DREMEL 3D40 FLEX Printer with Filament Instruction Manual

Original instructions

Contents

GENERAL SAFETY WARNINGS

 WARNING

READ ALL INSTRUCTIONS IN THIS MANUAL AND FAMILIARIZE YOURSELF WITH THE DREMEL 3D40 FLEX BEFORE SETUP AND USE. FAILURE TO COMPLY WITH THE WARNINGS AND INSTRUCTIONS MAY RESULT IN FIRE, EQUIPMENT DAMAGE, PROPERTY DAMAGE, OR PERSONAL INJURY. SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

WORK AREA SAFETY

a. Keep work area clean and well lit. Cluttered or dark areas invite accidents.
b. Do not operate Dremel 3D40 FLEX in the presence of flammable liquids, gases or dust. Dremel 3D40 FLEX creates high temperatures which may ignite the dust or fumes.
c. Store idle 3D40 FLEXs out of reach of children and other untrained persons. Injury can occur in hands of untrained users.

ELECTRICAL SAFETY

a. Always use the Dremel 3D40 FLEX with a properly grounded outlet. Do not modify Dremel 3D40 FLEX plug. Improper grounding and modified plugs increase risk of electric shock.
b. Do not use Dremel 3D40 FLEX in damp or wet locations. Do not expose Dremel 3D40 FLEX to rain. Presence of moisture increases risk of electric shock.
c. Do not abuse the cord. Never use the cord for pulling or unplugging the Dremel 3D40 FLEX. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
d. Avoid using this product during an electric storm. There may be a remote risk of a power surge from lightning that may result in an electric shock.
e. In case of emergency unplug Dremel 3D40 FLEX from outlet.

PERSONAL SAFETY

a. Stay alert, watch what you are doing and use common sense when operating a Dremel 3D40 FLEX. Do not use Dremel 3D40 FLEX while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating Dremel 3D40 FLEX may result in personal injury.

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

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

DREMEL 3D40 FLEX USE AND CARE

a. Before every use check Dremel 3D40 FLEX for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the Dremel 3D40 FLEX's operation. If damage is suspected then have the Dremel 3D40 FLEX repaired by an authorised Dremel service centre before use. Use of Dremel 3D40 FLEX when damaged may result in poor quality of object creation, further equipment damage, property damage or personal injury. may affect the Dremel 3D40 FLEX's operation. If damage is suspected then have the Dremel 3D40 FLEX repaired by an authorised Dremel service centre before use. Use of Dreme/l 3D40 FLEX when damaged may result in poor quality of object creation, further equipment damage, property damage or personal injury.

b. Do not touch the extruder tip during Dremel 3040 FLEX operation or until it has cooled down to at least 60°C (140°F). Contact with the extruder tip during or after operation before tip has cooled may result in personal injury.

c. Set up the Dremel 3040 FLEX in a well- ventilated area. Provide at least 8 inches of unobstructed spacing around Dremel 3D40 FLEX. Dremel 3D40 FLEX melts plastic during building. Plastic odours emitted during Dremel 3D40 FLEX operation may irritate eyes and airways. Locating Dremel 3D40 FLEX close to Surrounding objects prevents proper ventilation.

d. Do not reach inside the Dremel 3D40 FLEX while it is in operation. Contact with Dremel! 3D40 FLEX moving parts during operation may result in poor build quality, equipment damage or personal injury.

e. Prevent untrained individuals accessing the 3040 FLEX during operation. Use of Dremel3D40 FLEX by persons unfamiliar with these warnings an instructions may result equipment or property damage and personal injury.

f. Use only DREMEL PLA filament. Use of filament not authorized by Dremel may result in equipment and property damage.

g. Ensure small objects created by Dremel 3D40 FLEX are not accessible to young children. Small objects are potential choking hazards for young children.

h. Do not create illegal or inappropriate objects using Dremel 3040 FLEX.

i. Do not use Dremel 3D40 FLEX 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 3D40 FLEX may result in fire, property damage and personal injury.

j. Oo not use Dremel 3040 FLEX to create objects intended for food or drink applications such as preparation, decoration, storage, or consumption. Such use of objects created by Dremel 3D40 FLEX may result in illness or personal injury.

k. Do not use Dremel 3D40 FLEX to create objects intended with use with electrical components or housings of electrical components. PLA plastic is not suitable for electrical applications. Such use of objects created by Dremel 3D40 FLEX may result in property damage and personal injury.

i. Do not put plastic objects in or around your mouth. PLA plastic is not suitable for food or drink preparation and food utensils. Such use of objects created by Dremel 3D40 FLEX may result in illness or personal injury.

m. Do not use Dremel 3D40 FLEX to create objects intended for chemical storage. PLA plastic is not suitable for chemical storage. Such use of objects created by Dremel 3D40 FLEX may result inproperty damage and personal injury.

n. Do not modify Dremel 3D40 FLEX or alter factory settings. Modifications may result in equipment and property damage, and personal injury.

o. Do not expose Dremel 3D40 FLEX to temperatures exceeding 70°C (158°F). Dremel 3D40 FLEX may become damaged. Dremel 3D40 FLEX is intended to operate in temperature between 16-29° C (60 – 85° F).

p. Do not move or bump Dremel 3D40 FLEX or the extruder during operation. The object may build incorrectly.

q. 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.

r. Do not pull the filament out until instructed by the touch screen. Doing so may damage the extruder.

s. Use extra care not to damage the extruder tip when clearing debris. Dremel 3D40 FLEX will not work properly with damaged extruder tip and will require replacement.

t. Before every build make sure that the build platform is covered with Dremel specified build tape. Use of improper build tape may result in equipment damage and poor object build quality.

u. 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.

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

w. Do not drop the build platform. Tempered glass plate may break and result in personal injury.

x. Do not remove tempered glass plate from plastic holder. Contact with tempered glass plate edge may result in personal injury.

y. Do not twist or bend the build platform while removing objects. Tempered glass plate may separate from plastic holder and result in personal injury.

z. Dremel is not responsible for structural integrity or utility of objects created using Dremel 3D40 FLEX. Structural models created by inexperienced designers may result in property damage and personal injury.

SERVICE

a. Always unplug Dremel 3D40 FLEX from its power before performing any service procedures. Failure to do so may result in personal injury and equipment damage.

b. Have your Dremel 3D40 FLEX serviced only by an authorized Dremel service centre using only Dremel replacement parts. This will ensure that proper operation and safety of Dremel 3D40 FLEX is maintained.

c. Use only Dremel approved materials and components. Use of object materials, or 3D objects other than Dremel® approved object materials and genuine Dremel® components may void warranty.

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

USED SYMBOLS

Symbol	Name	Designation/ Explanation
⚠ WARNING	Warning symbol	Alerts user to warning messages
(read manual symbol)	Read manual symbol	Alerts user to read manual
V	Volts	Voltage
A	Amperes	Current)
Hz	Hertz	Frequency, cycles per second
Ø	Diameter	
o	Off position	
∼	Alternating current	Type or a characteristic of current
(hot surface symbol)	Hot surface hazard symbol	Contact may cause burn. Allow to cool before servicing.
(no pacemaker symbol)		The magnets of the build plate holder generate a field that can impair the function of cardiac pacemakers.

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 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.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

INFORMATION ON INTELLECTUAL PROPERTY

The Dremel 3D40 FLEX is intended for 3D printing bjects from digital files that you create or own, or have the right to print using the Dremel 3D40 FLEX. When making objects using the Dremel 3D40 FLEX, 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 3D40 FLEX may not be used to make objects protected by intellectual property rights owned by third parties without such third parties' permission. Using the Dremel 3D40 FLEX 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 3D40 FLEX or its software or firmware, except as permitted by applicable law. If you use the Dremel 3D40 FLEX in any way other than as recommended and described in these Operating/Safety Instructions, you do so at your own risk. Using the Dremel 3D40 FLEX 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.

FUNCTIONAL DESCRIPTION AND SPECIFICATIONS

BUILDING
Extruder: Single extrusion
Extruder temperature: Up to 230°C (397°F)
Operating Interface: 3.5" full color IPS touch screen
Maximum Build Volume: 10" x 6" x 6.7" (255mm x 155mm x 170mm)
Layer Thickness: 50 microns | 0.5 mm
Filament Colors: See Dremel3D.com for color choices
Internal Storage: 4GB
External Storage: USB Flash Drive
WEIGHT & DIMENSIONS
Weight (without spool): 16kg (35lbs) Dimensions: 20.25" x 16" x 15.9" (515mm x 406mm x 394mm)
FILAMENT
ONLY 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.
SOFTWARE
Dremel 3D40 FLEX comes with complimentary Dremel Digilab 3D Slicing software for Windows and Mac OSX. This application converts your 3D digital files into buildable files.
SUPPORTED OPERATING SYSTEMS

- Apple® Mac® OS® X v10.9 or later (Mavericks)
- Microsoft® Windows® 8.1
- Microsoft® Windows®7 SP1

MINIMUM SYSTEM SPECIFICATIONS

- CPU: 64-bit processor (32-bit not supported)

- Memory: 3 GB RAM (4 GB or more recommended)

- Disk space: ~2 GB free disk space for installation

- Display card: 1,024 MB GDDR RAM or more. Microsoft® Direct3D® 11 capable graphics card or higher

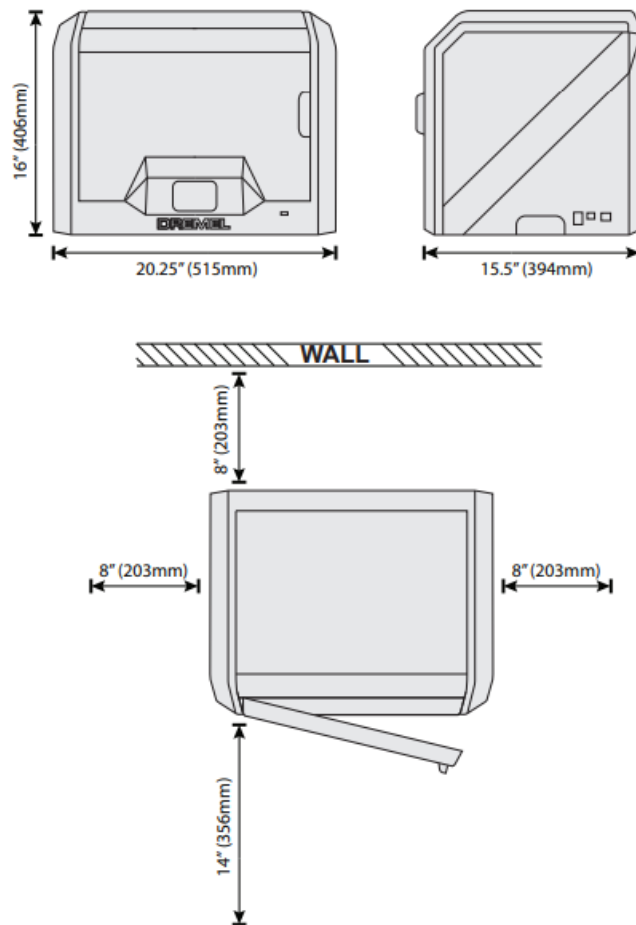- Pointing device: Three-button mouse

ELECTRICAL REQUIREMENTS
3D40 FLEX input rating: 100-240V, 47-60Hz, 0.8A-1.8A
OPERATING ENVIRONMENT
Room Temperature: 16-29° C (60 – 85° F)
Level workspace
Dry workspace environment

3D40 FLEX RESOURCES

Resource	Description	Location
Quick Start Guide	Provides illustrated walk through of how to un-box your 3D40 FLEX and start building out of the box.	Printed version of the Quick Start Guide is located in the rectangular component carton. It is also available on **www.dremel3d.com**
Dremel 3D Website	Provides the latest 3D40 FLEX software, product information, customer support, and 3D model and project downloads.	**www.dremel3d.com**
Dremel 3D Customer Support	Contact Dremel for product support, maintenance, and service.	www.dremel3d.com
File Slicing Software	Allows you to upload, edit, and build 3D files.	Installed from **www.dremel3d.com** or from USB flash drive provided with the Dremel 3D40 FLEX.

GLOSSARY OF TERMS

Term	Definition
Flexible Build Plate	The flat, flexible surface used by your Dremel 3D40 FLEX to build objects. The flexible build plate is comprised of a flexible steel plate with plastic handles for easy bending. The flexible build plate is attached to the printer using the build plate holder.
Build Plate Holder	The flat, magnetic surface used to hold the flexible build plate. It has a magnetic surface, two notches in the back and two movable latches in the front to hold down the flexible build plate.
Build Platform Clip	Clip located at the front of the build platform base that is used to secure the build platform in place.
Build Tape	Adhesive tape that improves the consistency of your objects and helps them stick to the build plate surface.
Build Volume	The three dimensional (3D) amount of space that an object will use once it is completed. Your Dremel 3D40 FLEX has a maximum build volume which means that objects with a larger build volume cannot be built unless they are resized or broken into subobjects.
Door	Your Dremel 3D40 FLEX 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 made with a transparent material so you can monitor the progress of your objects while keeping the build environment stable.
Ethernet Port	A local area wired networking technology that allow 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	A threadlike strand of plastic material.
Filament Guide Tube	A plastic piece that guides the filament from the filament spool through a passage in the outer housing of your Dremel 3D40 FLEX.
Filament Jam Sensor	A sensor in the extruder that pauses your printer if filament stops extruding properly.

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, .g3drem	A buildable file format compatible with your Dremel 3D40 FLEX.
Leveling Knobs	Knobs located under the build platform base that are used to create proper spacing between the extruder tip and the build platform.
Leveling Sensor	A sensor that detects the height of the build platform and assists in proper leveling.
Lid	Your Dremel 3D40 FLEX 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.
OW 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 Dremel3D.com.
Object Removal Tool	A tool used to separate your objects from the build platform.
PLA.	A bioplastic derived from renewable resources such as corn starch
Spool Holder	A plastic piece located to the left of the build platform inside your Dremel 3D40 FLEX build area that 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 Dremel3D.com.
Touch Screen	Full color display that is touch activated. It allows you to monitor your Dremel 3D40 FLEX and objects while also providing commands directly to your Dremel 3D40 FLEX 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 allow 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.

GETTING TO KNOW YOUR 3D40 FLEX
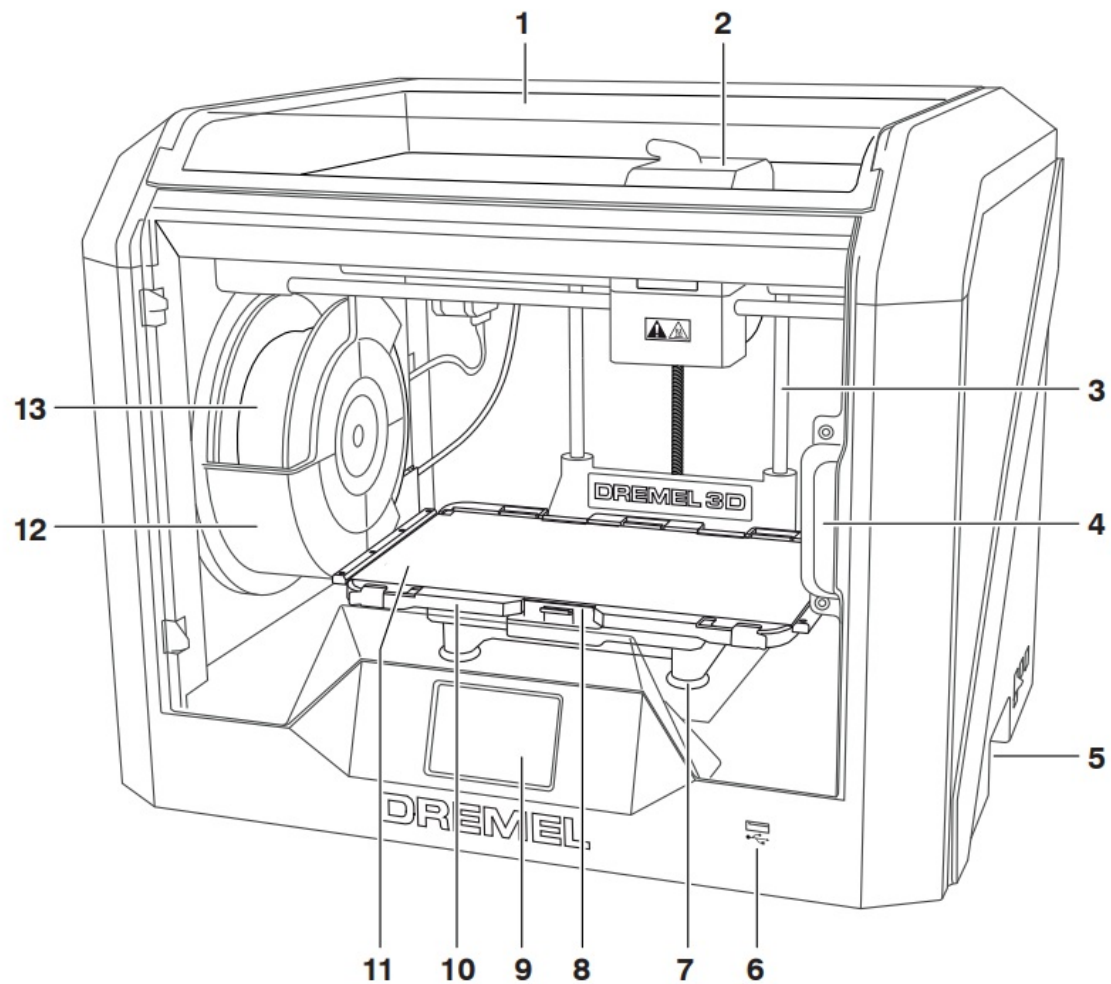
1. Lid	16. Filament Guide Tube
2. Extruder	17. Extruder Lever
3. Z-Axis Guide rail	18. Filament Guide Clip
4. Door	19. Extruder Intake
5. Gripping Handles	20. Extruder Fan
6. USB A Port	21. Ribbon Cable
7. Leveling Knobs	22. X-Axis Guide Rail
8. Build Platform Clip	23. Leveling Sensor
9. Touch Screen	24. Extruder Tip
10. Build Plate Holder	25. Power Switch
11. Flexible Build Plate	26. USB B Port
12. Filament Spool Holder	27. Ethernet Port
13. Filament Spool	28. Nameplate
14. Y-Axis Guide Rail	29. Power Input
15. Stepper motor	
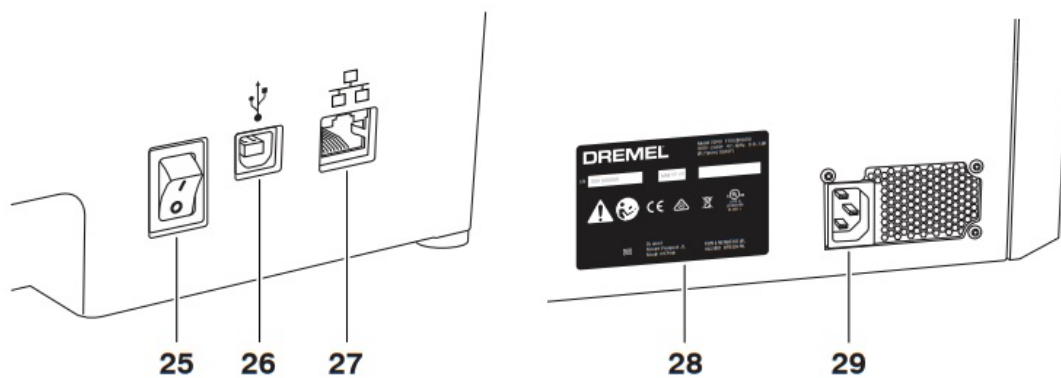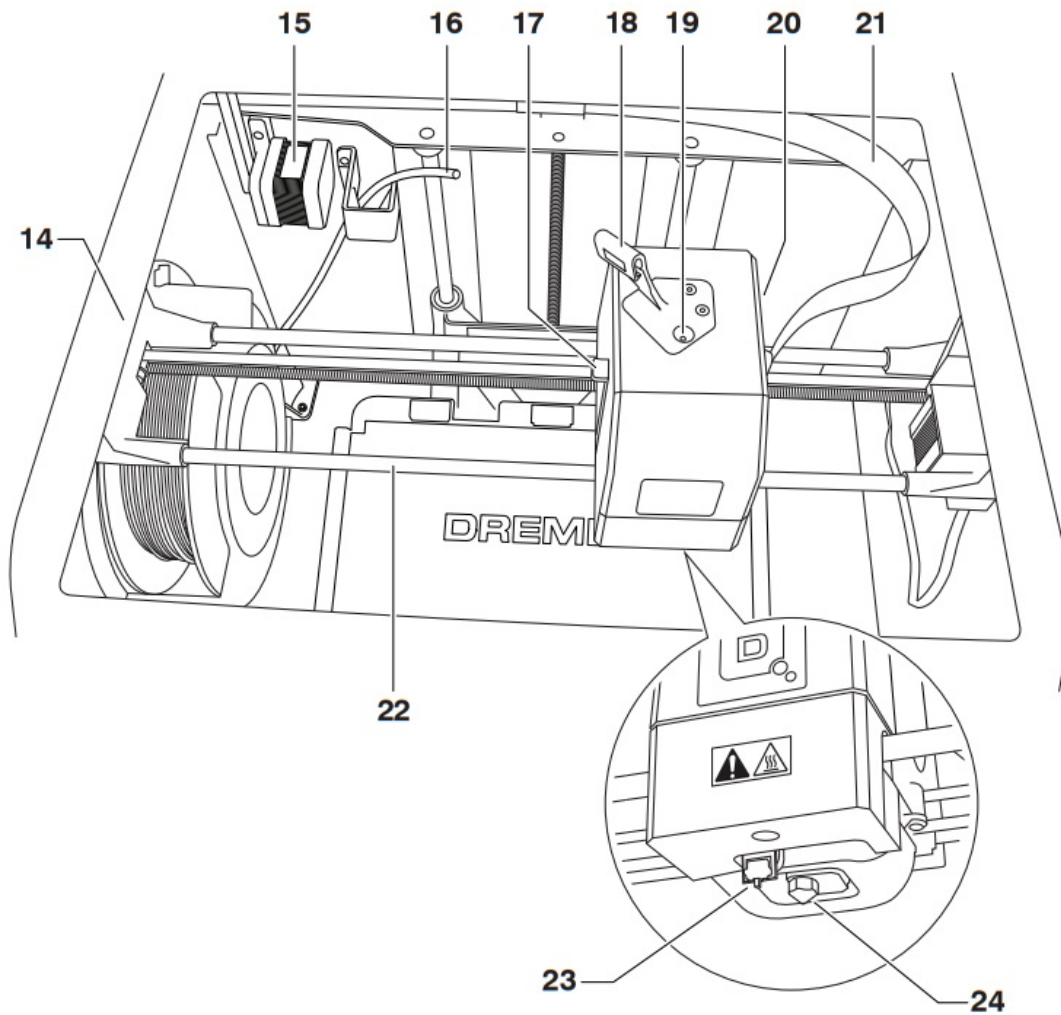
INTRODUCTION

Welcome to the world of Dremel 3D. Our mission is to mentor you through the 3D building process and share best practices for bringing your ideas to life. 3D building is a process that will involve experimentation and persistence. Thankfully, the Dremel experts are here to make your job easier with online tips and support. With Dremel, you can build on your own ideas, build them better and make them yours. To get started with 3D40 FLEX follow the initial setup routine on the touch screen.

KIT CONTENTS*
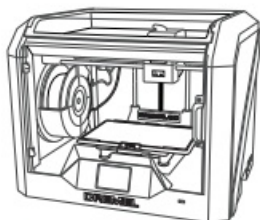
Dremel 3D40 FLEX

Instruction Manual

Quick Start Guide

Filament Spool**

Power Cable
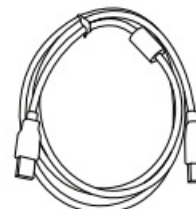
USB Cable

Build Tape
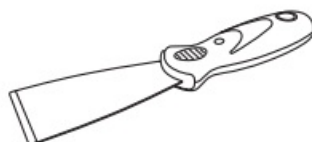
Object Removal Tool

USB Flash Drive
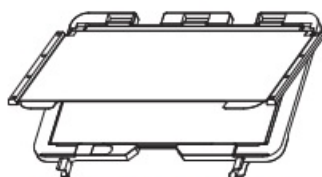
**Flexible Build Plate and
Build Plate Holder**

Unclog Tool

* Quantities may vary depending on kit.
**Do not store in moist or hot environment.

UNPACKING

1. Place box on table, cut tape, and open.

2. Remove top insert.
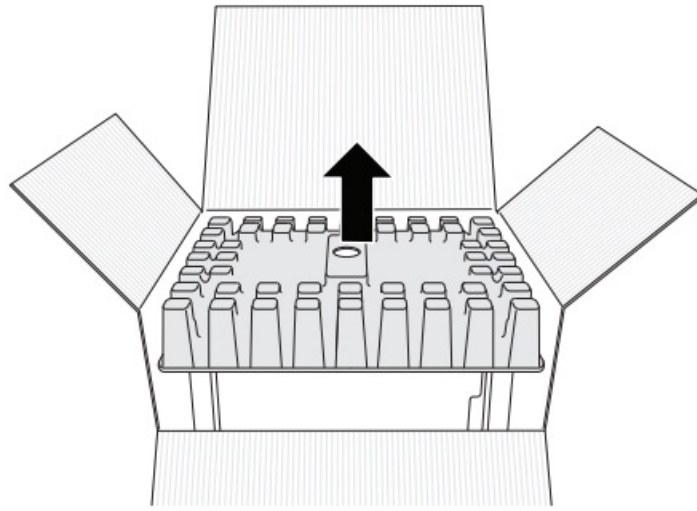
3. Remove 3D40 FLEX and place on table.

4. Open lid and remove top insert.
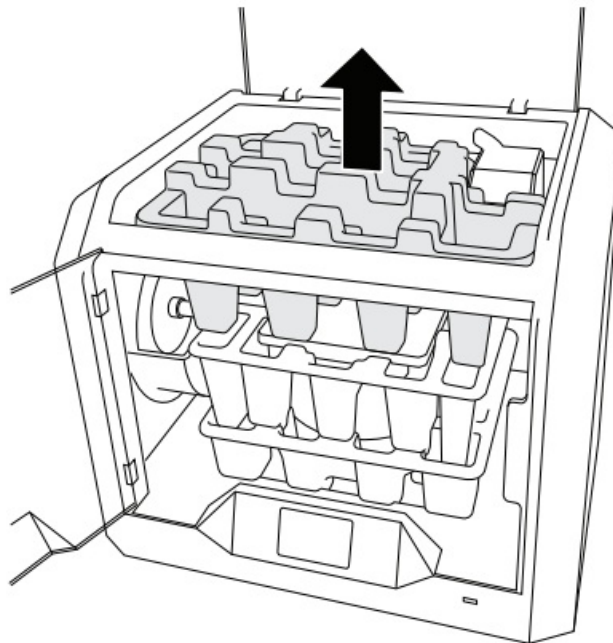
5. Raise build plate by lifting from both sides.
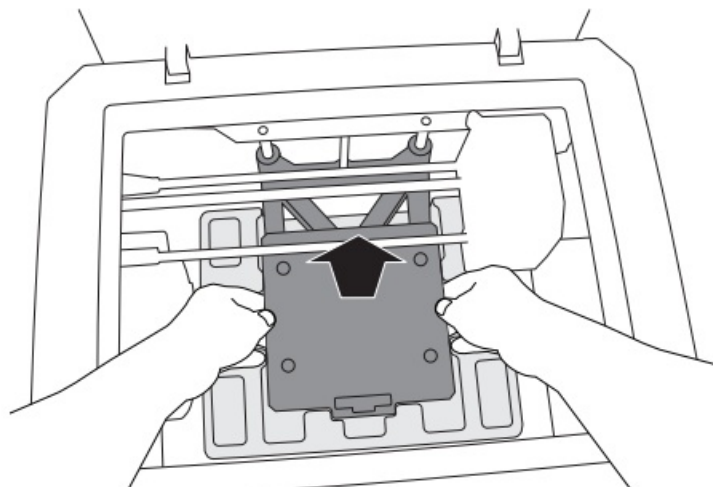
6. Open door and remove middle insert.
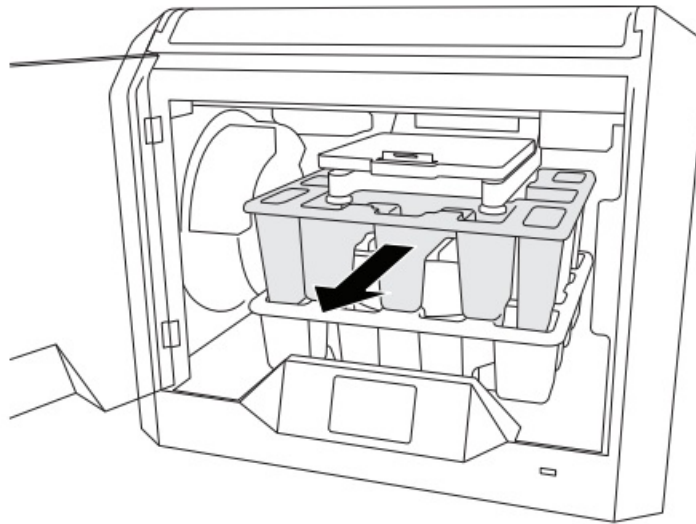
7. Remove bottom insert.
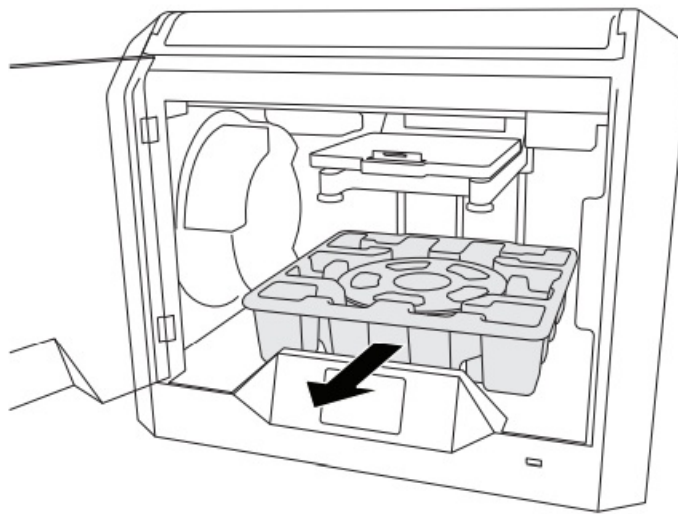
Tip: Keep packaging for future transportation and storage.

TOUCH SCREEN

Using your Dremel 3D40 FLEX without a computer is easy with the onboard software and full colour 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 3D40 FLEX. FAILURE TO DO SO MAY RESULT IN FIRE, EQUIPMENT DAMAGE, PROPERTY DAMAGE OR PERSONAL INJURY.

BUILD
Tap to select a 3D model and begin build process.
(See page 23 for detailed build instructions)
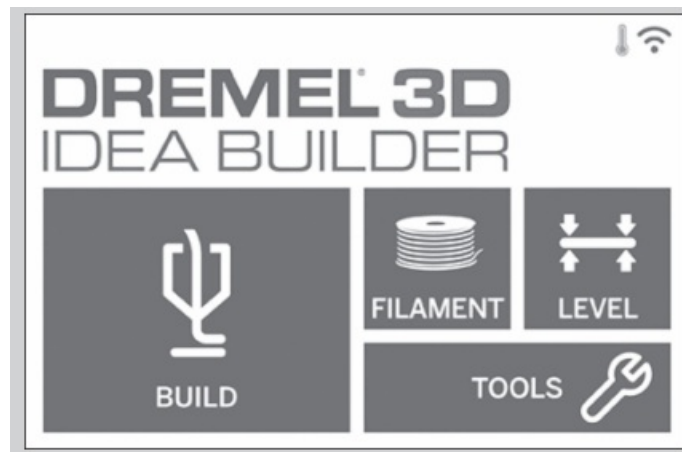
BUILD MENU
Tap Printer, USB Flash Drive, or Print Queue to choose the destination of your desired file.
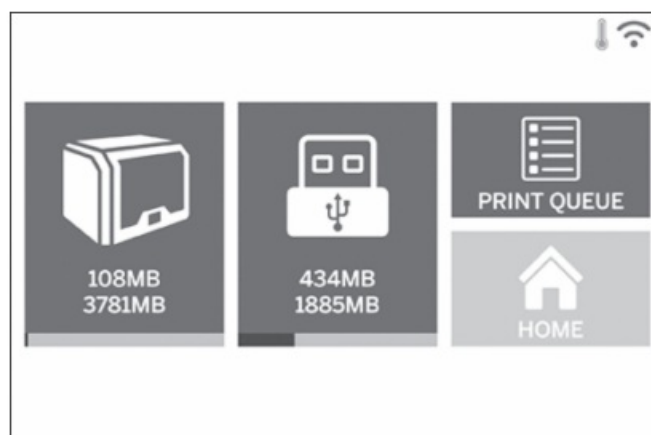
MODEL MENU
Tap to select the desired model or use arrows to scroll through pages to find your model.

FILE DETAILS
BUILD – Tap to begin build process.
DELETE – Tap to remove model file from on-printer storage or USB flash drive.
COPY TO PRINTER – From USB flash drive, tap to copy model file to on-printer storage.

BUILD STATUS

STOP – Tap to cancel the current build process.

PAUSE/PLAY – Tap to pause or resume the current build process. Pause will allow you to access the filament button.

CHANGE FILAMENT – Tap to change filament during the current build process to add more filament or change colors.
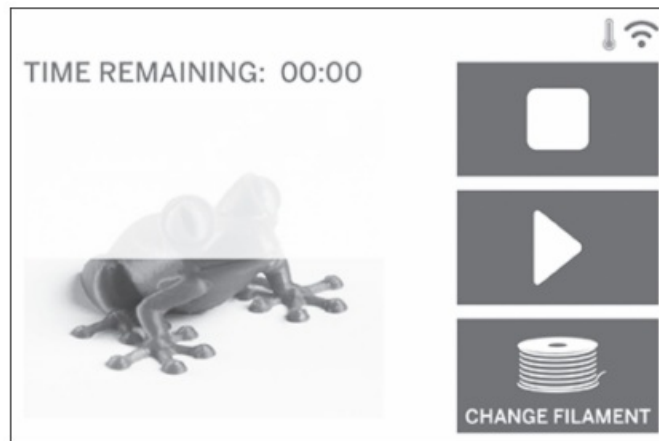
PRINT QUEUE MENU

BUILD – Tap to view details of next build.

DELETE – Tap to remove next build from queue.
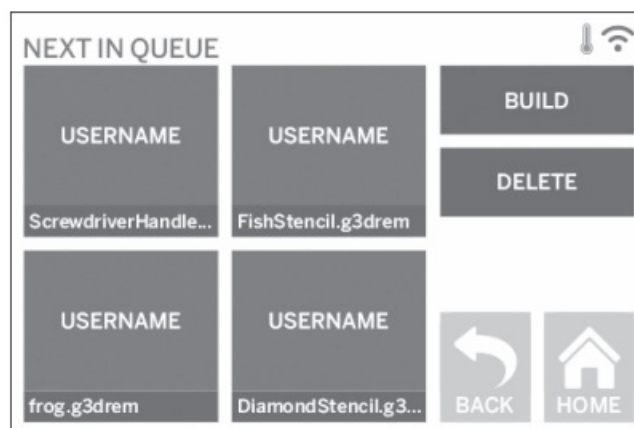
PRINT QUEUE MODEL DETAILS

BUILD – Tap to begin build process.

DELETE – Tap to remove model file from queue.
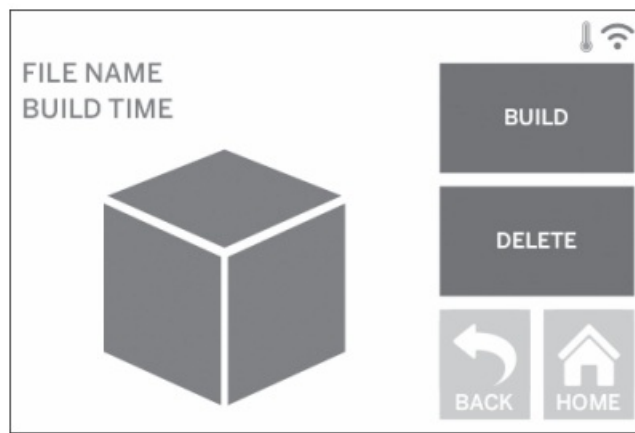
FILAMENT
Tap to begin heating and start filament load/change process. (See page 18 for instructions on filament load/change process)
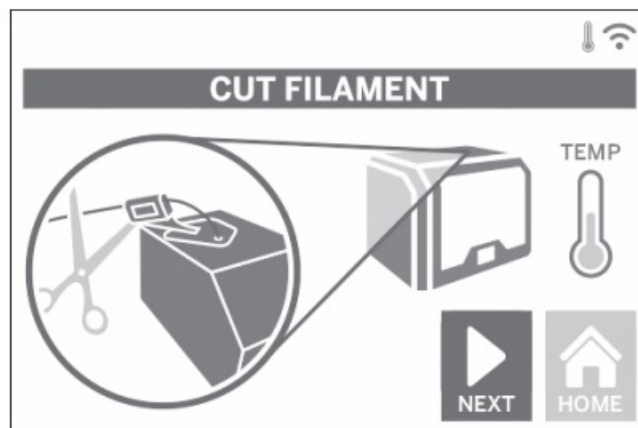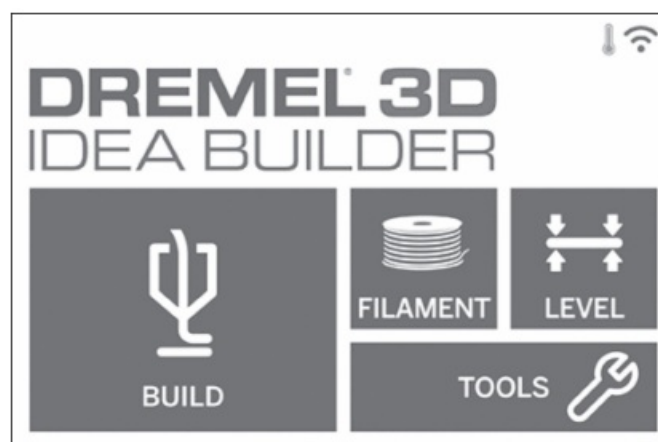
LEVEL
Tap to begin build platform leveling process. (See page 22 for instructions on leveling the build platform)
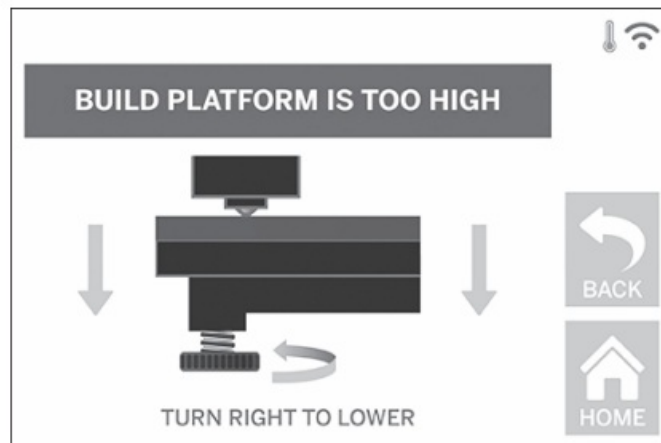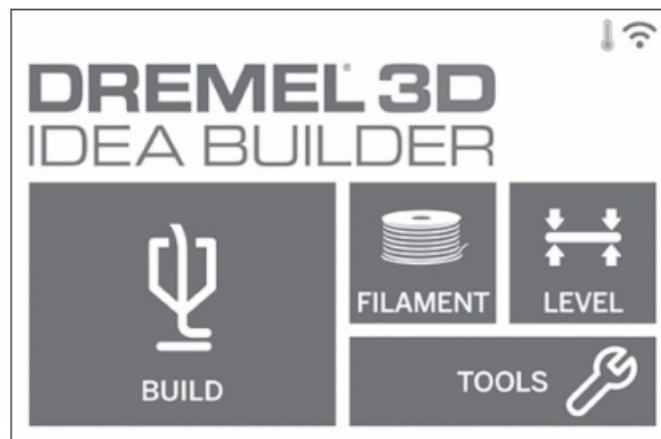
TOOLS
Tap to access the following individual printer functions and settings.
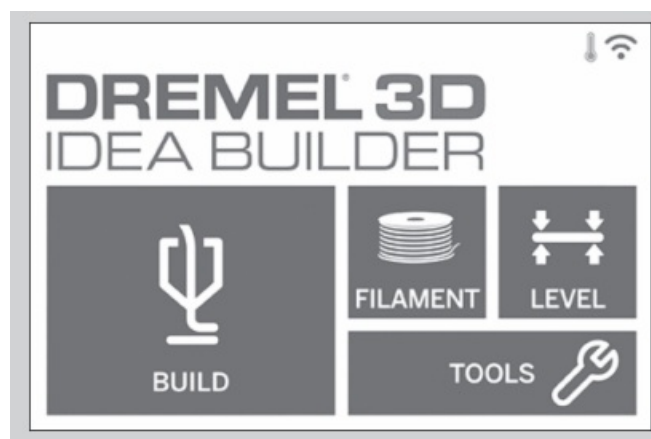
SERVICE
Tap to enter service menu to see customer service contact information.
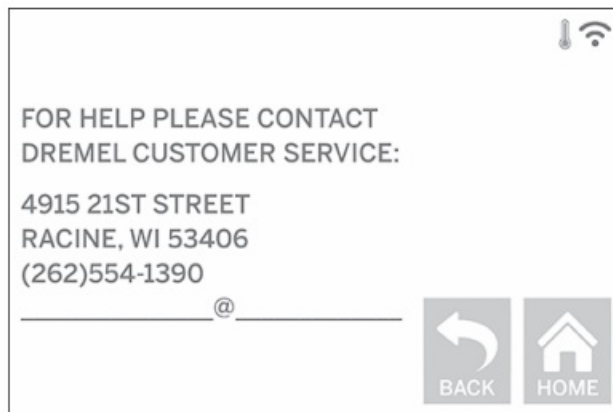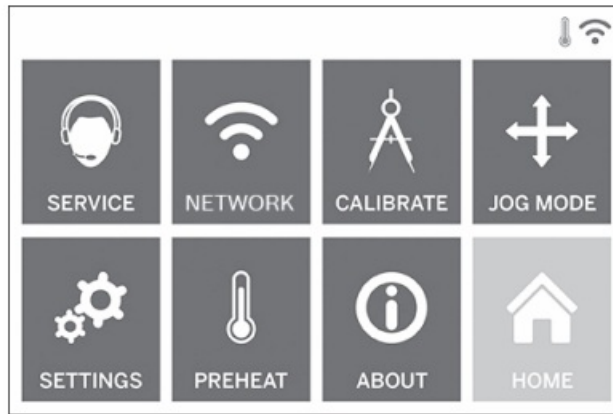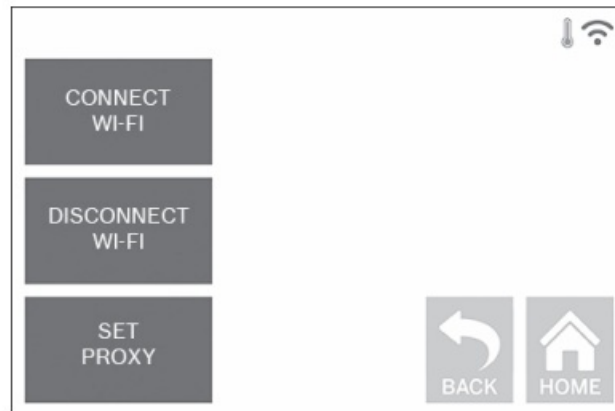
NETWORK

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

CONNECT WIFI – Tap to connect to WiFi.

DISCONNECT WIFI – Tap to turn Wifi off.

SET PROXY – Tap to set manual proxy.
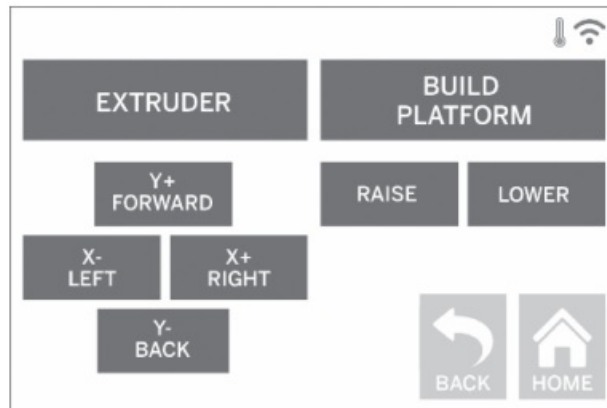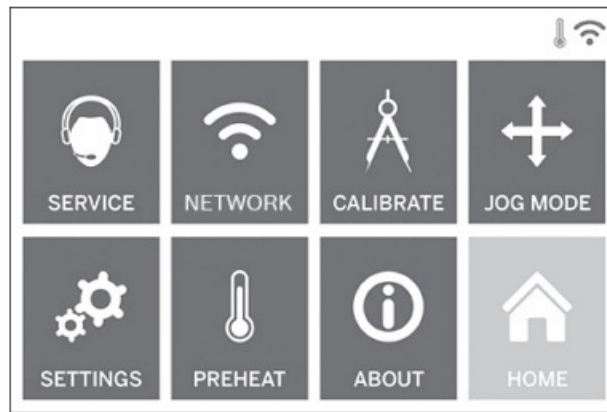
SET STATIC IP – Tap to set Static IP.

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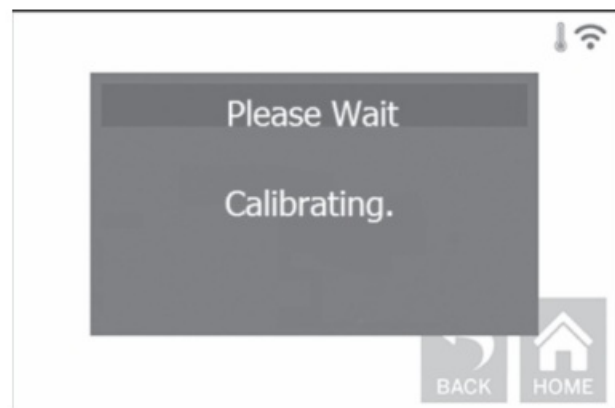
JOG MODE
Tap to display options to move extruder and build platform along the X, Y, and Z-axis.

SETTINGS

LANGUAGE – Tap to pick alternate menu language.

DISPLAY – Tap to customize cabinet LEDs or main menu hotkeys.

Z-AXIS OFFSET – Used to calibrate build plate height during assembly.

SOUNDS – Tap to turn 3D40 FLEX sounds On/Off.

DEMO MODE – Tap to turn retail demo mode On/Off.

FACTORY RESET – Tap to remove all information stored on 3D40 FLEX and return it to factory defaults.

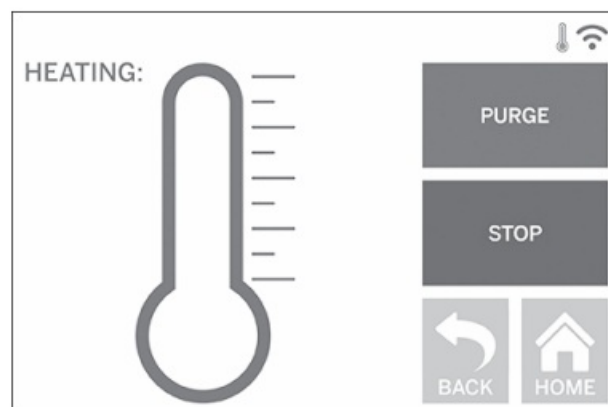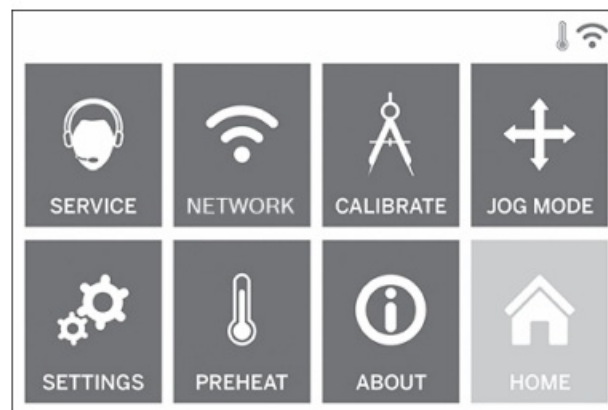CHECK FOR UPDATES – Tap to check for new firmware version when connected to Wifi or Ethernet.
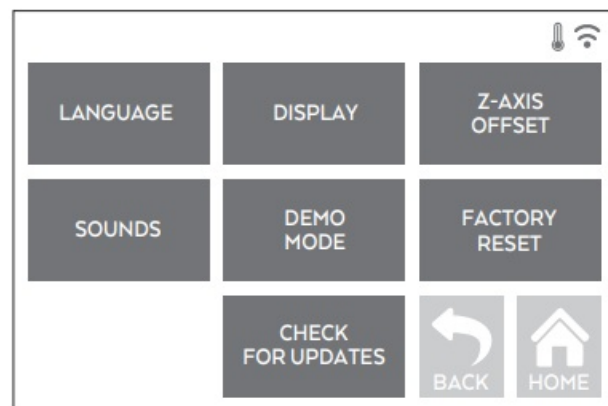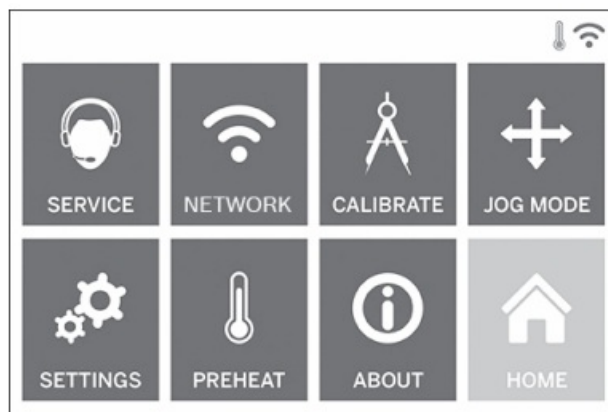
PREHEAT
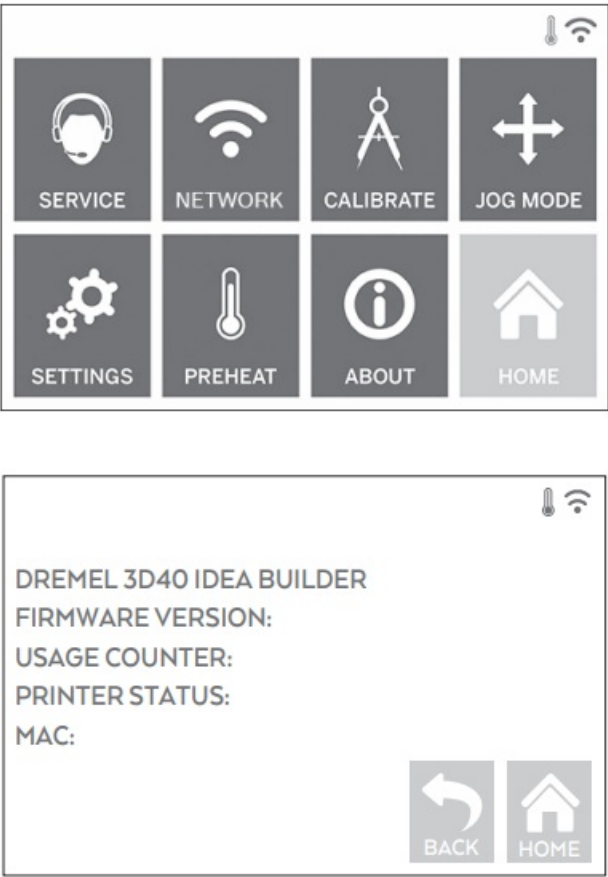Tap to automatically begin preheating the extruder for building or removing excess debris.
PURGE – Once extruder is hot, tap to manually extrude filament.
**STOP/START** – Tap to stop or start preheating.

ABOUT

Tap to see 3D40 FLEX information such as firmware version, usage counter, printer status, and MAC address.

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 if connected to WiFi symbol will be blue.
		Indicates that the extruder is cool.
		Indicates that the extruder is warm.
		Indicates that the extruder is hot.

INITIAL SETUP

The first time you power on your Dremel 3D40 FLEX you will be prompted to perform an initial setup of network. Completing this process will give you access to notifications of firmware updates.

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

2. If you choose "Yes", 3D40 FLEX will automatically connect to your ethernet or search for available wireless networks.

3. Choose your wireless network using the touchscreen. Use the arrows to scroll through the list of available wireless networks. When your wireless network name is highlighted, tap "Accept".
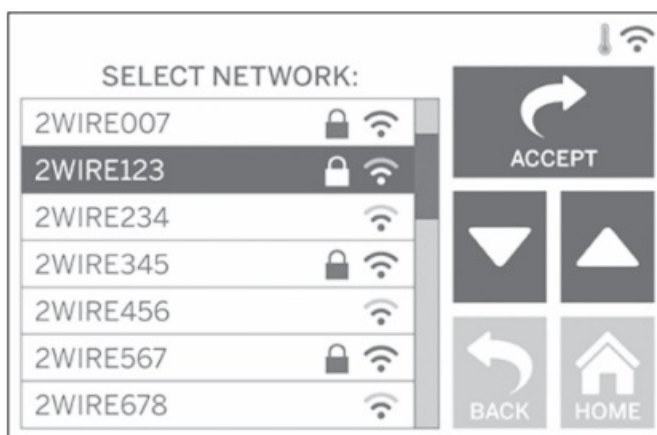
4. Enter your wireless network password and tap "Accept".

GETTING READY TO BUILD

⚠ **WARNING** OBSERVE ALL PROVIDED WARNINGS AND SAFETY INSTRUCTIONS WHEN USING THE DREMEL 3D40 FLEX. Failure to do so may result in fire, equipment damage, property damage or personal injury.

⚠ **WARNING** DO NOT TOUCH THE EXTRUDER TIP DURING OPERATION OR UNTIL IT HAS COOLED DOWN TO AT LEAST 60°C (140°F). Contact with the extruder tip during or after operation before tip has cooled

may result in personal injury.

⚠ **WARNING** USE ONLY DREMEL FILAMENT. Use of filament not authorized by Dremel may result in equipment and property damage.

⚠ **WARNING** DO NOT PULL THE FILAMENT OUT. Doing so may damage the extruder.

LOADING/CHANGING FILAMENT

1. Start filament load/change process by tapping "Filament" button on touchscreen. Extruder will move to front right corner of print area and extruder tip will begin to heat.
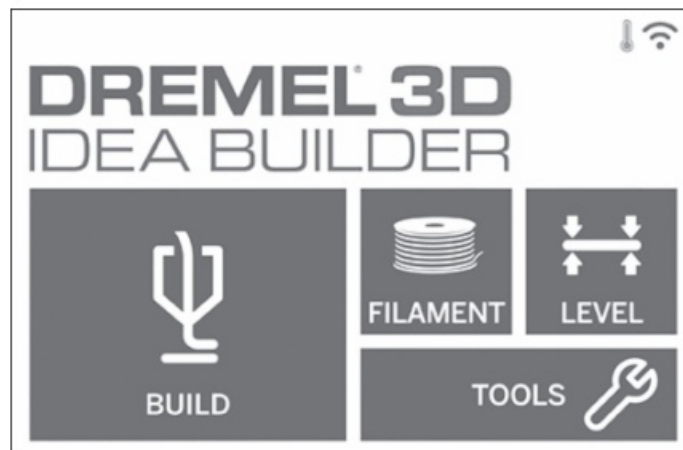
2. After extruder stops moving, open the 3D40 FLEX Lid for better access to extruder.
3. If existing filament is loaded, cut existing filament near extruder intake and tap "Next" button on touchscreen.
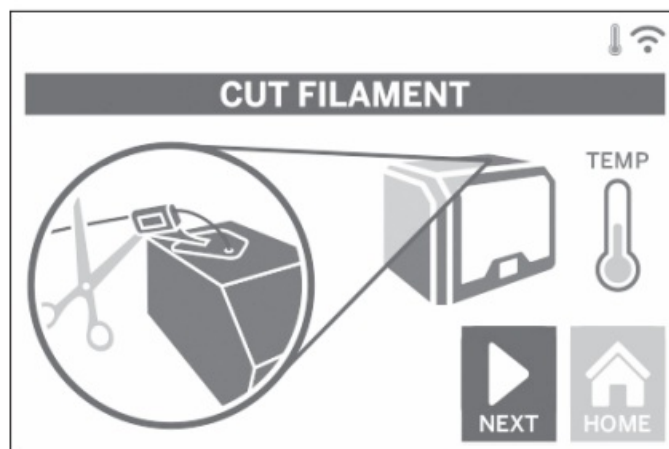
4. Remove Spool door by rotating it counter clockwise and remove existing spool if one is present, see figure1.

FIG. 1

Spool Holder

Open

Close

Filament

Filament Guide Tube

FIG. 2

Guide Tube   Filament   Filament Guide   Extruder intake
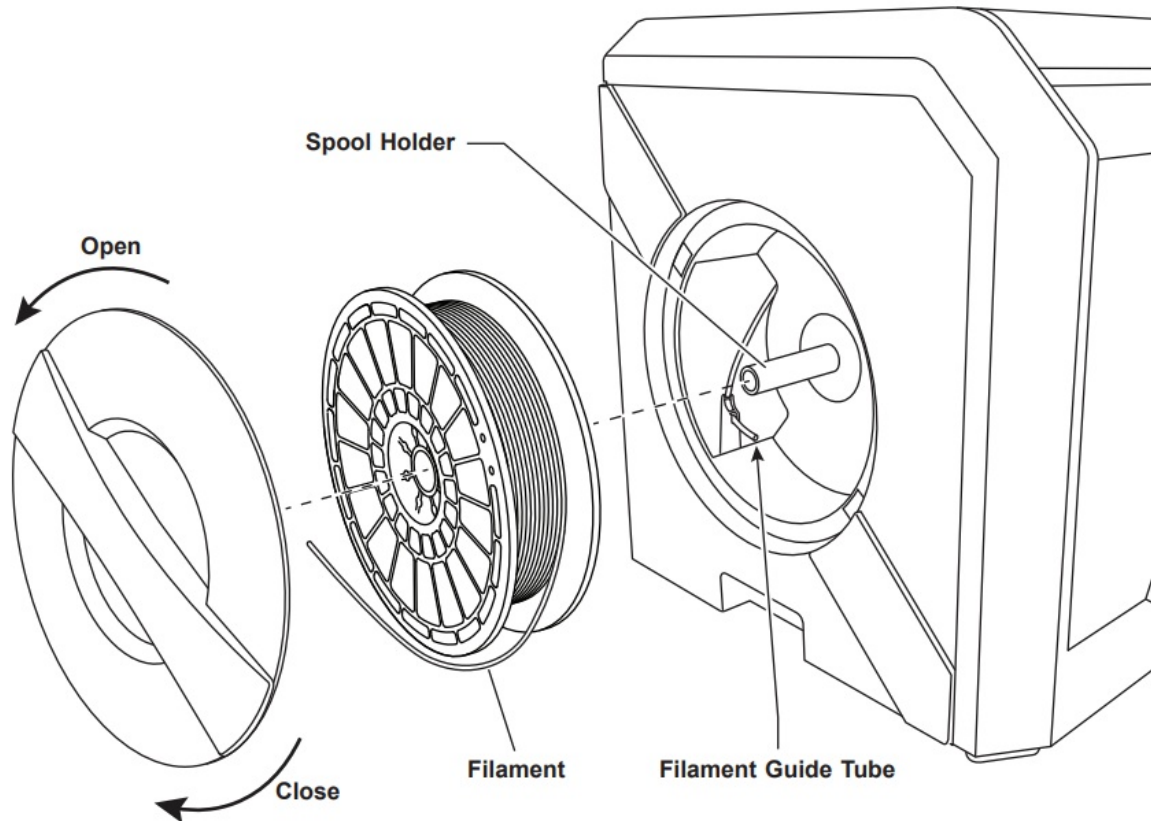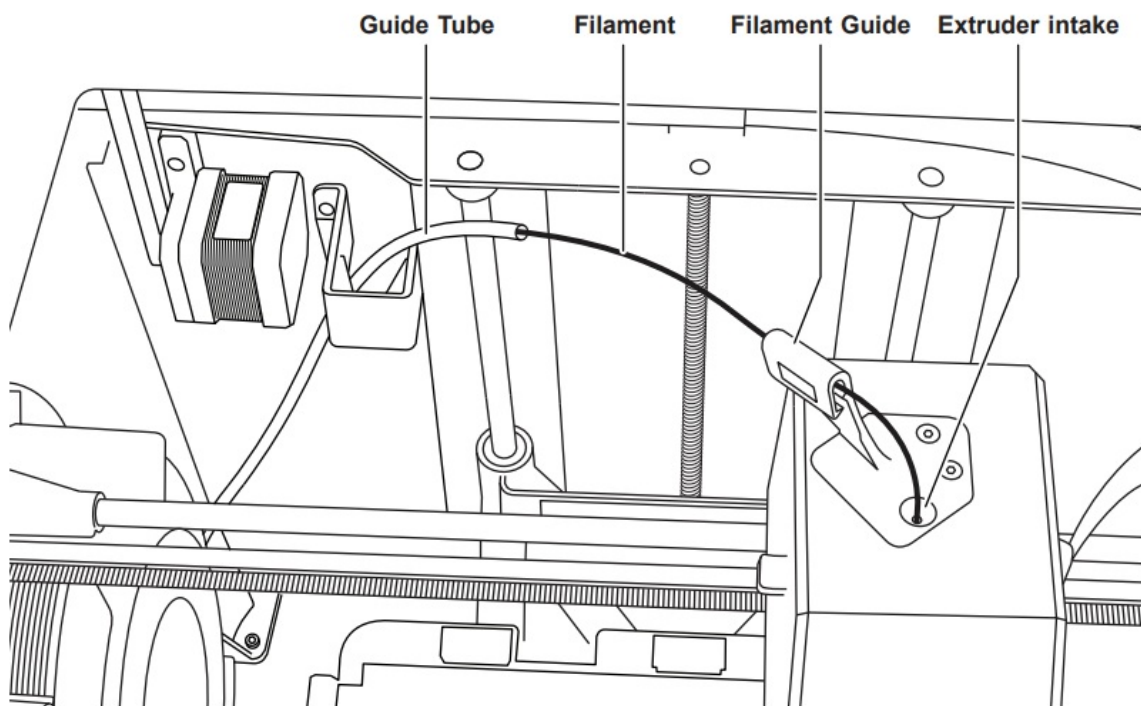
5. Thread tip of new filament through guide tube, place spool on spool holder, replace spool door by aligning locking tabs and rotating clockwise, see figure 1. Tap "Next" on touchscreen.

6. If changing existing filament, 3D40 FLEX will automatically purge existing filament.

7. When Feed Filament screen appears, tap "Next" on touchscreen and thread filament coming from guide tube into extruder intake until extruder feedsthrough on its own, see figure 2.
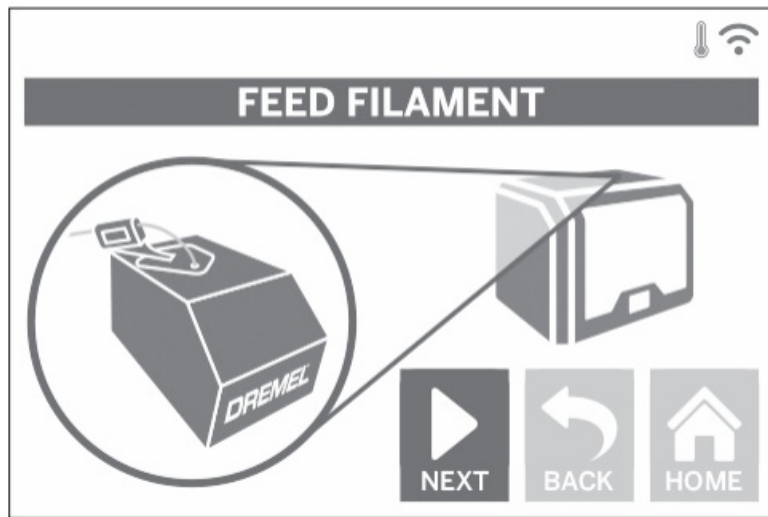
8. Filament will be drawn into the extruder and begin to exit from the hot extruder tip.

   NOTE: Your Dremel 3D40 FLEX was tested by building 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.

9. When new filament appears from extruder tip, tap "done" on touchscreen to complete filament load process, return to main menu, and calibrate extruder. Carefully remove excess filament without touching hot extruder tip. If necessary, carefully remove ebris from extruder tip with needle nose pliers.
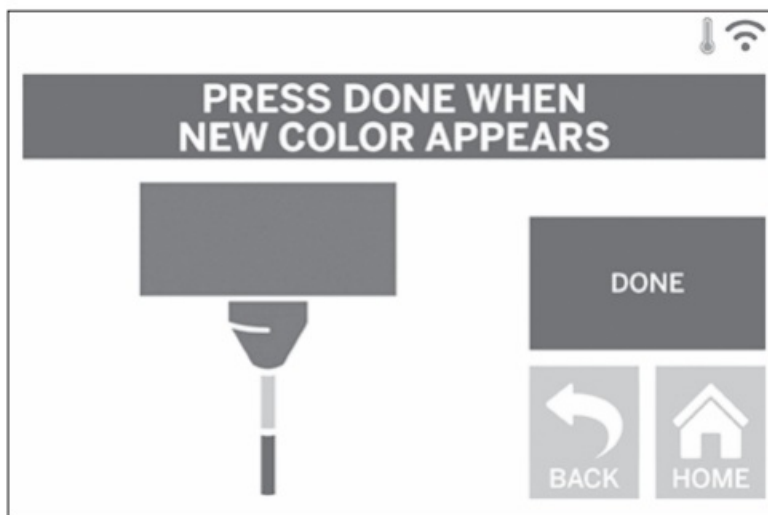
⚠ **WARNING** USE EXTRA CARE NOT TO DAMAGE THE EXTRUDER TIP WHEN CLEARING DEBRIS. DREMEL 3D40 FLEX WILL NOT WORK PROPERLY WITH A DAMAGED EXTRUDER TIP AND WILL REQUIRE REPLACEMENT.

10. Close 3D40 FLEX lid and door.

INITIAL SETUP

PREPARING BUILD PLATFORM

⚠ **WARNING** DO NOT DROP THE BUILD PLATFORM. TEMPERED GLASS PLATE MAY BREAK AND RESULT IN PERSONAL INJURY.
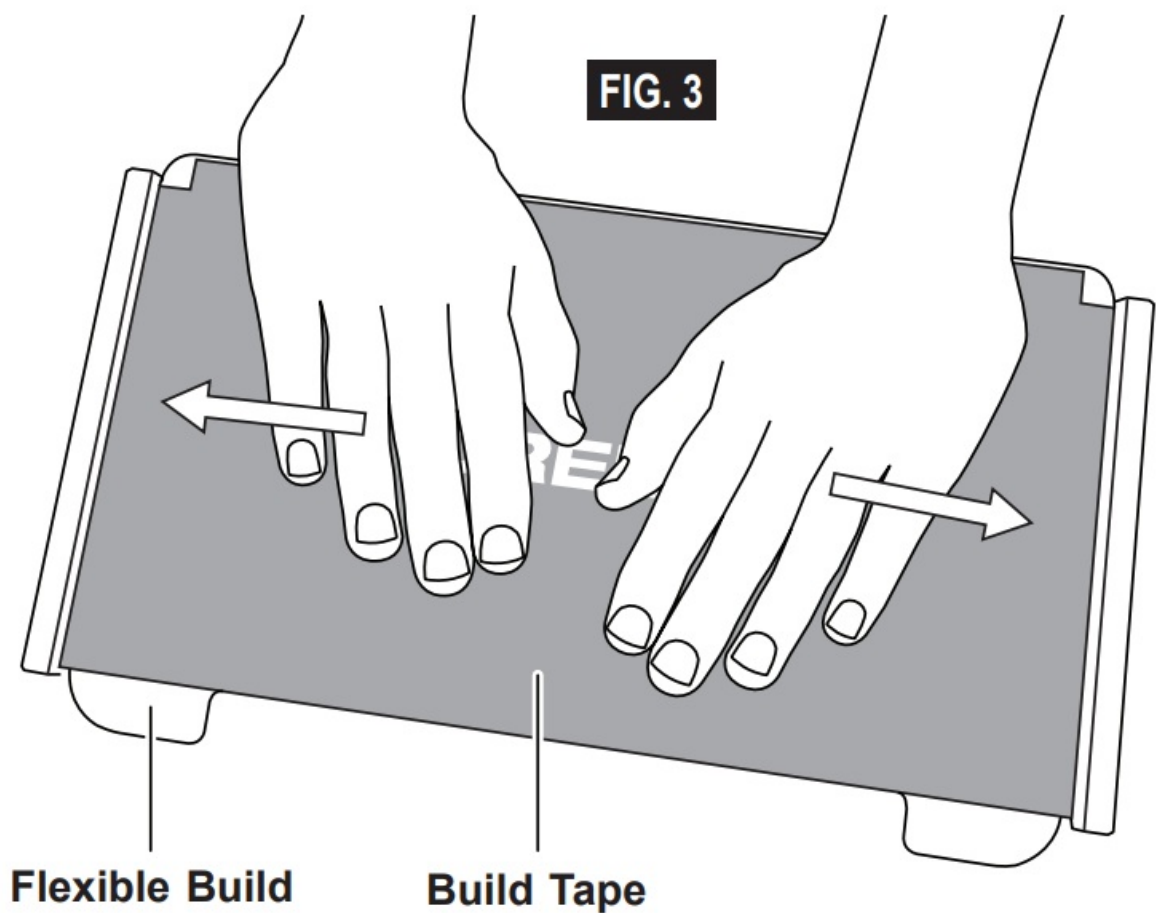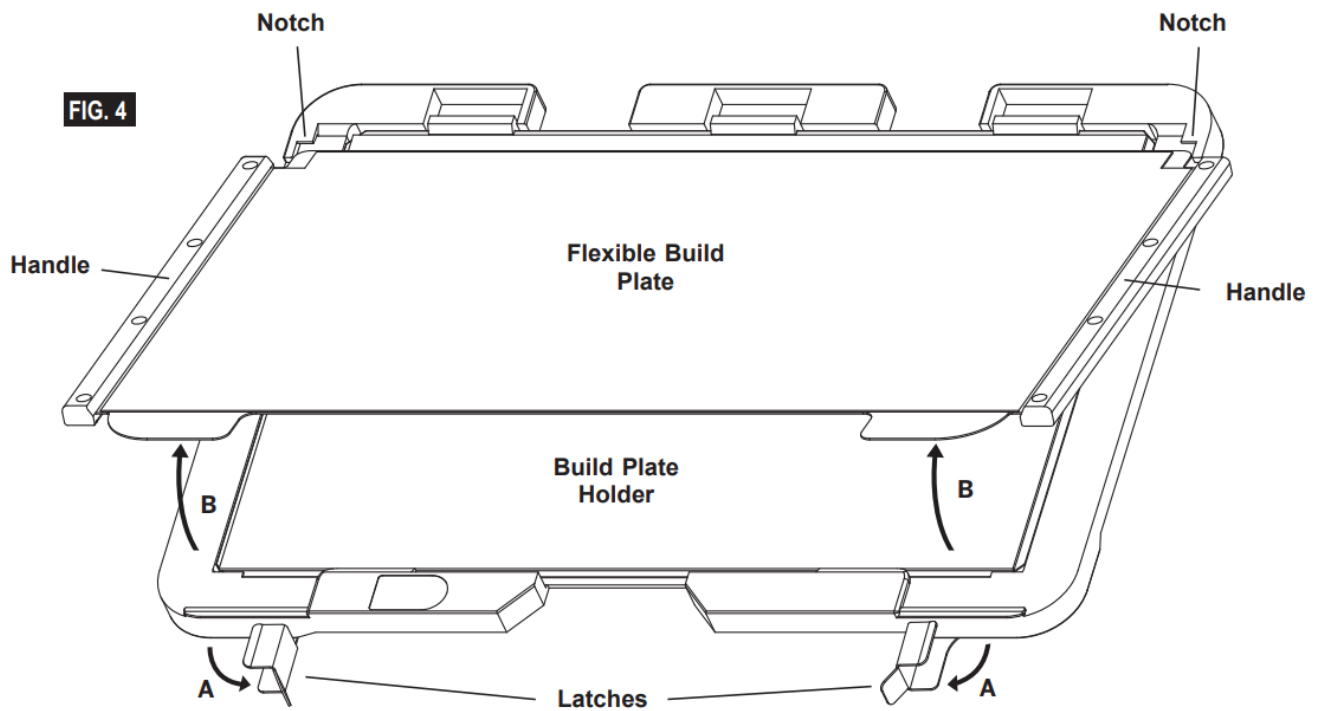
⚠ **WARNING** DO NOT REMOVE TEMPERED GLASS PLATE FROM PLASTIC HOLDER. CONTACT WITH TEMPERED GLASS PLATE EDGE MAY RESULT IN PERSONAL INJURY.

⚠️ **CAUTION** BEFORE EVERY BUILD MAKE SURE THAT THE FLEXIBLE BUILD PLATE IS COVERED WITH DREMEL SPECIFIED BUILD TAPE. USE OF IMPROPER BUILD TAPE MAY RESULT IN EQUIPMENT DAMAGE AND POOR OBJECT BUILD QUALITY.

1. Your build plate consists of two parts: the flexible build plate, and the build plate holder. The build plate holder has a magnetic surface to attach the flexible build plate to, and it has two notches in the back and movable latches in the front to hold down the corners of the flexible build plate.

2. The flexible build plate can be removed from the build plate holder by rotating the movable latches towards you (A), lifting the flexible build plate up by the blue handles (B), and pulling it out towards you (C), figure 3.

3. The flexible build plate comes with build tape installed. To remove it, lift it up from the tab at the front corner and slowly peel off. To install a new build tape, remove adhesive liner from build tape and place build tape over flexible build plate. For best results, apply build tape at center of flexible build plate and smooth outward to remove any air bubbles, figure 4.

FIG. 3

Flexible Build **Build Tape**

FIG. 4

Notch · Notch · Handle · Handle · Flexible Build Plate · Build Plate Holder · B · B · A · A · Latches

4. The flexible build plate can be installed on top of the build plate holder by sliding it backwards at an angle so that the corners of the flexible build plate slide under the notches at the back of the build plate holder. Release the flexible build plate so it sticks on top of the magnet, and close the latches at the front to hold it in place.
TIP: It is much easier to remove and install the flexible build plate if the build plate holder is already installed in the printer. In general, once the build plate holder is installed in the printer you do not need to remove it, you only need to remove the flexible build plate.

5. The build plate holder can be removed by pinching the clip located at the front of the build platform and lifting the build plate holder off the base, figure 7.

6. Install the build plate holder using the build platform clips.

FIG. 5
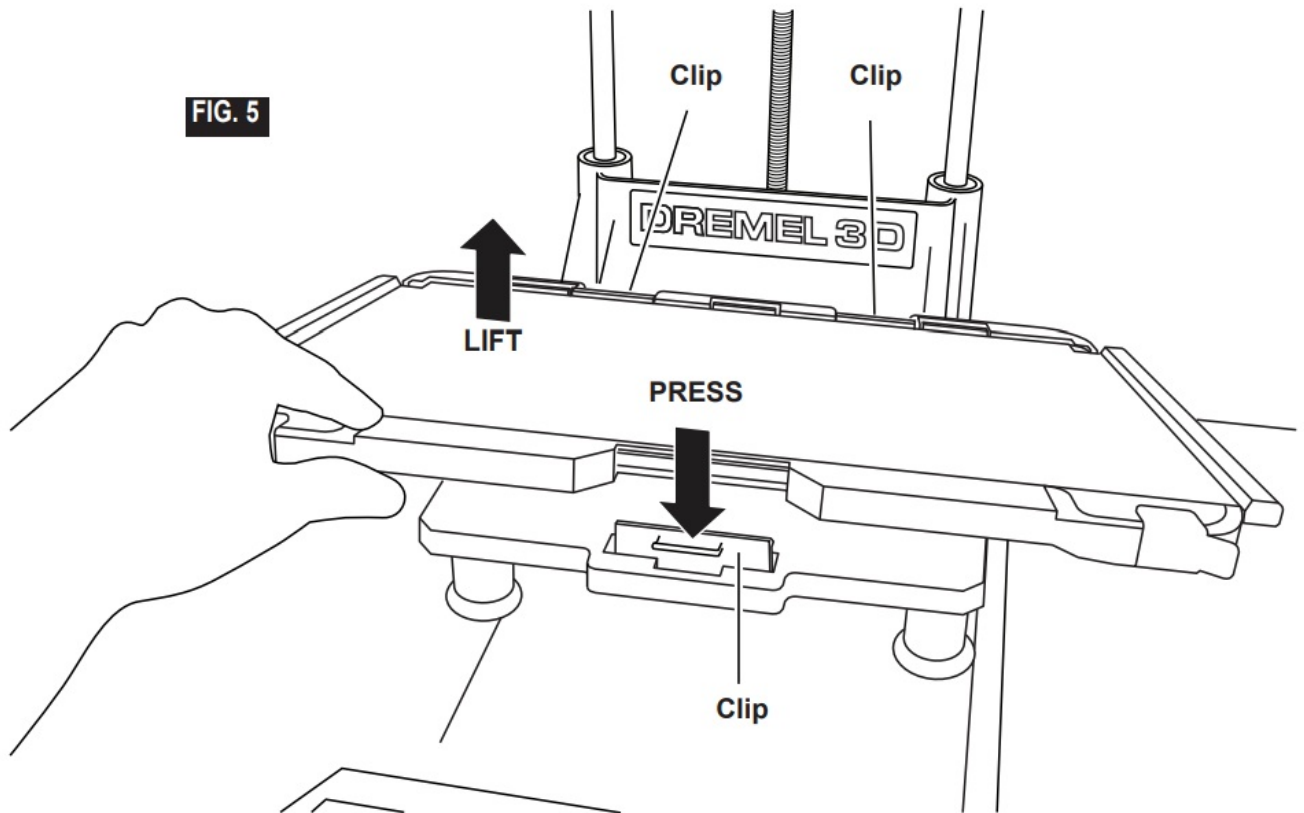
LEVELING BUILD PLATFORM

⚠️ **WARNING** DO NOT TOUCH THE EXTRUDER TIP DURING DREMEL 3D40 FLEX OPERATION OR UNTIL IT HAS COOLED DOWN TO 60°C (140°F). CONTACT WITH THE EXTRUDER TIP DURING OR AFTER OPERATION BEFORE TIP HAS COOLED MAY RESULT IN PERSONAL INJURY.

It is important you level the build platform every time you replace the build tape or reinstall the build platform to ensure that the build platform is evenly spaced from the extruder head. Make sure to remove any air bubbles from between the build platform and the build tape. Not leveling the build platform or eliminating air bubbles may cause objects to not build properly.

1. Make sure you have placed Build Tape on Build Platform and no objects are present. Applying Build Tape after leveling may effect the consistency of your object.

2. Tap "Level" on 3D40 FLEX's touchscreen.
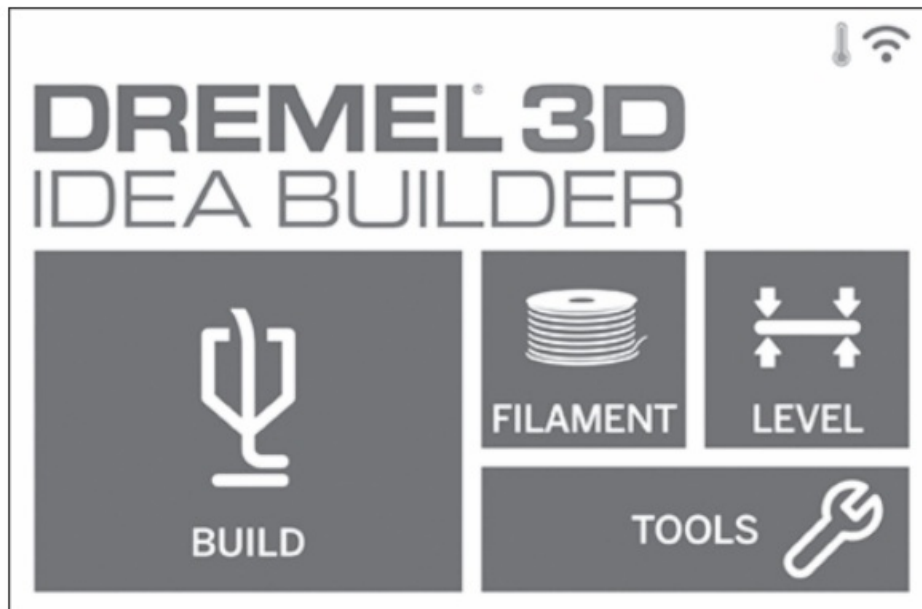
3. The extruder and build platform will move into position to level the build platform. 3D40 FLEX will first check level at the back center of the build platform. The two knobs under the build platform are used to raise and lower the build platform on the left and right. The extruder contains a sensor that detects if the bed is level, no additional tools are necessary.

4. The touchscreen will indicate if your build platform is too high or too low. If the build platform is too high, adjust the appropriate knob by rotating right until you hear a "beep" and the touchscreen indicates that it is ready to verify that the bed is level.
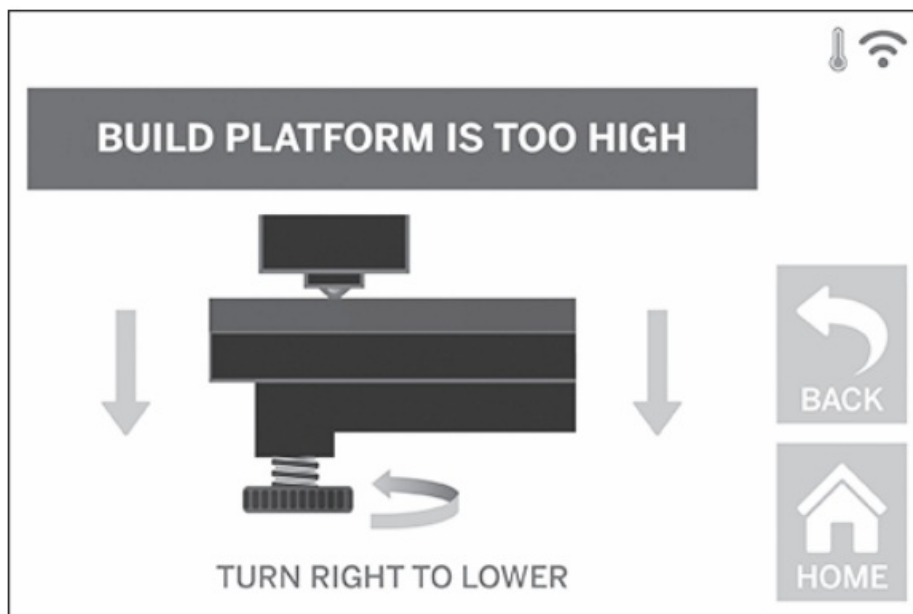
5. If build platform is too low, adjust the knob by rotating left until you hear a "beep" and the touchscreen indicates that it is ready to verify that the bed is level.
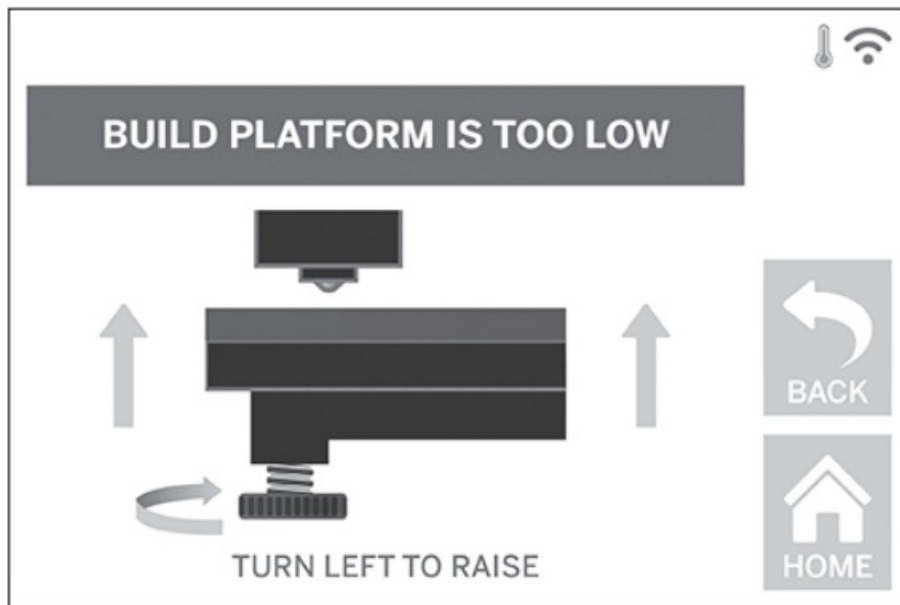
6. Tap "Verify" to check the bed level. If further adjustment is needed the touchscreen will indicate the direction, if the level is correct, the extruder will move to the next point and the level process cane repeated.

7. Repeat steps 4-6 for the second position, when you bed is fully level the extruder will automatically move to the calibration position and complete the leveling process.
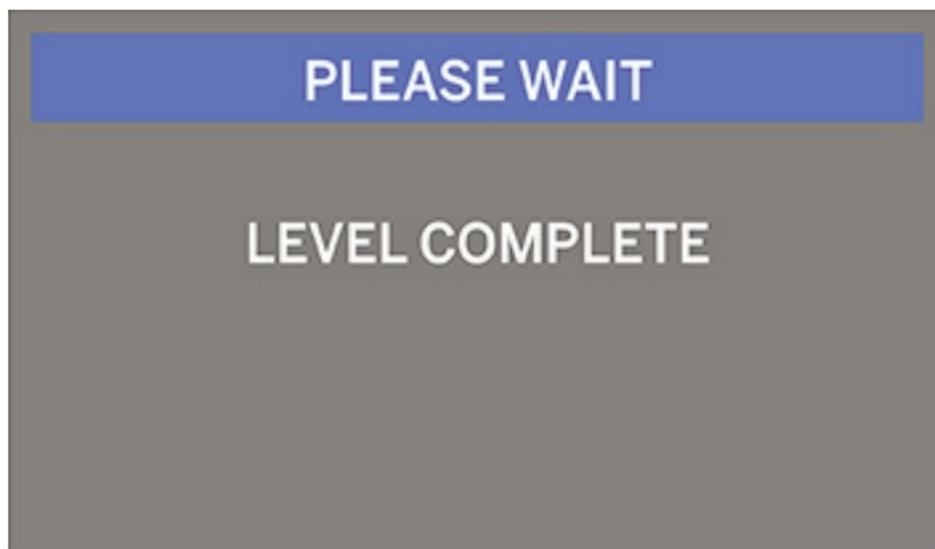
CONNECTING USB CABLE

1. Ensure 3D40 FLEX power switch is in the off position.
2. Connect the included USB cable to your 3D40 FLEX and computer, figure 6.
3. Open software.
4. Turn your Dremel 3D40 FLEX on using the power switch to sync your computer to your Dremel 3D40 FLEX.
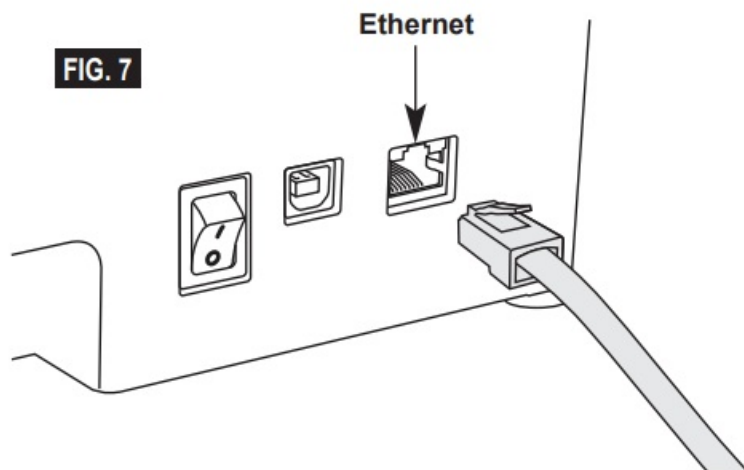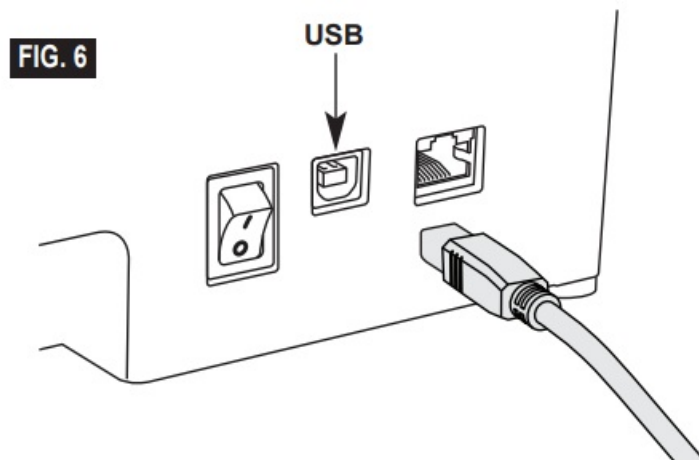
CONNECTING ETHERNET

1. Ensure 3D40 FLEX power switch is in the off position.
2. Plug ethernet cable into your 3D40 FLEX, figure 7.
3. Turn your Dremel 3D40 FLEX on using the power switch. Ethernet connection should be detected automatically. Tap "Accept" to confirm connection.

FIG. 6 — USB

FIG. 7 — Ethernet

BUILDING

⚠ **WARNING** OBSERVE ALL PROVIDED WARNINGS AND SAFETY INSTRUCTIONS WHEN USING THE DREMEL 3D40 FLEX. Failure to do so may result in fire, equipment damage, property damage or personal injury.

⚠ **WARNING** DO NOT REACH INSIDE THE DREMEL 3D40 FLEX WHILE IT IS IN OPERATION. Contact with Dremel 3D40 FLEX moving parts during operation may result in poor build quality, equipment damage or personal

injury.

NOTE: Your Dremel 3D40 FLEX 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.
You have several options when building on your 3D40
FLEX:

1. On-Printer Storage

2. USB Flash Drive

3. Computer

BEFORE YOU BUILD

1. Ensure an adequate amount of filament is loaded (see page 18).

   TIP: You can determine whether you have enough filament to complete your object before building by comparing the length of filament needed as displayed by Dremel Digilab 3D Slicer to the length of filament on spool indicated by the length gauge.

   If 3D40 FLEX runs out of filament during a build, it will pause until more filament is added.

2. Ensure build tape is applied, build platform is level and clear of objects.

BUILDING FROM ON-PRINTER STORAGE

1. On the main menu tap "Build".
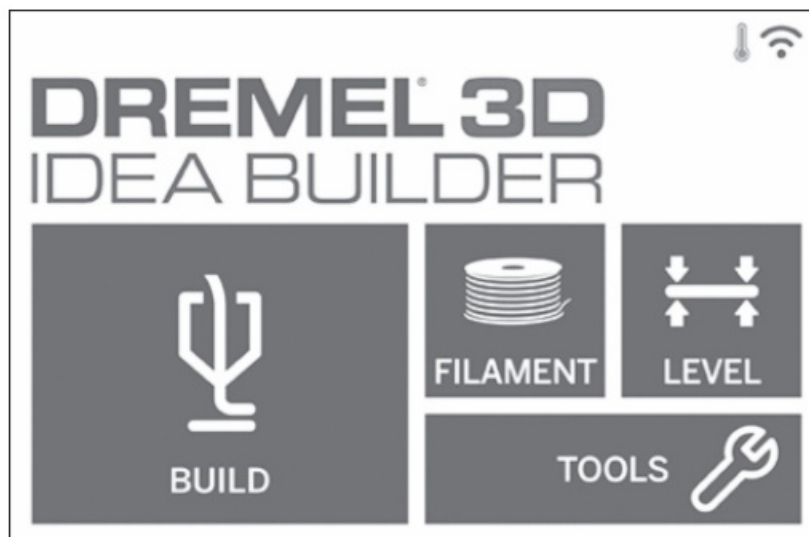
2. On the build menu tap the printer icon.

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.
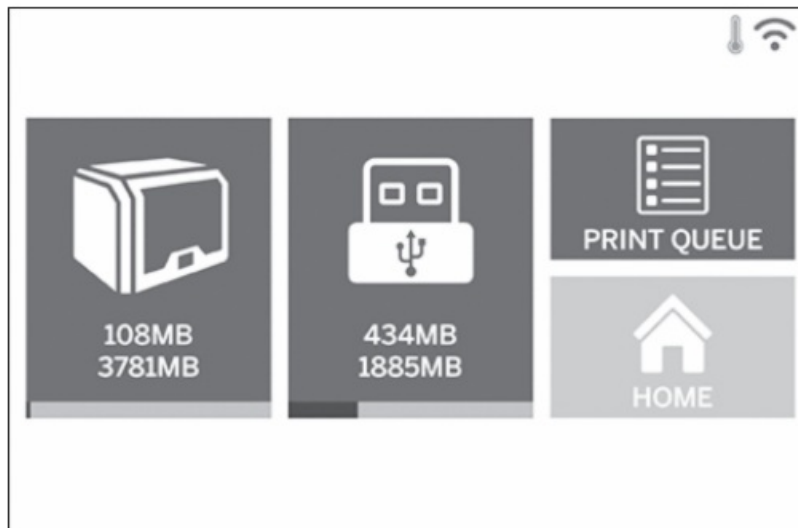

5. Your 3D40 FLEX will first align the extruder and build platform to their zero positions then the level sensor will lightly touch the build platform to complete alignment. Your extruder tip will begin to heat which may take a few minutes. Once the proper temperature is reached your model will begin to build.

6. Once your object is finished your 3D40 FLEX will automatically align the extruder and build platform to their calibration positions and cool the extruder tip.

7. Wait until the touch screen indicates that the extruder is "cool" to remove your object. See section for removing
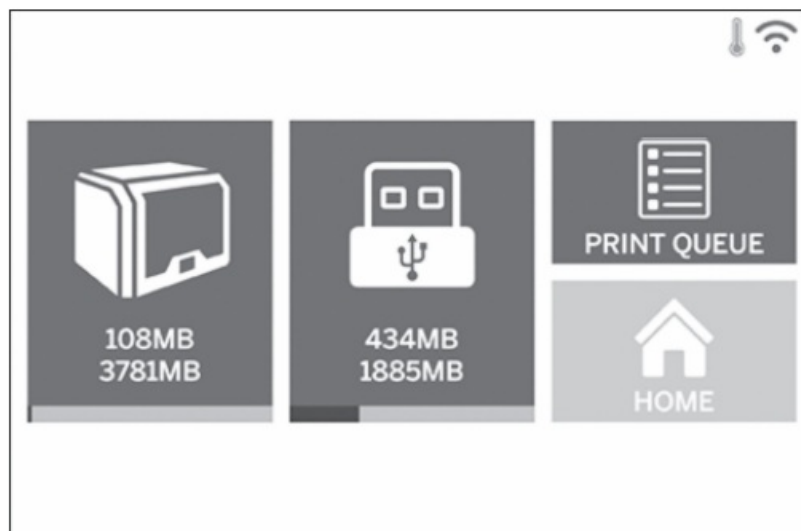
object from build platform below for object removal instructions.

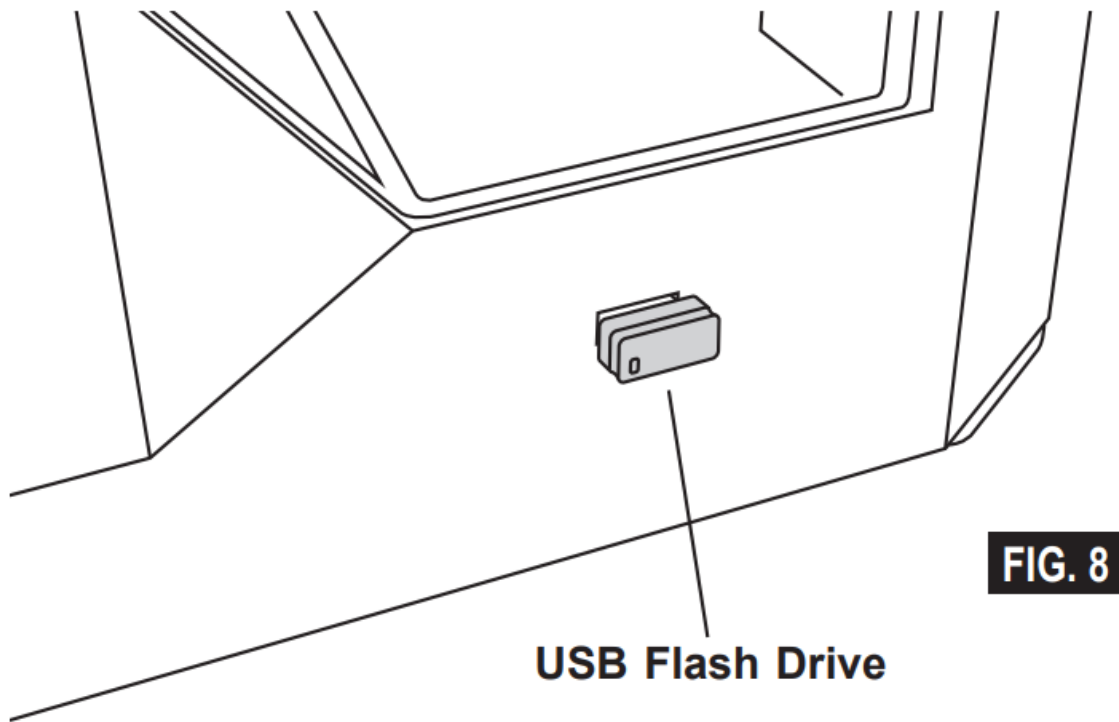## BUILDING FROM USB FLASH DRIVE

1. On main menu tap "Build".
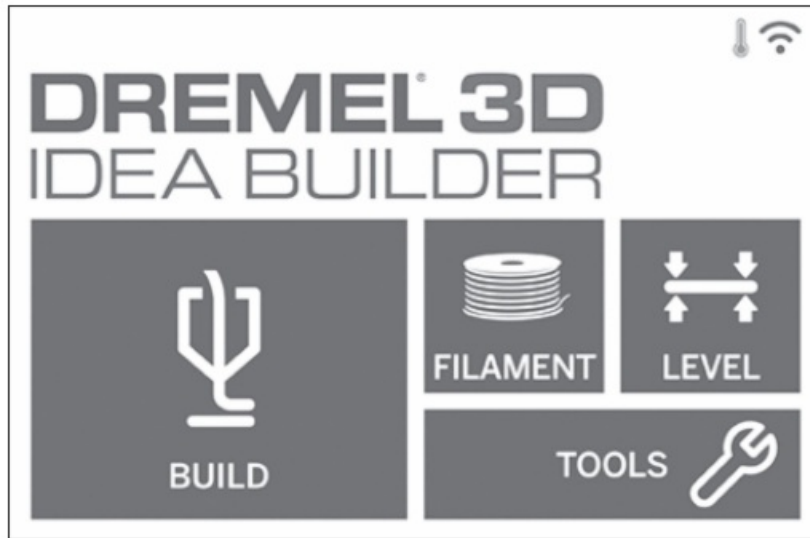
2. To USB icon to access contents of USB flash drive.

3. Follow steps 3-7 from Build from On-Printer storage to complete build from USB flash drive.

FIG. 8

USB Flash Drive

BUILD FROM COMPUTER
Dremel 3D40 FLEX is compatible with Dremel Digilab 3D Slicer. Follow the instructions that came with this software to complete a Build from your computer.

CANCELING YOUR BUILD ON 3D40 FLEX
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.

REMOVING YOUR OBJECT

REMOVING YOUR OBJECT FROM THE BUILD PLATFORM

⚠ **WARNING**
DO NOT TOUCH THE EXTRUDER TIP DURING DREMEL 3D40 FLEX OPERATION OR UNTIL IT HAS COOLED DOWN TO AT LEAST 60°C (140°F). Contact with the extruder tip during or after operation before tip 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**
DO NOT FLEX THE BUILD PLATE WITH THE OBJECT POINTING TOWARDS YOURSELF AND OTHERS. Objects flying off the build plate may result in personal injury.

⚠ **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**
DO NOT DROP THE BUILD PLATE HOLDER. Tempered glass plate may break and result in personal injury.

⚠ **WARNING**
DO NOT TWIST OR BEND THE BUILD PLATE HOLDER WHILE REMOVING OBJECTS. Tempered glass plate

may separate from plastic holder and 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. Wait for the extruder to cool before removing your object.
2. With the object still attached, remove flexible build plate from the build area. See page 20 for detailed instructions.
3. Flex the build plate with the object pointed away from yourself and others. Push on the back of it with your thumbs using your other fingers to hold onto the handles, figure 9. The part will release and will either fall off or be easy to pull off with your hand.
4. For thin or small parts, flexing the build plate may not be enough to release the part. In these cases, gently use the object removal tool to remove the object from the build plate, figure 9.

FIG. 9

Removal Tool
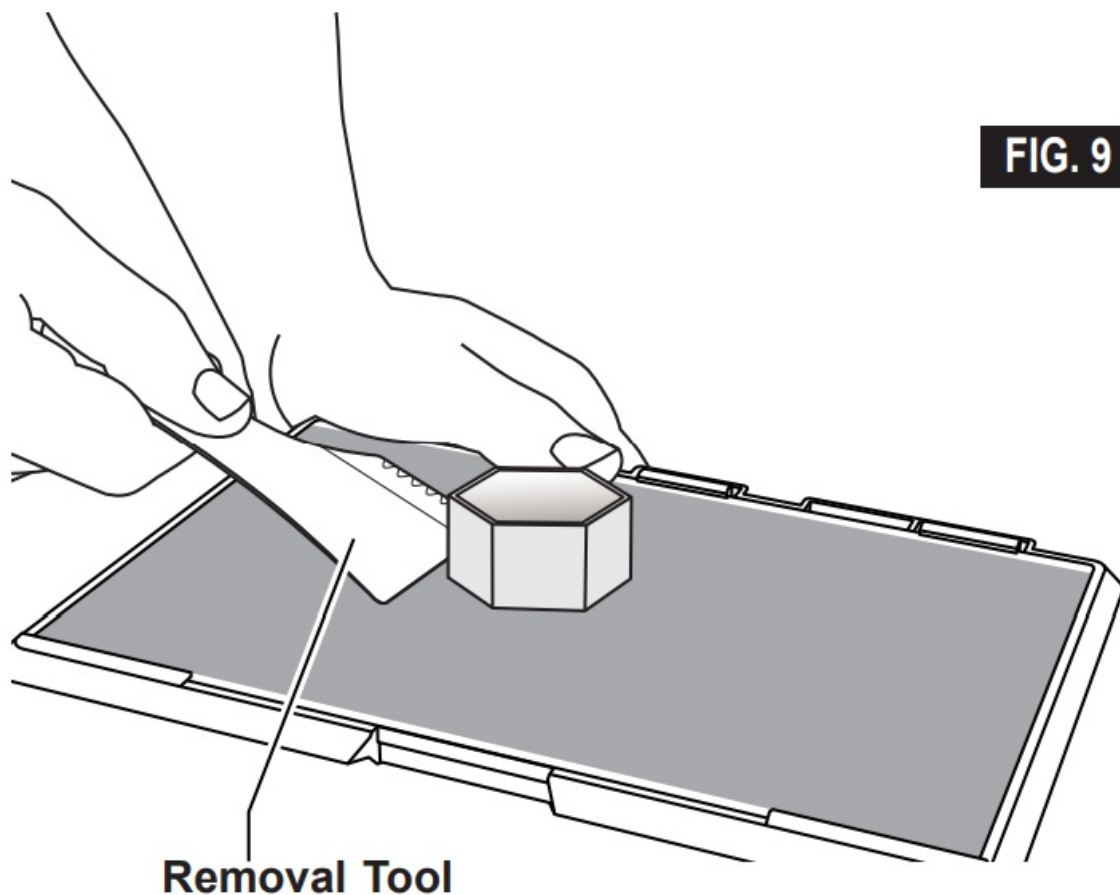
REMOVING SUPPORTS (IF REQUIRED)
Use needle nose pliers to remove supports that are inside your object or hard to reach.

BEST PRACTICES

1. ALWAYS USE BUILD TAPE.
2. Ensure your build plate is level before every object.
3. Ensure spool is installed properly and can rotate freely.
4. When using your Dremel 3D40 FLEX for the first time or after changing filament, allow Dremel 3D40 FLEX to

extrude until material is consistent with the installed filament color.

5. It is important to watch your Dremel 3D40 FLEX begin building objects. Your object is most likely to experience difficulty in the beginning. Thankfully, this is also the most convenient time to cancel the object, clean the build plate, and start your object again. Remain near the Dremel 3D40 FLEX during the building process.

6. It is important to save your Dremel 3D40 FLEX packaging as it will make re-boxing and transporting your Dremel 3D40 FLEX easier.

7. 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.

8. Use object removal tool gently to avoid damaging the build plate or object.

9. Whenever possible, it is best to locate your object in the center of the build plate. Using the best orientation for your object is critical. Ensure that your object is located on the build plate and that you are using the best orientation for building.

10. For steep overhangs (Less than 45 degree angle) it is recommended to build with support.

11. Always remove the build plate before removing the object.

12. Low speed sanding is recommended to prevent remelting of the object.

13. The Dremel Digilab 3D Slicer software will display the length of filament required for each object. Compare this to the length indicated on the spool length gauge.

MAINTENANCE

UNCLOGGING THE EXTRUDER
Use the unclogging tool to clean the extruder and unclog built up filament.

1. Wait for extruder to heat up insert the unclog tool into the extruder intake (top).
2. Clogged debris will be pushed down and will extrude from the extruder tip.
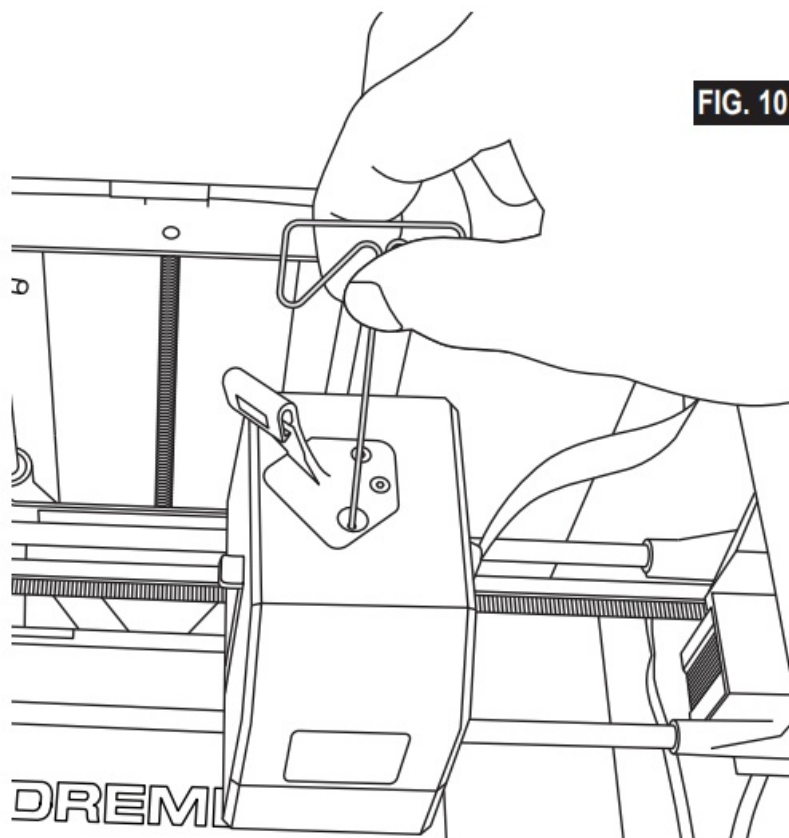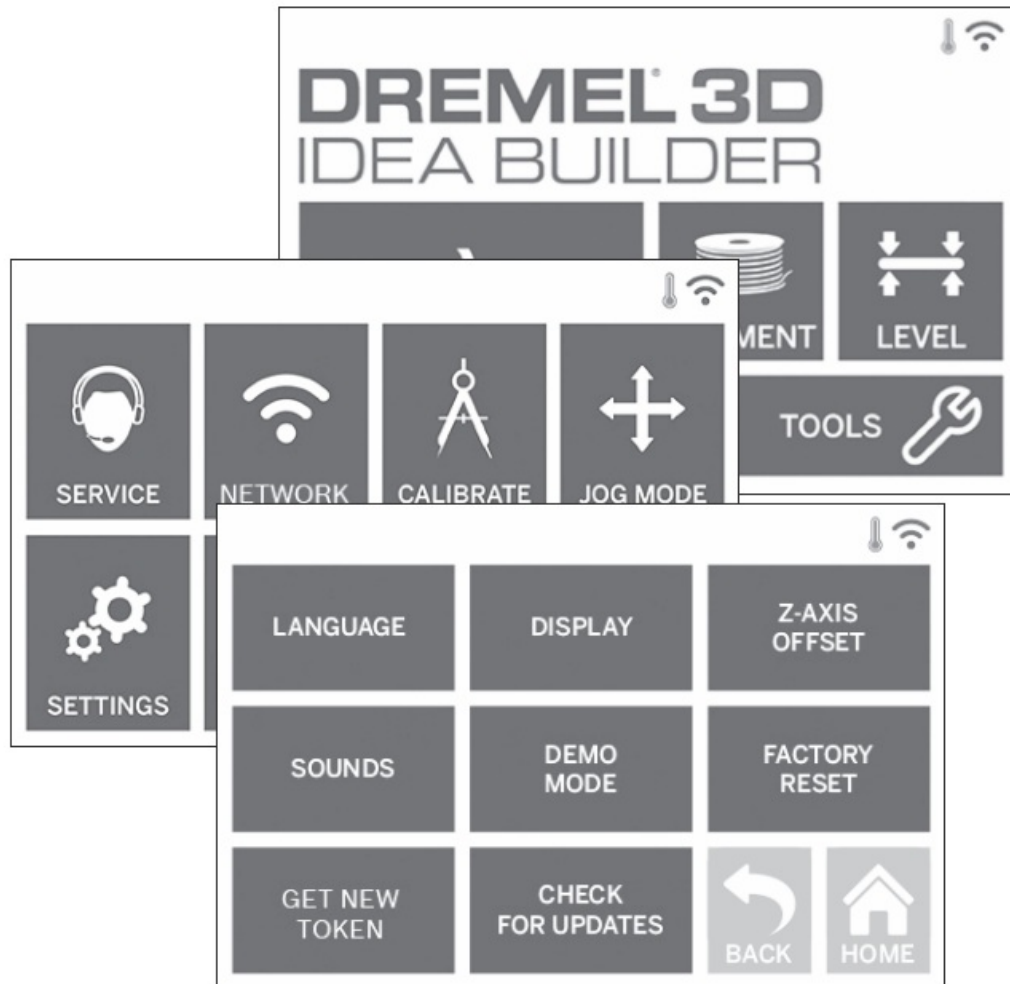
FIG. 10

UPDATING FIRMWARE VIA NETWORK

If your 3D40 FLEX is registered and added to your Dremel3D profile, you can update its firmware directlyfrom the touchscreen. To update firmware:

1. Tap "Tools", "Settings", "Check for Updates".

2. Your 3D40 FLEX will check to see if it has the latest firmware installed and ask if you would like to update if one is needed.

3. Choose accept to download and install the latest firmware.
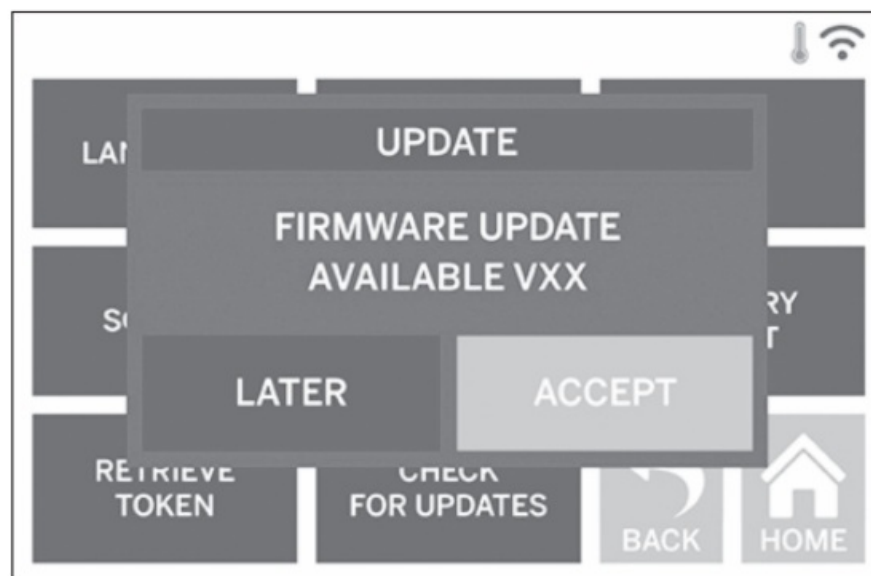
4. When the 3D40 FLEX starts up and returns to the Home Screen, firmware update is complete.

UPDATING FIRMWARE MANUALLY
If your 3D40 FLEX is not connected to a network, you can update firmware directly from a USB Flashdrive.

1. On your web browser go to www.dremel3d.com/support and download the latest 3D40 FLEX firmware file.

2. Add the 3D40 FLEX firmware file to an empty, FAT32 formatted, USB flashdrive.

3. Turn off your 3D40 FLEX using the ON/OFF switch.

4. Insert the USB flashdrive into the USB-A port.

5. Turn on your 3D40 FLEX and it should automatically detect and install the new firmware.

6. Turn your 3D40 FLEX OFF, remove the USB flashdrive, and turn ON again to complete the update.

CLEANING THE EXTERIOR
Clean the 3D40 FLEX's exterior with a lint free cloth.
Clear the outer surfaces of any debris that is visible.
To avoid damaging your Dremel 3D40 FLEX do not use water, chemicals or other cleaners on the 3D40 FLEX.
CLEANING THE EXTRUDER TIP

⚠️ **WARNING**
USE EXTRA CARE NOT TO DAMAGE THE EXTRUDER TIP WHEN CLEARING DEBRIS. DREMEL 3D40 FLEX WILL NOT WORK PROPERLY WITH DAMAGED EXTRUDER TIP AND WILL REQUIRE REPLACEMENT.

⚠️ **WARNING**
DO NOT TOUCH THE EXTRUDER TIP DURING DREMEL 3D40 FLEX OPERATION OR UNTIL IT HAS COOLED DOWN TO 60°C (140°F). Contact with the extruder tip during or after operation before tip has cooled may result in personal injury.
Using small needle nose pliers, pull away any plastic debris from the extruder tip.
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.

MAINTENANCE AND SERVICE

Problem	Cause	Corrective Action
Extruder head building off center.	Dremel 3D40 FLEX has lost track of the extruder head's exact location and is failing to build.	Sending the extruder head to the home position will recalibrate the Dremel 3040 FLEX. Cancel your object, clear build platform, send the extruder head to the home position, and restart the object.
PLA is not extruding or sticking to the build tape properly.	This can be caused by the build platform not being leveled with the extruder head.	Leveling the build platform will align the extruder head and ensure a better object quality. Cancel your object clear build platform, level the build platform, and restart the object.
Dremel 3040 FLEX froze before my object started.	Dremel 3D40 FLEX may have received conflicting commands.	Turn power switch off, wait 30 seconds, and turn power switch on.
Support material does not break away during cleaning and results in decreased quality of the final object.	Orientation of the part is not optimized.	Reorient the position of the 3D file in your file slicing software to minimize the support material or place the support material on a non-critical surface.
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.	Use your file slicing software to see the first layer height and position. Build with supports when necessary.
Part only built halfway.	Filament ran out. Filament clogged during build.	Replace filament and resume build. See No filament coming out".
No filament coming out.	Clogged extruder.	Contact customer service.
Extruder will not home.		Contact customer service.
Stringy or fraying plastic layers on steep overhangs.	Object overhangs are too far apart or too steep (<45 degree angle).	Build with supports.
3D40 FLEX will not find my Wi-Fi network.	Printer too far from wireless router.	Reposition 3040 FLEX to be closer to your router. Connect to network with Ethernet.
3D40 FLEX will not connect to my network.	Printer too far from wireless router.	Reposition 3040 FLEX to be closer to your router.
	Network password incorrect.	Re-enter your password or verify your password with your network owner.

OPEN SOURCE SOFTWARE

Firmware Updates

Dremel recommends that firmware be updated whenever Dremel provides an update. Dremel will provide firmware updating to improve performance and a dd additional features for the 3D40 FLEX throughout the life of the product.

There are two ways of updating the 3D40 FLEX: (1) Download update from www.dremel3d.com and install using USB memory drive. (2) Connect the 3D40 FLEX to the internet and update from the 3D40 FLEX 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 sending a written request to:

Dremel

Attn: Open Source Software Officer

P.O Box 081126

Racine, WI USA 53408-1126

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.

DREMEL® CONSUMER LIMITED WARRANTY

This DREMEL product is guaranteed in accordance with statutory/country-specific regulations; damage due to normal wear and tear, overload or improper handling are excluded from the warranty.
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 via **www.dremel.com** for further instructions.

DISPOSAL

The machine, accessories and packaging should be sorted for environmental-friendly recycling.

ONLY FOR EC COUNTRIES

Do not dispose of power tools with household waste!

According the European Guideline 2012/19/ EC for Waste Electrical and Electronic Equipment and its implementation into national law, power tools that are no longer usable must be collected separately and disposed of in an environmentally-correct manner.

CONTACT DREMEL

For more information on the Dremel product range, support and hotline, go to **www.dremel.com**.
Dremel, Konijnenberg 60, 4825 BD Breda, The Netherlands.

Documents / Resources

DREMEL 3D40 FLEX Printer with Filament [pdf] Instruction Manual
3D40 FLEX Printer with Filament, 3D40 FLEX, Printer with Filament, Filament

References

- ⓗ **Invented for life | Bosch Global**
- ⓜ **Manual-Hub.com - Free PDF manuals!**
- ⓓ **Location Selection | Dremel**
- ⓓ **3D-Drucker | Dremel**
- ⓓ **Imprimantes 3D | Dremel**
- ⓓ **3D-Drucker | Dremel**
- ⓜ **Manual-Hub.com - Free PDF manuals!**
- **User Manual**