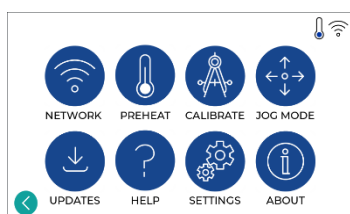
### PREHEAT

Tap PREHEAT to automatically begin preheating both, the extruder and the build plate for printing or removing excess debris.



### PURGE

Once extruder is hot, tap PURGE to manually extrude filament. You can also press and hold to extrude filament.



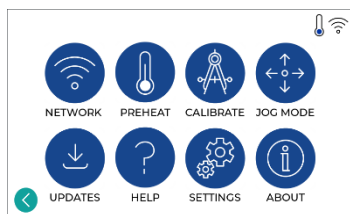
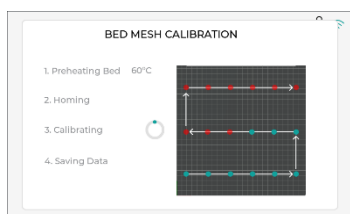
### CALIBRATE

3 options:

**Home extruder** – Moves the extruder and build platform to zero position.

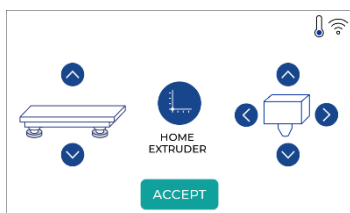
**Vibration Compensation** – Tool to calibrate high speed prints.

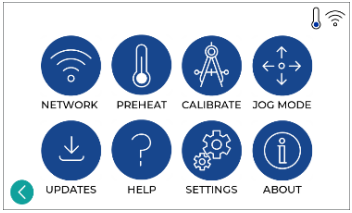
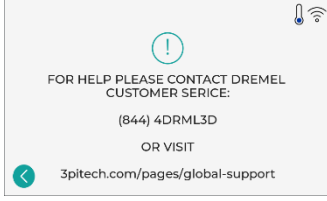
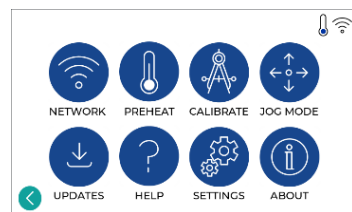
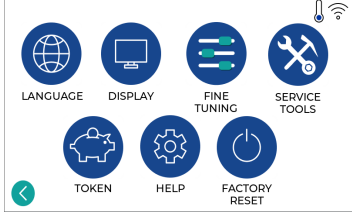
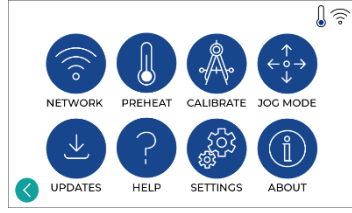
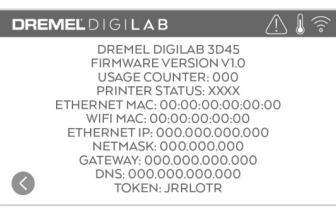
**Nozzle Gap Calibration** – Tool to change the nozzle offset and run a bed mesh calibration.









### JOG MODE

Tap "JOG MODE" to display options to home, move extruder and build platform along the X, Y, and Z-axis.



|   |  |
|---|--|
|    |  |
|    | <p><b>HELP</b></p> <p>Tap to enter service menu to see customer service contact information.</p>   |
|    | <p><b>SETTINGS</b></p> <p><b>LANGUAGE</b> - Tap to pick alternate menu language.</p> <p><b>DISPLAY</b> - Tap to customize cabinet LEDs or main menu hotkeys.</p> <p><b>TOKEN</b> - Tap to release current token and get a new token when connected to Wi-Fi or Ethernet.</p> <p><b>FACTORY RESET</b> - Tap to remove all information stored on 3D50 and return it to factory defaults.</p> |
|   |  |
|  |  |
|  | <p><b>ABOUT</b></p> <p>Tap to see 3D50 information such as firmware version, usage counter, printer status, MAC address, and token.</p>  |

## Touch Screen Icons

|   |   |
|---|---|
|  | Indicates that there is an error such as filament empty or door open. |
|  | Indicates that Ethernet is connected.                                 |
|  | Indicates WiFi signal strength and connected status.                  |
|  | Indicates that the extruder and build platform is cool.               |
|  | Indicates that the extruder and build platform is warm.               |
|  | Indicates that the extruder and build platform is hot.                |

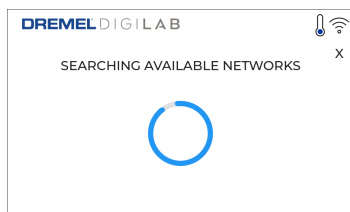
The first time you power on your Dremel 3D50 you will be prompted to perform an initial network setup. Completing this process will give you access to features such as printing wirelessly from your PC, firmware updates and printer notifications through your Dremel 3D slicer software. You will then be walked through how to load filament and properly level the build platform.

1. To complete the initial setup, tap START when prompted on the initial setup screen. If you decline this setup, you can always setup network later.

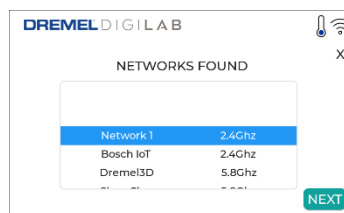


2. If you choose START, your 3D50 will automatically search for available wireless networks.

**NOTE:** Your 3D50 will auto connect to your ethernet if ethernet is plugged into your router. [See Page 24](#)



Choose your wireless network using the touch screen. Use the arrows to scroll through the list of available wireless networks. Tap on your network name to accept it.



3. Enter your wireless network password and tap DONE.



**⚠️WARNING** Observe all provided warnings and safety instructions when using the Dremel 3D50. Failure to do so may result in fire, equipment damage, property damage or personal injury.

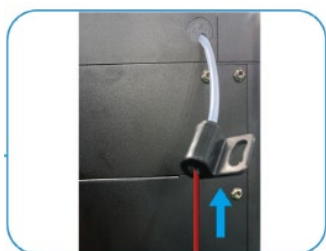
**⚠️WARNING** Do not touch the extruder tip or heated build platform during Dremel 3D50 operation or until it has cooled down to at least 60°C (140°F). Contact with the extruder tip or build platform while hot, may result in personal injury.

**⚠️WARNING** Use only DREMEL filament. Use of filament not authorized by Dremel may result in equipment, property damage, or personal injury.

**⚠️WARNING** Do not adjust extruder setting to exceed the **maximum rated temperature of the filament type being used**. Heating filament above recommended range can cause emissions that may result in personal injury.

**⚠️CAUTION** Do not pull the filament out. Doing so may damage the extruder.

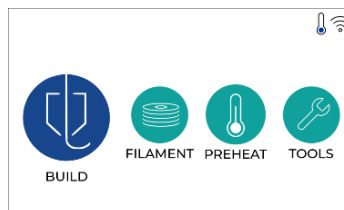
Insert  
Pushing  
Up



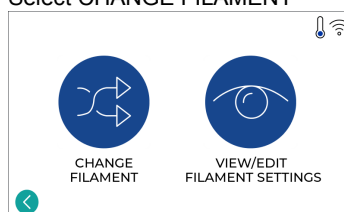
Remove  
pulling  
down

## LOADING/CHANGING FILAMENT

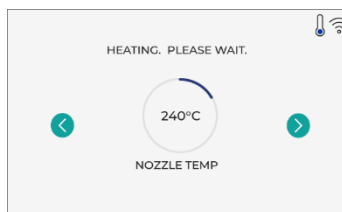
1. Tap FILAMENT to start the filament load/change process.



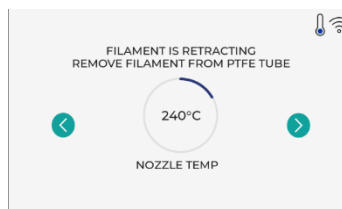
2. Select CHANGE FILAMENT



3. The extruder will reposition, and the nozzle will begin to heat to 240C.



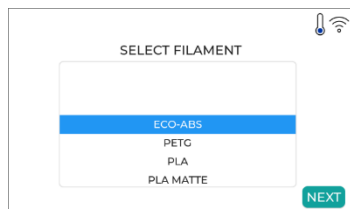
4. After extruder heats, it will begin to retract filament. Remove the filament from the PTFE guide tube.
5. Thread tip of new filament through PTFE guide tube,



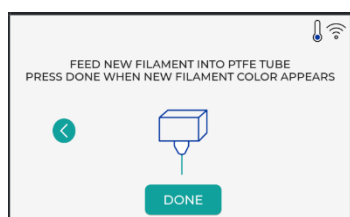
until it reaches the extruder. Place spool on spool holder see below.

**NOTE:** Ensure the gears inside of the extruder have properly gripped the filament before you finish. You will feel a tug and see the filament start to feed itself into the extruder when it has properly loaded.

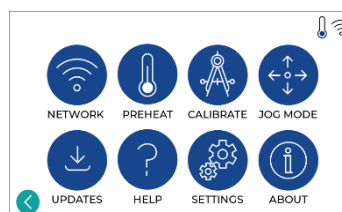
6. Select the filament type you loaded from the list. This will optimize the printer settings for that filament type. (This will also replace any print settings loaded in your sliced file).



7. When new filament loaded appears from extruder tip, tap DONE on screen to complete filament load process. Carefully remove excess filament without touching hot extruder tip. If necessary, carefully remove debris from extruder tip with needle nose pliers.

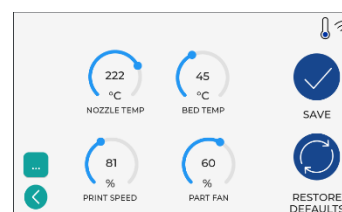


8. Return to main menu, tap TOOLS then CALIBRATE to calibrate the extruder.  
9. If open, close front and top doors



**NOTE:** Please check all settings prior to printing as improper settings may cause prints to fail, property damage, or personal injury.

**NOTE:** If you want to adjust your filament settings for your selected filament, you can do so on the next screen. Otherwise tap SAVE



**⚠ WARNING** Use extra care not to damage the extruder tip when clearing debris. Dremel 3D50 will not work properly with a damaged extruder tip and will require replacement.

## FILAMENT TYPES and SETTINGS

**NOTE:** Please check [3PITECH.com](http://3PITECH.com) for latest filaments and their recommended settings.

| Paramètres d'impression                                | PLA*            | ECO-ABS         | PETG            | Nylon           | SILK            | TPU             |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Plage de température de la buse                        | 200° C - 240° C | 200° C - 240° C | 240° C - 260° C | 230° C - 280° C | 210° C - 240° C | 220° C - 240° C |
| Température optimale de la buse                        | 230° C          | 230° C          | 250° C          | 255° C          | 230° C          | 230° C          |
| Plage de température de la plate-forme de construction | 25° C - 60° C   | 25° C - 60° C   | 70° C - 90° C   | Up to 100° C    | 25° C - 60° C   | 25° C - 60° C   |
| Température optimale de la plate-forme de construction | 60° C           | 60° C           | 80° C           | 80° C           | 70° C           | 60° C           |
| Multiplicateur de vitesse d'impression                 | 0-100%          | 0-100%          | 0-100%          | 0-100%          | 0-100%          | 0-100%          |
| Vitesse d'impression                                   | 90mm-250mm/s    | 90mm-250mm/s    | 56mm-100mm/s    | 45mm-80mm/s     | 45mm-200mm/s    | 20mm-40mm/s     |
| Multiplicateur de vitesse d'impression recommandé      | 100%            | 100%            | 100%            | 90%             | 100%            | 100%            |
| Gamme de ventilateurs                                  | 0-100%          | 0-100%          | 0-50%           | 0-50%           | 0-100%          | 0-100%          |
| Paramètres de ventilateur recommandés                  | 100%            | 100%            | 30%             | 50%             | 100%            | 100%            |

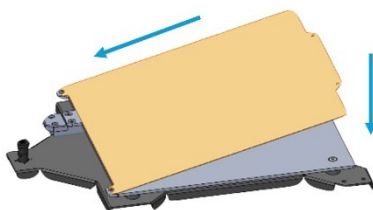
| PROPRIÉTÉS                          | PLA        | ECO-ABS    | PETG       | Nylon      | SILK       | TPU        |
|-------------------------------------|------------|------------|------------|------------|------------|------------|
| Traction                            | 68 Mpa     | 58 Mpa     | 50 Mpa     | 52 Mpa     | 58 Mpa     | 150 Mpa    |
| Densité                             | 1.24 g/cm³ | 1.25 g/cm³ | 1.27 g/cm³ | 1.13 g/cm³ | 1.19 g/cm³ | 1.21 g/cm³ |
| Allongement à la rupture            | 4%         | 30%        | 150%       | 310%       | 4%         | Up to 330% |
| Module de flexion                   | 3200 MPa   | 3050 MPa   | 2100 MPa   | 1600 MPa   | 3408 MPa   | 29 Mpa     |
| Résistance aux chocs Izod crantée   | 36 J/m     | 180 J/m    | 103 J/m    | 150 J/m    | 36 J/m     | 34.4 kJ/m  |
| Température de distorsion thermique | 54° C      | 78° C      | 78.4° C    | 155° C     | 60° C      | 74° C      |

## PREPARING BUILD PLATFORM

**⚠ WARNING** Do not touch the extruder tip or heated build platform **during Dremel 3D50 operation or until it has cooled down to at least 60°C (140°F)**. Contact with the extruder tip or build platform while hot, may result in personal injury.

**⚠ CAUTION** Before every build make sure that the Flex Build Sheet is aligned and securely placed onto the build platform. If not properly aligned, it may interfere with the nozzle and may result in a failed print.

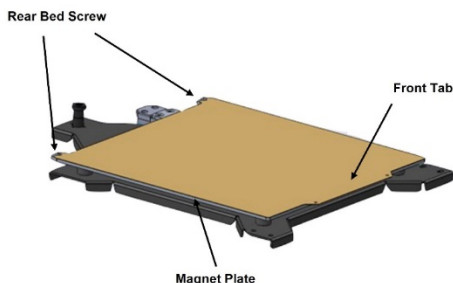
Remove Flex Build Sheet by lifting the front tab first, then



remove the Flex Build Sheet carefully out of the printer (pictured below).

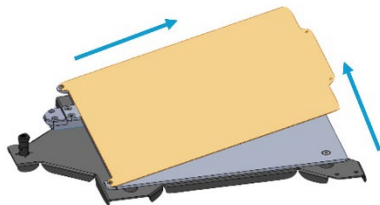
**NOTE:** To clean the Flex Build Sheet, clean with soapy water or isopropyl alcohol and dry with a towel.

1. Inspect the Flex Build Sheet and ensure its surface is clean. If Flex Build Sheet is damaged, use a new one



2. Install the Flex Build with front tab facing forward, align the sheet with the back pins and lay flat onto build platform.

**NOTE:** The Flex Build Sheet has a textured side and smooth side. You may use either depending on the finish you'd like

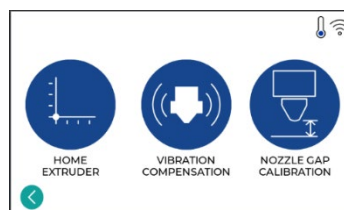


to have.

**NOTE:** Be sure the build plate is clean, and all prints are removed before starting a print.

**NOTE:** At the start of every print, the printer will scan the build plate and automatically level.

## PRINTER CALIBRATION

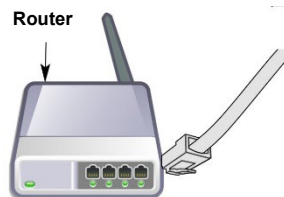


- **Home Extruder** – This will home the extruder to the X Y and Z axis.
- **Vibration Compensation** – This tool is a motion compensation technique that reduces vibrations to prevent resonance.
- **Nozzle Gap Calibration** – This tool allows you to adjust the Z-gap distance between the nozzle and the build plate.

## PRINTING OPTIONS:

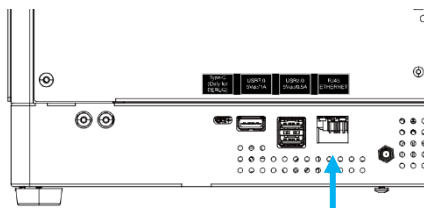
You can print from the Dremel desktop slicer software to the 3D50 Printer the following ways:

- a) WiFi
- b) Ethernet
- c) USB flash drive
- d) On-Printer Storage



## CONNECTING ETHERNET

1. Plug the ethernet cable into your 3D50 and then the other end into your router. (Direct connection from printer to computer not supported)
2. Ethernet connection should be detected automatically.





**⚠ WARNING** Observe all provided warnings and safety instructions when using the Dremel 3D50. Failure to do so may result in fire, equipment damage, property damage or personal injury.

**⚠ WARNING** Do not reach inside the Dremel 3D50 while it is in operation. Contact with Dremel 3D50 moving parts during operation may result in poor build quality, equipment damage or personal injury.

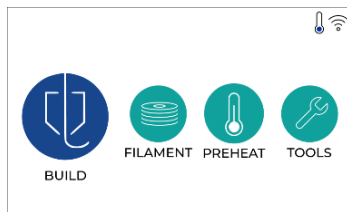
**NOTE:** Your Dremel 3D50 will build test objects before leaving the factory. These test objects may have been made with a different filament color than you are using. Therefore, a small amount of filament may be remaining in the extruder. The start of your first object may have some of this filament color until it transitions over to your filament color.

### BEFORE YOU BUILD

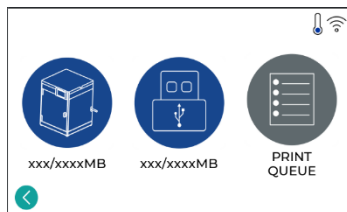
1. Ensure an adequate amount of filament is loaded (see page 22).  
If 3D50 runs out of filament during a build, it will pause until more filament is added.
2. Ensure build platform is level and clear of objects.
3. Ensure the extruder and build platform temperature is set according to the filament type used, see page 24 for details.

### BUILDING FROM ON-PRINTER STORAGE

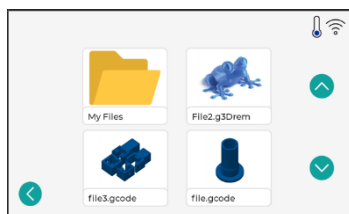
1. On the main menu tap BUILD.



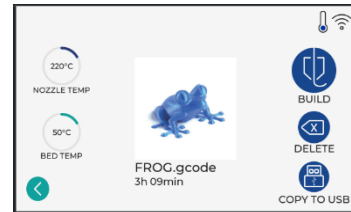
2. On the build menu tap the printer icon.



3. Tap the model file you would like to build. (Use arrows to scroll through pages)



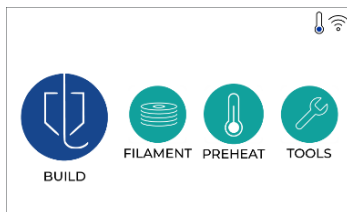
4. In the model detail page tap BUILD to begin building process.



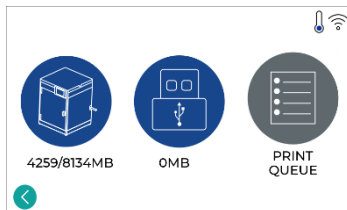
5. Your 3D50 will first home the extruder and build platform to their zero positions. It will then scan and level the build plate. Your extruder nozzle and build plate will begin to heat which may take a few minutes. Once the proper temperature is reached your model will begin to build.
6. Once your object is finished your 3D50 will automatically home the extruder and build platform.
7. Wait until the touch screen indicates that the extruder and build platform is cool to remove your object. See section "Removing Object from Build Platform" for object removal instructions.

### BUILDING FROM USB FLASH DRIVE

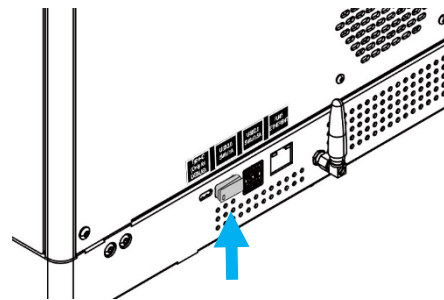
1. On main menu tap BUILD.



2. Tap USB icon to access contents of USB flash drive.



3. Follow steps 3-7 in the section above to complete build from USB flash drive.



### CANCELING YOUR BUILD ON 3D50

To cancel your object during preheating or building, tap STOP on the touch screen. If you confirm YES the extruder and build platform will move to their calibration positions.

## REMOVE YOUR PRINT

**⚠ WARNING** Do not touch the extruder tip or heated build platform during Dremel 3D50 operation or until it has cooled down to at least 60°C (140°F). Contact with the extruder tip or build platform during or after operation before tip and build plate has cooled may result in personal injury.

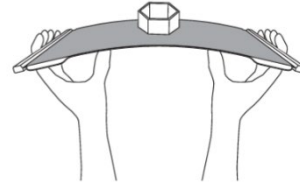
**⚠ WARNING** Use **personal protective equipment**. The use of protective equipment such as heat resistant gloves and safety glasses will reduce personal injuries.

**⚠ WARNING** Be aware of your body position when using hand tools to remove objects from the build platform. Sudden tool slip and improper body position during object removal from the build platform may result in personal injury.

**⚠ WARNING** Avoid scratching the build platform when removing objects. Scratches in the build platform will result in improper object creation.

1. Once your print is complete and has cooled, remove the build sheet from the printer by pulling it up off the magnet plate by its side handles.
2. To remove the printed object, flex the build sheet with the

object pointed away from yourself or others. Push on the back of it with your thumbs using your other fingers to hold onto the handles.



3. The object will be released and can easily be pulled off by hand. For thin or small parts, flexing the build sheet may not be enough to release the object. In these cases, you may use a plastic putty knife or your fingernails to unhinge and remove it.

**DO NOT USE** a metal scrapper as it will ruin the PEI surface of your build sheet.

### Removing Supports (If needed)

Use needle nose pliers to remove internal supports or hard to reach areas.

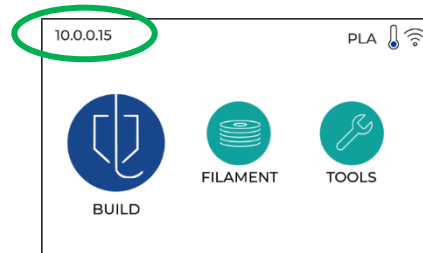
## CAMERA OPERATION

Your 3D50 is equipped with a camera that can be used to remotely monitor prints as long as your printer is connected to a network.

### How to access your 3D50's IP Address

1. If you are connected using WiFi or Ethernet, you can locate your IP address on the upper left corner of your home screen.
2. Open any web browser on the device you want to view the camera on. In the address bar, enter the string:

`http://IPADDRESS/webcam/?action=stream`  
For example: `http://10.0.0.15/webcam/?action=stream`



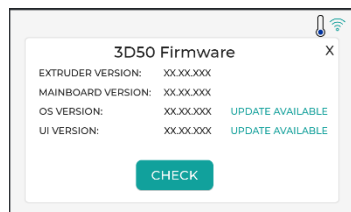
## BEST PRACTICES

1. Avoid touching the flex build sheet. Oil from your fingers will impair the flex sheet's ability to hold first layer adhesion. For proper adhesion of filament to the build platform, as needed, wash the build platform with soapy warm water then dry the build platform. You can also use alcohol to wipe the sheet clean and remove any oil.
2. Ensure the spool is installed properly and can rotate freely.
3. When using your Dremel 3D50 for the first time or after changing filament, allow Dremel 3D50 to purge until material is consistent with the installed filament color.
4. It is important to watch your Dremel 3D50 begin building objects. Your print is most likely to have trouble in the beginning. Thankfully, this is also the most convenient time to cancel the object, clean the build platform, and start your object again. Remain near the Dremel 3D50 during the building process.
5. It is important to save your Dremel 3D50 packaging as it will make re-boxing and transporting your Dremel 3D50 easier.
6. Ensure that you store filament spools in an environment that is not moist or too hot. It is recommended that you do not remove the filament spool from its airtight packaging until use.
7. Whenever possible, it is best to locate your object in the center of the build platform. Using the best orientation for your object is critical.
8. For steep overhangs (More than a 45-degree angle) it is recommended to build with supports.
9. If needed, remove the build flex sheet from the printer before removing the object. Allowing the object to cool to room temperature will make removing the printed model much easier.
10. To extend the usage of your build sheet, set your sliced file to print in other areas of the build plate, not just the center.

## UPDATING FIRMWARE VIA NETWORK

If your 3D50 is registered and connected to Wi-Fi, it should check for firmware updates each time it boots up. You can also update its firmware directly from the touch screen. To update firmware:

1. Tap TOOLS, then tap UPDATES.
2. Your 3D50 will check to see if it has the latest firmware installed. Click CHECK to search for an update. If there is an "UPDATE AVAILABLE" message you can press that to start the update that on the printer.



3. Tap ACCEPT to download and install the latest firmware.
4. When the 3D50 starts up and returns to the Home Screen, firmware update is complete.

## UPDATING FIRMWARE MANUALLY

If your 3D50 is not connected to a network, you can update firmware directly from a USB flash drive. On your web browser go to <https://3pitech.com/pages/3d50-support> and download the latest 3D50 firmware file

1. Add the 3D50 firmware file to an empty, FAT32 formatted, USB flash drive.
2. Turn off your 3D50 using the ON/OFF switch.
3. Insert the USB flash drive into the USB-A port on the bottom right side of the printer.
5. While your printer is powered on, go to TOOLS > UPDATES and click CHECK
4. This will start the update process on your 3D50 and automatically reboot when completed.

## CLEANING THE EXTERIOR

Clean the 3D50's exterior with a lint free cloth. Clear the outer surfaces of any debris that is visible.

To avoid damaging your Dremel 3D50 do not use water, chemicals or other cleaners on the 3D50 unless otherwise noted.

## CLEANING THE EXTRUDER TIP

**⚠️WARNING** Use extra care not to damage the extruder nozzle when clearing debris. Dremel 3D50 will not work properly with damaged extruder nozzle and will require replacement.

**⚠️WARNING** Do not touch the extruder nozzle or heated build platform during Dremel 3D50 operation or until it has

cooled down to at least 60°C (140°F). Contact with the extruder tip or build platform during or after operation before tip and build plate has cooled may result in personal injury.

Using small needle nose pliers, pull away any plastic debris from the extruder nozzle. If the debris is stubborn, the extruder may need to be heated.

## CLEANING THE TOUCH SCREEN

Wipe the touch screen with the soft, lint-free cloth. Do not spray cleaners on the touch screen.

## CLEANING THE BUILD SHEET

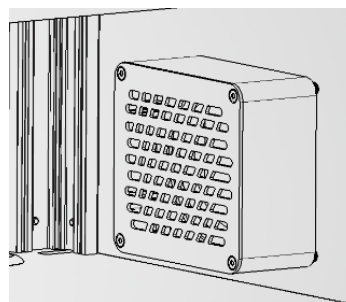
Oil build up from your fingers may diminish first layer adhesion. Clean the build sheet as needed using alcohol wipes or soap and water. Dry with a lint free cloth

## CHANGE THE FILTER

Change the filters every 6-12 months.

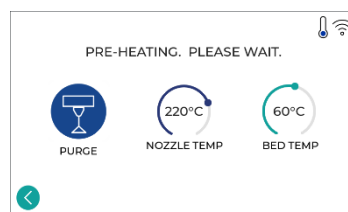
1. Remove the filter cover by unscrewing the 4 screws holding it in place.
2. Replace the old filter with a new one.

**NOTE:** White side of the filter should be facing inside the printer.



## UNCLOG EXTRUDER / PURGE CLOG

By changing filament, the 3D50 extruder will heat up sufficiently to melt any filament that may be clogging the extruder tip.



If nozzle is damaged or cannot be unclogged, replace it with a new one. A spare nozzle is included with your 3D50 printer.

## TROUBLE SHOOTING

3

| PROBLEM  | CAUSE   | CORRECTIVE ACTION  |
|--|---|--|
| Filament is not extruding or sticking to the build plate properly.   | This can be caused by the build platform not being clean.   | Cleaning the Flexible Build Plate with alcohol or soapy water.   |
| Support material does not break away during cleaning and results in decreased quality of the final object. | Temperature or print settings may be incorrect  | Lowering the temperature of the nozzle 5-10 degrees. You can also change the support offset to the model.  |
| Spaghetti mess at end of build.  | A layer of your object did not stick properly, model was saved with minimal surface area contacting the build platform, or object was built floating above the build platform with no support selected. Z-Gap offset may not be correct and the extruder tip is not properly spaced with the build plate. | Use the preview feature in Dremel slicer to see the first layer height and position. Build with supports when necessary.<br><br>Contact customer service on how to calibrate the Z-Gap Offset.   |
| Part only built halfway.   | Filament ran out or got tangled. Filament clogged during build. File corruption.  | Replace filament and resume build. See "No filament coming out".<br><br>Slice file again.  |
| No filament coming out.  | Clogged extruder.   | Contact customer service.  |
| Extruder will not home.  | Various issues.   | Contact customer service.  |
|  |   |  |
| 3D50 will not find my or connect to my Wi-Fi network.  | Printer too far from wireless router. Antenna not installed. Network password or SSID incorrect   | Reposition 3D50 to be closer to your router. Make sure the WiFi antenna is screwed in all the way. Connect to network with Ethernet. Re-enter your password/SSID or verify your password with your network owner.  |
| Build did not start when sent over network.  | Filament ran out.<br><br>Doors open.<br><br>Model was already building  | Load additional filament and resume build.<br><br>Doors must be closed to start builds over your network, start build from print queue<br><br>The build plate must be clear to start a build over your network, clear the build plate and start build from print queue.. |

### Firmware Updates

Dremel recommends that firmware be updated whenever Dremel provides an update.

Dremel will provide firmware updates to improve performance and add additional features for the 3D50 throughout the life of the product. There are two ways of updating the 3D50: (1) Download update from [www.3pitech.com](http://www.3pitech.com) and install using USB memory drive. (2) Connect the 3D50 to the internet and update from the 3D50 touch screen.

### Open-Source Software used in this Dremel product

This product contains software components that are licensed by the holder of the rights under any version of the GNU General Public License (GPL), GNU Lesser General Public License (LGPL) or any other open-source software license which requires that source code be made available. You can receive a complete machine-readable copy of the corresponding source code by filling out the form located at <https://3pitech.com/pages/contact-us-1>

Your request should include: (i) the name of the Dremel product, (ii) the serial number (if applicable), (iii) the software version (if applicable), (iv) your name, (v) your company name (if applicable) and (vi) your return mailing and email address (if available).

We may charge you a nominal fee to cover the cost of the

physical media and distribution.

You may send your request (i) within three (3) years of the date you received the product that included the software which is subject of your request or (ii) in the case of code licensed under the GPL version 3 for as long as Dremel offers spare parts or customer support for that product.

### Warranty regarding further use of the Open-Source Software:

DREMEL provides no warranty for the Open-Source Software programs contained in this device, if such programs are used in any manner other than the program execution intended by DREMEL. The licenses listed below define the warranty, if any, from the authors or licensors of the Open-Source Software. DREMEL specifically disclaims any warranties for defects caused by altering any Open-Source Software program or the product's configuration. You have no warranty claims against DREMEL in the event that the Open-Source Software infringes the intellectual property rights of a third party. Technical support, if any, will only be provided for unmodified software.

### Recycling

You can recycle your 3D printer in the U.S. by visiting <http://www.mrmrecycling.com/recycle-now.php>

For other countries, please visit your local electronic recycling center



If used for non-commercial or educational purposes, your Dremel 3D50 is warranted against defective materials or workmanship for a period of one year from the date of purchase. If the Dremel 3D50 is used for commercial purposes, this warranty will apply 60 days from the date of purchase. In the event of the product fails to conform to this written warranty, please take the following action:

1. DO NOT return your product to the place of purchase.
2. Please contact customer service
3. Carefully package the product by itself, in original packaging, with no other items, and return it, freight prepaid, along with:
  - a. A copy of your dated proof of purchase (please keep a copy for yourself).
  - b. A written statement about the nature of the problem.
  - c. Your name, address and phone number to:

| CONTINENTAL USA  | CANADA                                     | MEXICO   |
|--|--|--|
| Dremel Service Center<br>Phone: 1 (800) 437-3635<br><a href="https://us.dremel.com">https://us.dremel.com</a>                            | Giles Tool Agency<br>Phone: 1-416-287-3000 | 3D Market<br>Phone: 1-800-004-6733<br><a href="http://www.3dmarket.mx">www.3dmarket.mx</a> |
| <b>OUTSIDE CONTINENTAL UNITED STATES</b><br>See your local distributor or write to Dremel, 13202 Globe Drive in Mount Pleasant, WI 53177 |  |  |

We recommend that the package be insured against loss or in-transit damage, for which we cannot be responsible.

This warranty applies only to the original registered purchaser. DAMAGE TO THE PRODUCT RESULTING FROM TAMPERING, ACCIDENT, ABUSE, NEGLIGENCE, UNAUTHORIZED REPAIRS OR ALTERATIONS, PRODUCT USE IN VIOLATION OF THE "GENERAL SAFETY WARNINGS," UNAPPROVED ATTACHMENTS, USE OF FILAMENT OTHER THAN DREMEL APPROVED FILAMENT, OR OTHER CAUSES UNRELATED TO PROBLEMS WITH MATERIAL OR WORKMANSHIP ARE NOT COVERED BY THIS WARRANTY.

No employee, agent, dealer or other person is authorized to give any warranties on behalf of Dremel. If Dremel inspection shows that the problem was caused by problems with material or workmanship within the limitations of the warranty, Dremel will repair or replace the product free of charge and return the product prepaid. Repairs made necessary by normal wear or abuse, or repair for products outside of the warranty period, if they can be made, will be charged at regular factory prices.

**DISCLAIMER OF IMPLIED WARRANTIES: DREMEL MAKES NO OTHER WARRANTY OF ANY KIND WHATEVER, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY DREMEL AND EXCLUDED FROM THIS LIMITED WARRANTY.**

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. The obligation of the warrantor is solely to repair or replace the product. The warrantor is not liable for any incidental or consequential damages due to any such alleged defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you.

For prices and warranty fulfillment in the continental United States, contact a Dremel service location.

1-844-437-6533 (8AM - 5PM CT M to F)

Imported in the U.S. by:  
3PI Tech Solutions Inc.  
5600 River Road, Suite 800, Rosemont,  
IL 60018, United States

This radio transmitter [IC: 27985-3D50] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Cet émetteur radio [IC: 27985-3D50] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antennes énumérés ci-dessous, avec le gain maximal autorisé indiqué. L'utilisation de ces types d'antennes dont le gain est supérieur au gain maximal indiqué pour l'un des types énumérés est strictement interdite avec cet appareil.

| Type     | Antenna Gain | Impedance | Frequency Range |
|----------|--------------|-----------|-----------------|
| External | 4.86dBi      | 50Ω       | 2.4-2.5GHz      |
| External | 2.36dBi      | 50Ω       | 5150-5850MHz    |

Antenna model: 3D50

The device operates on 5725-5850MHz, the EIRP meet the requirement.

For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate.