



MP Education Inventor II 3D Printer



P/N 30525

User's Manual

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SAFETY WARNINGS AND GUIDELINES

Please read this entire manual before using this device, paying extra attention to these safety warnings and guidelines. Please keep this manual in a safe place for future reference.

- Be careful not to damage the blue tape on the build plate.
- Take care to avoid touching hot parts, including heat blocks, extruder nozzle, and the extruded filament.
- Do not wear gloves when operating or repairing to avoid entanglement.
- Keep the printer and all accessories out of reach of children.
- Do not remove or disconnect the USB cable when printing from a computer.
- Do not force or tear anything during unpacking and setup. This may cause damage to the printer and/or its accessories.
- Do not reach inside the printer during operation.
- Always allow the printer and extruded filament to cool before reaching inside.
- Ensure that the printer is turned off and unplugged from its power source before making repairs or performing service.
- Do not install this device on an unstable surface where it could fall and cause either personal injury or damage to the device and/or other equipment.
- Do not subject the product to extreme force, shock, or fluctuations in temperature or humidity.
- This device is intended for indoor use only.
- Do not expose this device to water or moisture of any kind. Do not place drinks or other containers with moisture on or near the device. If moisture does get in or on the device, immediately unplug it from the power outlet and allow it to fully dry before reapplying power.
- Do not touch the device, the power cord, or any other connected cables with wet hands.
- Use only in a well-ventilated area. Do not use in close, confined spaces.

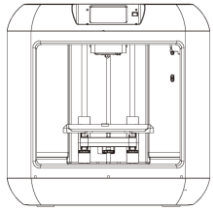


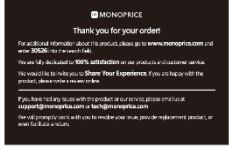
- Prior to operation, check the unit and power cord for physical damage. Do not use if physical damage has occurred.
- Before plugging the unit into a power outlet, ensure that the outlet provides the same type and level of power required by the device.
- Unplug this device from the power source when not in use.
- Take care to prevent damage to the power cord. Do not allow it to become crimped, pinched, walked on, or become tangled with other cords. Ensure that the power cord does not present a tripping hazard.
- Never unplug the unit by pulling on the power cord. Always grasp the connector head or adapter body.


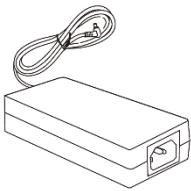

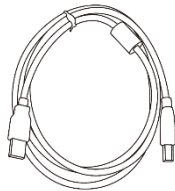
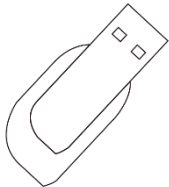
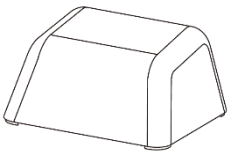
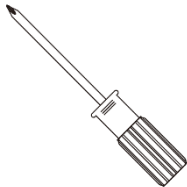
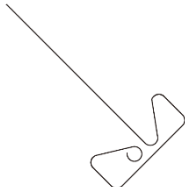

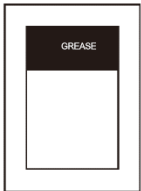

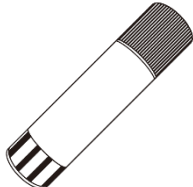


CUSTOMER SERVICE

The Monoprice Customer Service department is dedicated to ensuring that your ordering, purchasing, and delivery experience is second to none. If you have any problem with your order, please give us an opportunity to make it right. You can contact a Monoprice Customer Service representative through the Live Chat link on our website www.monoprice.com during normal business hours (Mon-Fri: 5am-7pm PT, Sat-Sun: 9am-6pm PT) or via email at support@monoprice.com

PACKAGE CONTENTS

Please take an inventory of the package contents to ensure you have all the items listed below. If anything is missing or damaged, please contact Monoprice Customer Service for a replacement.

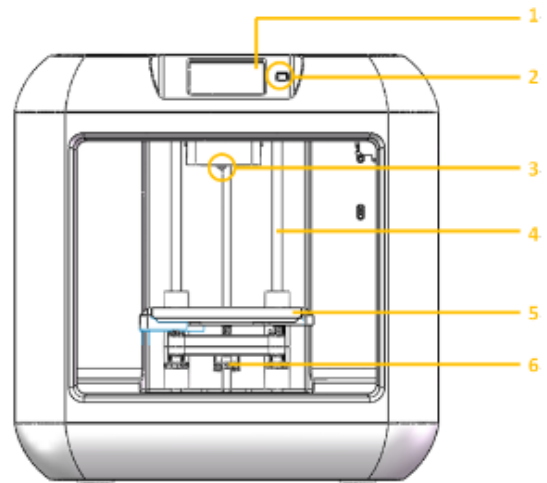
			
1x 3D printer	1x Spool filament	1x User's manual	1x Thank you card

			
1X Warning card	1x AC power adapter	1x AC power cord	1x USB cable
			
1x USB stick	1x Lid	1x Screwdriver	1x Unclogging pin tool
			
1x Wrench	1x Package of grease	1x Allen wrench set	1x Glue stick
			
1x Filament guide tube	1x PTFE tube		

PRODUCT OVERVIEW

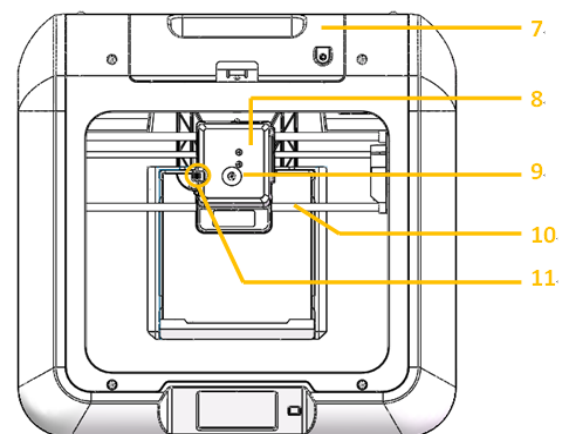
Front View

1. Touch screen
2. Touch screen button
3. Nozzle
4. Z-axis guide rod
5. Build plate
6. Leveling knob



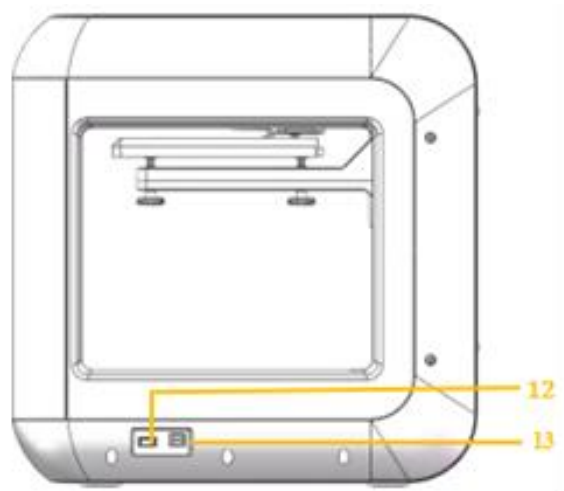
Top View

7. Filament cartridge
8. Extruder
9. Filament intake
10. X-axis guide rod
11. Spring presser



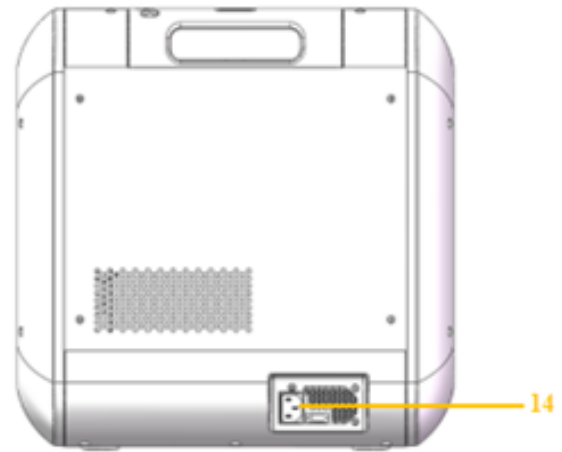
Right Side View

12. USB stick input
13. USB cable input



Rear View

14. Power input

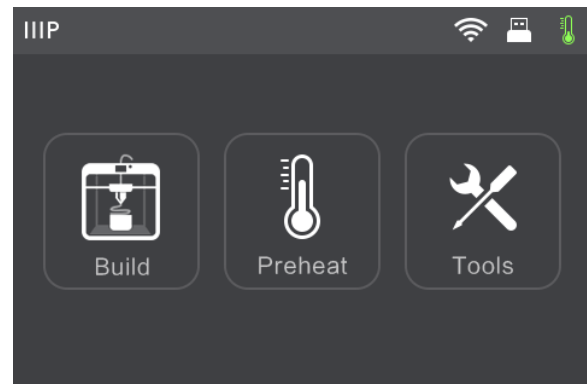


OSD MENU SYSTEM

Top Menu

The **Top Menu** is displayed after the printer is powered on and initialized.

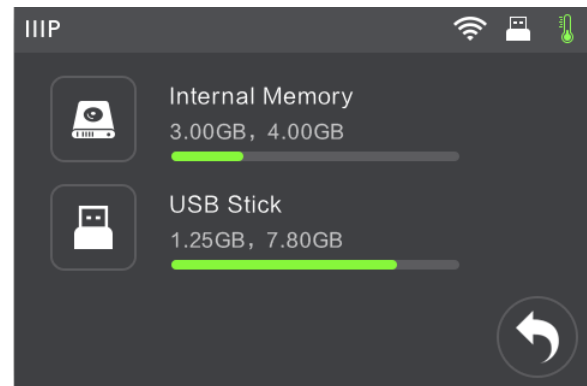
- Touch the **Build** button to enter the **Build Menu**.
- Touch the **Preheat** button to enter the **Preheat Menu**.
- Touch the **Tools** button to enter the **Tools Menu**.



Build Menu

The **Build Menu** is displayed by touching the **Build** button from the **Top Menu**.

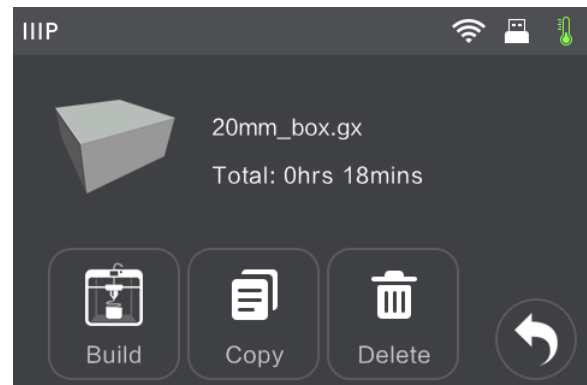
- Touch the **Internal Memory** button to read the print file from internal memory.
- Touch the **USB Stick** button to read the print file from the USB stick.
- Touch the **Back** button to return to the previous menu.



Print Menu

The **Print Menu** is displayed after selecting a print file from internal memory or the memory stick. The print filename is displayed along with an estimate of the amount of time the print process will consume.

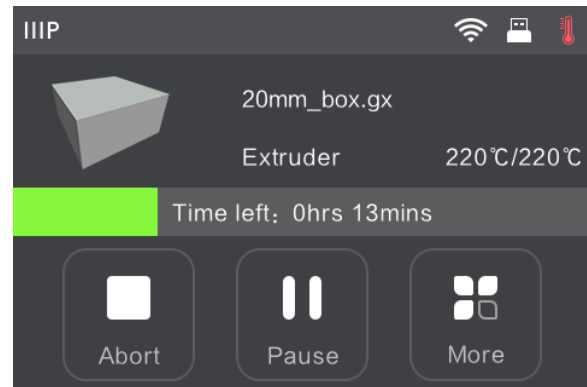
- Touch the **Build** button to start printing the loaded print file.
- Touch the **Copy** button to copy the loaded print file.
- Touch the **Delete** button to delete the loaded print file.
- Touch the **Back** button to return to the previous menu.



Print Progress Screen

The **Print Progress Screen** is displayed while printing is in progress. It shows the print filename, the actual and target temperatures, and the print progress with the remaining time displayed.

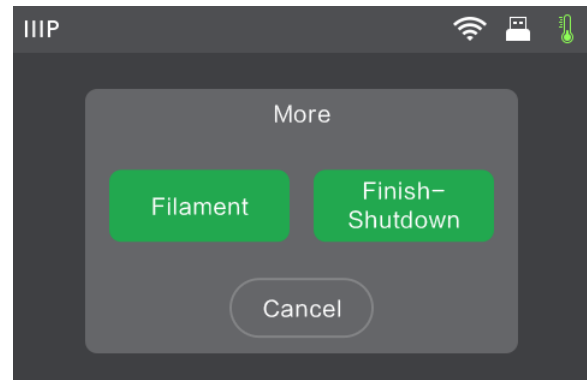
- Touch the **Abort** button to cancel the print in progress.
- Touch the **Pause** button to pause the print. Press the **Resume** button to resume printing.
- Touch the **More** button to display the **More Menu**.



More Menu

The **More Menu** is displayed by touching the **More** button on the **Print Progress Screen**.

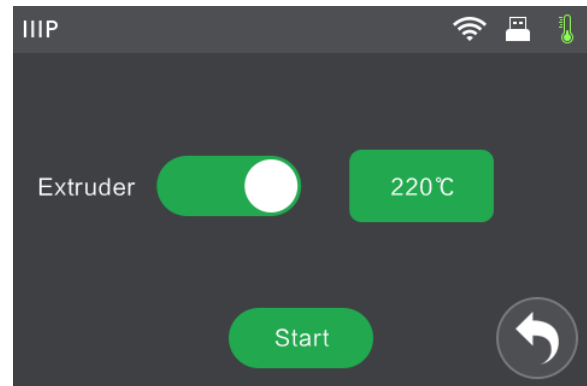
- Touch the **Filament** button to change filament during printing. Note that the print must be paused first.
- Touch the **Finish-Shutdown** button to start auto shutdown after the print is completed.
- Touch the **Cancel** button to return to the **Print Progress** screen.



Preheat Menu

The **Preheat Menu** is displayed by touching the **Preheat** button on the **Top Menu**.

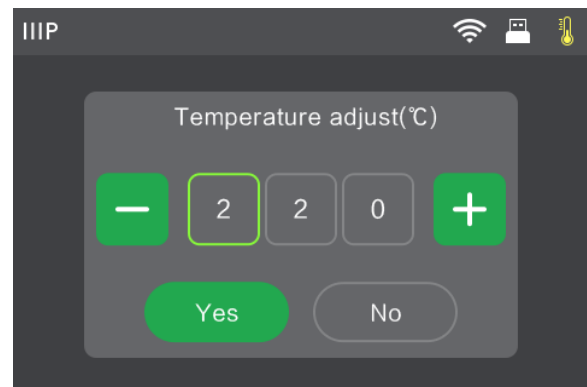
- Touch the **Extruder** button to set the target print temperature. The default target print temperature is 220°C.
- Touch the **Start** button to start preheating the extruder.
- Touch the **Back** button to return to the previous menu.



Preheat Temperature Screen

The **Preheat Temperature Screen** is displayed by touching the **Extruder** button on the **Preheat Menu**.

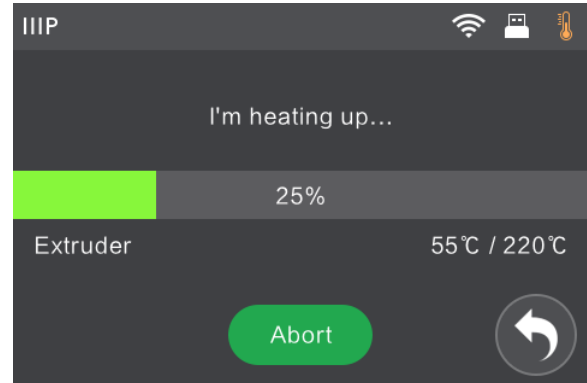
- Touch an individual digit to select the digit to change.
- Touch the - button to decrease the value of the highlighted digit.
- Touch the + button to increase the value of the highlighted digit.
- Touch the **Yes** button to save the displayed temperature value and return to the previous screen.
- Touch the **No** button to cancel any changes and return to the previous screen.



Preheating Screen

The **Preheating Screen** is displayed during the preheating process. It displays the preheating progress, as well as the actual and target temperatures.

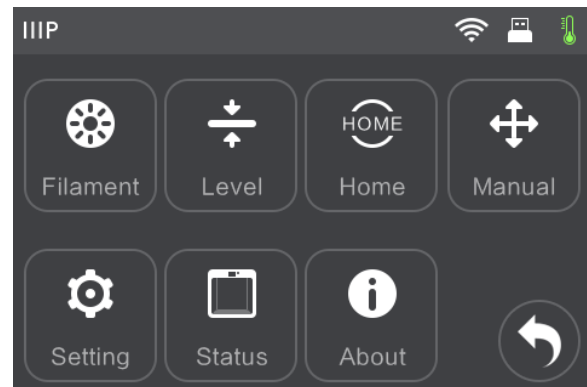
- Touch the **Cancel** button to abort the preheating process.



Tools Menu

The **Tools Menu** is displayed by touching the **Tools** button on the **Top Menu**.

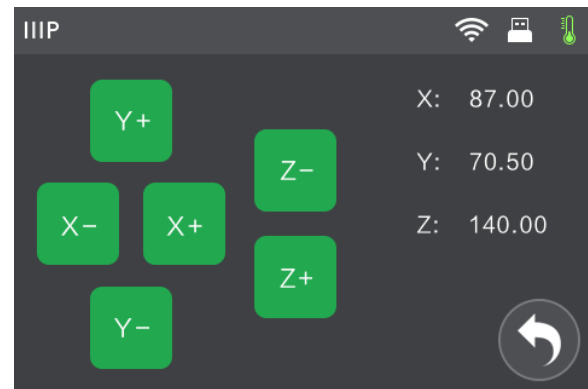
- Touch the **Filament** button to load or unload filament.
- Touch the **Level** button to level the build plate.
- Touch the **Home** button to move the extruder to the home position.
- Touch the **Manual** button to display the **Manual Adjustment Screen**.
- Touch the **Setting** button to display the **Setting Menu**.
- Touch the **Status** button to display the **Printer Status Screen**.
- Touch the **About** button to display **About Screen**.
- Touch the **Back** button to return to the previous menu.



Manual Adjustment Screen

The **Manual Adjustment Screen** displays the **X** and **Y** positions of the extruder and the **Z** position of the build plate.

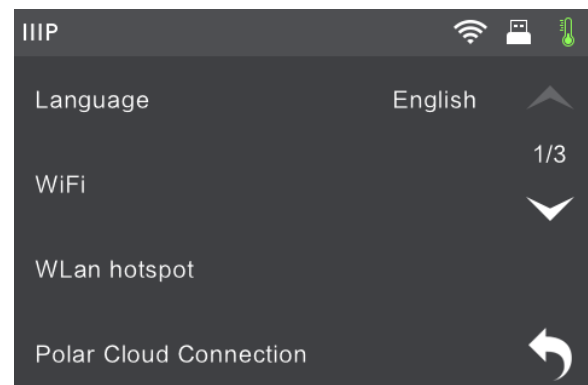
- Touch the **X+** button to move the extruder to the right.
- Touch the **X-** button to move the extruder to the left.
- Touch the **Y+** button to move the extruder towards the back of the printer.
- Touch the **Y-** button to move the extruder towards the front of the printer.
- Touch the **Z+** button to raise the build plate.
- Touch the **Z-** button to lower the build plate.
- Touch the **Back** button to return to the previous menu.



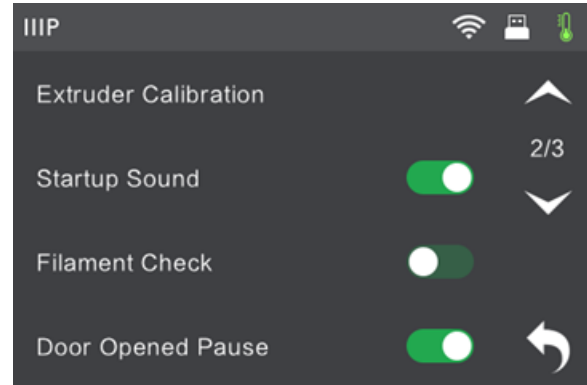
Setting Menu

The **Setting Menu** is displayed by touching the **Setting** button on the **Tools Menu**.

- Touch the **Language** label to select the language for the **OSD Menu System**.
- Touch the **WiFi** label to display the **WiFi Screen**.
- Touch the **WLAN hotspot** label to display the **WLAN Hotspot Screen**.
- Touch the **Extruder Calibration** label to display the **Extruder Adjust Screen**.
- Touch the **Down** button to display the second page of the **Setting Menu**.
- Touch the **Back** button to return to the previous menu.



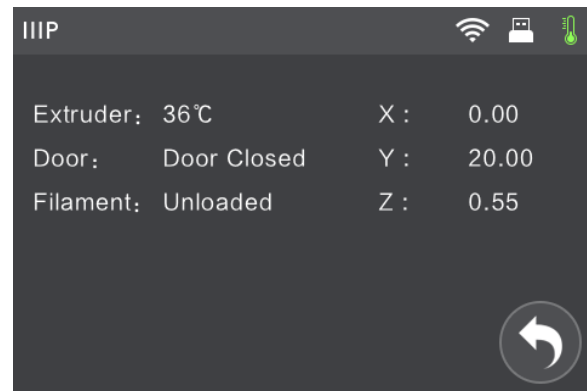
- Touch the **Filament Check** button to enable or disable filament checking.
- Touch the **Door Open Pause** button to enable or disable automatic print pausing when the door is opened.
- Touch the **Factory Reset** label to reset the printer's settings to their factory default values.
- Touch the **Update** label to update the printer's firmware.
- Touch the **Up** button to display the first page of the **Setting Menu**.
- Touch the **Back** button to return to the previous menu.



Status Screen

The **Status Screen** is displayed by touching the **Status** button on the **Tools Menu**. It displays the real-time status of the printer.

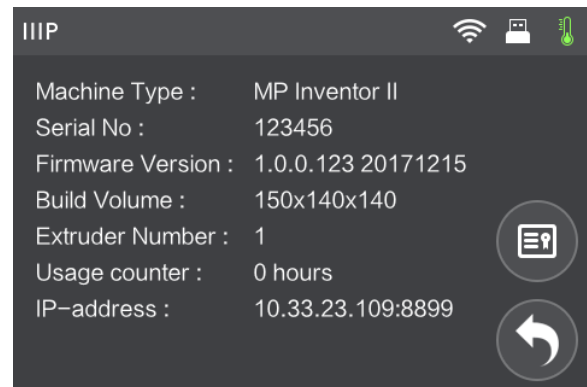
- Touch the **Back** button to return to the previous menu.



About Screen

The **About Screen** is displayed by touching the **About** button on the **Tools Menu**. It displays basic information about the printer.

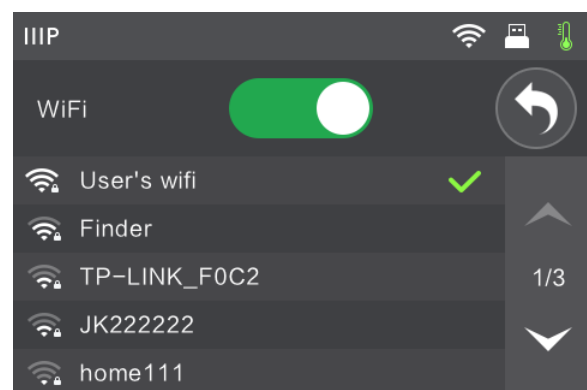
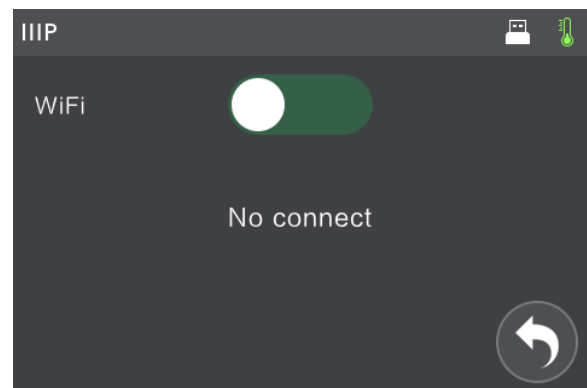
- Touch the **Back** button to return to the previous menu.



WiFi Screen

The **WiFi Screen** is displayed by touching the **WiFi** label on the **Setting Screen**. The Wi-Fi® function allows you to connect the Inventor II to a local Wi-Fi Access Point (AP)/hotspot, i.e., the one your computer is normally connected with. You can then connect to the printer in MP FlashPrint in Station Mode (STA) without changing your computer's network settings

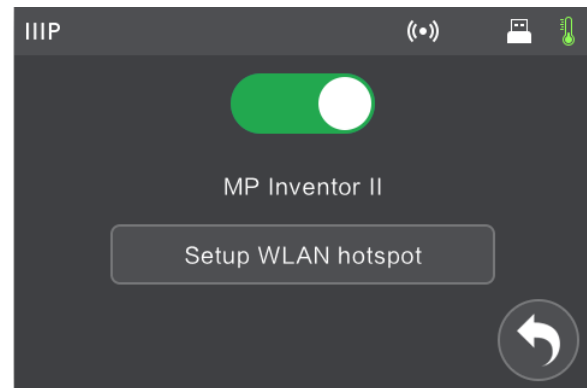
- Touch the **WiFi** button to enable or disable Wi-Fi.
- When Wi-Fi is enabled, touch the name of the Wi-Fi network to select it.
- Touch the **Up** button to display the previous page of the Wi-Fi network list.
- Touch the **Down** button to display the next page of the Wi-Fi network list.
- Touch the **Back** button to return to the previous menu.



WLAN Hotspot Screen

The **WLAN Hotspot Screen** is displayed by touching the **WLAN hotspot** label on the **Setting Menu**. The MP Inventor II printer contains a built-in Wi-Fi® radio, which can be configured as a Wi-Fi Access Point (AP)/hotspot. You can then connect to the printer in MP FlashPrint by changing the Wi-Fi connection on your computer to the Wi-Fi address of the printer.

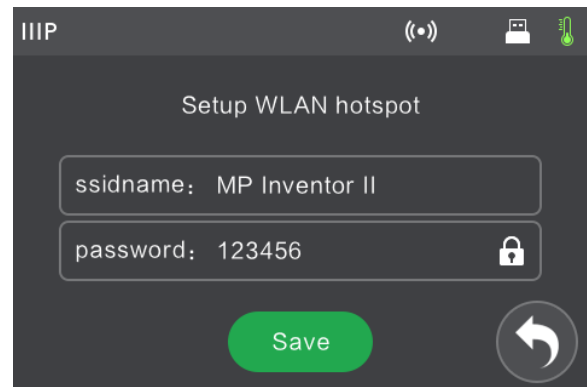
- Touch the **On/Off** button to enable or disable the WLAN hotspot.
- Touch the **Setup WLAN hotspot** button to display the **Setup WLAN Hotspot Screen**.
- Touch the **Back** button to return to the previous menu.



Setup WLAN Hotspot Screen

The **Setup WLAN Hotspot Screen** is displayed by touching the **Setup WLAN hotspot** button on the **WLAN Hotspot Screen**.

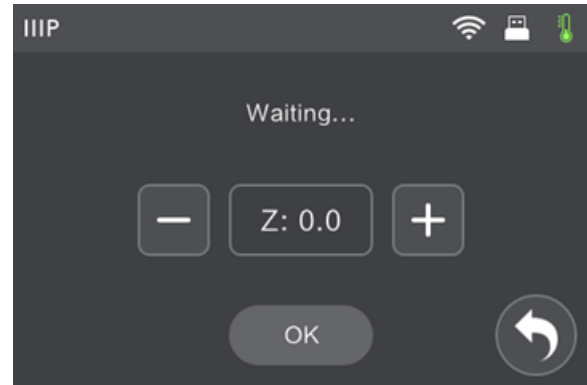
- Touch the **ssidname** field to set the WLAN hotspot name.
- Touch the **password** field to set the WLAN hotspot password.
- Touch the **Save** button to save the settings.
- Touch the **Back** button to return to the previous menu.



Extruder Adjust Screen

The **Extruder Adjust Screen** is displayed by touching the **Extruder Calibration** label on the **Setting Menu**.

- Touch the **-** button to increase the distance between the extruder nozzle and the build plate in the home position.
- Touch the **+** button to decrease the distance between the extruder nozzle and the build plate in the home position.
- Touch the **OK** button save your changes.
- Touch the **Back** button to return to the previous menu.



UNPACKING

1. Place the box on a flat, clean work surface.
2. Open the box. Grab the printer by the two handles and lift it out of the box, then place it on the work surface.



3. Remove the accessories box and open it. Take an inventory of the package contents to ensure that all parts are present and in good working order. See the *PACKAGE CONTENTS* section above.



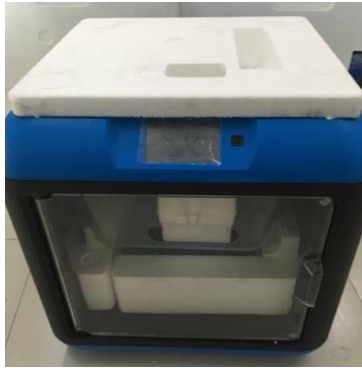
4. Remove the styrofoam packing from the printer.



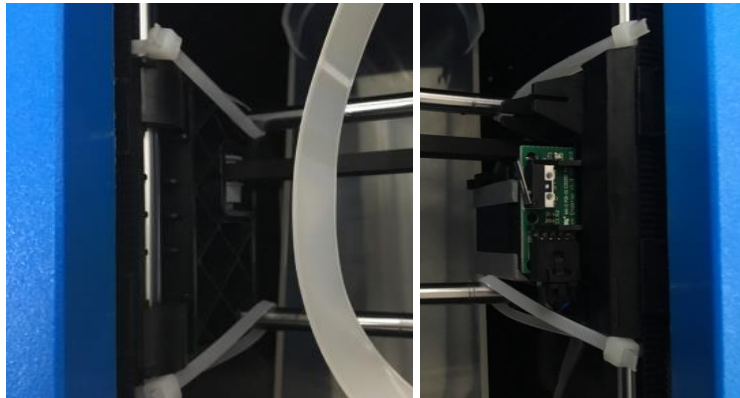
5. Remove the plastic bag from around the printer.



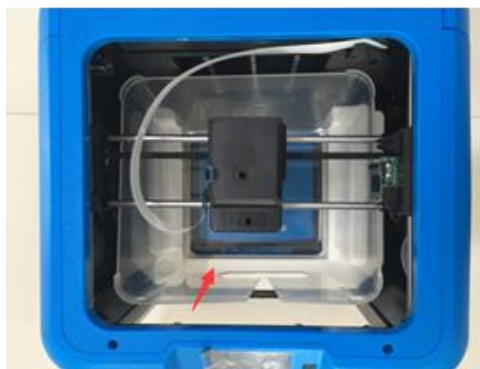
6. Remove the styrofoam packing from the top of the printer.



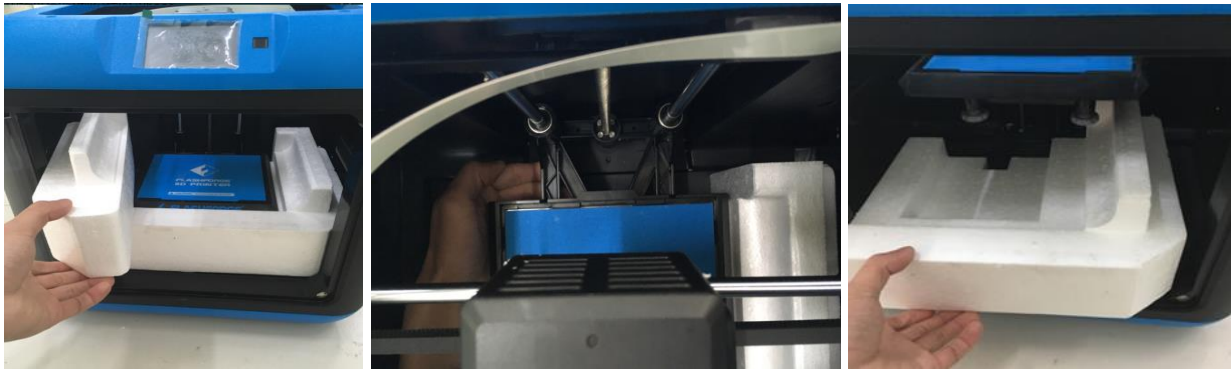
7. Remove the tape that holds the flat cable in place, then cut the four cable ties securing the guide rods in place. Manually move the extruder in both the X and Y planes to ensure it moves freely.



8. Slightly squeeze the bottom of the lid and carefully remove it.



9. Remove the styrofoam packing on the left side, then manually lift the build plate and remove the styrofoam packing from under the build plate.



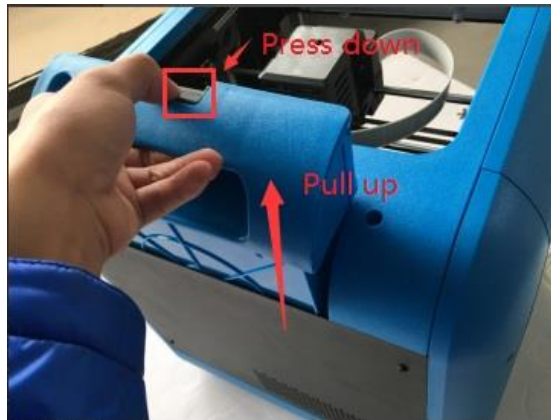
10. Remove the plastic protective film from the touch screen.

Congratulations, you have successfully unpacked your new 3D printer!

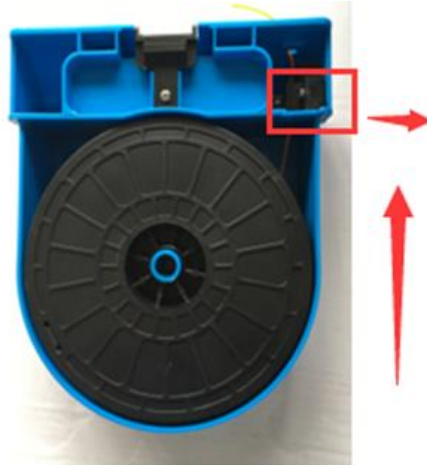
LOADING FILAMENT

Perform the following steps to load filament into your 3D printer.

1. The **Filament Cartridge** is located at the rear of the printer. Remove the cartridge by pressing down on the button at the top, then lifting the cartridge out of the printer.



2. Place a spool of filament on the hub, then feed filament up through the black **Filament Detection** assembly, shown in the red box in the image below. Note that the filament should feed from the bottom of the spool to the top. Insert the cartridge into the printer.



3. Ensure that the **Power Switch** is in the OFF position. Insert the DC barrel connector on the included **AC Power Adapter** into the **Power Input** jack



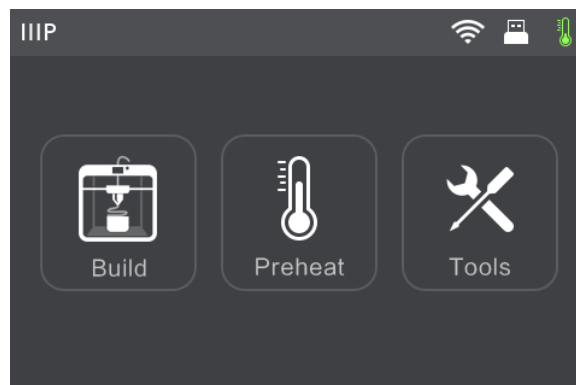
4. Feed the filament into the **Filament Guide Tube** until it comes out the other end.



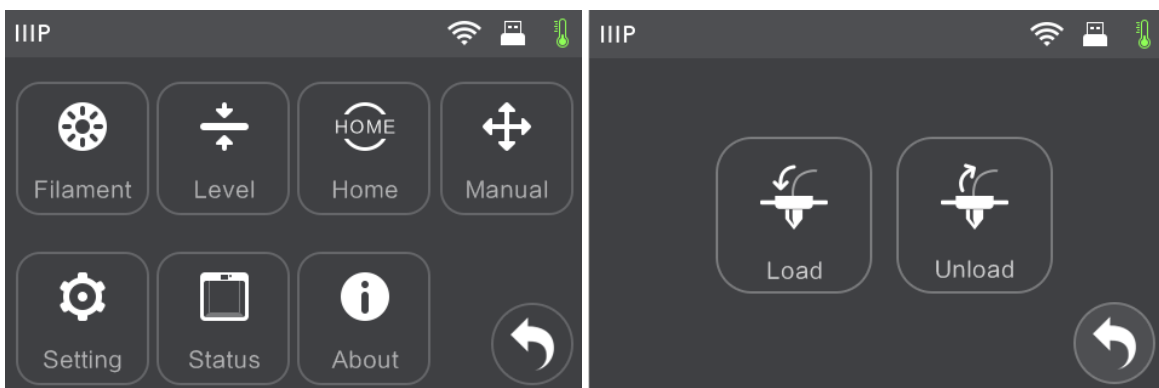
5. Insert the filament guide tube into the **Filament Intake** hole at the top of the **Filament Cartridge**.



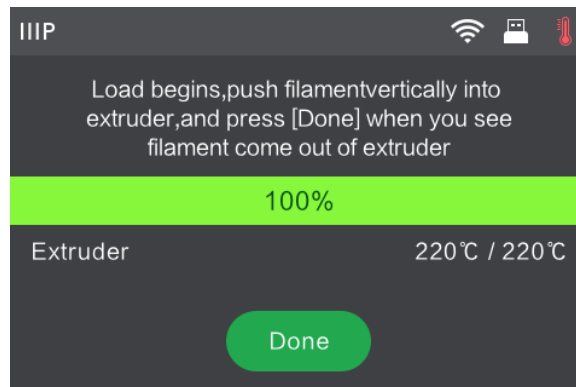
6. Manually lower the **Build Plate** so that there is at least 2" space between the extruder **Nozzle** and the **Build Plate**.
7. Flip the **Power Switch** to the ON position and wait for the printer to initialize.
8. Touch the **Tools** button on the **Top Menu**.



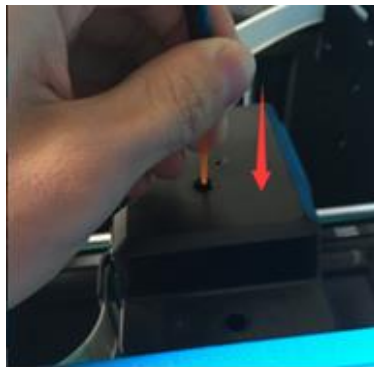
9. Touch the **Filament** button on the **Tools Menu**, then touch the **Load** button.



10. The printer will preheat the extruder to 220°C. When it reaches the target temperature, the printer will beep to inform you that it is ready.



11. Insert the filament into the **Filament Intake** hole on top of the extruder. The filament will be drawn into the **Extruder**. Once filament starts to extrude from the **Nozzle**, touch the **Done** button.



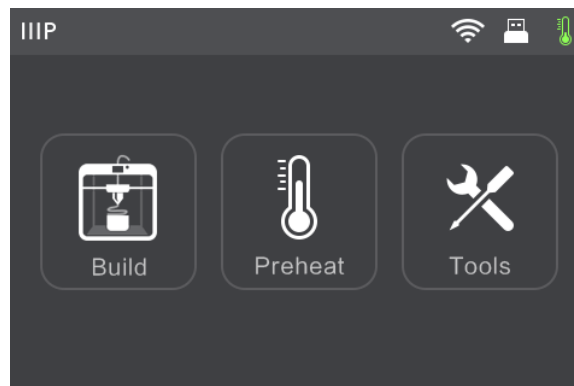
Congratulations, you have successfully loaded filament into your printer!

BUILD PLATE LEVELING

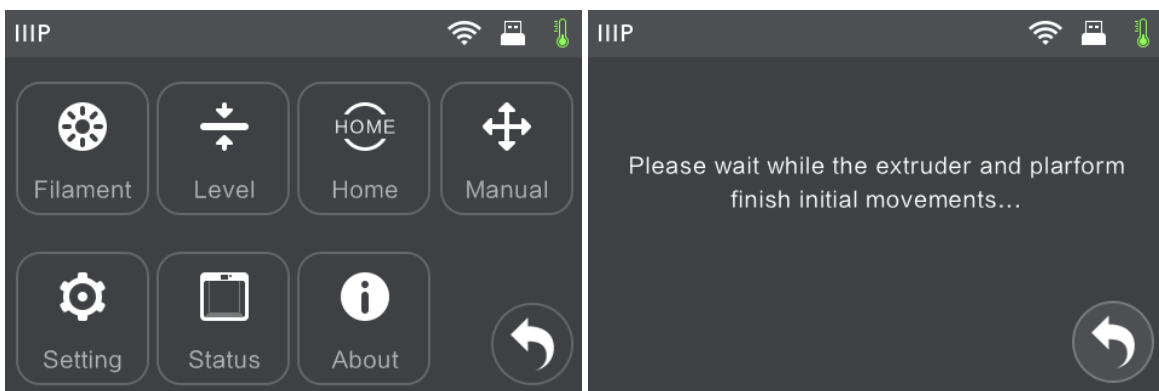
The Inventor II features a 3-point intelligent leveling system, which gives clear and comprehensive feedback. There are three, spring-loaded knobs under the build plate. Turning the knobs counterclockwise (when viewed from above) increases the distance between the build plate and the extruder nozzle. Turning them clockwise (when viewed from above), decreases the distance between the build plate and the extruder nozzle.

Perform the following steps to level the build plate.

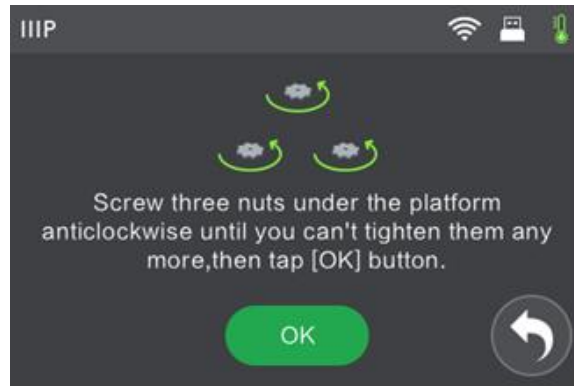
1. With the printer powered ON, touch the **Tools** button on the **Top Menu**.



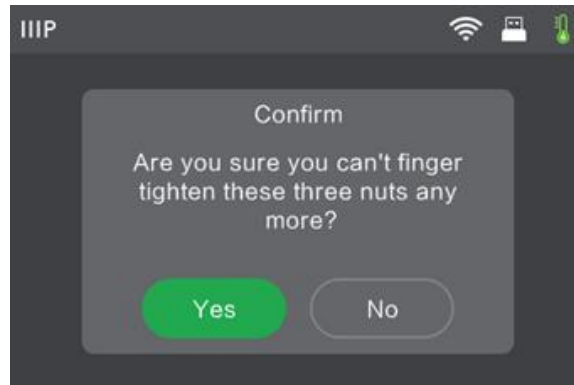
2. Touch the **Level** button, then wait while the **Extruder** and **Build Plate** finish their initial movements.



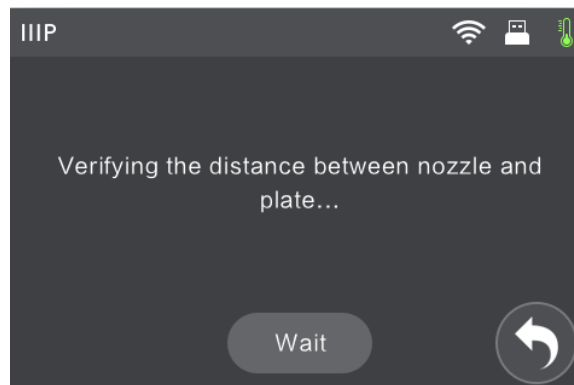
3. Turn the three spring-loaded knobs under the **Build Plate** counterclockwise (as viewed from above) until you cannot turn them anymore, then touch the **OK** button.



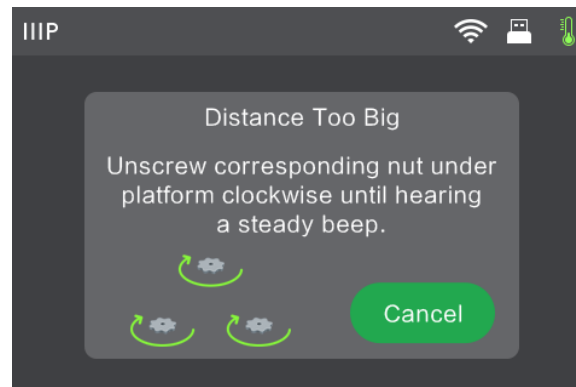
4. Confirm that you cannot tighten the knobs any more, then touch the **Yes** button.



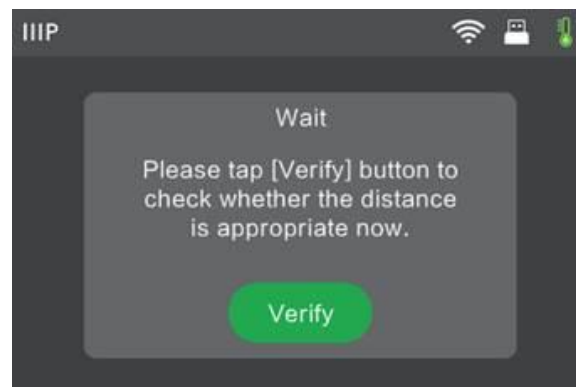
5. Wait while the printer checks the distance between the build plate and the extruder nozzle at the first leveling point



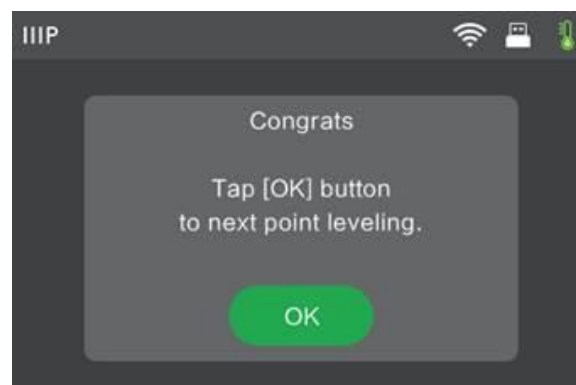
6. Turn the knob under the leveling point clockwise (when viewed from above), until the printer beeps.



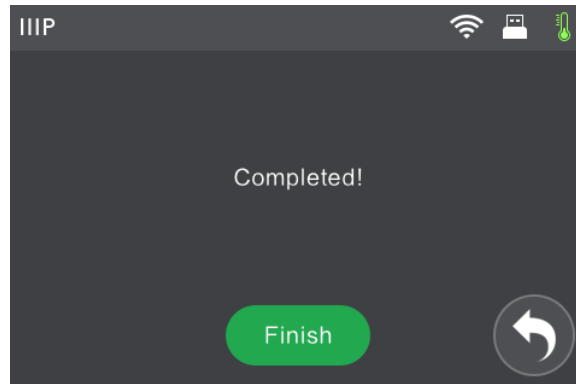
7. Touch the **Verify** button. The printer will check the distance again.



8. If the distance is correct, touch the **OK** button to proceed to the next leveling point. If not, follow the onscreen instructions until the distance is correct and the **OK** button is displayed.



- Continue following the onscreen instructions until all three points are properly leveled and the **Completed Screen** is displayed. Touch the **Finish** button to complete the leveling process.

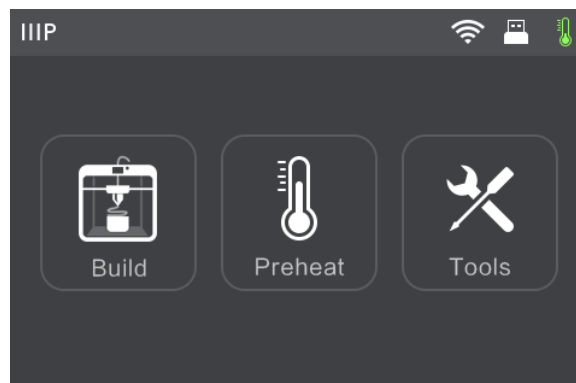


Congratulations, you have successfully leveled the Build Plate!

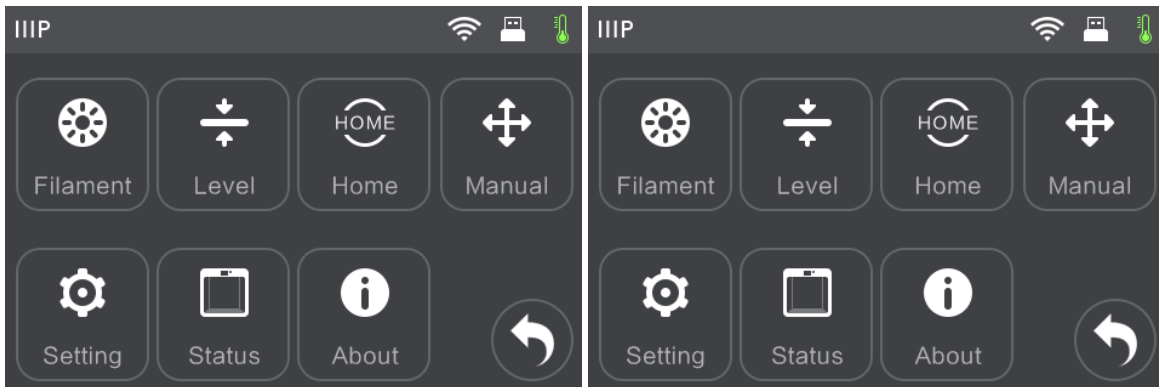
UNLOADING FILAMENT

Perform the following steps to remove the filament.

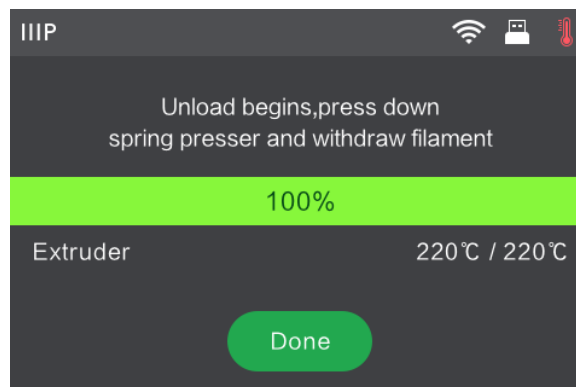
- With the printer powered on, touch the **Tools** button on the **Top Menu**.



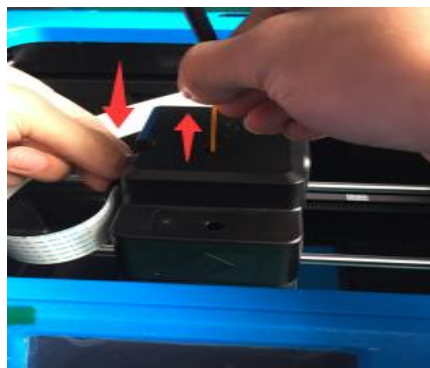
2. Touch the **Filament** button, then touch the **Unload** button.



3. The printer will preheat the extruder to 220°C. When it reaches the target temperature, the printer will beep to inform you that it is ready.



4. Depress the **Spring Presser** on the extruder, press down on the filament for 3 seconds, then pull the filament out. Do not use force when pulling the filament as it may damage the gears.



MP FLASHPRINT SOFTWARE

Installation

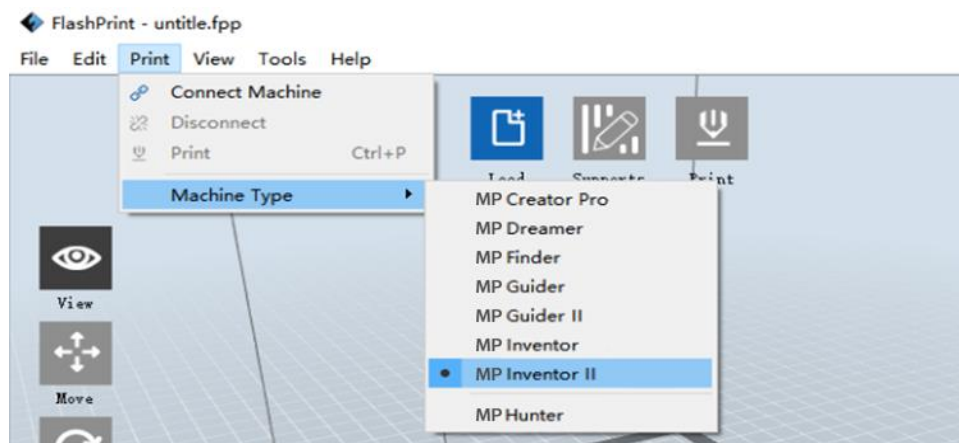
The Inventor II 3D printer uses MP FlashPrint slicing software to create print files or to print directly from the computer via a wired USB or wireless connection. MP FlashPrint is available for Microsoft® Windows® and Linux®, in both 32-bit and 64-bit versions, as well as Apple® Mac® OS X®. The MP FlashPrint installation packages can be found on the included USB stick.

Once you have located the software installation package, run the application and follow the onscreen installation instructions.

Initial Setup

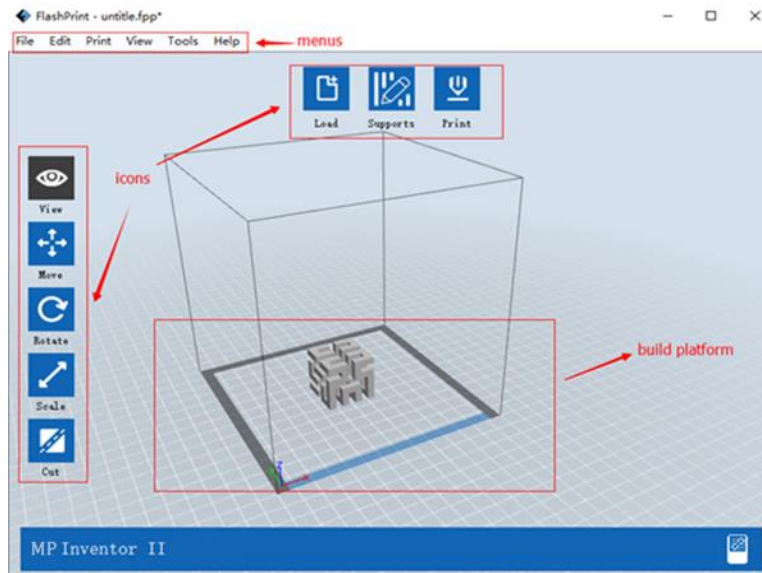
Once MP FlashPrint has been installed, double-click the application shortcut to start the program. If this is the first time the program has been run, you will be presented with a dialog asking you to select the Machine Type. Choose the **MP Inventor II** entry.

You can also select the Machine Type from within the program by clicking **Print > Machine Type > MP Inventor II**, as shown in the screenshot below.







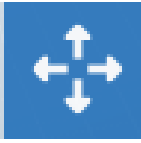



Main Interface Overview

The screenshot below shows the three main elements of the software - the Menus, the Icons, and the Build Platform.



The icons have the functions listed in the table below.

Icon	Function
 Load	Loads a model or Gcode file. MP FlashPrint supports .STL, .OBJ, and .FPP model files. You can also load a .PNG, .JPG, .JPEG, or .BMP file and MP FlashPrint will generate a model from the image. See the <i>Generating a Model</i> section for details.
 Supports	Enters the Support Edit mode.
 Print	Prints directly from MP FlashPrint via a USB or wireless connection or exports a Gcode file to the USB stick.

 <p>View</p>	<p>Views the MP FlashPrint home screen from one of six viewing angles.</p>
 <p>Move</p>	<p>Moves the model around on the X/Y plane. Hold the SHIFT key then click to move the mode along the Z axis.</p>
 <p>Rotate</p>	<p>Turns and rotates the model.</p>
 <p>Scale</p>	<p>Scales the size of the model.</p>
 <p>Cut</p>	<p>Cuts the model into several parts.</p>

Loading a File

MP FlashPrint supports six different ways to load a model or Gcode file, as outlined below.

- Click the **Load** icon on the main interface, then select the file.
- Drag and drop the file onto the main interface.
- Click **File > Load File**, then select the file.

- Click **File > Load Examples** to load one of the sample files.
- Click **File > Recent Files**, then select the file from the list of recently used files.
- Drag and drop the file onto the MP FlashPrint icon on the desktop to launch MP FlashPrint and load the file.

Generating a Model

MP FlashPrint can generate a 3D model file from a .PNG, .JPG, .JPEG, or .BMP image file. When you load the image file, the following dialog box will be displayed, which allows you to set several model parameters.

Shape: Determines the basic shape of the model. You can select Plane, Tube, Canister, Lamp, or Seal basic shapes.

Mode: Selects whether the light or dark portions of the image will be the high points of the model.

Maximum Thickness: Sets the Z value of the model.

Base Thickness: Sets the minimum raft thickness. The default value is 0.5mm.

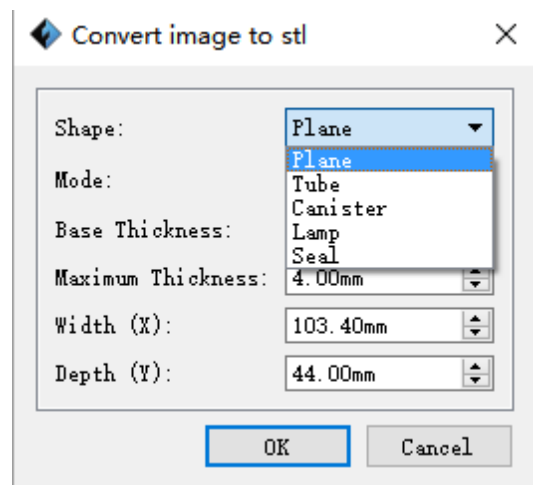
Width: Sets the X value of the model.

Depth: Sets the Y value of the model.

Bottom Thickness: Sets the thickness of the bottom of tube, canister, and lamp type models.

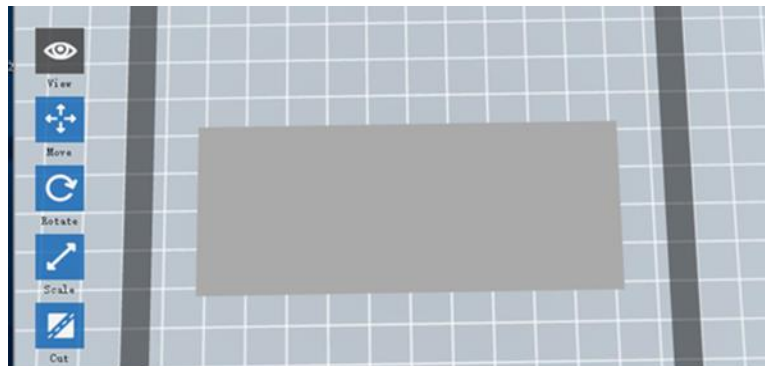
Top Diameter: Sets the diameter for the top of tube, canister, and lamp type models.

Bottom Diameter: Sets the diameter for the bottom of tube, canister, and lamp type models.

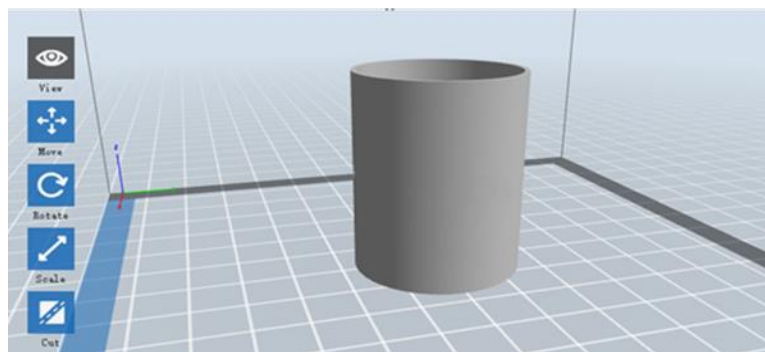


The following screenshots illustrate the five basic shapes.

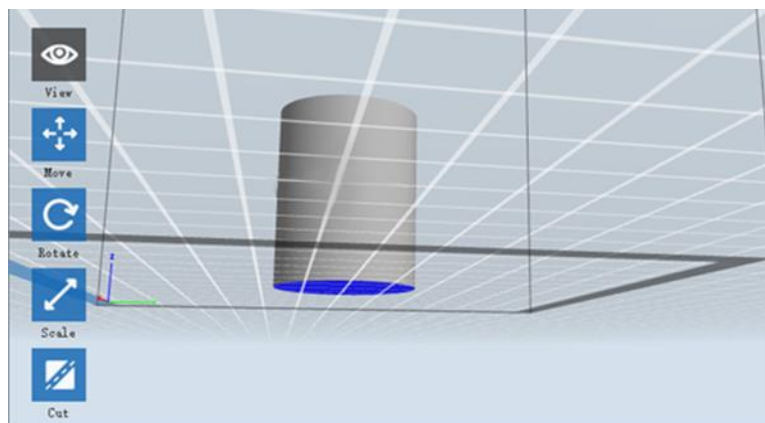
Plane



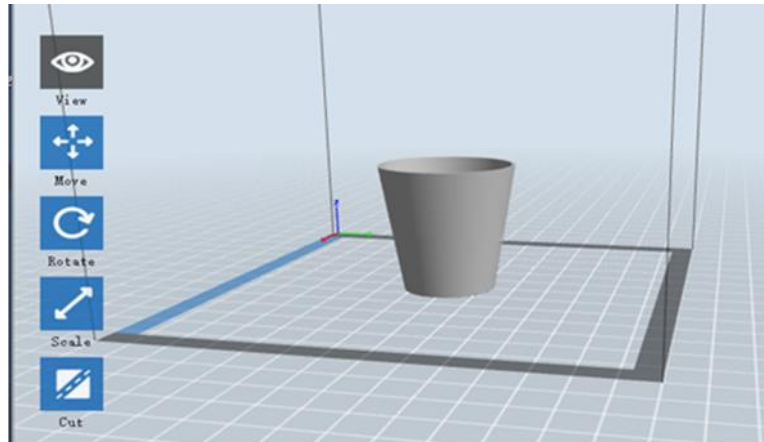
Tube



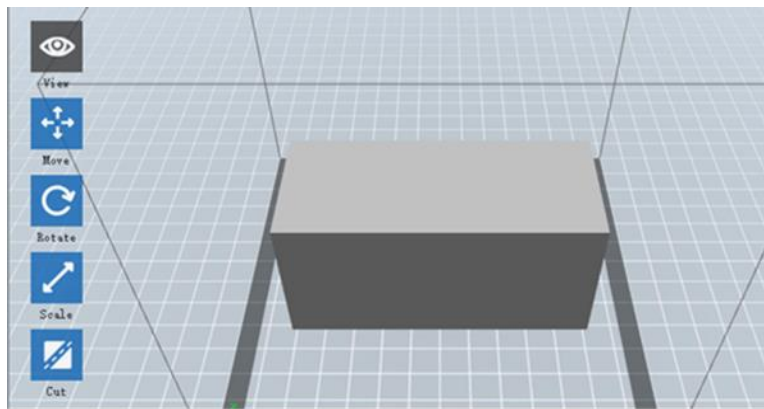
Canister



Lamp



Seal



Changing Views

You can change the camera angle in relation to the model and build area using a variety of methods.

Drag: Click the **View** icon, then drag the camera using one of the following methods.

- Left click and hold, then move the mouse.
- Click and hold the mouse wheel, then scroll up or down.
- Hold down the **SHIFT** key, right click and hold, then move the mouse.

Rotate: Click the **View** icon, then rotate the camera using one of the following methods.

- Right click and hold, then move the mouse.
- Hold down the **SHIFT** key, left click and hold, then move the mouse.

Scale: Scroll the mouse wheel up or down to zoom the camera in or out.

Set View: You can select one of six preset camera angles using one of the following methods.

- Click the **View** menu, then select one of the six options from the drop-down list.
- Click the **View** icon, then click it again and a submenu will appear with six options for selection.

Reset View: You can reset the camera angle to the default using one of the following methods.

- Click the **View** menu, then select **Home View**.
- Click the **View** button, then click it again and a submenu will appear. Select the **Reset** option.

Show Model Outline: You can set MP FlashPrint to show the model outline highlighted in yellow. To do so, click the **View** menu, then select the **Show Model Outline** option.

Show Steep Overhang: When the intersection angle between the model surface and a horizontal line is within the overhang threshold value, the surface has steep overhang and is shown in red when Show Steep Overhang is enabled. To enable or disable Show Steep Overhang, click the **View** menu, then select the **Show Steep Overhang** entry. The default threshold value is 45 degrees.

Model Manipulation

You can manipulate the model using a variety of methods.

Move: Click on the model to select it. You can then move it around the build area in a variety of ways.

- To move the model horizontally in the X/Y plane, left click and hold on the model, then move the mouse.
- To move the model vertically in the Z plane, hold down the SHIFT key, left click and hold on the model, then move the mouse.
- Click the **Move** button, then enter the distance value. Click **Reset** to reset the distance values.

*Note: After moving the model, click **Center > On Platform** to ensure that the model is in the build area and in contact with the build platform.*

Rotate: Click on the model to select it. You can then rotate the model in all three planes in a variety of ways.

- Click the **Rotate** icon and three mutually perpendicular rings will appear around the model. Click and hold on one ring and move the mouse to rotate the model in that plane.
- Click the **Rotate** icon, then manually enter rotation angle values. Click **Reset** to reset the rotation angle values.

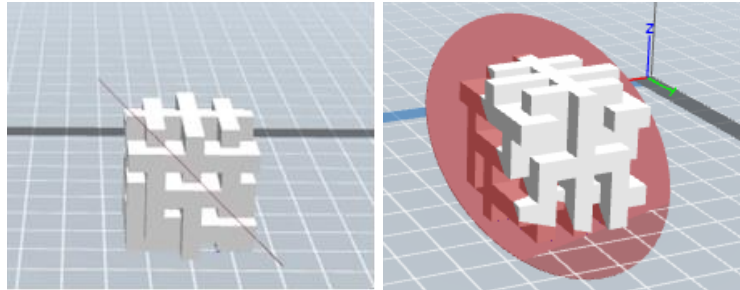
Scale: Click on the model to select it. You can then scale it in a variety of ways.

- Click the **Scale** icon, then hold the button and move the mouse to change the scale. The corresponding values will display near the model.
- Click the **Scale** icon, then enter scales values for the X, Y, and Z axes.
- Click the **Scale** icon, then click the **Maximum** button to get the largest size possible for the build area.
- Click the **Scale** icon, then click the **Reset** button to reset the size of the model.

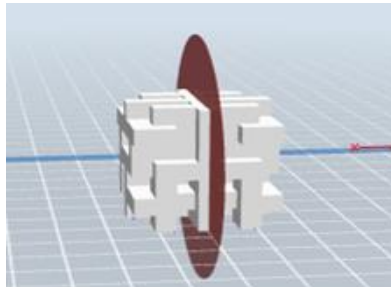
*Note that if the **Uniform Scaling** radio button is enabled, it will scale the model in proportion when changing any size value.*

Cut: Click the model to select it, then double-click the **Cut** icon to set the cut plane in a variety of ways.

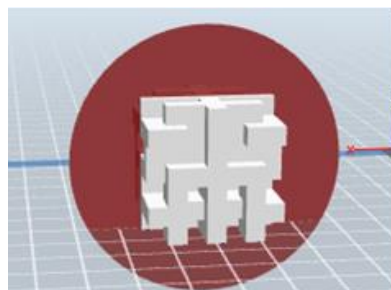
- Left click and drag the cursor across the model to set the cut angle.



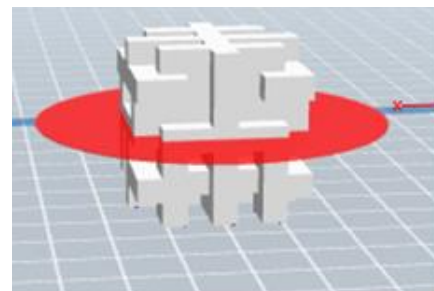
- Select the **X Plane** option to cut the model vertically.



- Select the **Y Plane** option to cut the model vertically.

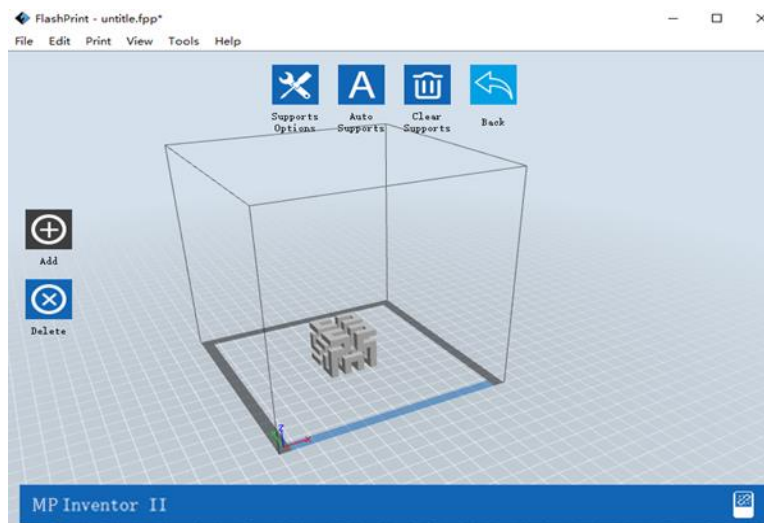


- Select the **Z Plane** option to cut the model horizontally.

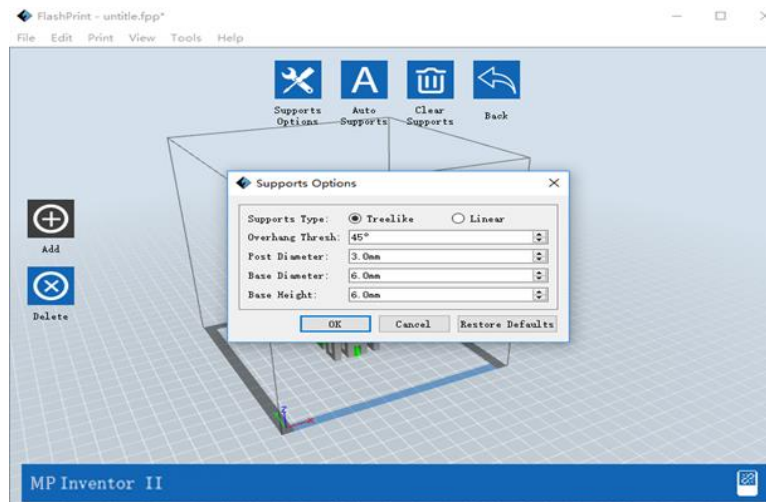


Supports

Because 3D printing is an additive process, each layer of filament needs a base to build on. The printer can gradually increase the layer size, so long as the overhang angle is less than about 45 degrees. Otherwise, you need to create support elements to serve as the base for adding additional layers. To edit the supports, click the **Edit** menu, then select the **Supports** entry. Alternatively, click the **Supports** icon. Click the **Back** button when finished editing the supports.



Support Options: Click the **Support Options** button to display the Support Options dialog. You can select **Treelike** or **Linear** supports. Treelike supports are built at angles, while Linear supports are linear, vertical supports for the overhanging elements. When you click the **OK** button, the software will generate the appropriate support structures. If the model already has supports, the software will judge whether the existing supports need to be deleted or not on the basis of the type of existing support, and display the corresponding prompt to let you make the choice.



Auto Supports: Click the **Auto Supports** button to allow the software to judge where supports are needed and will generate corresponding treelike or linear supports. If the model already has supports, the software will delete them and new supports will be generated.

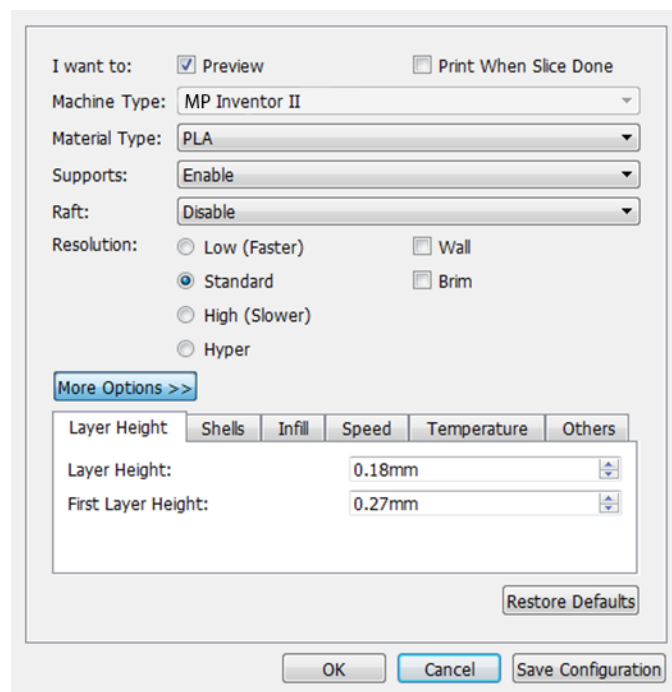
Add Supports: Click the **Add** button to manually generate supports. Move the cursor to the position where a support is needed, left click to choose the starting point, then while holding down the mouse button, drag the mouse to the termination point. The supports preview will be displayed with the support highlighted. If the support surface doesn't need support or the support column angle is too large, the support will not be generated.

Clear Supports: Click the **Clear Supports** button to remove all existing supports. If you change your mind, click the **Undo** option or press **CTRL+Z**.

Delete Supports: Click the **Delete Supports** button to remove individual supports. Click the cursor on the support you want to remove to highlight that support and all subnode supports, then click the left mouse button to delete the highlighted support.

Printing a Model

Click the Print icon on the main interface to slice the model and print the resulting Gcode file, either directly from MP FlashPrint or by first exporting it to the USB stick.



The screenshot shows the 'MP FlashPrint' slicing settings dialog box. At the top, there are two checkboxes: 'I want to:' with 'Preview' selected (checked) and 'Print When Slice Done' (unchecked). Below these are dropdown menus for 'Machine Type' (set to 'MP Inventor II'), 'Material Type' (set to 'PLA'), 'Supports' (set to 'Enable'), and 'Raft' (set to 'Disable'). The 'Resolution' section has four radio buttons: 'Low (Faster)', 'Standard' (selected), 'High (Slower)', and 'Hyper'. To the right of these are two checkboxes: 'Wall' and 'Brim', both of which are unchecked. A 'More Options >>' button is located below the resolution options. Below this button is a tabbed interface with tabs for 'Layer Height', 'Shells', 'Infill', 'Speed', 'Temperature', and 'Others'. The 'Layer Height' tab is active, showing 'Layer Height:' set to '0.18mm' and 'First Layer Height:' set to '0.27mm'. At the bottom right of the dialog is a 'Restore Defaults' button. At the very bottom are three buttons: 'OK', 'Cancel', and 'Save Configuration'.

Preview: Check the **Preview** box to preview the model before slicing and printing.

Print When Slice Done: Check the **Print When Slice Done** box to start the print as soon as the slice is completed.

Material Type: Select the filament type in use.

Supports: Enable or disable the creation of supports.

Raft: Enables or disable a **Raft**, which is several layers of material on the build plate to help with model adhesion.

Wall: Check the **Wall** box to help clear leaking filament from a second extruder during dual color printing.

Brim: Check the **Brim** box to print a ring of filament around the model to help prevent warping and assist with bed adhesion.

Resolution: For ABS and PLA printing, you can choose **Low**, **Standard**, or **High** resolution. For PLA printing, you can also choose **Hyper**. The higher the resolution, the smoother the model surface, but at a corresponding cost in print speed.

More Options: Click the **More Options** button to reveal tabs with additional options.

Layer: Click the **Layer** tab to reveal the layer options.

- **Layer Height:** Sets the thickness of each layer. The thinner the layer, the smoother the model surface, but at a corresponding cost in print speed.
- **First Layer Height:** Sets the thickness of the first layer of the model, which affects how well the model adheres to the build plate. The maximum thickness is 0.4mm and the default value is usually sufficient.

Shell: Click the **Shell** tab to reveal the shell options.

- **Perimeter Shells:** Sets the number of perimeter shells. The maximum value is 10.
- **Top Solid Layers:** Sets the number of solid layers at the top of the model. The maximum value is 30 and the minimum is 1.
- **Bottom Solid Layers:** Sets the number of solid layers at the bottom of the model. The maximum value is 30 and the minimum is 1.

Infill: Click the **Infill** tab to reveal the infill options. Infill is the structure that is printed inside the model. Infill directly affects the strength of the printed mode.

- **Fill Density:** Sets the fill density in 5% increments. A 100% density results in a solid model, while a 0% density results in no infill.
- **Fill Pattern:** Allows you to select the shape of the infill structure. You can select **Line**, **Hexagon**, or **Triangle**.
- **Combine Infill:** You can select the layers for combining according to the layer thickness. The combined thickness should not exceed 0.4mm. The **Every N Layers**

option is for all infill, while the **Every N Inner Layers** affects only the inner infills, which generally saves print time.

Speed: Click the **Speed** tab to reveal the speed settings.

- **Print Speed:** Determines the speed that the extruder moves while printing filament. It can be set from 10 to 200 mm/sec in 10mm/sec increments. The slower the speed, the higher quality the resulting printed models. For PLA printing, 80mm/sec is recommended.
- **Travel Speed:** Determines the speed that the extruder moves while moving from place to place and not actively printing filament. It can be set from 10 to 200 mm/sec in 10mm/sec increments. The slower the speed, the higher quality the resulting printed models. For PLA printing, 100mm/sec is recommended.

Temperature: Click the **Temperature** tab to reveal the temperature options.

- **Extruder Temperature:** Sets the operating temperature of the extruder from 0 to 240°C, in 5°C increments. Set the temperature according to the type of filament being printed.

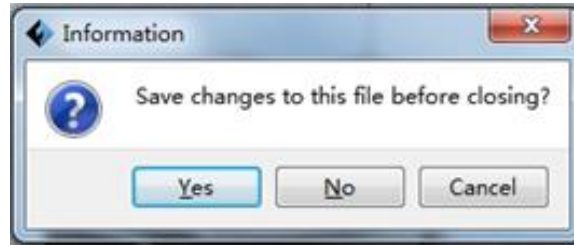
Others: Click the **Others** tab to reveal additional options.

- **Pause At Heights:** Sets the height at which the print will automatically be paused. This is usually done to allow you to change filament at one or more points. Click the **Edit** button to set the pause point(s). The print can be paused anywhere from 1 to 59.9 mm.

File Menu

The **File Menu** contains the following options.

New Project: Click **File > New Project** or press **CTRL+N** to create a new, blank project. A project saves in one place all the models in the scene, including positions, supports, and settings. If there are any unsaved changes to a previously loaded project, you will be prompted to save the changes.



Save Project: Click **File > Save Project** or press **CTRL+S** to save the current project.

Project files have a .FPP suffix.

Load File: Click **File > Load File** or press **CTRL+O** to load a model, Gcode, or project file.

Save As: Click **File > Save As** to save the project or model file.

Examples: Click **File > Examples** to load one of four built-in sample models.

Recent Files: Click **File > Recent Files** to choose from a list of recently loaded files.

Preferences: Click **File > Preferences** to set several General and Print preferences.

- **Language:** Allows you to select the language used in MP FlashPrint.
- **Font Size:** Allows you to set the size of the font used in MP FlashPrint. You can select **Small**, **Medium**, or **Large**.
- **Check for Updates after start up:** Determines whether MP FlashPrint will automatically check for the existence of software or driver updates.
- **Auto layout newly-imported model:** Determines whether the software will automatically adjust the position of a model immediately after it is loaded.
- **Printing Window Type:** Allows you to choose the Basic (default) print dialog or the Expert dialog, with many more individual settings.

Quit: Click **File > Quit** or press **ALT+F4** to exit MP FlashPrint. If there are any unsaved changes to your project or model, you will be prompted to save the changes.

Edit Menu

The **Edit Menu** contains the following options.

Undo: Click **Edit > Undo** or press **CTRL+Z** to undo the last change. In most cases, you can undo multiple changes, one at a time.

Redo: Click **Edit > Redo** or press **CTRL+Y** to redo the last change that was undone. In most cases, you can redo multiple undos.

Empty Undo Stack: Click **Edit > Empty Undo Stack** to clear the software's memory of recent undos. This has the same effect as saving and reloading the project or model file.

Select All: Click **Edit > Select All** or press **CTRL+A** to select all models in the scene.

Duplicate: Click **Edit > Duplicate** or press **CTRL+V** to copy the selected model(s).

Delete: Click **Edit > Delete** or press the **Del** key to delete the selected model(s).

Auto Layout All: Click **Edit > Auto Layout All** to automatically arrange the model(s) on the build platform. You will be prompted to set the distance between models, which can be from 1.0 to 50.0 mm.

Mirror Model: Click **Edit > Mirror Model** to mirror the selected model(s) in the X, Y, or Z planes.

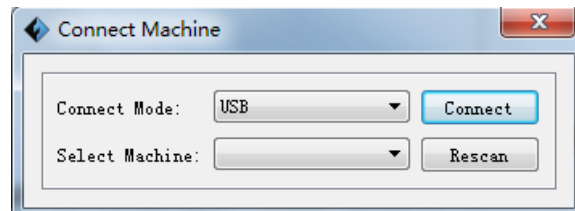
Repair Models: Click **Edit > Repair Models** to correct any errors in the selected model(s).

Supports: Click **Edit > Supports** to enter **Support Edit** mode.

Print Menu

The **Print Menu** contains the following options.

Connect Machine: Click **Print > Connect Machine** to establish a USB or Wi-Fi® connection to the printer. This option is not available if the printer is already connected.



Disconnect: Click **Print > Disconnect** to break a connection with the printer. This option is not available if there is no connection with the printer.

Print: Click **Print > Print** or press **CTRL+P** to open the print dialog.

Machine Type: Click **Print > Machine Type**. Allows you to select the specific model of 3D printer to use with MP FlashPrint. This printer is the MP Inventor II.

View Menu

The **View Menu** contains the following options.

Home View: Sets the camera to the default position.

Top View: Sets the camera to look directly down onto the build area.

Bottom View: Sets the camera to look directly up towards the build area.

Left View: Sets the camera to look at the build area from the left.

Right View: Sets the camera to look at the build area from the right.

Front View: Sets the camera to look at the build area from the front.

Back View: Sets the camera to look at the build area from the rear.

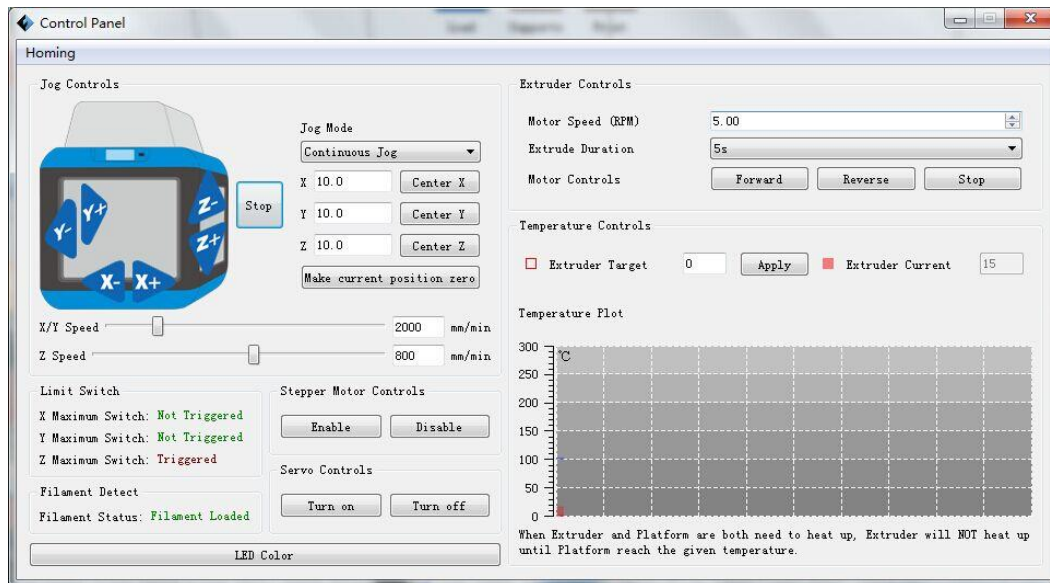
Show Model Outline: Puts a yellow outline around the model.

Show Steep Overhang: Highlights in red those portions of the model that require supports.

Tools Menu

The **Tools Menu** contains the following options.

Control Panel: Click **Tools > Control Panel** to modify the printer's settings from within MP FlashPrint. Note that if you are not connected to the printer, you will be prompted to do so before the Control Panel can be displayed.



- **Jog Mode:** The Jog Mode section allows you to select the distance that the extruder and build plate move with each mouse click.
- **Six Blue Arrow Buttons:** The buttons allow you to manually move the extruder and build plate. The amount they will move with each click of the mouse is determined by the Jog Mode settings.
- **Stop:** Click the Stop button to abort any current movement.
- **XYZ Coordinates:** Displays the current position of the extruder and build plate. You cannot edit the displayed values.
- **Make Current Position Zero:** Click the **Make Current Position Zero** button to set the zero position for the three axes.
- **Center XYZ:** Click a **Center** button to move the extruder or build plate to the zero position for that axis.
- **Set X/Y Speed:** Sets the speed at which the extruder moves.

- **Set Z Speed:** Sets the speed at which the build plate moves.
- **Limit Switch:** Displays the status of the limit switches on each axis. If the extruder or build plate are not moved to its maximum positions, the status will show **Not Triggered** in green. If the extruder or build plate has been moved to its maximum position, the status will show **Triggered** in red.
- **Stepper Motor Controls:** Click the **Enable** button to lock the stepper motor so that it does not allow movement. Click **Disable** to unlock the stepper motor so the extruder and build plate can be manually moved.
- **LED Color:** Allows you to set the LED color of the Inventor II printer.
- **Motor Speed (RPM):** Controls the speed of the filament feed wheel.
- **Extruder Duration:** Controls the motor rotation time.
- **Forward:** Feeds filament to the extruder.
- **Reverse:** Unloads filament from the extruder.
- **Stop:** Stops motor movement when feeding or unloading filament.
- **Temperature Control:** Allows you to set the target extruder temperature. Click the **Apply** button to start heating the extruder.

Update Firmware: Allows you to update the printer's firmware.

On Board Preferences: Allows you to check the printer's name.

Machine Information: Displays information about the printer, including the firmware version.

Help Menu

The **Help Menu** contains the following options.

First Run Wizard: Re-runs the wizard that automatically runs the first time MP FlashPrint is run.

Help Contents: Allows you to read the help files.

Feedback: Allows you to submit feedback.

Check For Updates: Checks for MP FlashPrint updates.

About MP FlashPrint: Displays MP FlashPrint version information.

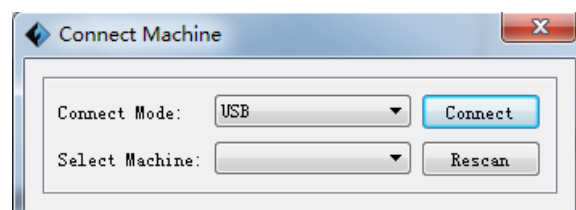
CONNECTING THE PRINTER

There are three ways of connecting the MP FlashPrint software with the Inventor II printer - a wired USB connection, a wireless connection with the printer serving as the Wi-Fi access point/WLAN hotspot, or a wireless connection using an existing Wi-Fi® access point.

USB Connection

Perform the following steps to connect your PC to the Inventor II printer using a wired USB connection.

1. Plug one end of the included USB cable into the USB port on the printer, then plug the other end into a USB port on your computer.
2. Power on the printer and your computer, then start the MP FlashPrint software.
3. Click **Print > Connect Machine**.

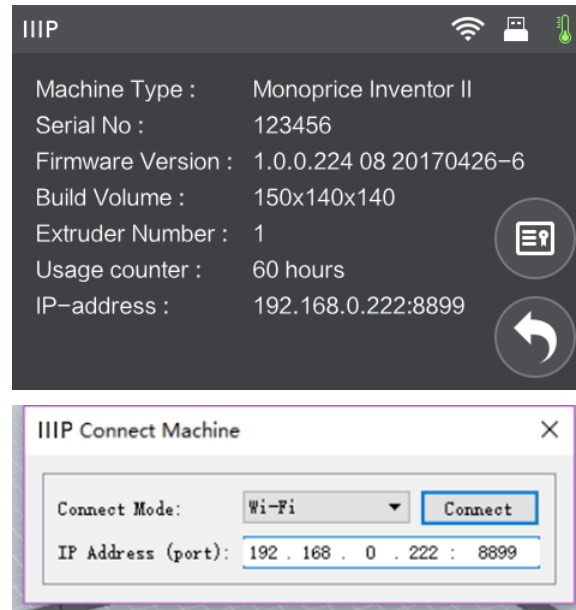


4. Set the **Connection Mode** to **USB** and set the **Select Machine** option to the **Inventor II** printer. If the printer does not appear in the Select Machine list, click the **Rescan** button. If it still does not appear, reinstall the driver software.

WLAN Hotspot Connection

Perform the following steps to connect your PC to the Inventor II printer using the printer's built-in WLAN hotspot.

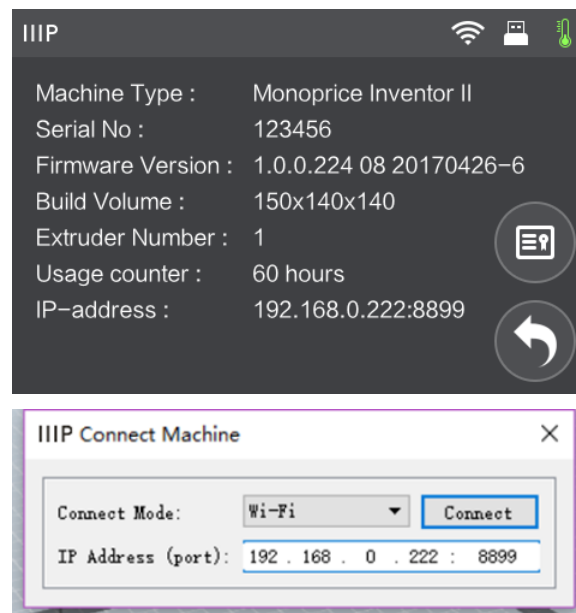
1. Power on the printer and your computer.
2. On the printer, select **Tools > Setting > Wlan hotspot > Wlan hotspot ON**.
3. Open your computer's wireless network settings and scan for available Wi-Fi® signals. Select the **Inventor II** entry, then click **Connect**.
4. Start the MP FlashPrint software, then click **Print > Connect Machine**.
5. Set the **Connect Mode** to **Wi-Fi**, then input the **IP Address** of the printer and click **Connect**.



Wi-Fi Connection

Perform the following steps to connect your PC to the Inventor II printer using an existing Wi-Fi® access point.

1. Power on the printer and your computer.
2. On the printer, select **Tools > Setting > WiFi > WiFi ON**.
3. Locate and select the Wi-Fi signal that your computer is connected with.
4. Start MP FlashPrint software, then click **Print > Connect Machine**.
5. Set the **Connection Mode** to **Wi-Fi**, then input the **IP Address** of your Wi-Fi access point and click **Connect**.



PRINTING

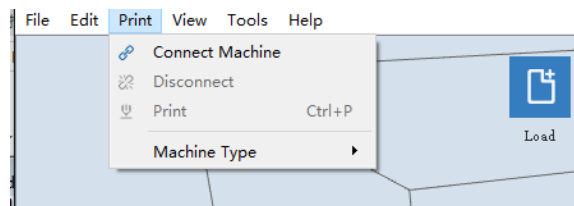
Perform the following steps to print a model on the Inventor II printer from a Gcode file saved to the USB stick.

Generating Gcode

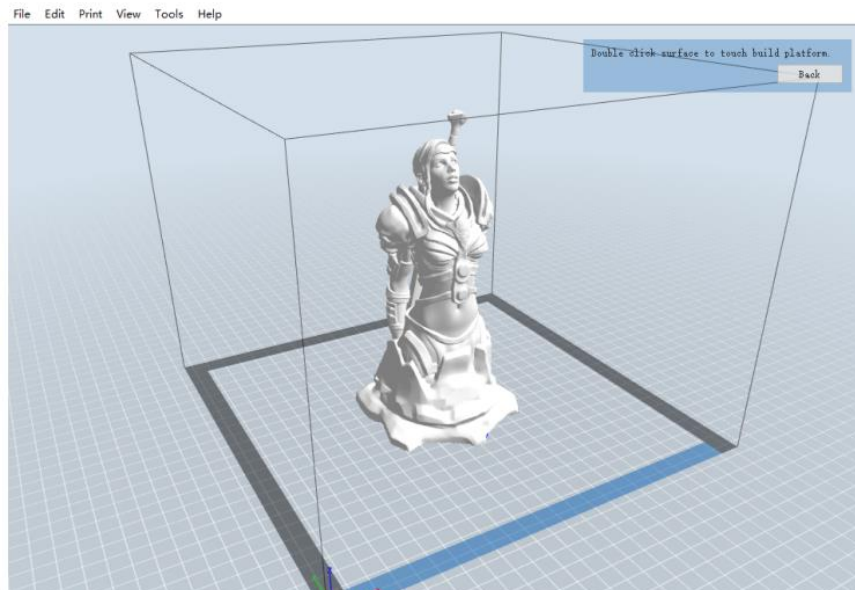
1. Plug the USB stick into a USB port on your computer.
2. Double-click the MP FlashPrint shortcut to launch the software.



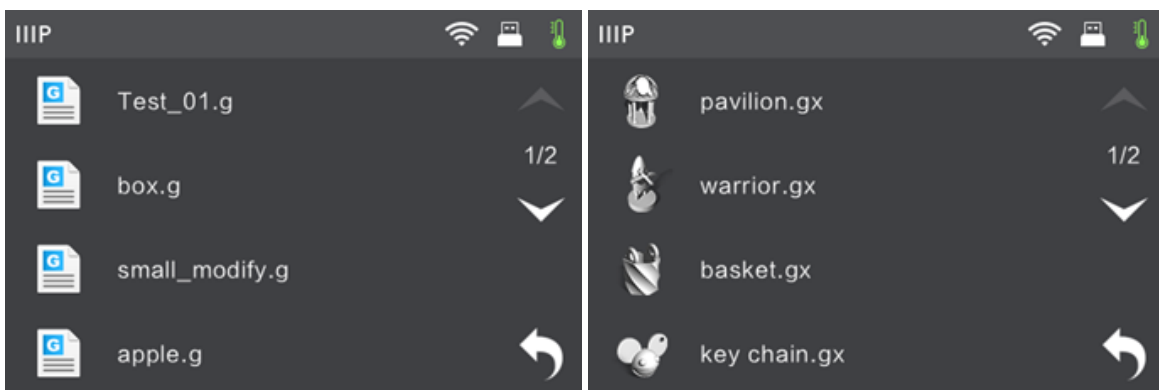
3. Click **Print > Machine Type** and select the **MP Inventor II** entry.



4. Click the Load icon to load a **.STL** model file. The model will display within the build area.
5. Double-click the **Move** icon, then click the **On the Platform** and **Center** buttons to ensure the model is in contact with the center of the build platform.

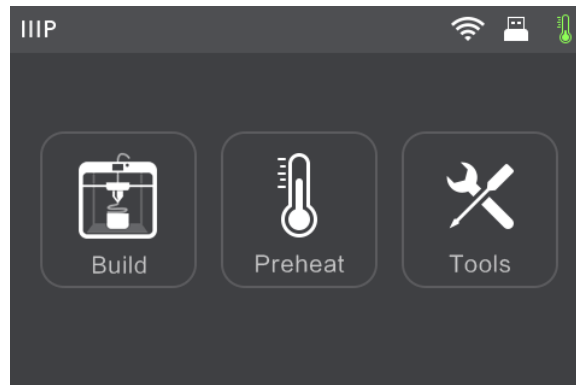


6. Click the **Print** icon, then change the settings as appropriate for your filament type and model.
 - **Preview:** Check the **Preview** box if you want to preview the model after slicing is done.
 - **Print When Slice Done:** Because we are printing from the USB stick, uncheck this box to save the Gcode file to the USB stick.
 - **Machine Type:** Select **MP Inventor II**.
 - **Material Type:** Select the type of filament you are using.
 - **Supports:** If your model has overhanging elements, enable the **Supports** option.
 - **Raft:** It is recommended to enable the **Raft** option.
 - **Resolution:** It is recommended to select the **Standard** option.
 - **More Options:** It is recommended to leave them at the default values.
7. Click **OK** to save the Gcode file. Save it to the USB stick. You can rename the file as desired and save it as either a **.g** or **.gx** file. Files with a **.gx** extension can be previewed, while **.g** files cannot.

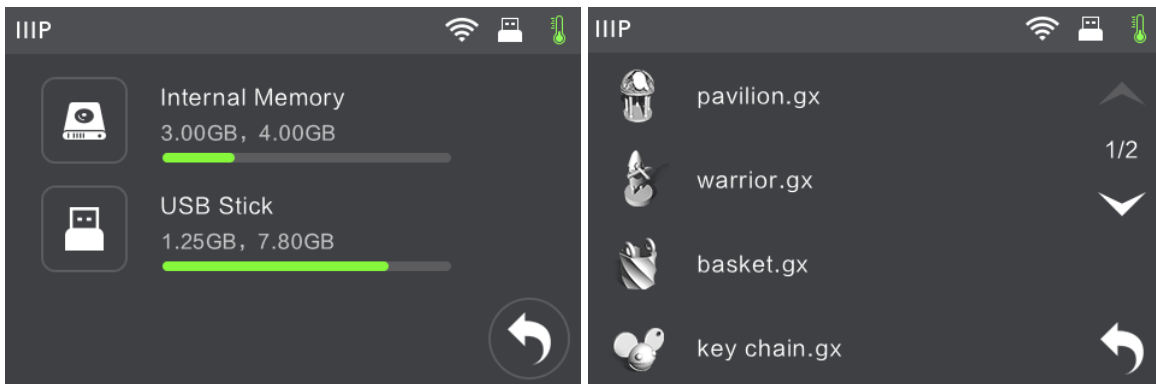


8. Eject the USB stick, then plug it into the USB port on the printer.
9. Power on the Inventor II printer.
10. Ensure that the build plate is leveled and that filament is loaded.

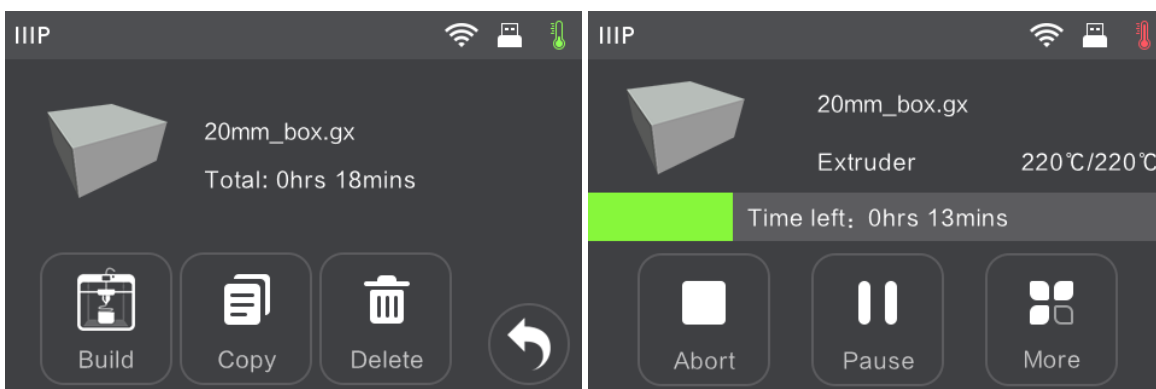
11. Touch the **Build** button on the printer display.



12. Touch the **USB Stick** option, then locate and load your model file.



13. Touch the **Build** icon to begin printing. The printer will begin heating the extruder, then will begin printing once the target temperature is reached. Touch the **Abort** button at any time to cancel the print.



SPECIFICATIONS

Model	30525
Printer Name	MP Fully Enclosed 150
Number of Extruders	1
Print Technology	Fused Filament Fabrication (FFF)
Screen Type	3.5" Color IPS Touch Screen
Build Area	150 x 140 x 140 mm
Layer Resolution	0.1 - 0.4 mm
Build Accuracy	±0.1mm
Positioning Accuracy	XY Axis: 0.011mm, Z Axis: 0.0025mm
Filament Diameter	1.75mm ±0.07mm
Supported Filament Types	ABS, PLA, Wood, Copper Fill, Steel Fill, Bronze Fill, and other materials
Nozzle Diameter	0.4mm
Build Speed	10~200 mm/sec
Software	MP FlashPrint
Supported Input Formats	.3MF, .STL, .OBJ, .FPP, .BMP, .PNG, .JPG, .JPEG
Supported Output Formats	.G, .GX
Supported Operating Systems	Windows® XP and later (32-bit and 64-bit), Mac® OS X®, Linux®
Input Power	100 ~ 240 VAC, 50/60 Hz
Power Consumption	65 watts
Connectivity	USB cable, USB stick, Wi-Fi®
Dimensions	16.5" x 16.5" x 16.5" (420 x 420 x 420 mm)
Weight	25.8 lbs. (11.7 kg)

TECHNICAL SUPPORT

Monoprice is pleased to provide free, live, online technical support to assist you with any questions you may have about installation, setup, troubleshooting, or product recommendations. If you ever need assistance with your new product, please come online to talk to one of our friendly and knowledgeable Tech Support Associates. Technical support is available through the online chat button on our website **www.monoprice.com** during regular business hours, 7 days a week. You can also get assistance through email by sending a message to **tech@monoprice.com**

REGULATORY COMPLIANCE

Notice for FCC



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,
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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

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.

Notice for Industry Canada

This Class B digital apparatus complies with Canadian ICES-003

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada



EU Declaration of Conformity

Monoprice, Inc. declares the product described within this user guide or manual is in compliance with below applicable directives. The full text of the EU Declaration of Conformity is available at the following internet address:

https://www.monoprice.com/product?c_id=107&cp_id=10724&cs_id=1072403&p_id=30525&seq=1&format=2 or the CE DoC can be found within this user manual

- EMC Directive 2004/108/EC
- Low Voltage Directive 2014/35/EU
- RoHS2 Directive 2011/65/EU
- WEEE Directive 2012/19/EC
- Packaging & Packaging Waste Directive 94/62/EC
- REACH Directive 1907/2006/EC

WEEE Information

User information for consumer products covered by EU Directive 2012/19/EU on Waste Electric and Electronic Equipment (WEEE)

This document contains important information for users with regards to the proper disposal and recycling of Monoprice products. Consumers are required to comply with this notice for all electronic products bearing the following symbol:



For Consumers in the European Union: This EU Directive requires that the product bearing this symbol and or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electrical and electronics products via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your unwanted product, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

Safety Notice



WARNING: Do not use this product near water, for example, in a wet basement or near swimming pool or in an area where accidental contact with water or liquid might occurs

WARNING: Avoid using this product during an electrical storm. There may be a remote risk of electric shock from the surge caused by lightning

WARNING: The external power adapter or AC power cord is the equipment's disconnection device. The power outlet must be located nearby the equipment and its access must be easy

WARNING: Use this product in a well-ventilated area

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