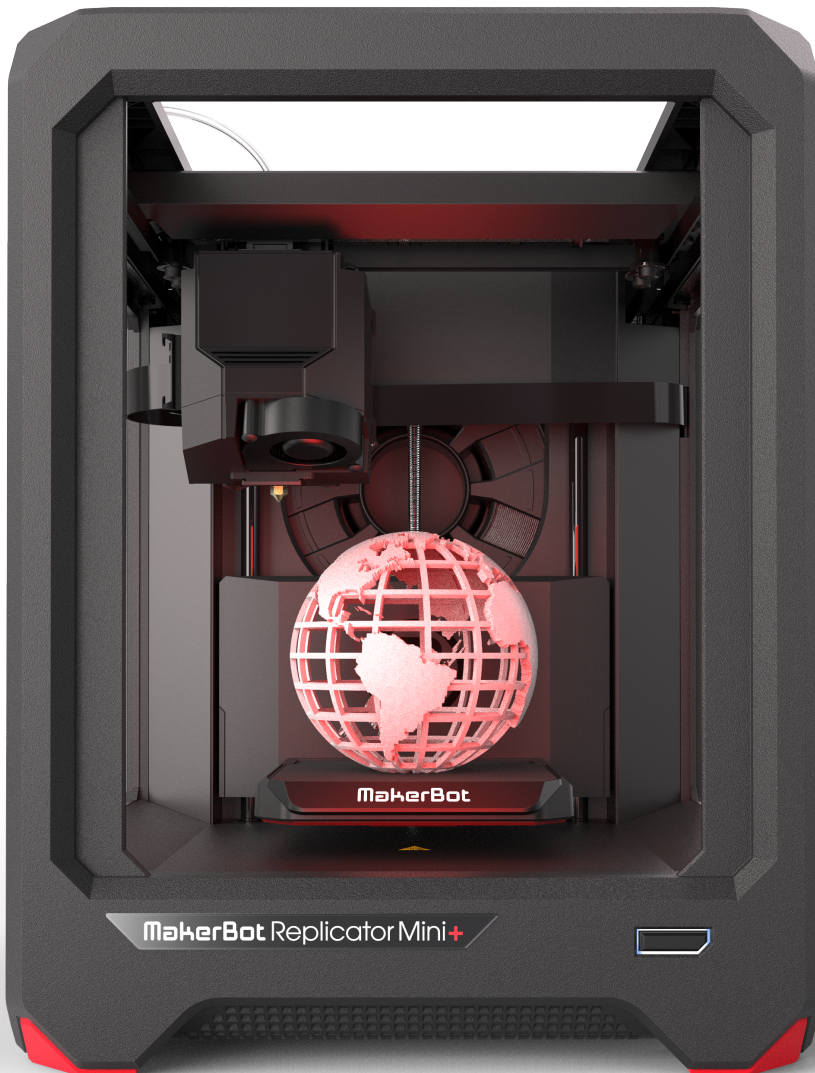




MakerBot Replicator Mini+

USER MANUAL



Chapter 1

Welcome

Welcome to the Reference Guide for the MakerBot® Replicator® Mini+ 3D Printer. The MakerBot Replicator Mini+ is super easy to use, and it is packed with brand-new features. Use this reference guide to familiarize yourself with the capabilities of the MakerBot Replicator Mini+, MakerBot Print™, and the MakerBot Mobile App.

PRODUCT WARRANTY

The MakerBot Replicator Mini+ 3D Printer is covered by a limited warranty. For terms and conditions, see makerbot.com/legal.

OVERALL PROVISIONS

All information in this user manual (“Manual”) is subject to change at any time without notice and is provided for convenience purposes only. MakerBot Industries, LLC and our respective affiliates and suppliers (“MakerBot”) reserves the right to modify or revise this Manual in its sole discretion and at any time and makes no commitment to provide any such changes, updates, enhancements, or other additions to this Manual in a timely manner or at all. You agree to be bound by any modifications and/or revisions. Contact the MakerBot Support Team for up-to-date information. In order to protect MakerBot proprietary and confidential information and/or trade secrets, this document may describe some aspects of MakerBot technology in generalized terms.

DISCLAIMERS

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MANUFACTURER

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9452327301 אזה תרושקתה דרשנ לש יטוחלא רושיא רפטמ
רזחא ינכט יוניש לכ וב תושעל אלו רישכמה לש תירוקמה הנטנאה תא ףילצההל רוטא

This telecommunication equipment conforms to NTC technical requirement.
8.9.2 Connection and use of this communications equipment is permitted by the Nigerian Communications Commission

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 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 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.

WIRELESS SPECIFICATIONS

Frequency	WLAN RF Frequency Range	Protocol	Antenna Type	Antenna Specifications
2.4 GHz	2.412 – 2.472 GHz	802.11 b/g/n	Taoglas, part # FX831.07.0100C	2.5 dBi in the 2.4 GHz band



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 Replicator Mini+ includes moving parts that can cause injury. Never reach inside the MakerBot Replicator Mini+ while it is in operation.



Warning: The MakerBot Replicator Mini+ generates high temperatures. Always allow the Smart Extruder+ to cool down before you reach inside.



Warning: There is a risk of shock. The MakerBot Replicator Mini+ is not user serviceable.



Caution: Do not leave the MakerBot Replicator Mini+ unattended during operation.



Caution: Do not print using materials that have not been approved by MakerBot for use with the MakerBot Replicator Mini+.



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



Caution: In case of emergency, disconnect the MakerBot Replicator Mini+ from the socket outlet.



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



Caution: Never remove the Smart Extruder+ from your MakerBot Replicator Mini+ or turn off the MakerBot Replicator Mini+ during or immediately after printing. Always allow the Smart Extruder to cool completely before removing it from the MakerBot Replicator Mini+ or turning off your 3D printer.



Caution: Do not look directly at any operating LED component.



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

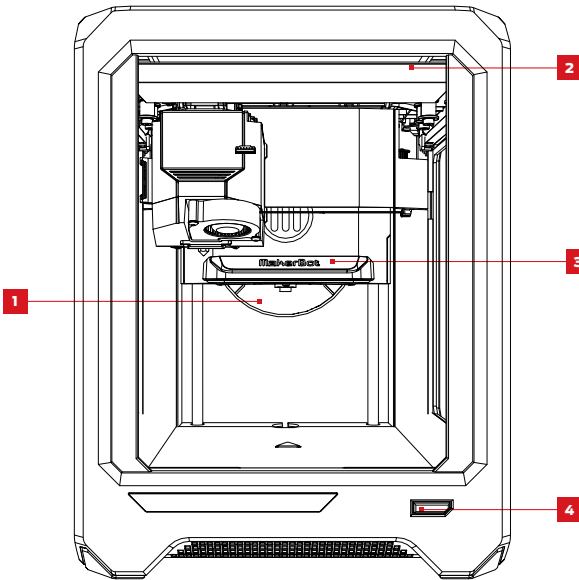


Caution: Dust generation and accumulation should be minimized. Some dust and dry powders can build static electricity charges when subjected to friction and create an ignition hazard.

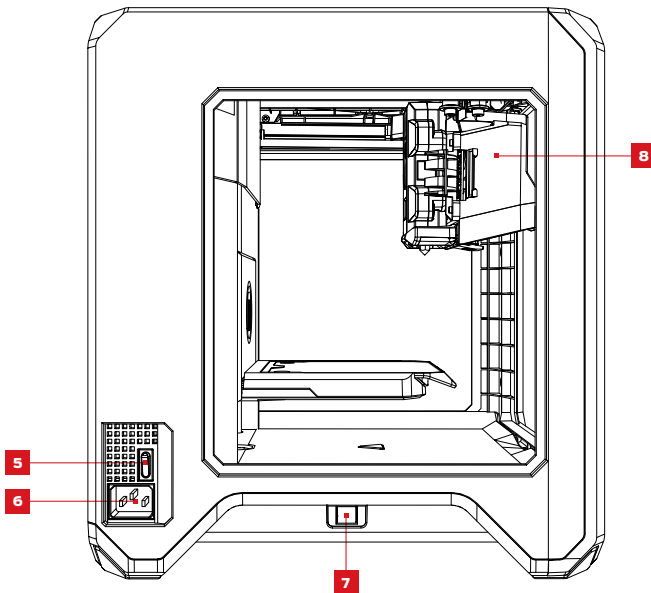
HOW THE MAKERBOT REPLICATOR MINI+ WORKS

The MakerBot Replicator Mini+ makes three-dimensional objects out of melted MakerBot PLA Filament. First, use MakerBot Print to translate 3D design files into instructions for the MakerBot Replicator Mini+. Then, transfer those instructions to the MakerBot Replicator Mini+ via your local network, the MakerBot Mobile App, or USB cable. The MakerBot Replicator Mini+ will melt MakerBot PLA Filament and squeeze it out onto the build plate in thin lines to build your object layer by layer.

MAKERBOT REPLICATOR+ DIAGRAMS



- 1. Filament Spool Pocket
- 2. Gantry
- 3. Build Plate
- 4. Action Button



- 5. Power Switch
- 6. Power Input Port
- 7. USB Port
- 8. Extruder Assembly

Chapter 2

Getting Started

When you set up your MakerBot® Replicator® Mini+ 3D Printer, remember that it was built and packaged very carefully at the MakerBot factory. We hope you'll take your time and be just as careful unpacking it and getting it set up.

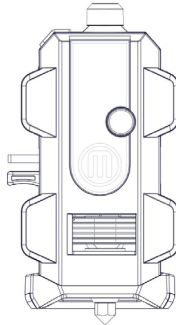
SETUP KIT

When you set up your MakerBot Replicator Mini+ 3D Printer, remember that it was built and packaged very carefully at the MakerBot factory. We hope you'll take your time and be just as careful unpacking it and getting it set up.



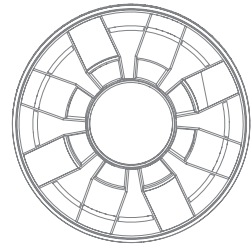
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MAKERBOT PRODUCT SAFETY INFORMATION BOOKLET



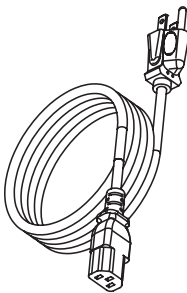
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SMART EXTRUDER+



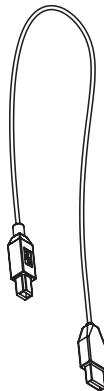
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SMALL MAKERBOT PLA FILAMENT SPOOL



1

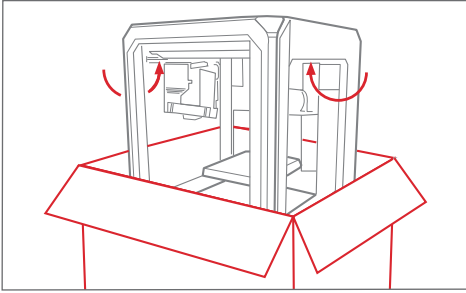
POWER CORD



1

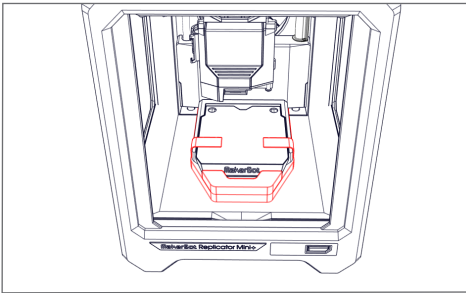
USB A-TO-B CABLE

UNPACKING THE REPLICATOR MINI+



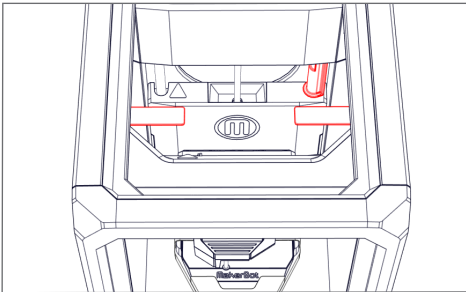
Open the Box

Open the box containing your MakerBot Replicator Mini+ and remove the setup kit.



Remove Securing Tape And Build Platform Foam

Be careful in removing tape that holds on that secures the build plate to the z-stage. Remove the foam under the build platform.



Remove Shipping Clips

Remove the clip that prevents the build platform from moving during shipping. Also, remove the two clips attached to the gantry belts. **Save these clips!** They will be handy if you ever need to transport your MakerBot Replicator Mini+ in the future.

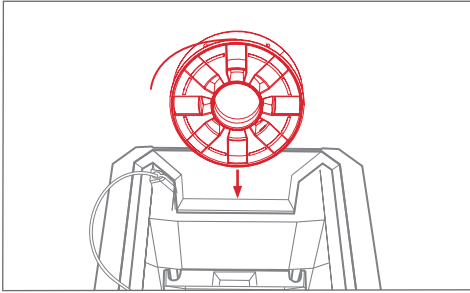
INSTALL THE SMART EXTRUDER+

Press the Smart Extruder+ against the back of the extruder carriage, with the connector pins facing the extruder carriage. Magnets will lock the Smart Extruder+ into place.

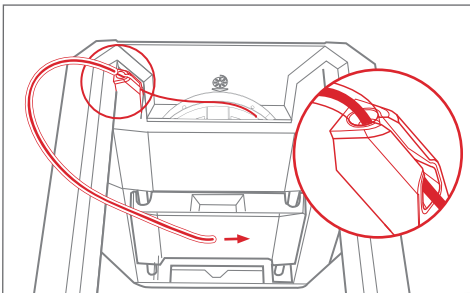


Caution: Never remove the Smart Extruder+ from your MakerBot Replicator Mini+ during or immediately after printing. Always allow the Smart Extruder+ to cool completely for five to ten minutes before removing it from the 3D printer.

INSTALL THE SPOOL OF MAKERBOT PLA FILAMENT

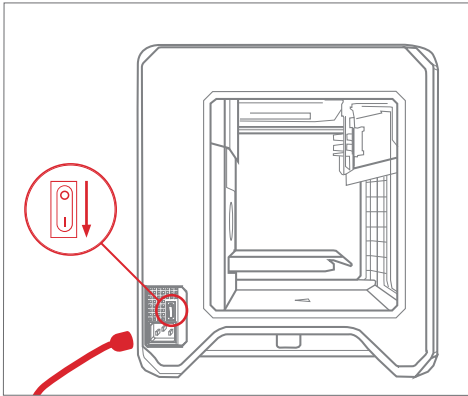


1. Locate the MakerBot PLA Filament spool and remove it from its plastic bag.
2. Lower the filament spool into the Filament Spool Pocket, making sure that the filament windows on the spool are facing you.



3. Pinch one end of the filament and feed that end of the filament through the white filament guide tube until a small amount of filament comes out of the other end.

PLUG IN AND POWER ON



1. Make sure the power switch is in the Off position.
2. Locate the power cord and plug it into the power input port at the back of the MakerBot Replicator Mini+.
3. Plug the power cord into an electrical outlet.



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

4. Switch the power on.

Chapter 3

Start Up

When you first turn on your MakerBot® Replicator® Mini+ 3D Printer, you will use the MakerBot Mobile App, MakerBot Print™, and the Action Button to navigate through the many diverse features of the MakerBot Replicator Mini+.

THE MAKERBOT MOBILE APP

MakerBot Mobile is a free app that gives you the power to wirelessly setup your MakerBot Replicator Mini+, monitor prints, and control multiple network-enabled MakerBot 3D printers over the Cloud. MakerBot Mobile allows you to do the following:

- Setup your MakerBot Replicator Mini+
- Start, pause, and cancel prints
- Initiate filament changes
- Monitor your prints
- Receive notifications about your prints, such as print completion, any errors that may occur, and more
- Visually monitor your prints via the onboard camera

DOWNLOADING THE MAKERBOT MOBILE APP

For Android devices

1. Open the Google Play store and type in MakerBot.
2. When you find the MakerBot Mobile App, tap Install.
3. After the mobile app is installed, open the app.
4. You will be asked to sign in with your MakerBot account information.
If you do not have a MakerBot account, tap **Sign Up** and create one.

For IOS devices

1. Go to the App Store on your iOS device and type in MakerBot.
2. When you find the MakerBot Mobile App, tap Install.
3. After the mobile app is installed, open the app.
4. You will be asked to sign in with you MakerBot account information.
If you do not have a MakerBot account, tap **Sign Up** and create one.

THE GUIDED SETUP

The first time you turn on your MakerBot Replicator Mini+, you will be guided through the initial setup process using the MakerBot Mobile App to connect this printer to a Wi-Fi network. The guided setup is the first time that your MakerBot Replicator Mini+ connects to the Internet via your Wi-Fi connection and is the most efficient way to setup your printer.

This Guided Setup will walk you through pairing your smartphone or tablet to your printer, connecting the printer to a Wi-Fi connection, z axis calibration, and loading filament. From there, it will prompt you to print a preloaded example print.

BEGIN THE GUIDED SETUP

1. Open MakerBot Mobile on your mobile device and log in with your MakerBot credentials. If you do not already have a MakerBot account, create one.
2. Tap the **Printers** icon, or tap the Navigation button and tap **Printers**.
3. You will be taken to the **My Printers** screen, which will list any saved printers and will allow you to connect to new printers.
 - a. For iOS users, tap the **Add a Printer** button if there are no printers on your list.
 - b. For Android users, tap the **Floating Action Button** to add a printer.
4. Tap **Setup a New Printer**.
5. Follow the instructions on the MakerBot Mobile App and MakerBot Replicator+ to complete the Guided Setup.

HOW TO LOAD/UNLOAD FILAMENT

1. Open the MakerBot Mobile App and connect to the MakerBot Replicator Mini+.
2. Tap **Filament**.
2. Tap **Load Filament** or **Unload Filament** and then **Continue**. The Smart Extruder+ will start to heat up. When the Smart Extruder+ is fully heated, the extruder motor will start feed filament in the appropriate direction.
2. When you are done loading or unloading filament, tap **Done**.

NOTE: If you want to change filament during a print, tap **Pause** with the MakerBot Mobile App. Follow the steps above, and then tap **Resume** to finish your print.

Tips for Loading or Unloading Filament

- Before loading, cut the end of your filament to create a clean edge. This allows the filament to be inserted into the Smart Extruder+ more easily.
- Before removing the current filament spool, unclip the filament guide tube from the spool pocket.
- Wait until the Smart Extruder+ finishes unloading your filament before pulling it free. Always allow the Smart Extruder+ to do most of the work when unloading filament.
- Clear away any excess extruded plastic before printing.

THE MAKERBOT REPLICATOR MINI+ ACTION BUTTON

The Action Button allows you to control and manage the printing process on your MakerBot Replicator Mini+. With the Action button, you can start, pause and cancel prints, as well as, begin or restart the Guided Setup.

After you plug in and power on your MakerBot Replicator Mini+, the Action Button will flash in white. This lets you know that the MakerBot Replicator Mini+ is starting up. Once the Action Button is solid white, the MakerBot Replicator Mini+ is idle and ready for printing.

Initiate Guided Setup

While the Action button is solid white and idle, press and hold the Action Button for 4 seconds to begin the First Run Experience of pairing and Wi-Fi setup. The Action button will flash white while setting up the hotspot and then flash blue when broadcasting the hotspot.

Restart Guided Setup

If at any time you wish to restart the First Run Experience, press and hold the Action button when the printer is idle, or during the First Run Experience. The Action button will flash white while setting up the hotspot and then flash blue when broadcasting the hotspot.

Confirm Error

Sometimes, while printing, the printer may encounter an error. If you receive a printer error that does not need your attention in order to continue the printing process, a short press of the Action button will acknowledge the error.

If you receive a printer error that does require your confirmation to continue, press and hold the Action button for 4 seconds to acknowledge the error and continue printing.

End Filament Loading

During the load filament process, press the Action button to cancel filament loading. Also, during the load filament process, but before the extruder carriage motors engage and the extruder fully heats up, press the Action button for 4 seconds to cancel filament loading.

Pause or Cancel Printing

During printing, the Action button is solid red. While the MakerBot Replicator Mini+ is printing, press the Action button once to pause printing. With printing is paused, the Action button will glow solid blue. To resume printing, simply press the Action button again. The Action button will change from solid blue to solid red. To cancel printing, press and hold the Action button for 4 seconds while printing is paused.

Unload Filament

To unload filament, press and hold the Action button for 4 seconds during the filament load process.

CONNECT TO A NETWORKED PRINTER

To Connect to a Networked Printer

1. Open the MakerBot Mobile App and log in with your credentials on your mobile device.
 - a. For iOS users, tap **Add a Printer**.
 - b. For Android users, tap the **Printers** icon, or tap the Navigation button and tap **Printers**.
2. You will be taken to the **My Printers** screen, which will list any saved printers and will allow you to connect to new printers.
 - a. For iOS users, tap **Add+**.
 - b. For Android users, tap **Add a Printer** or tap the **Floating Action Button** to add a printer then tap **Connect to a Networked Printer**.
3. Scroll through the list of available printers already connected on the specified network and tap on a printer.
4. You will see an information screen which lists the name of the printer, the printer type, and the printer IP address. Once you have found the correct printer, tap **Use This Printer**.
5. Push the dial on the MakerBot Replicator Mini+ control panel to authenticate the connection. On the MakerBot Mobile App, you will see the live camera feed and print state from the MakerBot Replicator Mini+.

To Connect to a Printer via IP Address

If you have a non-standard network setup, you may need to manually connect your 3D printer to a network via IP address. If so, follow these steps:

1. Open the MakerBot Mobile App and log in with your credentials on your mobile device.
 - a. For iOS users, tap **Add a Printer**.
 - b. For Android users, tap the **Printers** icon, or tap the Navigation button and tap **Printers**.
2. You will be taken to the **My Printers** screen, which will list any saved printers and will allow you to connect to new printers.
 - a. For iOS users, tap **Add+**.
 - b. For Android users, tap **Add a Printer** or tap the **Floating Action Button** to add a printer.
3. Tap **Connect Via IP Address**.
4. Type in the printer's IP address and tap **OK**.
5. You will see an information screen which lists the name of the printer, the printer type, and the printer IP address. If this is the correct printer, tap **Use This Printer**.

Chapter 4

MakerBot Print

The MakerBot® Replicator® Mini+ 3D Printer streamlines 3D print preparation and file management using MakerBot Print™. MakerBot Print is a free desktop application that allows you to discover, prepare, manage, and share 3D prints.

DOWNLOADING AND INSTALLING MAKERBOT PRINT (WEBSITE)

1. Go to **makerbot.com/print**. Click the Download button.
2. Select your operating system from the drop-down menu on the download pack and click Download.
3. Double-click the MakerBot Print installer to run the installation wizard. Follow the installation instructions.

HOW IT WORKS

MakerBot Print streamlines 3D print preparation and file management. PC users can also import and manipulate Native CAD files. MakerBot Print allows you to Arrange, Orient, Scale, and View your 3D models and prepare them for print. You can also access print settings to modify your print.

CONNECTING TO MAKERBOT PRINT (WI-FI, ETHERNET, USB)

To connect via USB cable, insert the USB-B end of the cable into the port on the side of your MakerBot Replicator Mini+ and insert the USB-A end of the cable into a USB port on your computer. MakerBot Print will detect your MakerBot Replicator Mini+.

To connect via Wi-Fi, in MakerBot Print, navigate to the Printer Panel and select **Add a Printer > Add a Network Printer**. Find your MakerBot Replicator Mini+ in the list of networked devices and click Add. Press the Action Button to authenticate the connection. You must be on the same Wi-Fi connection as the MakerBot Mini+ in order to connect to it.

To add an offline printer, open the printer panel and click **Add a Printer**. Select **Add an Unconnected Printer** and then select the type of printer you are using. The build plate will update to the appropriate size.

CHOOSING A 3D MODEL

Every 3D print starts with a 3D model. If you want to print a 3D model you designed yourself, export it from your 3D modeling application in a compatible format. You can also download 3D models on Thingiverse®.

To open an object from your local computer, open the Project Panel, click **Add Models**, and navigate to the location of the saved file. Select the file and click **Open** to import it into MakerBot Print. You can also click **File > Insert File** to import the object into MakerBot Print. Once a model has been added, it is available to be used on your build plate.

File

- Allows you to create new projects, open/save projects, insert/import files, and access system preferences.
- If you have a multi-file STL assembly, select **File > Insert STL Files Assembled**.

Edit

- Allows you to undo an action, redo an action, as well as, copy and paste objects.

View

- Allows you to view your model from an array of 2D views, 3D views, and multiple perspectives.

Help

- Enables Help with MakerBot Print and allows you to check for updates.

Login Account

- Log into your MakerBot account. You can also switch to a different MakerBot account.

Explore MakerBot

- Log in with your MakerBot account to find technical support for your 3D printer as well as access the MakerBot store to purchase the materials necessary for your printing needs.

Explore Thingiverse

- From MakerBot Print, you can navigate out to Thingiverse for exploring hundreds of thousands of free 3D printable files.

Export

- Export your 3D model to a .makerbot file, which is the product of a sliced 3D file that creates the instructions for your 3D printer to follow. These instructions create your 3D object.

Print

- The print option is only available when MakerBot Print is connected to a 3D printer.

Project Panel

- Click the Project Panel to import models into MakerBot Print.
- The heading shows the name of the project. To rename the project, select **File > Save Project As...**
- You can also create multiple build plates to manage large build projects. Under Build Plates, click the **+** button to insert another build plate.

- To delete a build plate, right-click the build plate preview and select **Delete Build Plate**. Models that were on the deleted build plate become hidden, but they are not deleted.

Model View

- Prepare and arrange your 3D models on the build plate.
- Click and hold the right mouse button and move the mouse to be able to view your model from any angle.
- Press and hold the **Shift** key and the right mouse button together to move the build plate in space.
- Zoom using a trackpad or the scroll wheel on your mouse.

Print Preview

- Slices the 3D model into layers so that you can view the path the Smart Extruder+ tool will make while printing the model.
- **Play Preview** shows all the layers that make up the sliced model and animates them. Play preview shows you how your 3D model will be printed before any printing is even done.
- **Layer Range** allows you to view sliced the model up to a certain layer. You can slice the model and view all layers, up to a certain layer, a single layer, a single layer with one layer above and a single layer with one layer below.
- **Select Layer** allows you to set which layer you would like to view up to.
- **Head Moves** the number of moves the extruder head makes in creating your 3D print.
- **Display** allows you to turn on or off certain information regarding the slice preview.

Select the **Model Material** checkbox to turn on or off viewing the rendering of your 3D model.

Select the **Support Material** checkbox to view the support structures that may be part of your 3D model.

Select the **Head Moves** checkbox to view the travel moves from a project. Travel moves are parts of the extruder path where the Smart Extruder+ moves without extruding any plastic.

Select the **Layer Highlight** checkbox to highlight the selected layer.

In Print Preview, drag the **Layer Slider** up and down to change the selected layer.

In Print Preview, drag the **Move Slider** left and right to change the selected tool path movement.

Model Info

- Allows you to change the units that your 3D model is measured in. You can cycle between mm, cm, m, in, and ft.

Print Settings

- Select **Extruder Type** to choose which type of extruder you are using. MakerBot Print will automatically detect the extruder type if already connected to a printer.
- Select **Layer Height** to set the thickness of your printed object's individual layers. A lower layer height will result in a smoother surface. An object with a higher layer height will print faster.
- Select **Shells** to set the number of outlines the extruder prints on each layer before printing the infill. More shells make an object stronger and heavier and increase print times.
- Adjust the Infill percentage to set the density of your printed object's internal support structure. A higher percentage will result in a heavier, stronger object.
- Select the **Supports** checkbox to print support structures on your model. MakerBot Print will automatically generate supports for any overhanging sections of your object. Supports will be easily removable once you detach your finished object from the build plate.
- Select the **Rafts** checkbox, which is selected by default, to have your 3D object printed on a raft. The raft acts as a base for your object and any support structures. It ensures that everything adheres well to the build plate. The raft will be easily removable once you detach your finished object from the build plate.

Arrange

- If there are multiple objects on the build plate, select the **Arrange Build Plate** to move the objects to the most optimal placement on the build plate.
- If there are multiple objects on the build plate and all of the objects can't fit on the original build plate, select **Arrange project** to arrange the objects to the most optimal placement on the build plate. Objects that can't be arranged on the original build plate will be moved to another build plate and arranged optimally as well.
- Use the right-click menu to copy, paste, hide, or delete your model from the build plate.

Adjust Orientation

- Select **Place Face on Build Plates** to lay your model flat on the build plate
- Rotate your model by 90 degrees or by a specific number of degrees along the x-, y-, or z-axis.

Adjust Scale

- Select **Uniform Scaling** to adjust the scale of your model equally along the x-, y-, or z-axis. Enter the percentage of how much you want your model scaled.
- De-select **Uniform Scaling** to scale the model by a specific amount along the x-, y-, or z-axis.

Printer Panel

- Select the 3D printer to be used with your project.
- Select the printer drop-down and **Add a Printer > Add a Network Printer** on your local network or **Add an Unconnected Printer** for exporting files.
- Once finished editing your 3D model, select **Export** to export your model into a sliced file or **Print** to print your file if it MakerBot Print is connected to a printer.

SYSTEM PREFERENCES

If you want to change any system preferences before printing, click **File > System Preferences**. Here, you can specify options that will affect the quality of your printed object and MakerBot Print experience, like graphics quality and view manipulation.

Unit Controls

Select the default model unit that you wish to use when you insert a model into MakerBot Print.

Display Settings

Choose Low, Medium, or High resolution to specify the display resolution of the object in MakerBot Print.

Note: These resolution profiles only affect the object in screen preview. The printed model quality is not affected.

Warning Settings

Select the checkbox to allow warnings regarding graphic performance. This option will check to see if you are using an integrated graphics processor.

View Manipulation

Edit the default Zoom, Pan, and rotate button configurations.

Privacy

Select the checkboxes to automatically send anonymous usage statistics and personal statistics to MakerBot.

BEGINNING A PRINT WITH THE MAKERBOT REPLICATOR MINI+

When you are ready to print your model, click Print to slice the model using the current settings and send a .makerbot print file to your MakerBot Replicator Mini+.

If MakerBot Print is connected to your MakerBot Replicator Mini+, the print file will be sent directly to your 3D printer. Click **Show Print Preview** in MakerBot Print to open a preview of the sliced model.

Printing the object on a raft is selected by default. The raft acts as a base for your object and any support structures and ensures that everything adheres well to the build plate. The raft will be easily removable once you detach your finished object from the build plate.

HOW TO PAUSE OR CANCEL A PRINT

To pause a print, push the Action button once on the MakerBot Replicator Mini+ while printing.

To cancel a print, push the Action button for 4 seconds while the print is paused on the MakerBot Replicator Mini+.

AFTER YOU PRINT

REMOVING THE PRINT FROM THE BUILD PLATE

When your print finishes, remove the build plate from the MakerBot Replicator Mini+. Carefully peel your print off the grip surface. Peel the raft off of the bottom of the print, if you printed the object with a raft. When you have removed the print from the build plate, make sure to clean the grip surface of any debris before reloading the build plate into the MakerBot Replicator Mini+.

Note: When you bend the flexible build plate, some pieces of the raft may remain on the plate. Use a flat, non-sharp tool to remove the raft pieces. Never use a knife to remove pieces of the raft. You can damage the build plate.

MAINTAINING THE BUILD PLATE

The surface of the MakerBot Replicator Mini+ build plate, known as the Grip Surface, allows for better print adhesion and quality than using a surface like blue tape. However, over time, the grip surface can become cracked and damaged. If these cracks or tears begin to affect print quality, it is time to replace the Grip Surface.

Go to <https://store.makerbot.com/> to order more grip surfaces.

Chapter 5

Troubleshooting

PRINTING PROBLEMS/CONNECTIVITY PROBLEMS

PROBLEM	SOLUTION
Can't load filament into the Smart Extruder+.	Try unloading and loading again. Hold the Smart Extruder+ in place and try pushing the filament through. As long as you are holding the Smart Extruder+ in place, pushing on the filament will not damage it. Be sure to insert the filament and not the filament guide tube into the Smart Extruder+. Also, make sure the filament end has a clean edge before inserting it into the Smart Extruder+. A clean edge will allow for easier insertion.
Can't remove filament from the Smart Extruder+.	Try running the filament load script and allowing the plastic to extrude for a few seconds. Then try unloading again.
Filament breaks between the spool and the Smart Extruder+.	Ensure that the filament unwinds counterclockwise from the spool. Always unload any filament left in the Smart Extruder+.
Filament won't extrude from the Smart Extruder+.	Try unloading and reloading the filament.
Printed object is stuck to the build plate.	If the object is still stuck, take a thin metal craft spatula and carefully work the blade under the object. When the blade is most of the way under the object, twist the handle slightly. The object should come free. Never use a knife or sharp tool to remove pieces of the object or pieces of the raft. You can damage the build plate and also injure yourself.
Object peels off the build plate during printing.	Calibrate the Z offset. If you are still experiencing issues, manually reduce the Z offset. Ensure that the build plate is clean. Dust and oil from your hands or tears and wrinkles in the grip surface covering the plate can prevent objects from adhering. Wipe down the build plate with a clean, lint-free cloth.
The Smart Extruder+ is installed, but the MakerBot Replicator Mini+ does not recognize it.	Remove the Smart Extruder+ and attach the extruder again.

Chapter 7

Reference

BUILD PLATE: A flat plastic plate with a polycarbonate surface. This is where the MakerBot® Replicator® Mini+ will build your objects.

EXTRUDER ASSEMBLY: The Smart Extruder+ installed in the extruder carriage.

EXTRUDER CARRIAGE: The part of the extruder assembly that sits on the gantry and moves back and forth. When the Smart Extruder+ is installed in the extruder carriage, the extruder assembly is complete.

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

FIRMWARE: The software that runs on your MakerBot Replicator Mini+.

GANTRY: The apparatus that allows the extruder assembly to move around.

.MAKERBOT: The format of print files for your MakerBot Replicator Mini+. Print files contain instructions for your MakerBot Replicator Mini+.

MAKERBOT ACCOUNT: The username and password you will use to sign into MakerBot Print™ and to log on to Thingiverse® and other MakerBot sites.

MAKERBOT PRINT: Free software for use with your MakerBot Replicator Mini+. MakerBot Print will help you prepare and print 3D models.

MAKERBOT PLA FILAMENT: Polylactic acid filament. PLA is a corn-based thermoplastic. MakerBot PLA Filament is the material from which you make objects on the MakerBot Replicator Mini+.

MAKERBOT REPLICATOR MINI+: The MakerBot Replicator Mini+ 3D Printer.

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

PRINT PREVIEW: The feature in the Print dialog that provides an estimated print time, estimated amount of filament your print will use, and a rendering of what your print will look like.

RAFT: A plastic base printed on the build plate and used as a printing surface for your printed object. All models printed on the MakerBot Replicator Mini+ will be printed with a raft.

SETTINGS DIALOG: The dialog that allows you to select options that will affect the quality of your printed object.

SLICING: The process of turning a 3D model into a print file containing instructions for your MakerBot Mini+ Desktop 3D printer. The MakerBot Replicator Mini+ uses print files with the extension .makerbot.

SMART EXTRUDER+: The Smart Extruder+ draws the filament from the spool, melts it, and pushes it through a nozzle onto the build plate.

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

SUPPORT: 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 Print that stores additional information about your 3D model files, such as orientation and location on the build plate.

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

USB CABLE: A cable that allows your computer to communicate with your MakerBot Replicator Mini+.

Z-AXIS HOMING CALIBRATION: Allows the Smart Extruder+ determine its location relative to the build plate.

SPECIFICATIONS

PRINTING

Print Technology:	Fused deposition modeling
Build Volume:	10.1 L X 12.6 W X 12.6 H cm [4 L X 5 W X 5 H in]
Layer Resolution:	100-300 microns
Filament:	1.75 mm [0.069 in] MakerBot PLA Filament
Nozzle Diameter:	0.4 mm [0.015 in]
Print File Type:	.makerbot
Grip Build Surface:	Polycarbonate film

SOFTWARE

Software Bundle:	MakerBot Print
3D Model File Types:	Windows: .stl, .obj, .thing, .sldprt, .sldasm, .ipt, .iam, .iges, .igs, .step, .stp, CATPart, .CATProduct, .prt, .par, .asm, .wrl, .x_t, .x_b Mac: .stl, .makerbot
Supported OS:	Windows (7+), Mac OSX (10.9, 10.10, 10.11)

PHYSICAL DIMENSIONS

Printer:	29.5 L X 34.9 W X 38.1 H [[11.6 L X 13.8 W X 15 H in]]
Shipping Box:	40 L X 45.4 W X 52.2 H cm [[15.75 L X 17.9 W X 20.6 H in]]
Printer Weight:	9.3 kg [20.6 lbs.]
Shipping Weight:	12.1 kg [26.7 lbs.]

TEMPERATURE:

Ambient Operating Temperature:	15-26°C [60-78°F]
Storage Temperature:	0-38°C [32-100°F]

ELECTRICAL

Power Requirements:	100-240 VAC; 0.75-0.41 A; 50/60 Hz; 100W
Connectivity:	USB, Wi-Fi

CAMERA

Camera Resolution:	640X480 at 4 fps
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Support

support.makerbot.com

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

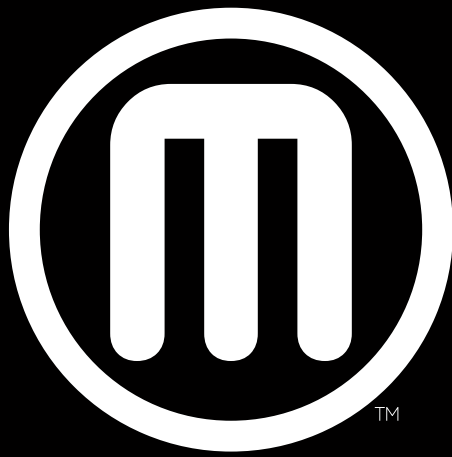
makerbot.com/support/select

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 Replicator+, 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 PLA Filament, please email the address above, or call our Sales Team at 347.334.6800.



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