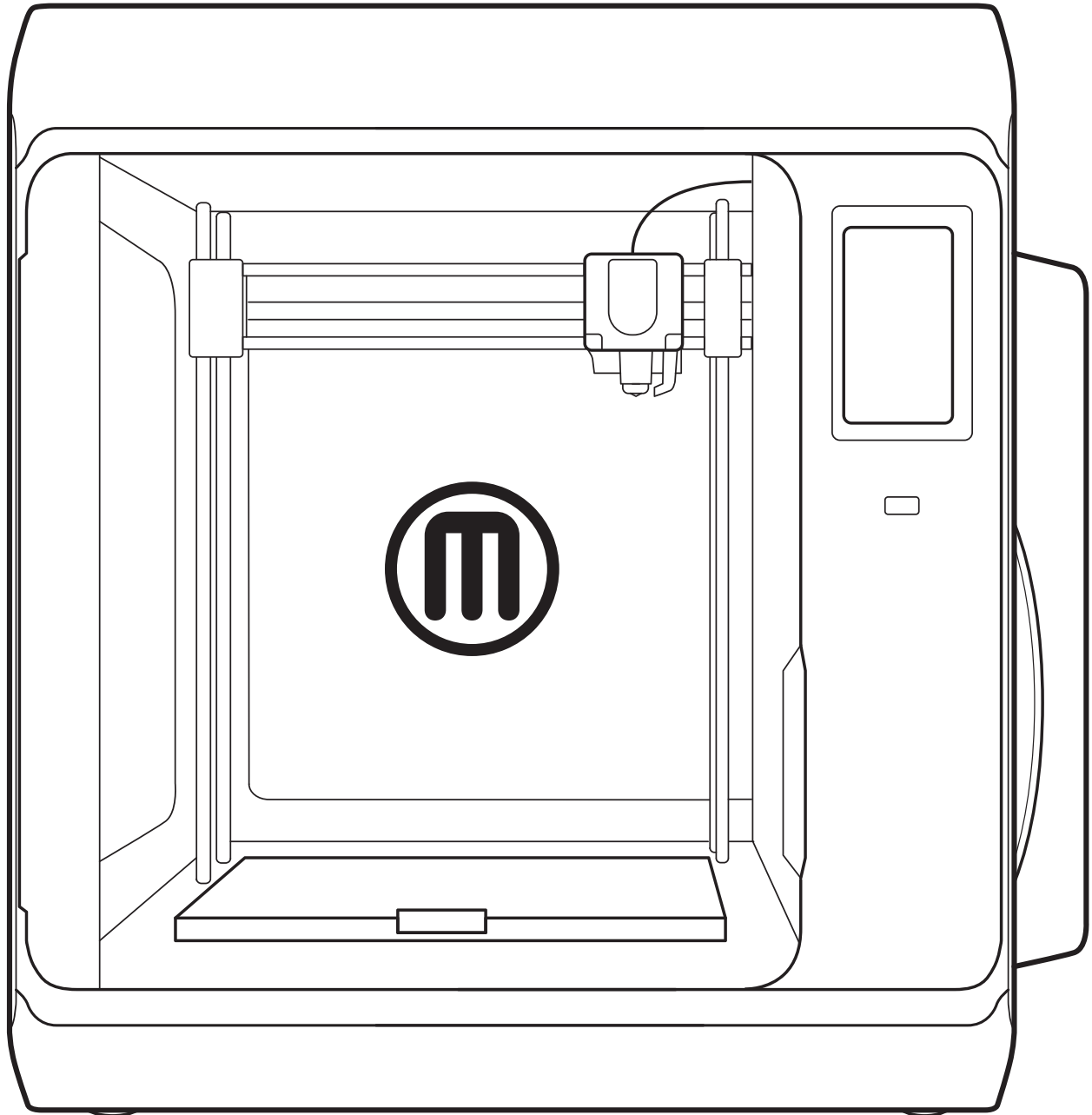


MakerBot.

SKETCH LARGE

USER MANUAL



CHAPTER 1

WELCOME

Welcome to the User Manual for the MakerBot® Sketch Large™ 3D Printer.

LEGAL NOTICES

LIMITED WARRANTY

The MakerBot Limited Warranty (available at makerbot.com/legal) applies to the MakerBot Sketch Large 3D Printer.

OVERALL PROVISIONS

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SAFETY AND COMPLIANCE

MANUFACTURER:

MakerBot Industries, LLC
One MetroTech Center, 21st Floor
Brooklyn, NY 11201
347.334.6800

PRODUCT: 3D Desktop Printer

MODEL: Sketch Large

MAKERBOT SKETCH LARGE CAT NO.: PAJA27

RATINGS: 100-250VAC 350W/320W ~50-60HZ



Regulatorycompliance@makerbot.com

RADIO AND TELEVISION INTERFERENCE

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

- Reorient or relocate the machine.
- Increase the separation between the equipment.
- Connect the equipment to an outlet on a different circuit.

Any changes or modifications made to this equipment voids your authority to operate this equipment under FCC Rules.



Safety alert symbols precede each safety message in this manual. These symbols indicate potential safety hazards that could harm you or others or cause product or property damage.



Warning: The MakerBot Sketch Large includes moving parts that may cause injury. Never reach inside the MakerBot Sketch Large while it is in operation.



Warning: The MakerBot Sketch Large generates high temperatures. Always allow the MakerBot Sketch Large Extruder and build plate to cool down before you reach inside.



Warning: There is a risk of shock. The electronics of the MakerBot Sketch Large are not user serviceable.



Caution: The socket outlet must be located near the printer and must be easily accessible.



Caution: In case of emergency, disconnect the MakerBot Sketch Large from the socket outlet.



Caution: The MakerBot Sketch Large melts plastic during printing. Plastic odors and particles may be emitted during this operation. Make sure to set up the MakerBot Sketch Large in a well-ventilated area.



Caution: Always allow the Extruder to cool to 50°C before reaching inside the MakerBot Sketch Large or removing the Extruder.



Caution: Children under 12 should be supervised by an adult.



Caution: Dust generation and accumulation should be minimized. Some dust and dry powders can build static electricity charges when subjected to friction and create an ignition hazard.

Note: For users in Japan, the power cord is only for use with this printer model, the MakerBot Sketch Large 3D Printer.

ABOUT THE MAKEBOT SKETCH LARGE

HOW THE MAKERBOT Sketch Large WORKS

The MakerBot Sketch Large makes three-dimensional objects out of different types of melted materials. First, download a model from the internet or design a part, then use MakerBot CloudPrint to translate 3D design files into a .makerbot file, which creates instructions for the MakerBot printer. Then, transfer the .makerbot file to the MakerBot printer via your local network, or USB flash drive.

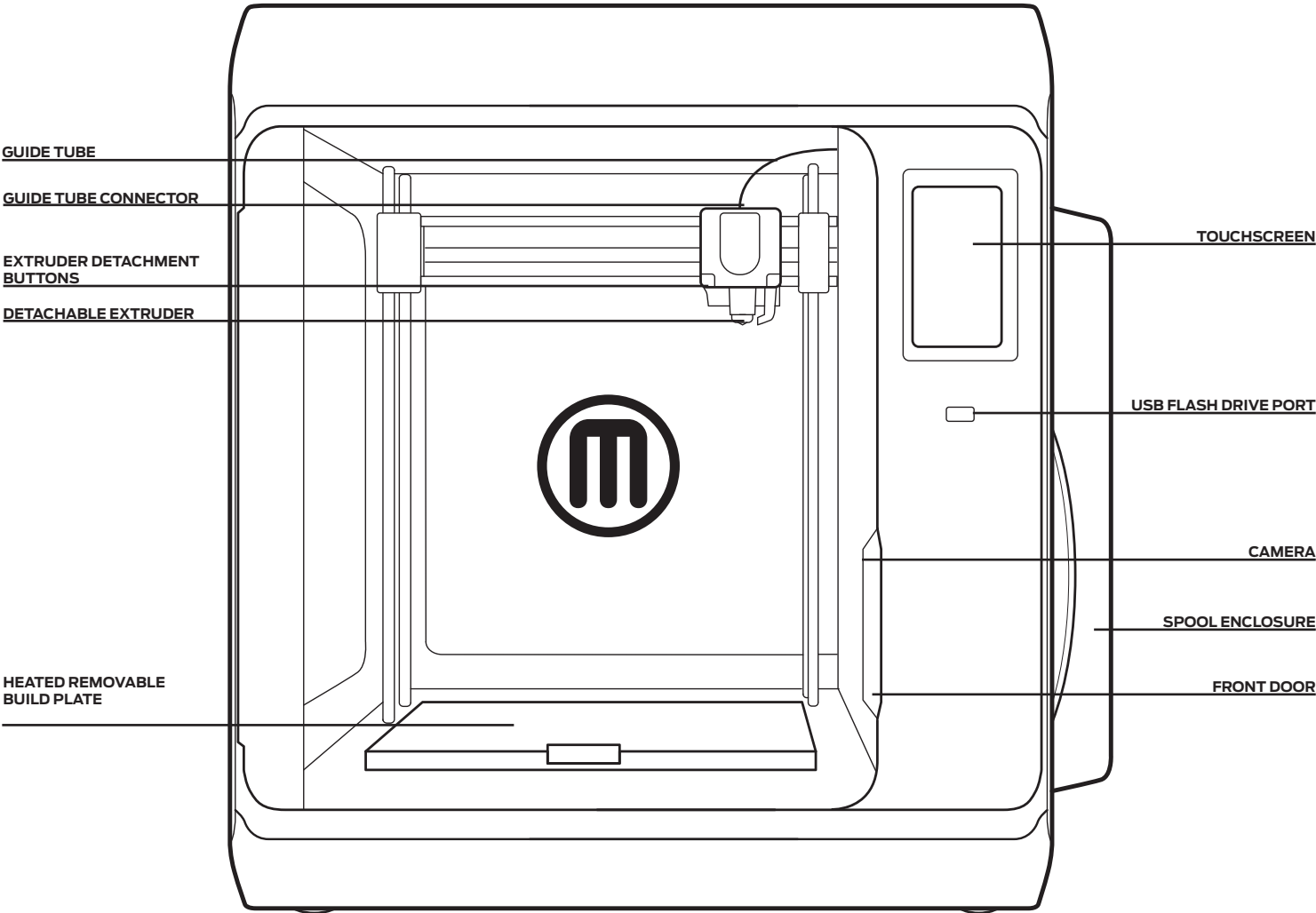
The MakerBot Sketch Large will melt materials and extrude it out onto the build plate in thin lines to build your object layer by layer. This 3D printing technology is called fused deposition modeling (FDM).

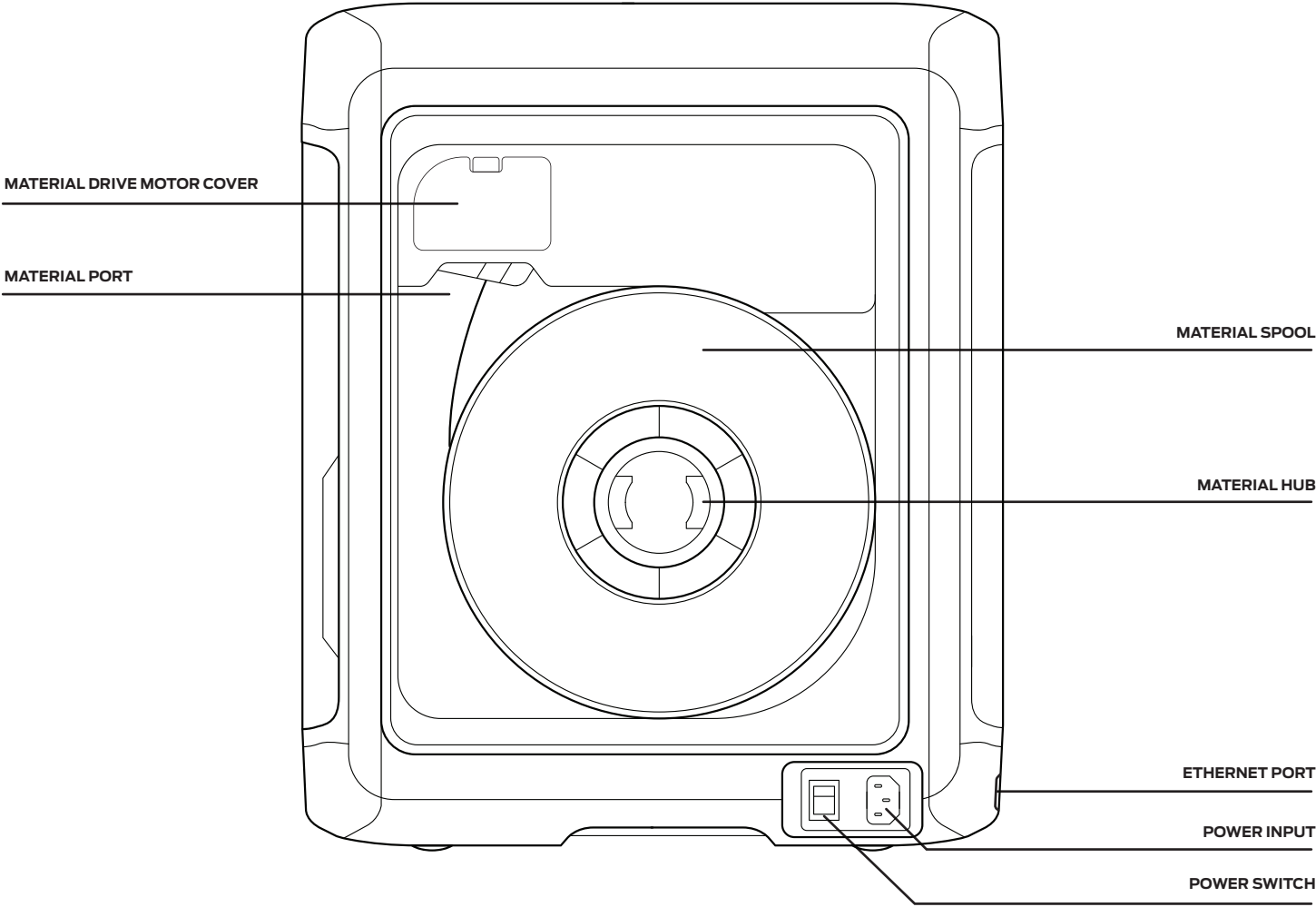
SPECIFICATIONS

PRINTING	
Print Technology	Fused deposition modeling (FDM)
Build Speed	Max Print Speed: Up to 150 mm/sec
Layer Resolution	Maximum Capability: 100 - 400 microns Print Mode tuned for: 200 microns to provide an optimal balance of high surface quality and quick print time
Maximum Build Volume	220mm x 200mm x 250mm [8.66in x 7.87in x 9.84in]
Supported Materials	MakerBot PLA for Sketch and MakerBot Tough
Maximum Heated Build Plate Temperature	110C [230F]
Operating Volume	50 dB
Recommended Print Mode	Balanced
HARDWARE	
Print Heads	1 (user replaceable)
Nozzle Diameter	0.4 mm
Nozzle Material	Stainless Steel (SU304)
Sensors	Filament Detection and Auto Load/Unload
Display	109mm color touch screen [4.3in color touch screen]
Build Plate	Heated with removable, flexible build surface
Build Surface	Grip Surface
Camera Resolution	2 megapixels
Ambient Operating Temperature	15C to 30C [59F to 86F] 10% to 70% RH non-condensing
Storage Temperature	0C to 55C [32F to 131F]
Filter	Particle Filter
SIZE & WEIGHT	
Product Dimensions	547mm (H) x 535mm (W) x 470mm (D) [21.54in (H) x 21.07in (W) x 18.50in (D)]
Product Weight	23.2kg [51.15lb]
Shipping Weight	32.5kg [71.65lb]
Shipping Box	675mm (H) x 569mm (W) x 591mm (D) [26.57in (H) x 22.40in (W) x 23.27in (D)]

MATERIAL SPOOLS	
Material Spools	1.75mm [0.069in]
Spool Type	Sketch Material Spool
Spool Size	Weight = 1kg [2.2lb] Diameter = 203mm [8in]
System	Open Filament System
SAFETY & COMPLIANCE	
Directives	LVD,WEEE, RoHS, Packaging, RED, EMC
Safety Standards	IEC/ EN/UL 62368-1
ELECTRICAL	
Power Requirements	100-250VAC 350W/320W ~50-60HZ
Connectivity	USB flash drive, Ethernet, Wi-Fi
SOFTWARE	
Software Bundle	MakerBot CloudPrint
File Types	MakerBot (.makerbot), STL (.stl) .catpart .dae .gib .iges .ipt .obj .par .sab .sat .sldprt.Thing .wrl x_t .3mf
Recommended Browser	Latest version of Chrome, Edge, Firefox, or Safari

MAKERBOT SKETCH LARGE DIAGRAM





CHAPTER 2

GETTING STARTED

When you set up your MakerBot® Sketch Large™ 3D Printer, remember that it was built and packaged very carefully. We hope you will take your time and be just as careful unpacking it and getting it set up.

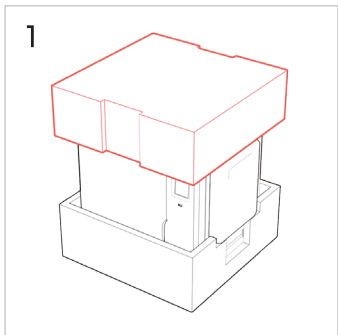
UNBOXING

NEED HELP?

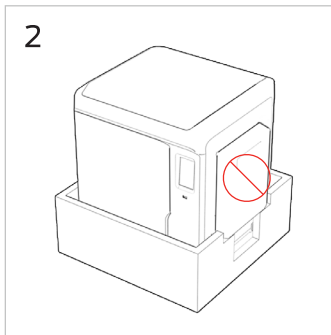
US/CAN Call: **+1 925.529.8563** Mon - Fri 9am – 6pm ET

Or Visit: **Support.MakerBot.com**

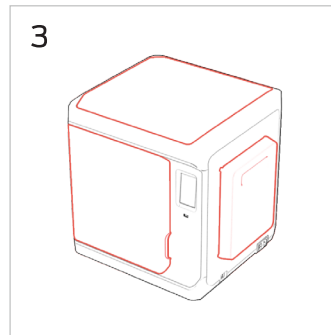
International: **MakerBot.com/Service-Partners**



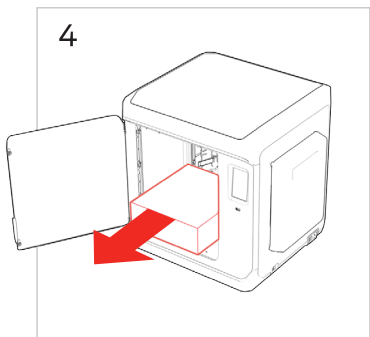
Carefully remove the packing material and its contents from the top of the printer.



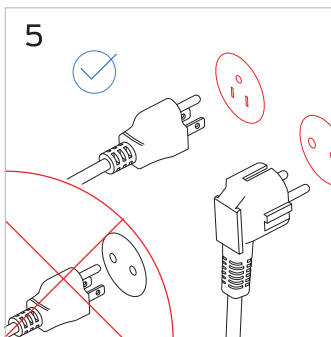
Carefully lift the printer and place it on a stable flat surface. **Do not lift from the spool enclosure. It may detach from the printer.**



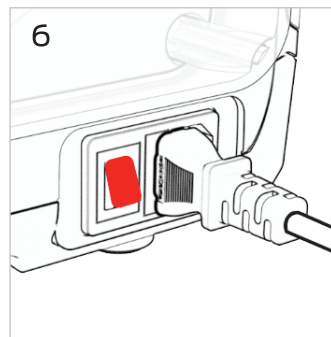
Remove the bubble wrap, tape and protective coverings from the printer.



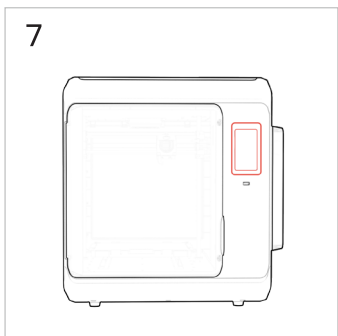
Open the front door and pull the packaging material forward out of the printer.



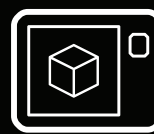
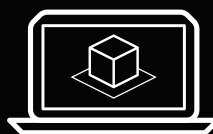
Locate the power input then use the correct power cord to connect the printer to an accessible outlet.



Toggle the power switch on. It's located on bottom right side of the printer.



After the printer powers on, follow the on screen instructions to finish setting up your printer.



Go to: **cloudprint.makerbot.com**

CloudPrint is a browser-based app that enables you to prepare & send files directly to your printer.

Visit cloudprint.makerbot.com to create a Makerbot account and connect your printer to CloudPrint.

SETTING UP THE SKETCH LARGE

In case of conflicting information between this Manual and the on-screen instructions, FOLLOW THE ON-SCREEN information, since it is updated more frequently.

TURN ON YOUR MAKERBOT Sketch Large

The power button for the MakerBot Sketch Large is located on the bottom right side of the printer. Toggle this switch to turn on your MakerBot Sketch Large.

To turn off your MakerBot Sketch Large, toggle the switch the opposite direction .

THE GUIDED SETUP

The first time you turn on your MakerBot Sketch Large, you will be guided through the initial setup process using the MakerBot Sketch Large user interface. This Guided Setup will walk you through connecting the printer to an internet connection, authorizing your printer, running calibration, loading material, and running your test print.

Please see [Chapter 3: Guided Setup](#) for more information.

Prepare Your Model to Print

The 3D model must be formatted, or “sliced” for the MakerBot Sketch Large using the MakerBot CloudPrint software. MakerBot CloudPrint can import an STL or other supported 3D file type, and export a MakerBot (.makerbot) file type.

Please see [Chapter 5: MakerBot CloudPrint](#) for more information about MakerBot CloudPrint.

SUPPORTED FILE TYPES:

MakerBot (.makerbot), STL (.stl)
 .catpart .dae .gib .iges .ipt .obj .par .sab .sat .sldprt.Thing .wrl x_t .3mf



Caution:

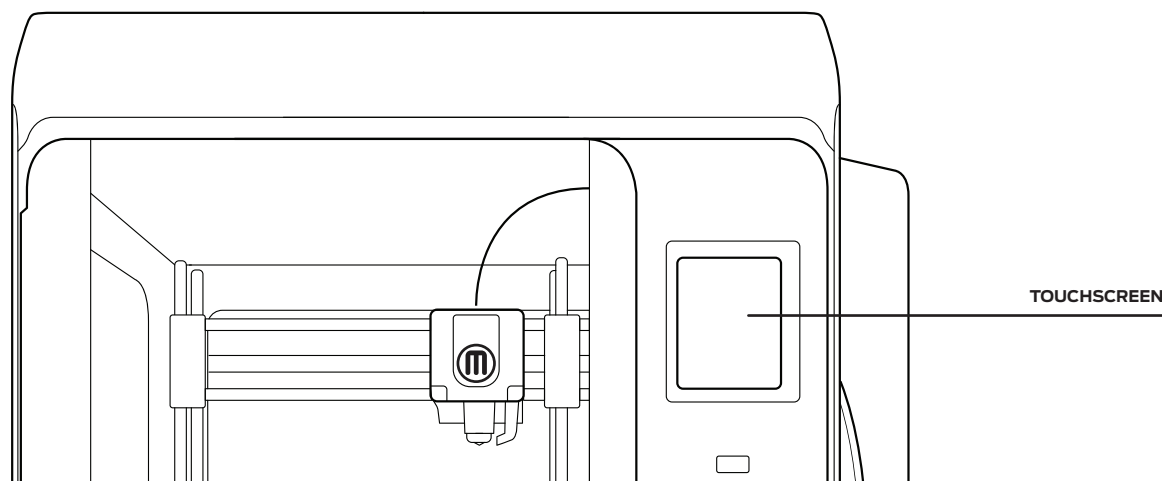
Never remove an extruder from your MakerBot Sketch Large 3D printer during or immediately after printing. Always allow an Extruder to cool below 50°C.

CHAPTER 3

GUIDED SETUP

The first time you turn on your MakerBot® Sketch Large™ 3D Printer, you will be guided through the setup process via the onboard touchscreen. From there, you will learn everything you need to know to start your first 3D print.

THE MAKERBOT Sketch Large TOUCHSCREEN



THE GUIDED SETUP

The first time you turn on your MakerBot Sketch Large, you will be guided through the initial setup process using the MakerBot Sketch Large user interface. This Guided Setup will walk you through connecting the printer to an internet connection, authorizing your printer, running calibration, loading material, and running your test print.

RE-RUN THE GUIDED SETUP

To re-run the Guided Setup, select **SETTINGS > UTILITIES > RESET TO FACTORY**. The screen will then prompt a restart of the printer. Restoring factory settings will allow you to rerun the Guided Setup and also remove all authorized MakerBot accounts.

NEW FIRMWARE UPDATE REQUIRED

Having up to date firmware is one of the most important factors in getting the most out of your MakerBot Sketch Large. The first step in the setup process will make sure that your MakerBot Sketch Large is running the most up to date firmware. You will not be able to proceed without updating firmware. Use the touch screen on your MakerBot Sketch Large to select the option that works best for you. Once selected your MakerBot Sketch Large will walk you through the firmware update process via on screen prompts.

UPDATING VIA ETHERNET

Please make sure your MakerBot Sketch Large is plugged into your local network via the Ethernet port in the back of the printer. Once your MakerBot Sketch Large has established an Ethernet Connection, it will download the latest firmware. Once the firmware has been downloaded and installed, restart the printer.

UPDATING VIA WI-FI

Once you select "Update via Wi-Fi" from the startup screen, your MakerBot Sketch Large 3D Printer will automatically scan for nearby Wi-Fi networks. Select your preferred wireless network from the available list. You will then be prompted for the password for this network, please enter it using the touch screen. Once complete your MakerBot Sketch Large will connect to the network and automatically download the newest firmware version. Once you have successfully entered the password for the selected Wi-Fi network, your MakerBot Sketch Large will automatically connect and begin searching for the latest firmware version. Once the latest firmware has been found, it will automatically begin downloading and installing. Once all three steps have been completed, your MakerBot Sketch Large will restart running the latest firmware version. Once the firmware has been downloaded and installed, restart the printer.

UPDATING VIA USB FLASH DRIVE

Visit support.MakerBot.com to download the latest firmware.

Once you have downloaded the newest firmware version, transfer it to a USB flash drive. Please ensure that the firmware file is not embedded inside another folder on your USB flash drive, or else the Sketch Large printer will not be able to select it. Also be sure that there is only one firmware file on your USB flash drive. Insert your USB flash drive into the USB flash drive port under the touch screen then power cycle the printer.

Once the firmware has been installed, restart the printer again.

SIGNING INTO YOUR MakerBot account

Logging into your MakerBot account on your MakerBot Sketch Large will ensure the best experience within the MakerBot ecosystem and will automatically register your MakerBot Sketch Large. Your MakerBot account is the account that you use to log into MakerBot.com and MakerBot CloudPrint.

If you do not have an account, visit <https://accounts.makerbot.com> to create one.

NAMING YOUR PRINTER

You can use the touchscreen keyboard to enter a name for your MakerBot Sketch Large. This is a helpful feature to help differentiate multiple printers.

BUILD PLATE CALIBRATION

The MakerBot Sketch Large will need to determine the height of the build plate. Adjust the nozzle of up or down so that it just touches the build plate. You should be able to slide a piece of paper under it with a little resistance. The printer may already be calibrated to start printing after unboxing.

LOADING THE MATERIAL

Follow the onscreen instructions to load the spool and material into your MakerBot Sketch Large.

LOADING TIPS

Before loading your materials it is important to remove a few inches from the spool before inserting it into the slot in the bay. Any materials that may be bent or crimped may get stuck or break along the way to the extruder.

If you are using material you had previously printed with, it is important that you remove any material that may have already been routed from the tube to the extruder.

If the material feels brittle or breaks easily do not load this into the printer. Remove at least 2 feet of the material and continue with loading.

To determine if your Material has become brittle, you'll want to bend a piece of it back onto itself a few times. If you can bend it at least 3 times before breaking it is not brittle.

TEST PRINT

Once you have loaded material into the extruder, it is time to run a test print to ensure your MakerBot Sketch Large is setup successfully.

START TEST PRINT

Tap "Start Test Print" to start the print. The extruder will then begin heating up for the test print.

Once the extruder and build plate have heated, the test print will begin. It is recommended that you watch at least the first few layers to ensure the print is adhering to the build plate. The test print will take around 30 minutes. The display screen will show progress of the print.

CHAPTER 4

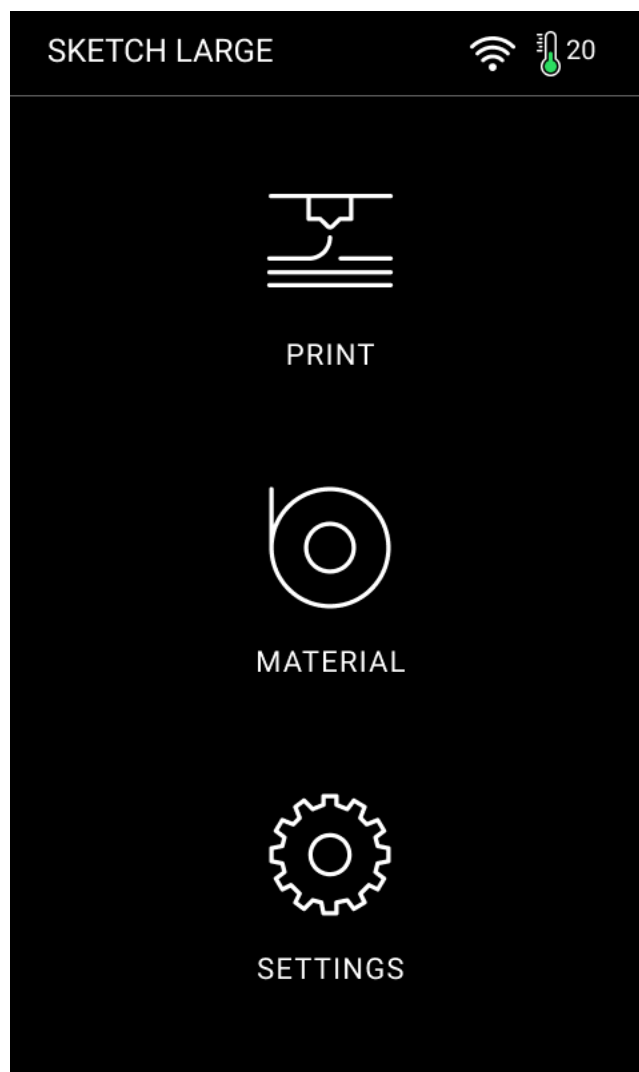
TOUCHSCREEN USER INTERFACE

The touchscreen interface gives you options for managing your printer and the printing process. You can use these options to print objects from a USB flash drive on your MakerBot® Sketch Large™ Performance 3D Printer or start prints initiated via MakerBot CloudPrint™ software. You can also change printer settings and monitor a print's progress.

HOME SCREEN

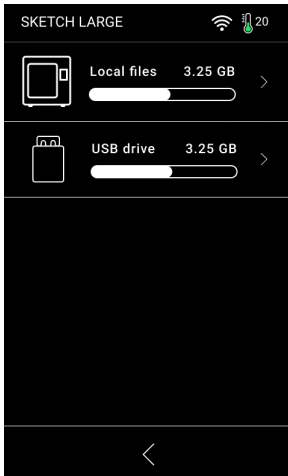
The touchscreen gives you three options for managing your printer and the printing process:

- › PRINT
- › MATERIAL
- › SETTINGS



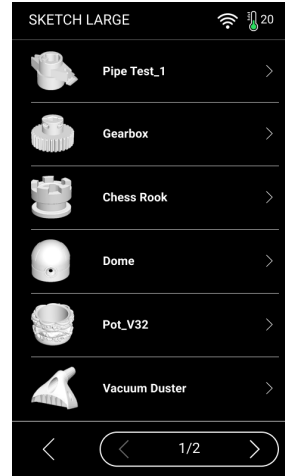
START A PRINT

1 SELECT A FILE



Select **[PRINT]** on the touchscreen to initiate a print stored on a USB flash drive or saved on the printer's internal memory.

Push the icon to select the location of the file you want to print.

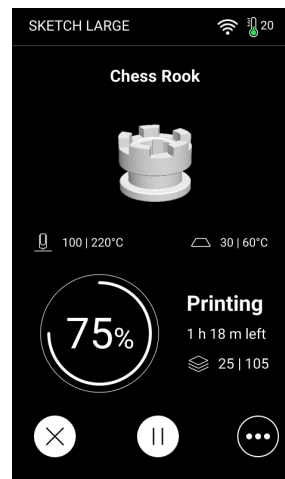


Tapping the play button immediately starts the print and tapping on the filename takes you to the details of the print file. A model file must be exported from the MakerBot Print Application and then copied to a USB flash drive.

2 START THE PRINT



Tap **[PRINT NOW]** on the touchscreen to start the selected print. The file will copy on to the printer. Then, it will begin printing.



While printing the progress will be shown on the screen. You can pause the print, change material, and access more info while a print is in progress.

3 PRINT COMPLETE



After the print is complete, the screen will indicate its completion. Push the screen to continue to the next menu.

MATERIAL

Select the **[Material]** icon to load or unload material.

For material best practices, see Chapter 3, Guided Setup.

TO LOAD MATERIAL

1. Cut the end of your material to create a clean edge
2. Use the touch screen to select **[MATERIAL > LOAD]**
3. Follow the instructions on the screen

TO UNLOAD MATERIAL

1. Use the touch screen to select **[MATERIAL > UNLOAD]**
2. Follow the instructions on the screen
3. Rewind the material onto the spool and store in a dry place.

If you are changing material spools, make sure to keep the spool tightly wound as you pull the material free of the guide tube. If you do not, the material could unravel or tangle on the spool.

NOTE: When you are not using a material spool, make sure the free end of the material is inserted into one of the storage slots of the spool. This allows you to find the insertion end of the material much faster and will prevent the spool from tangling.

SETTINGS

Select the **[SETTINGS]** icon to personalize your MakerBot Sketch Large, edit network or sharing settings, update firmware, access calibration, and other tools.

NETWORK

Under network, you can connect your printer to a Wi-Fi network, Ethernet and also authorize MakerBot accounts to the printer.

WI-FI

Select **[WI-FI]** to begin the setup process of connecting your MakerBot Sketch Large to a WiFi connection. When you select **[WI-FI]**, the MakerBot Method will show the available WiFi networks. Select the WiFi network that you would like to connect to and enter a password if required.

ETHERNET

Select this option if you would like to use an ethernet cable to connect to the internet.

MAKERBOT ACCOUNT

Sign in with your MakerBot account to add this printer to your printer list. If you do not have a MakerBot account, please visit MakerBot.com to create an account.

PREHEAT

Preheating allows you to heat your nozzle or build plate before printing or for maintenance.

UTILITIES

Select this to access the printer's utilities and options

INFO

Select the **[INFO]** icon to view firmware information, network information, and print statistics from your MakerBot Sketch Large.

LANGUAGE

Select this option to choose the language the printer display uses.

CALIBRATION

This process calibrates the distance of the tip of the extruder to the build plate. When prompted slide a piece of paper back and forth between the nozzle and the build plate. Tap the up and down arrow to adjust the distance until you feel slight friction, like a pencil writing on paper. Tap **[OK]** to complete calibration.

HOMING

Pressing homing returns all the parts of the printer to their origin.

MOVE

This utility allows you to manually control the position of all moving components on the printer. Moving the components can be useful for access during maintenance of the printer.

CAMERA

The camera and USB flash drive port can not be used at the same time. There are two options for handling this condition. **(Recommended) Auto Mode:** While printing: Camera is on; USB flash drive is off. While idling: Camera is off; USB flash drive is on. **Manual Mode:** You can manually select what is in use.

NAME PRINTER

Give your printer a name so you can find it easier in your printer list.

LED

You can toggle whether or not the LED on the printer is on or off.

BUZZER

Select whether or not the internal buzzer creates noise alerts or not.

FACTORY RESET

Factory reset clears all saved settings and users who are authorized to the printer. A power cycle is required at the end of the process to complete it.

UPDATE

Select this to manually check if a firmware update is available online. To update firmware via USB flash drive download it from support.MakerBot.com and copy it to a USB flash drive. Insert the USB flash drive into the front of the printer and power cycle the machine to initiate the update. Keeping your firmware up to date improves machine reliability and print quality.

CHAPTER 5

MAKERBOT CLOUDPRINT™

The MakerBot® Sketch Large™ 3D Printer streamlines 3D print preparation and file management using MakerBot CloudPrint™ software. MakerBot CloudPrint gives you the tools to streamline your 3D printing workflow. You can monitor, start prints, and manage your print queue all from the browser.

GETTING STARTED WITH MAKERBOT CLOUDPRINT™

1. Go to **CLOUDPRINT.MAKERBOT.COM**.
2. Log into your MakerBot Account. If you don't already have a MakerBot account, click "Sign Up" to create one.

Please visit our MakerBot CloudPrint Learning Page to get our most up-to-date instructions and guides on how to use the MakerBot CloudPrint application.

Note: The balanced print mode has been tuned to give you the best overall print quality. MakerBot recommends using the balanced print mode for best results.

ADD YOUR PRINTERS

On the touch screen press **Settings > Network > MakerBot account**, then sign in with your MakerBot account. To add printers to your account on CloudPrint, first click "Add Printer". Choose the MakerBot printer type that you'd like to add to CloudPrint and your workspace and follow the instructions on the screen.

If you've previously used your printer on MakerBot Print, your printer may show up already when you click "Manage Printers". If so, click the "Share with Workspace" on each printer to give all members of your workspace access to your printer.

STARTING A PRINT WITH THE MAKERBOT SKETCH LARGE

There are two ways to begin printing an object. You can use the touchscreen on the MakerBot Sketch Large or MakerBot CloudPrint.

When you are ready to print your model, click **PRINT** in MakerBot CloudPrint to slice the model using the current settings and send a .makerbot print file to your MakerBot Sketch Large. You will be reminded to clear the build plate and asked to initiate the print on the touchscreen. You can also select **[BEGIN PRINTING]** on the touch screen after starting the file transfer.

If MakerBot CloudPrint is connected to your MakerBot Sketch Large, the print file will be sent directly to your 3D printer. If MakerBot CloudPrint is not connected to your MakerBot Sketch Large, this button will open a dialog allowing you to export and save a .makerbot print file. You can transfer the print file to your MakerBot Sketch Large using a USB flash drive.

HOW TO PAUSE OR CANCEL A PRINT

To pause a print, push the pause icon on the print progress screen. You can also select the printer in MakerBot CloudPrint and select **PAUSE**.

To cancel a print, tap the top of the screen that says printing or paused. A drop down will appear with the option to cancel the print.

TO ADD AN OFFLINE PRINTER

1. Open the printer panel and click **[ADD A PRINTER]**

AFTER YOU PRINT

REMOVING THE PRINT FROM THE BUILD PLATE

When your print finishes and after it cools, remove the build plate from the MakerBot Sketch Large. Remove the print from the build plate by first slightly bending it, then using the provided tool to remove the print. The print will peel off the smooth grip surface.

NOTE: Some pieces of the raft may remain on the plate. Use a flat, non-sharp tool such as a putty knife to remove the raft pieces. Never use a knife to remove pieces of the raft—doing so can damage the build plate.

CHAPTER 6

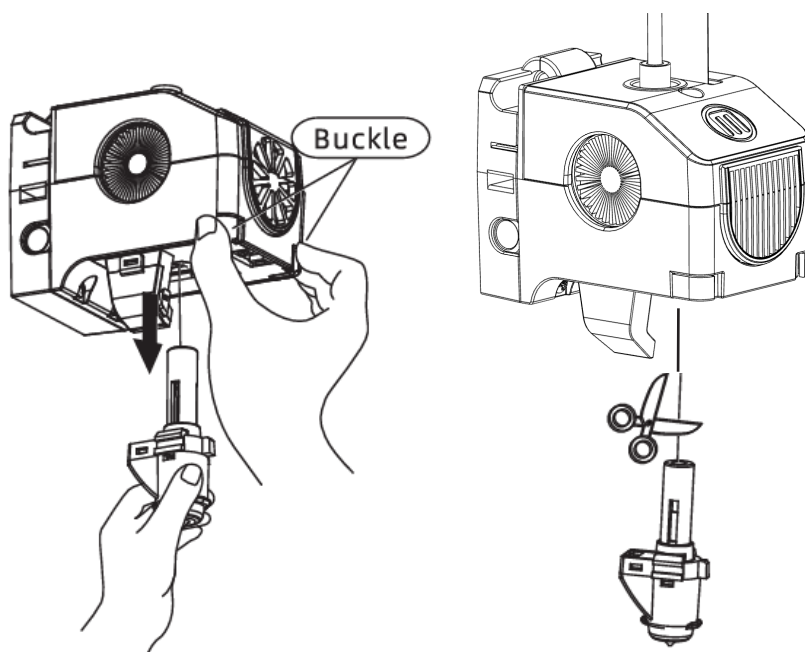
PRINTER MAINTENANCE

As soon as you take your MakerBot® Sketch Large™ 3D Printer out of the box, it is ready to print high-quality models. However, like any machine, routine maintenance is needed. Here are some ways you can keep your MakerBot Sketch Large printing smoothly.

REMOVING THE EXTRUDER

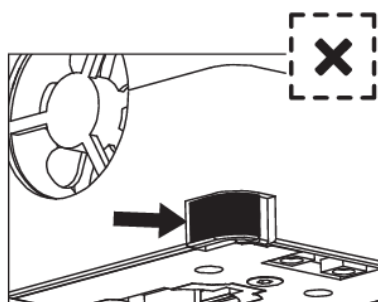
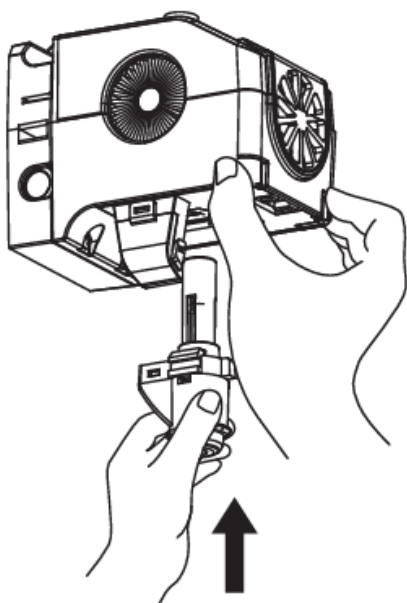
The extruder can be removed with material still inside (it will have to be cut from the spool). We recommend unloading the material before removal. Be sure to power off the printer before removing or installing an extruder. To remove or swap the extruder follow the instructions below.

1. While pressing the left and right clips pull down on the extruder until it releases. Depending on your printer this may require a more secure grip on the extruder. Gloves can be used to prevent pinching.
2. If material is still inside the extruder, pull the extruder down and leave several inches of material still attached after cutting it. Then rotate the material spool in order for end of the material to be back in the guide tube.

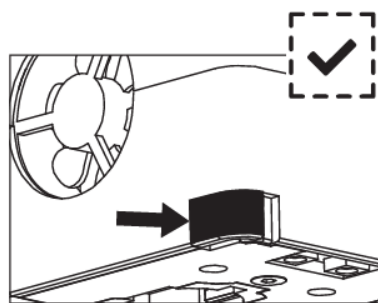


INSTALLING A NEW EXTRUDER

1. Be sure the printer is powered off, then push the new extruder into place until you hear a click.
2. Check that the extruder detachment buttons are reset.
3. You may need to calibrate the extruder.



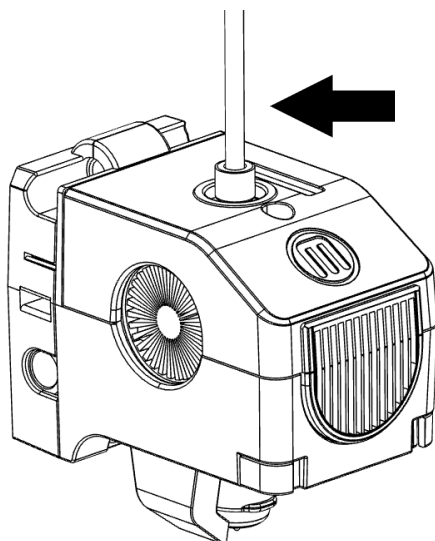
Improperly installed with seam



Properly installed with no seam

THE GUIDE TUBE

Press down on the guide tube connector, then pull the guide tube up.



EXTRUDER CALIBRATION

Calibration should be run if you are noticing any print quality issues, or if the extruders are changed.

You can access the calibration script on the MakerBot Sketch Large by going to **Settings > Utilities > Calibration** on the printer's touch screen.

MAINTAINING THE BUILD PLATE

The surface of the MakerBot Sketch Large build plate, known as the Grip Surface, allows for better print adhesion and print quality compared to other types of build surfaces.

Go to [HTTPS://STORE.MAKERBOT.COM/](https://store.makerbot.com/) to order more build plates.

MONTHLY MAINTENANCE

Please apply grease to the printer guide rods every 30 days of regular use or if the printer has not been used for an extended period of time.

OTHER ISSUES

For help with issues not covered in this chapter, please go to [SUPPORT.MAKERBOT.COM](https://support.makerbot.com).

CHAPTER 7

REFERENCE

GLOSSARY

BUILD PLATFORM: The support for the build plate. The build platform's underside contains adjustable hex bolts for use during assisted-leveling.

ETHERNET CABLE: The cable used to connect your MakerBot Sketch Large to a local area network.

EXTRUDER CARRIAGE: Holds the extruder firmly in place on the rail of the gantry while allowing for quick and easy extruder swapping.

EXTRUDER NOZZLE: The opening on the end of the Extruder from which heated MakerBot material emerges to be spread onto the build plate.

FIRMWARE: The software that runs on your MakerBot Sketch Large.

GANTRY: The apparatus that allows the carriage and extruder assemblies to move.

GRIP SURFACE: The surface on which the extruder prints on. Prints adhere better to the Grip Surface resulting in reduced warping and curling.

GUIDED SETUP: The set of tasks that runs when you turn on the MakerBot Sketch Large for the first time. The setup assistant helps you load material and start a test print.

INTERNAL STORAGE: The part of the MakerBot Sketch Large onboard storage that you can use to store print files.

.MAKERBOT: The format of print files for your MakerBot Sketch Large. Print files contain instructions for your MakerBot Sketch Large.

MAKERBOT ACCOUNT: The username and password you will use to sign in to MakerBot CloudPrint, and log on to Thingiverse and other MakerBot sites.

MAKERBOT CloudPRINT SOFTWARE: Free software for use with your MakerBot Sketch Large. MakerBot CloudPrint will help you discover, manage, share and print 3D models.

MATERIAL GUIDE TUBE: The plastic tube that guides the MakerBot material from the material spool to the extruder.

.OBJ: A file format used for 3D models.

EXTRUDER: The extruder draws the material from the spool, melts it, and pushes it through a nozzle onto the Build Plate.

PROFILE: The settings used to slice your 3D model and create a print file. MakerBot CloudPrint Software comes with preset profiles for Balanced and High-resolution prints.

RAFT: A plastic base printed on the build plate and used as a printing surface for your printed object.

SLICING: The process of turning a 3D model into a print file containing instructions for your MakerBot Sketch Large. The MakerBot Sketch Large uses print files with the extension .makerbot.

HEATED REMOVABLE BUILD PLATE: The flat plate on which the MakerBot Sketch Large 3D Printer builds an object. This plate is removable and bending the plate allows you to remove objects.

.STL: A widely used file format for 3D models.

SUPPORTS: Automatically generated support structures used to prop up any sections of a print that will not stand alone.

.THING: A file format used by MakerBot CloudPrint that stores additional information about your 3D model files.

THING: A file or group of files saved to Thingiverse or to your MakerBot Cloud Library.

THINGIVERSE: An online community for sharing 3D design files.

TOUCHSCREEN: The touchscreen at the upper right corner of the MakerBot Sketch Large. The touchscreen allows you to start prints, change settings and view status information.

USB FLASH DRIVE: A USB flash drive. You can use a USB flash drive to transfer print files to and from the MakerBot Sketch Large. Make sure that the USB flash drive is formatted to FAT32. USB flash drives that are formatted to NTFS will not be visible.

CONTACT

SUPPORT

support.makerbot.com

Our website has extensive documentation and troubleshooting information about your MakerBot Sketch Large. It's a great resource when you want to try to solve issues quickly on your own.

my.makerbot.com/support

At MakerBot, we take pride in offering expert, responsive, friendly customer support to our customers around the world. If you need help resolving an issue with your MakerBot Sketch Large, open a case with the MakerBot Support Team at the web address above.

SALES

sales@makerbot.com

To learn about other MakerBot products, including MakerBot material, please email the address above, or call our Sales Team at **+1 347.334.6800**

FCC Caution.

(1)§ 15.19 Labelling requirements.

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.

§ 15.21 Changes or modification warning

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

§ 15.105 Information to the user.

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.

RF warning for Mobile device:

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.