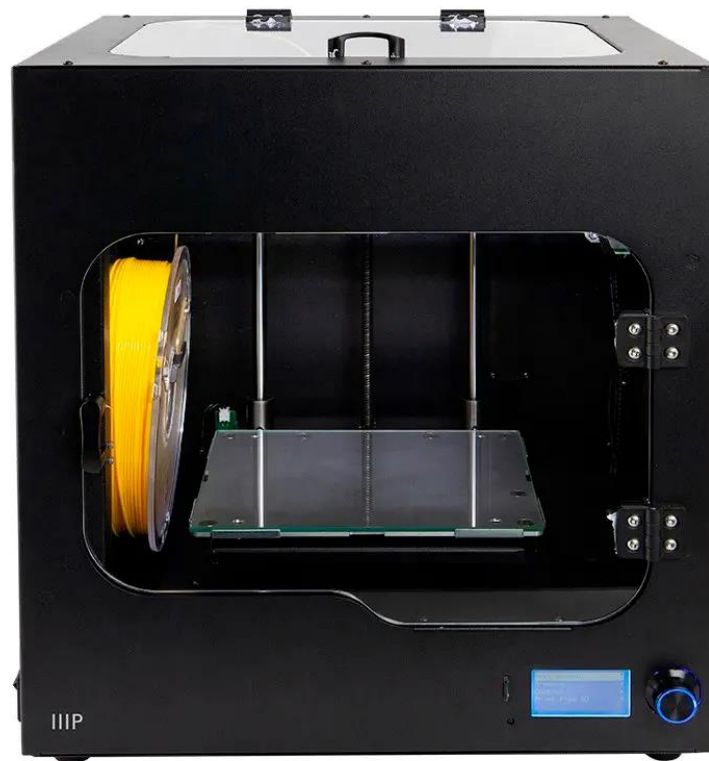




Maker Ultimate 2 3D Printer



P/N 36045

User's Guide

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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.

- Do not reach inside the printer during operation.
- Always allow the printer and extruded filament to cool before reaching inside.
- Take care to avoid touching hot parts, including heat blocks, extruder nozzle, build platform, and 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 force or tear anything when unpacking and during setup. This may cause damage to the printer and/or its accessories.
- 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.
- 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.

- This device uses a grounded power cord and requires a ground connection for safe operation. Ensure that the power source has a proper ground connection. Do not modify the plug or use a "cheater" plug to bypass the ground connection.
- 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.
- Use only in a well-ventilated area. Do not use in close, confined spaces.
- Take care when using a scraper to remove a model. Never direct the scraper towards your fingers or body.
- The printer is designed to operate with an ambient temperature ranging from +41°F (+5°C) to +104°F (+40°C). Printing outside these limits may result in low quality prints.
- Use eye protection when cleaning or sanding the printed models to avoid getting small particles in your eyes.

INTRODUCTION

Thank you for purchasing this Maker Ultimate 2 3D Printer! This printer uses the FFF (Fused Filament Fabrication) method of printing. It features a metal frame, fully enclosed structure, and heated build platform. It can print 1.75mm ABS, PLA, metal fill, wood fill, and other filament types with melting points below 250°C. It has a 200 x 150 x 150 mm print area and can print at speeds up to 150mm/sec. It can print from a computer using a USB connection or from sliced gcode files stored on a microSD™ card. It supports auto leveling, has a removable and a heated glass build plate.

FEATURES

- Supports auto leveling
- Includes a heated, removable, glass build platform
- Can print using a USB connection to your PC or from a sliced gcode file on a microSD™ card
- Supports ABS, PLA, metal fill, wood fill, and other filament types with melting points below 250°C
- 200 x 150 x 150 mm print area
- Can print at speeds up to 150mm/sec.
- Includes WiiBuilder slicing software
- Includes 8GB microSD™ card
- Fully assembled

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 or via email at support@monoprice.com. Check the website for support times and links.

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 500g spool of PLA filament

1x Filament holder

1x 8GB microSD™ card

1x microSD™ card reader

1x Metal scraper

1x USB cable

1x Switch cable

1x Motor cable

1x Set of Allen keys

1x Roll yellow tape

1x Spanner

1x Stick of water washable glue

1x US power cord

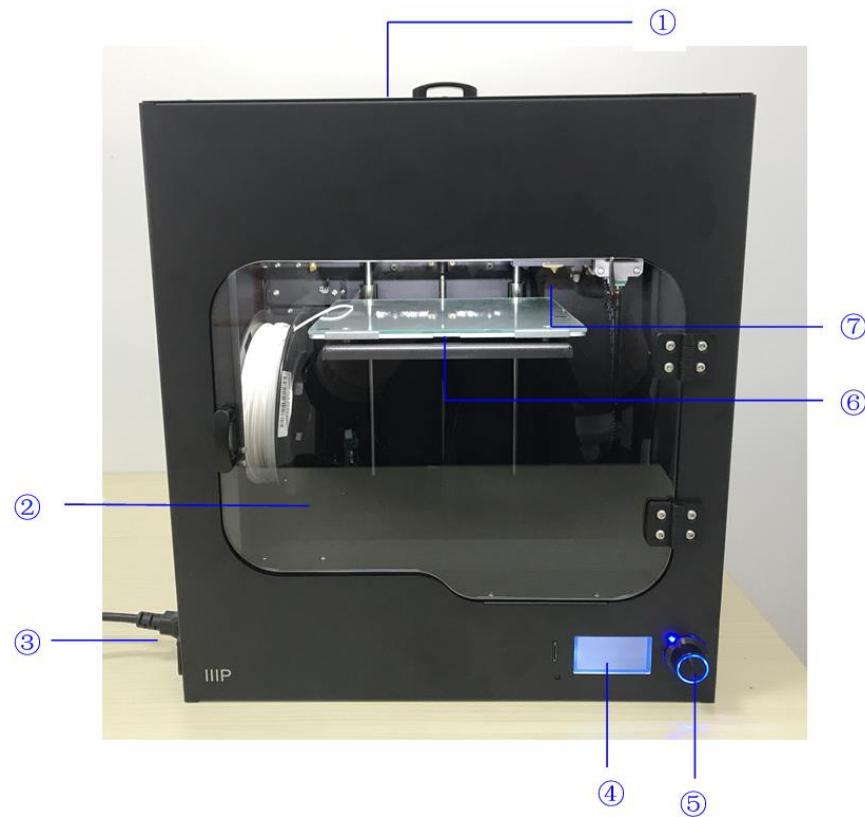
1x UK power cord

1x EU power cord

5x User's manuals (English, Deutsche, Español, Français, Italiano)

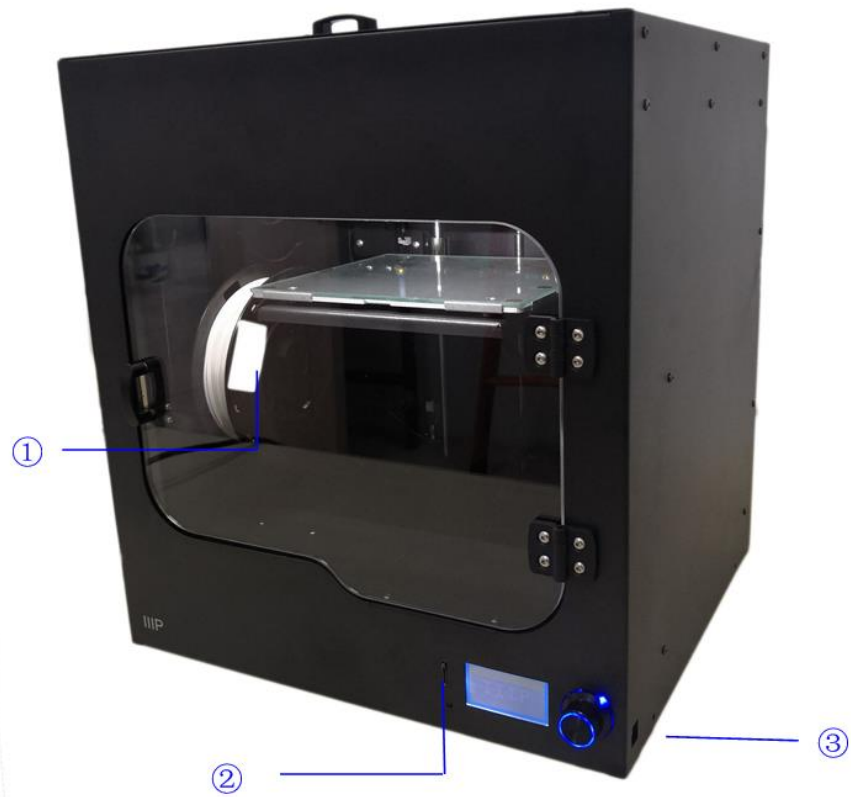
PRODUCT OVERVIEW

Front View



1. Top Cover
2. Front Door
3. AC Power Socket and Power Switch
4. LCD Display
5. Control Knob
6. Heated Build Platform
7. Nozzle

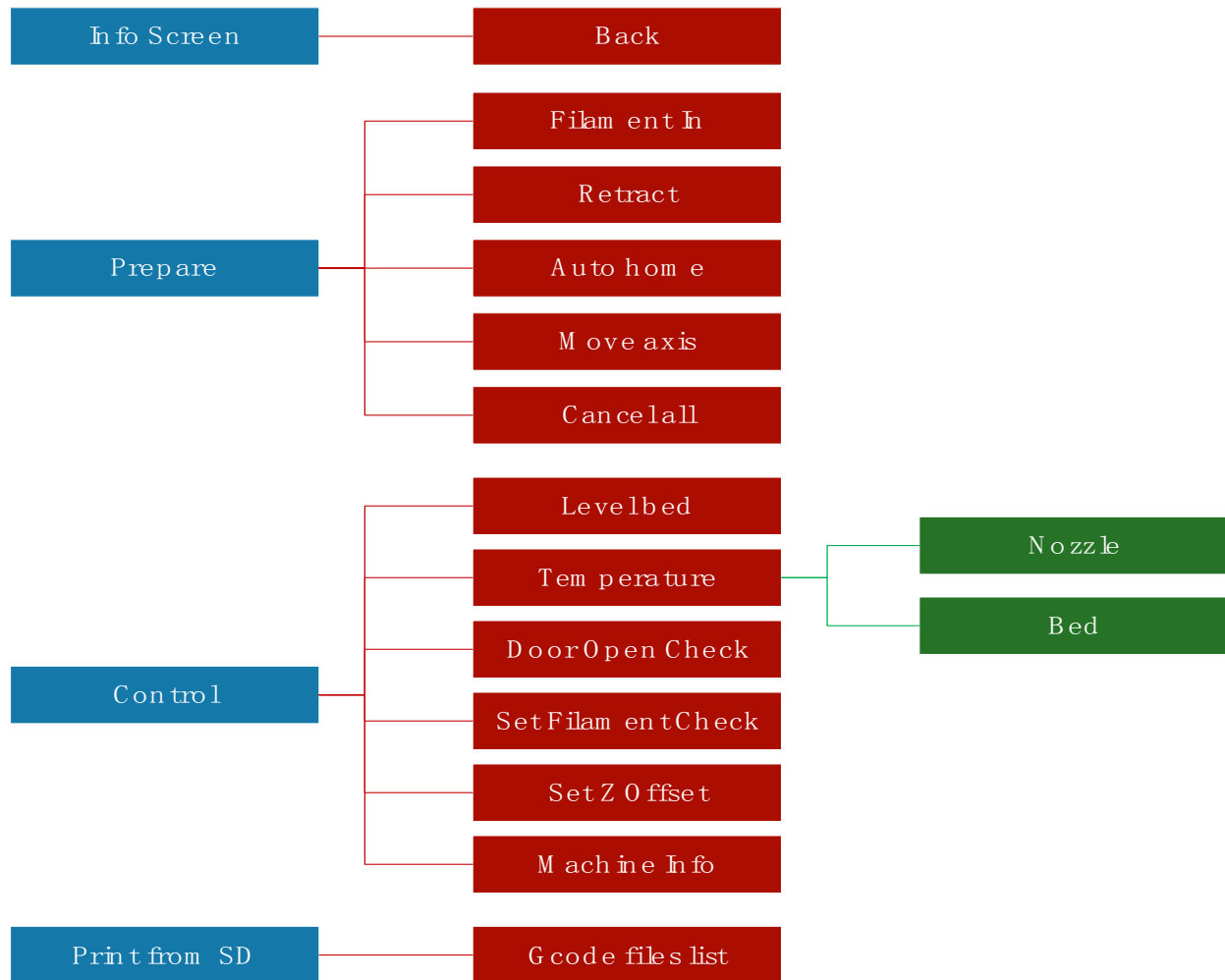
Right Side View



1. Filament Holder
2. microSD™ Card Slot
3. USB Port

MENU SYSTEM

Menu Map

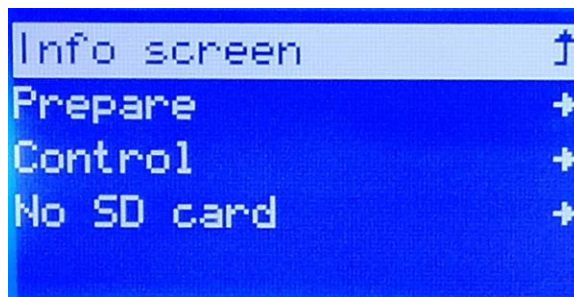


Menu Operation

- The **Control Knob** to the right of the **LCD Display** is used to manipulate the menu.
- If on a menu or submenu, turn the **Control Knob** counterclockwise to move the menu highlight up or to the left.
- If on a menu or submenu, turn the **Control Knob** clockwise to move the menu highlight down or to the right.

- If on a menu or submenu, push the **Control Knob** to enter the highlighted submenu or to select the highlighted entry for editing.
- If editing a value, turn the **Control Knob** counterclockwise to decrease the value.
- If editing a value, turn the **Control Knob** clockwise to increase the value.
- If editing a value, push the **Control Knob** to save the displayed value and return to the previous menu or submenu.

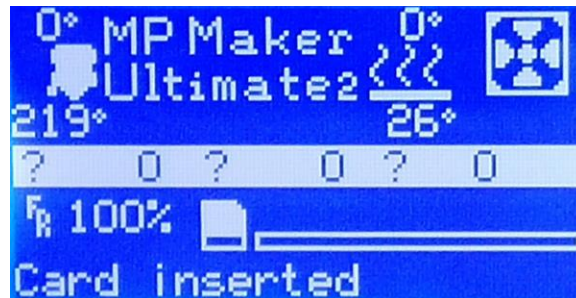
Main Menu



- **Info Screen:** Displays the printer information screen.
- **Prepare:** Opens the **Prepare** submenu. When printing a model, the **Prepare** operation is replaced with the **Tune** option.
- **Tune:** Opens the **Tune** submenu. When not printing a model, the **Tune** option is replaced with the **Prepare** option.
- **Control:** Opens the **Control** submenu.
- **Print from SD™:** Displays a list of gcode files on the inserted microSD™ card. If a microSD card is not inserted, the line will read **No SD card**.
- **Pause/Resume print:** When printing a model, select **Pause print** to pause the print. While the print is paused, select **Resume print** to resume printing.

- **Stop print:** When printing a model, select **Stop print** to cancel the print operation.

Info Screen



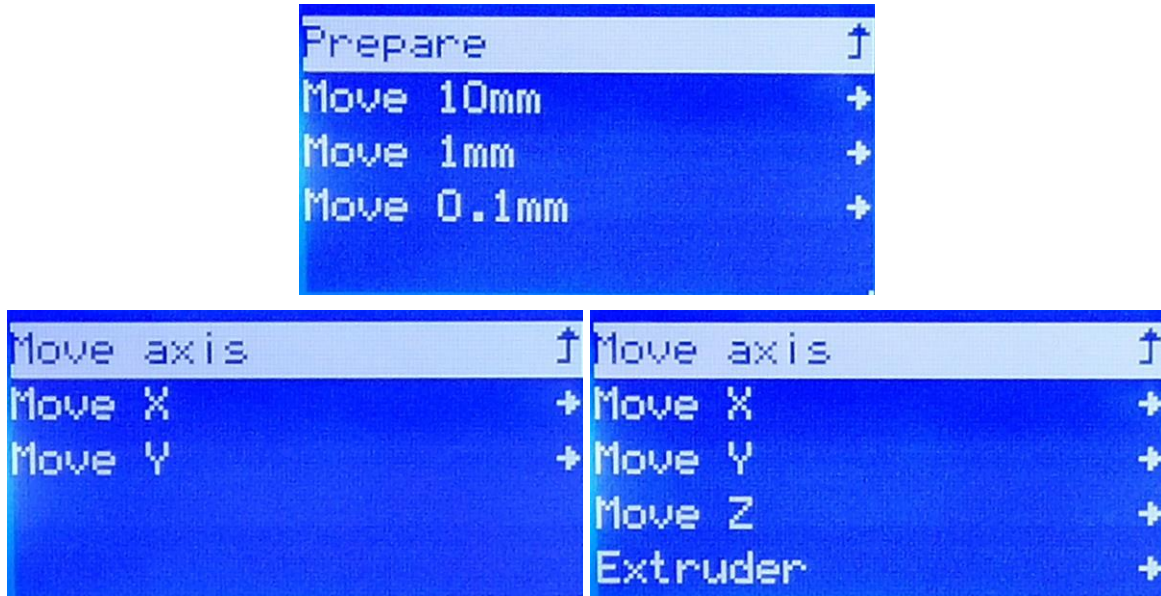
- Press the **Control Knob** to exit the Info Screen.

Prepare Menu



- **Main:** Select the **Main** option to return to the **Main Menu**.
- **Filament In:** Loads filament.
- **Retract:** Unloads filament.
- **Auto home:** Moves the extruder and build platform to their home positions.
- **Set home offsets:** Displays the **Set Home Offsets** screen.
- **Move axis:** Opens the **Move Axis** menu.
- **Cancel all:** Cancels all printer operations.

Move Axis Menu



- **Prepare:** Returns to the **Prepare Menu**.
- **Move 10mm:** Selecting the **Move 10mm** option displays the movement screen, as shown on the left above, allowing you to move the X and Y axes only.
- **Move 1mm:** Selecting the **Move 1mm** option displays the movement screen, as shown on the right above, allowing you to move the X, Y, and Z axes, as well as the extruder.
- **Move 0.1mm:** Selecting the **Move 0.1mm** option displays the movement screen, as shown on the right above, allowing you to move the X, Y, and Z axes, as well as the extruder.
- **Move axis:** Select the **Move axis** option to return to the **Control Menu**.
- **Move X:** Select the **Move X** option to open the **Move X Edit Screen**. Rotate the **Control Knob** to move the extruder along the X axis, then press it to save the value and return to the **Move Axis Menu**.
- **Move Y:** Select the **Move Y** option to open the **Move Y Edit Screen**. Rotate the **Control Knob** to move the extruder along the Y axis, then press it to save the value and return to the **Move Axis Menu**.
- **Move Z:** Select the **Move Z** option to open the **Move Z Edit Screen**. Rotate the **Control Knob** to move the build platform up or down, then press it to save the

value and return to the **Move Axis Menu**. This option will only be visible when choosing 1mm or 0.1mm.

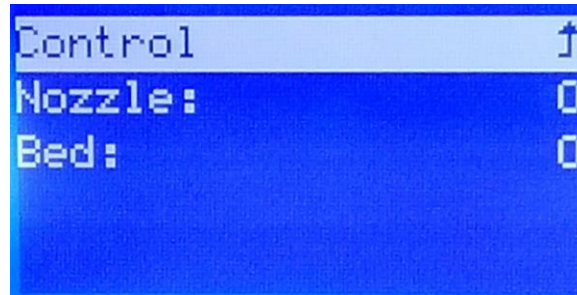
- **Extruder:** Select the **Extruder** option to open the **Move Extruder Edit Screen**. Rotate the **Control Knob** to push filament in or out, then press it to save the value and return to the **Move Axis Menu**. This option will only be visible when choosing 1mm or 0.1mm.

Control Menu

| | | | |
|--------------------|---|--------------------|---|
| Main | ↑ | Temperature | → |
| Level bed | | Door Open Check | → |
| Temperature | + | Set Filament_Check | → |
| Door Open Check | + | Set Z_Offset | → |
| Set Filament_Check | + | Machine Info | → |

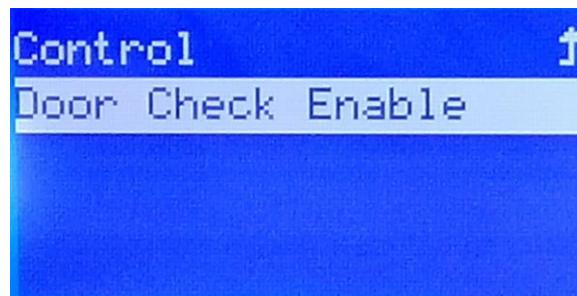
- **Main:** Select the **Main** option to return to the **Main Menu**.
- **Level bed:** Starts the bed leveling process.
- **Temperature:** Opens the **Temperature Menu**.
- **Door Open Check:** Opens the **Door Open Check Menu**.
- **Set Filament_Check:** Opens the **Set Filament_Check Menu**.
- **Set Z_Offset:** Opens the **Set Z_Offset Menu**.
- **Machine Info:** Displays the **Machine Info Screen**.

Temperature Menu



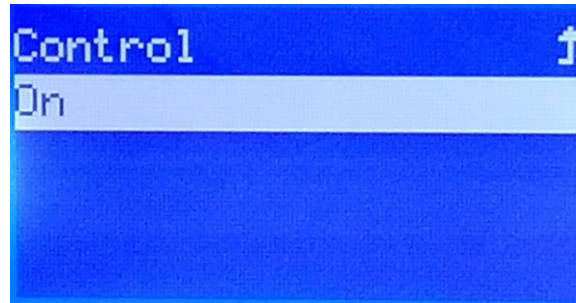
- **Control:** Select the **Control** option to return to the **Control Menu**.
- **Nozzle:** Select the **Nozzle** option to open the **Nozzle Temperature Edit Screen**. Rotate the **Control Knob** to set the temperature, then press it to save the value and return to the **Temperature Menu**.
- **Bed:** Select the **Bed** option to open the **Bed Temperature Edit Screen**. Rotate the **Control Knob** to set the temperature, then press it to save the value and return to the **Temperature Menu**.

Door Open Check Menu



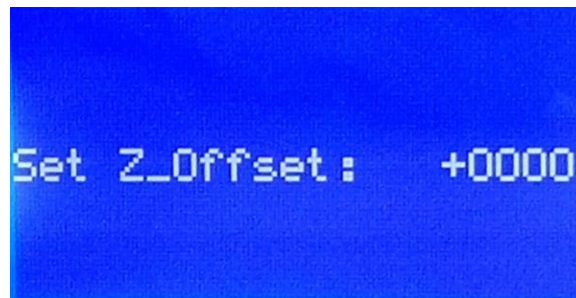
- **Door Check:** When enabled, opening the door will pause printing. When disabled, opening the door will have no effect.

Set Filament_Check Menu



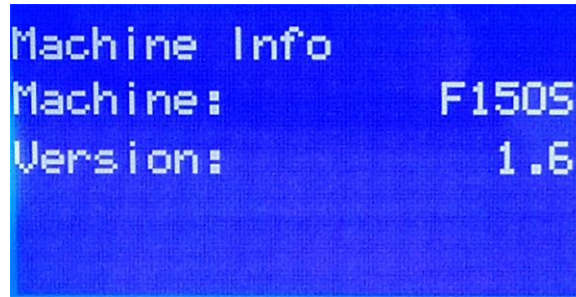
- When set to **On**, printing will automatically pause if the filament runs out. When set to **Off**, printing will continue, even if the filament runs out (though nothing will actually print, of course).

Set Z_Offset Menu



- **Set Z_Offset:** Adjusts the gap between the nozzle and the print bed. Positive values increase the size of the gap, while negative values decrease the size of the gap. The displayed value is in microns, so for example, setting the value to -100, decreases the size of the gap by 0.1mm.

Machine Info Screen



- This screen displays the **Machine Name** and **Firmware Version**.

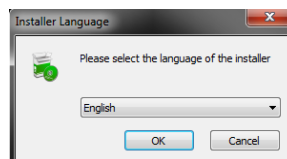
WIIBUILDER SLICING SOFTWARE

The printer includes the WiiBuilder slicing software on the included microSD™ card. Use the included card reader to display the contents of the microSD card on your PC to install the program.

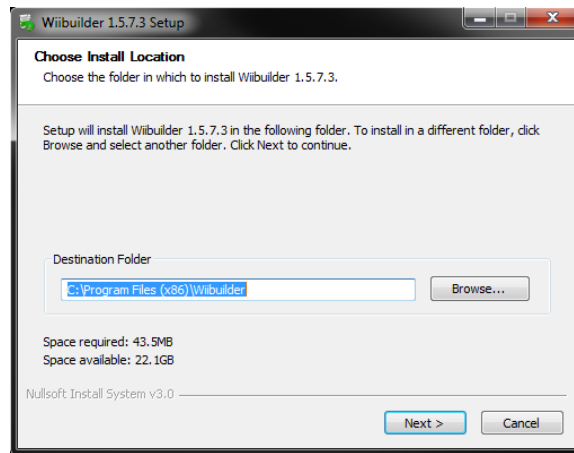
Installation

Perform the following steps to install the WiiBuilder slicing software.

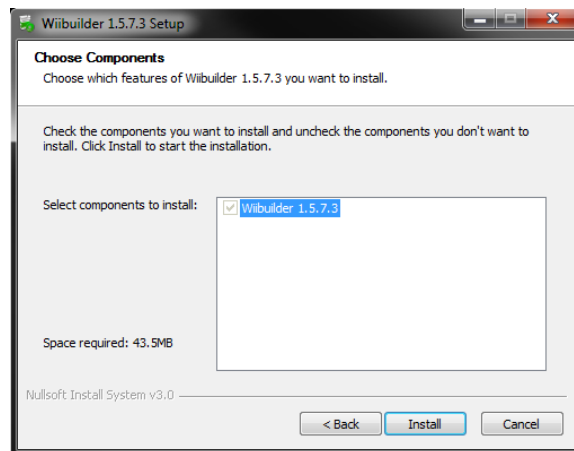
1. Locate and run the **WiiBuilder.exe** software on the microSD card to install the WiiBuilder software program. The Installer will prompt you for the language to use in the InstallShield Wizard. Use the pull-down menu to select your preferred language, then click the **OK** button to continue.



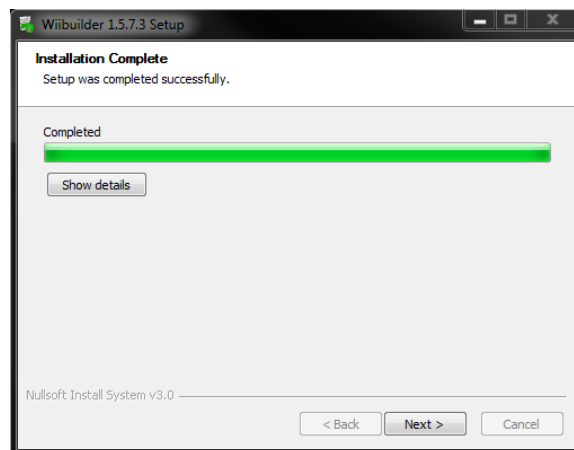
- The Wizard will prompt you to select the install location. If you don't want to use the default install location, use the **Browse...** button to select a different directory. Click the **Next** button when you are satisfied with the install location.



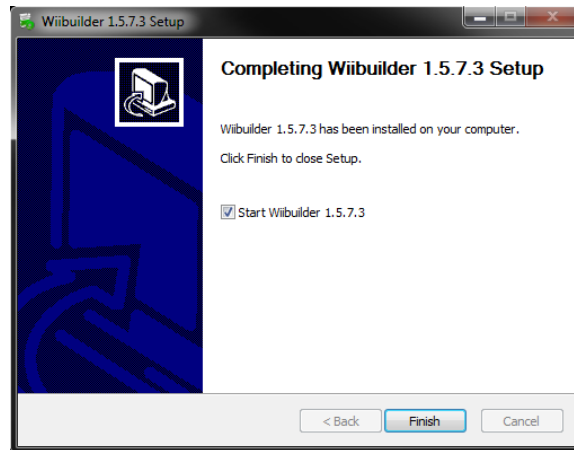
- Click the **Install** button to continue.



- Once the installation is complete, click the **Next** button to continue.

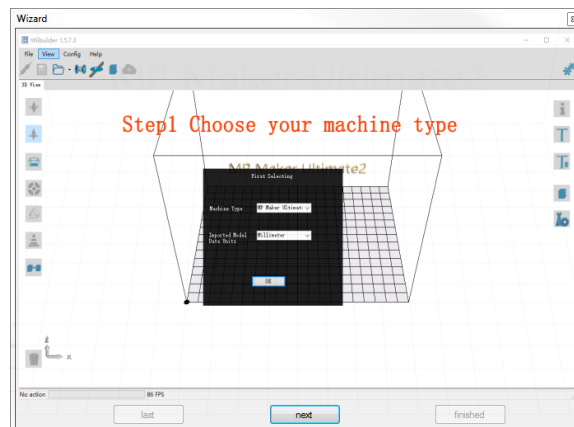


5. Click the **Finish** button to complete the installation and launch the program.

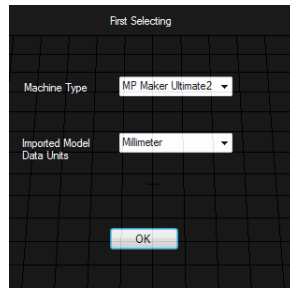


WiiBuilder Setup

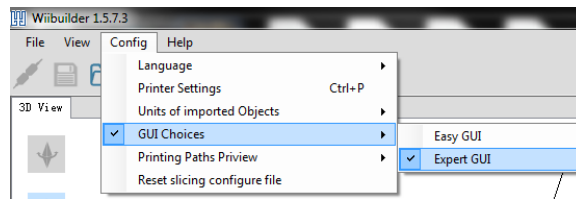
1. Once the program launches, the **Initial Setup Wizard** will launch. It will inform you of several program basics, including how to load model files, the locations of the slice buttons, etc. Read each page, clicking the **next** button to proceed from page to page. Click the **finished** button on the final page to close the Wizard.



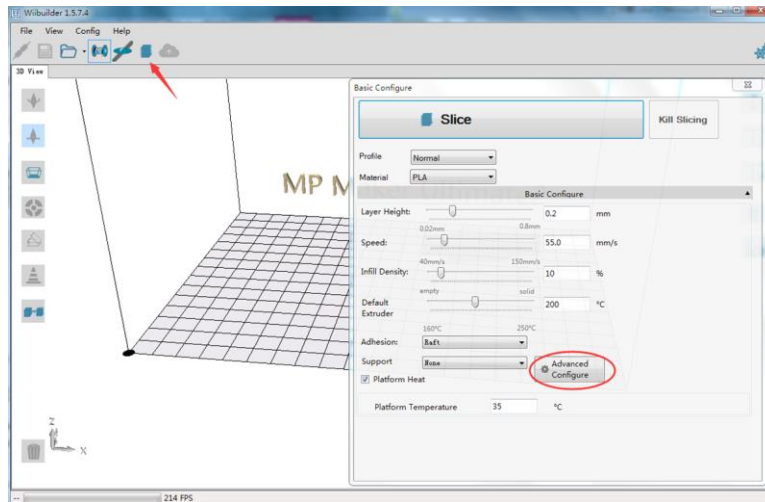
2. Once the Wizard closes, you will be prompted to select the printer model and the units of measure you want to use. **MP Maker Ultimate2** is the default selection. Click the **OK** button to continue.



3. Click the **Config > GUI Choices > Expert GUI**.



4. Click one of the **Slice** buttons to display the **Basic Configure** dialog.



5. Click the **Advanced Configure** button to display the following dialog. The following sections detail the options on each tab.

The screenshot shows the 'Advanced Configure' dialog box with the 'Speed' tab selected. Below it, the 'Dual Extrusion' sub-tab is active, showing settings for standby temperature, prime tower size, ooze shield distance, and extruder assignments for support, interface, build plate adhesion, and infill.

| Tab | Option | Value |
|----------------|-------------------------------|----------------|
| Speed | Top/Bottom Speed(mm/s) | 46.5 |
| | Outer shell speed(mm/s) | 25 |
| | Inner shell speed(mm/s) | 30 |
| | Infill Speed(mm/s) | 75 |
| | Support Infill Speed(mm/s) | 58.2 |
| | Support Interface Speed(mm/s) | 39.5 |
| | Initial Layer Speed(mm/s) | 26.5 |
| Dual Extrusion | Standby Temperature(°C) | 150 |
| | Prime Tower Size(mm) | 15 |
| | Ooze Shield Distance(mm) | 2 |
| | Support Extruder | Right Extruder |
| | Support Interface Extruder | Right Extruder |
| Others | Build Plate Adhesion Extruder | Right Extruder |
| | Infill Extruder | Default |

Speed Tab

This close-up view of the 'Speed' tab shows the following settings:

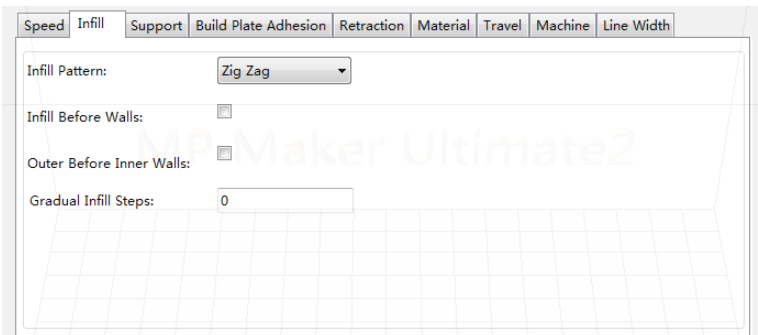
| Option | Value |
|-------------------------------|-------|
| Top/Bottom Speed(mm/s) | 46.5 |
| Outer shell speed(mm/s) | 25 |
| Inner shell speed(mm/s) | 30 |
| Infill Speed(mm/s) | 75 |
| Support Infill Speed(mm/s) | 58.2 |
| Support Interface Speed(mm/s) | 39.5 |
| Initial Layer Speed(mm/s) | 26.5 |
| Travel speed(mm/s) | 104.8 |

The **Speed Tab** features the following options:

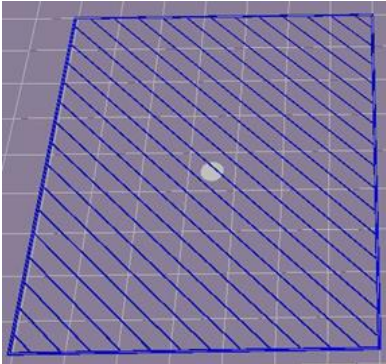
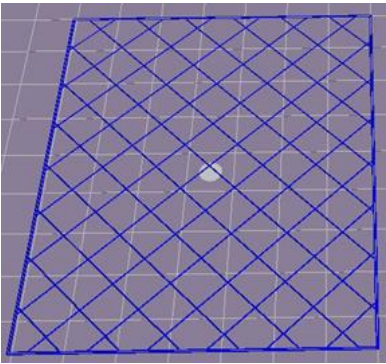
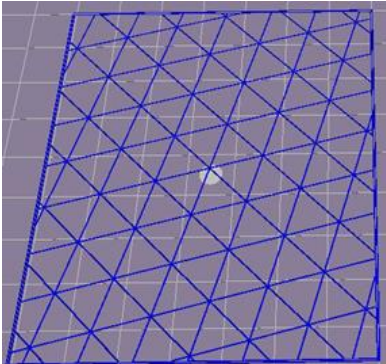
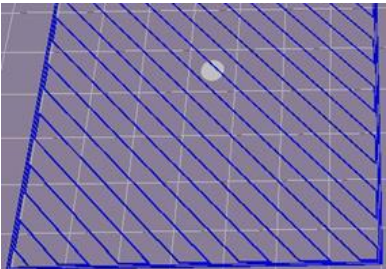
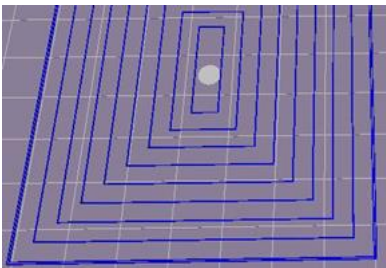
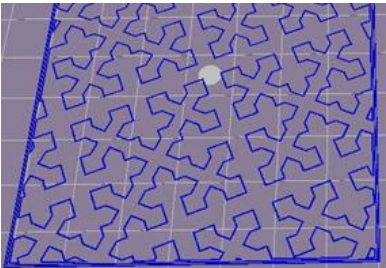
- **Top/Bottom Speed (mm/s):** Sets the printing speed of the top and bottom surfaces of the model.
- **Outer shell speed (mm/s):** Sets the printing speed of the external shell surfaces.
- **Inner shell speed (mm/s):** Sets the printing speed of the internal shell surfaces.
- **Infill Speed (mm/s):** Sets the printing speed of the infill inside the model.

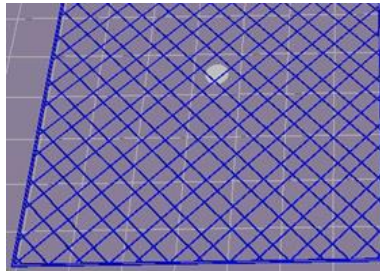
- **Support Infill Speed (mm/s):** Sets the printing speed of infill inside the model supports.
- **Support Interface Speed (mm/s):** Sets the printing speed of the top and bottom surfaces of the model supports.
- **Initial Layer Speed (mm/s):** Sets the printing speed of the first layer of the model.
- **Travel speed (mm/s):** Sets the movement speed of the nozzle when not printing.

Infill Tab



- **Infill Pattern:** Use the drop-down menu to select one of seven different infill patterns, including **Lines**, **Grid**, **Triangles**, **Zig Zag**, **Concentric**, **Cross**, and **Octet**. The individual patterns are illustrated in the table below.
- **Infill Before Wall:** Check this box to print the model after filling and printing the outline.
- **Outer Before Inner Walls:** Check this box to print the exterior walls before printing the interior walls.
- **Gradual Infill Steps:** For models that need to gradually change the fill rate, this value determines how many layers to change at once.

| Infill Patterns | |
|---|--|
|  |  |
| Lines | Grid |
|  |  |
| Triangle | Zig Zag |
|  |  |
| Concentric | Cross |



Octet

Support Tab

| Speed | Infill | Support | Build Plate Adhesion | Retraction | Material | Travel | Machine | Line Width |
|-----------------------------------|--------|---------|---|------------|----------|--------|---------|------------|
| Support Pattern: Zig Zag | | | Enable Support: <input checked="" type="checkbox"/> | | | | | |
| Overhang angle for support(°): 60 | | | Support Top Thickness(mm): 0.8 | | | | | |
| Support infill density(%): 10 | | | Support Bottom: 0.8 | | | | | |
| Support Top Gap(mm): 0.18 | | | Support Interface: 70 | | | | | |
| Support Bottom Gap(mm): 0.1 | | | Support Interface Infill Pattern: Lines | | | | | |
| Distance X/Y(mm): 0.7 | | | | | | | | |

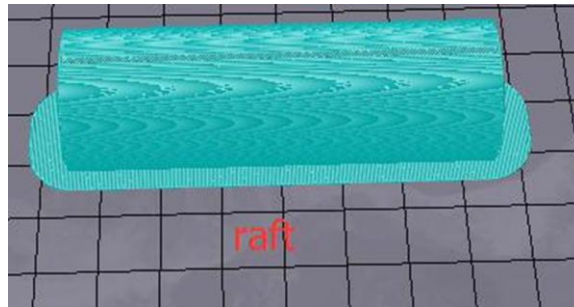
- Support Pattern:** Use the drop-down menu to select one of five support patterns, including **Lines**, **Grid**, **Triangles**, **Zig Zag**, and **Concentric**. The pattern designs are the same as those of the infill patterns of the same name.
 - Lines** support is easier to remove and is used on models that require more support.
 - Grid** support is used on small models, which need fewer supports.
 - Zig Zag** support is used for models that are particularly difficult to remove. It is stronger than Lines support and is better than Grid support.
- Overhang angle:** The overhang angle is the angle between the support and the surface of the model. Larger settings make the supports easier to remove, while smaller settings provide better support. The default angle is 60 degrees.
- Support infill density (%):** Determines the infill density for supports. The higher the density, the stronger the supports.

- **Support Top Gap (mm):** The distance between the top of the support and the model surface. The smaller the distance, the more effective the support, but is more difficult to remove from the model surface, resulting in residual material on the model surface. The larger the distance, the less effective the support, but is easier to remove from the model surface, resulting in a smoother surface.
- **Support Bottom Gap (mm):** The distance between the bottom of the support and the model surface. The effects of this parameter are the same as the effects of the **Support Top Gap (mm)** parameter.
- **Distance X/Y (mm):** The distance between the support and the model surface in the horizontal plane. The effects of this parameter are the same as the effects of the **Support Top Gap (mm)** parameter.
- **Enable Support:** Check this box to use supports.
- **Support Top:** Determines the thickness of the top layer of the supports.
- **Support Bottom:** Determines the thickness of the bottom layer of the supports.
- **Support Interface:** Sets the percentage of infill used inside the supports.
- **Support Interface Infill Pattern:** Use this drop-down menu to choose one of five infill patterns for the supports, including **Lines**, **Grid**, **Triangles**, **Zig Zag**, and **Concentric**. The pattern designs are the same as those of the infill patterns of the same name.

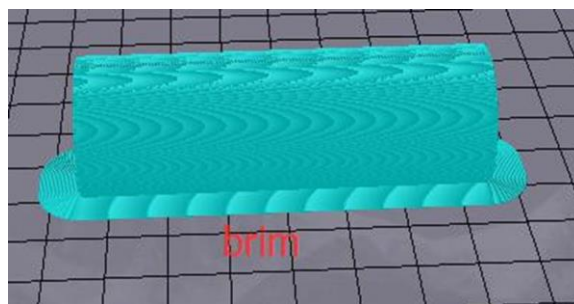
Build Plate Adhesion Tab

| Speed | Infill | Support | Build Plate Adhesion | Retraction | Material | Travel | Machine | Line Width |
|-------------------------|--------|---------|----------------------|------------|----------|--------|---------|------------|
| Raft Air Gap(mm) | | 0.19 | Brim line amount | | 20 | | | |
| Raft Extra Margin(mm) | | 5 | Skirt Line Count | | 1 | | | |
| Raft Base thickness(mm) | | 0.3 | | | | | | |
| Initial Layer Z Overlap | | 0.09 | | | | | | |

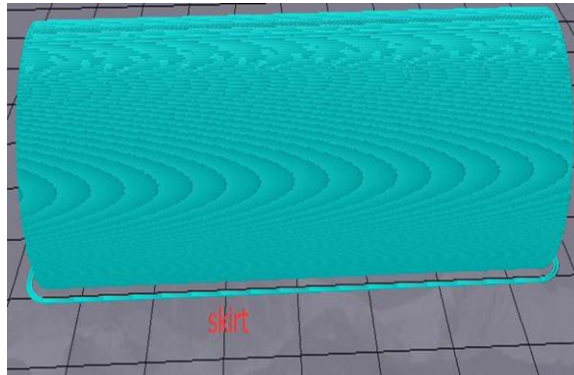
- **Raft Air Gap (mm):** The distance between the raft and the model. This determines the difficulty of removing the raft from the model.



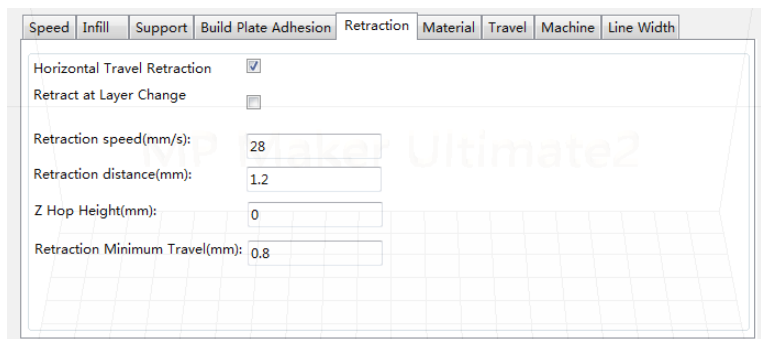
- **Raft Extra Margin (mm):** The distance between the edge of the raft and the model surface.
- **Raft Base thickness (mm):** Determines the thickness of the raft.
- **Initial Layer Z Overlap:** Determines the amount of overlap between the first and second layers of the model.
- **Brim line amount:** Sets the number of ring gaskets that are added to the edge of the model in contact with the build platform.



- **Skirt Line Count:** Sets the number of anti-overflow lines at the end of the model in contact with the build platform.

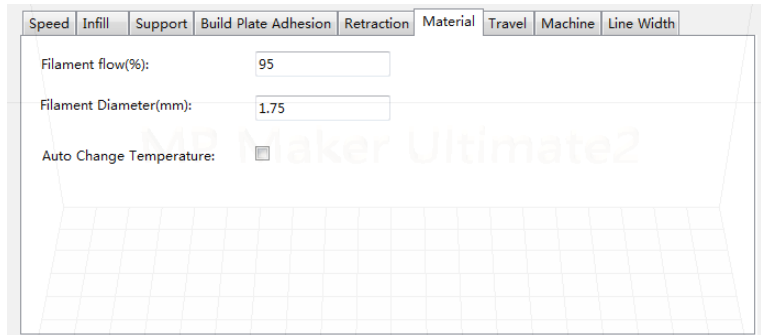


Retraction Tab



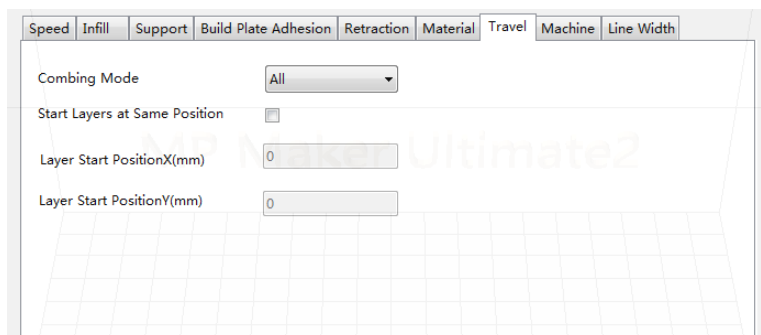
- **Horizontal Travel Retraction:** Check this box to enable filament retraction when the nozzle is not printing and is moving in a horizontal direction.
- **Retract at Layer Change:** Check this box to retract the filament when switching from layer to layer.
- **Retraction speed (mm/s):** Sets the speed at which filament is retracted.
- **Retraction distance (mm):** The distance the filament is retracted within the nozzle.
- **Z Hop Height (mm):** The distance the nozzle is lifted when filament is returned after retraction.
- **Retraction Minimum Travel (mm):** Sets the minimum nozzle movement distance before printing and before retracting the filament.

Material Tab



- **Filament flow (%):** Sets the flow rate of filament in the melting state. This is set according to the type of filament being used. In general, the flow rate for PLA or PLA Pro is 90 and the flow rate of ABS is 100.
- **Filament Diameter (mm):** Sets the diameter of the filament being used. This printer only supports 1.75mm diameter filament.
- **Auto Change Temperature:** When printing, the nozzle will automatically change the printing temperature according to the type of filament being used. General consumable are set by default, so there is no need to select this option.

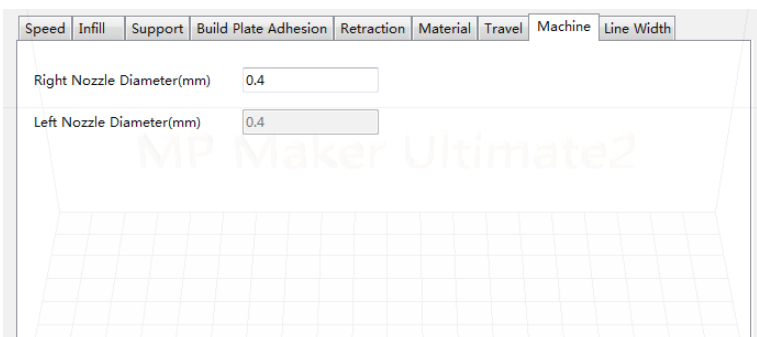
Travel Tab



- **Combing Mode:** This option determines how the nozzle will move when not printing. The **Off** option has the nozzle move the shortest distance between the previous extrusion location and the new start location. The **All** option causes the nozzle to move along anything it has already extruded. The **No Skin** option will avoid the outer layers to move the nozzle to the new start location, which can greatly improve print quality.

- **Start Layers at Same Position:** This option changes the accuracy of the model in the same plane. It is generally set by default.
- **Layer Start PositionX (mm):** This option allows you to change the X axis coordinates of the position of the model layer.
- **Layer Start PositionY (mm):** This option allows you to change the Y axis coordinates of the position of the model layer.

Machine Tab



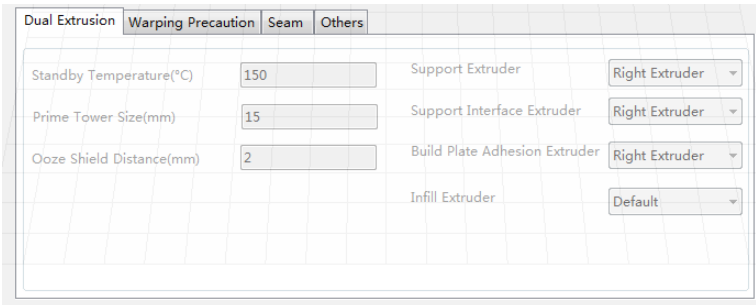
- **Right Nozzle Diameter (mm):** Sets the diameter of the nozzle on the right extruder. This printer only has a single extruder, which is designated the right extruder. The nozzle diameter of this printer is 0.4mm.
- **Left Nozzle Diameter (mm):** Sets the diameter of the nozzle on the left extruder. This printer only has a single extruder, which is designated the right extruder.

Line Width Tab

| Speed | Infill | Support | Build Plate Adhesion | Retraction | Material | Travel | Machine | Line Width |
|------------------------------|--------|---------|----------------------------------|----------------------------|----------|--------|----------------------------------|------------|
| Outer Wall Line Width(mm) | | | <input type="text" value="0.4"/> | Skirt/Brim Line Width(mm) | | | <input type="text" value="0.4"/> | |
| Inner Wall(s) Line Width(mm) | | | <input type="text" value="0.4"/> | Raft Top Line Width(mm) | | | <input type="text" value="0.4"/> | |
| Top/Bottom Line Width(mm) | | | <input type="text" value="0.4"/> | Raft Middle Line Width(mm) | | | <input type="text" value="0.7"/> | |
| Infill Line Width(mm) | | | <input type="text" value="0.5"/> | Raft Base Line Width(mm) | | | <input type="text" value="0.8"/> | |
| Support Line Width(mm) | | | <input type="text" value="0.4"/> | Prime Tower Line Width(mm) | | | <input type="text" value="0.4"/> | |

- **Outer Wall Line Width (mm):** This is the width of the outermost wall line. By lowering this value, higher levels of detail can be printed.
- **Inner Wall(s) Line Width (mm):** This is the width of a single wall line for all walls except the outermost wall.
- **Top/Bottom Line Width (mm):** This is the width of the top and bottom lines.
- **Infill Line Width (mm):** This is the width of a single infill line.
- **Support Line Width (mm):** This is the width of a single support structure line.
- **Skirt/Brim Line Width (mm):** This is the width of a single skirt or brim line.
- **Raft Top Line Width (mm):** This is the width of the lines in the top surface of the raft. These lines can be thin so that the top of the raft is smooth.
- **Raft Middle Line Width (mm):** This is the width of the lines in the middle raft layers. Making the second layer extrude more causes the lines to stick to the build plate.
- **Raft Base Line Width (mm):** This is the width of the raft base layer. These should be thick lines to assist with build plate adhesion.
- **Prime Tower Line Width (mm):** This is the extrusion width of the prime tower.

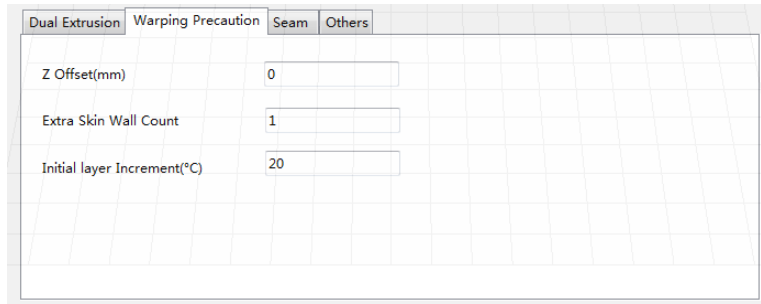
Dual Extrusion Tab



| Dual Extrusion | | Warping Precaution | Seam | Others |
|--------------------------|-----|--------------------|------|---|
| Standby Temperature(°C) | 150 | | | Support Extruder: Right Extruder |
| Prime Tower Size(mm) | 15 | | | Support Interface Extruder: Right Extruder |
| Ooze Shield Distance(mm) | 2 | | | Build Plate Adhesion Extruder: Right Extruder |
| | | | | Infill Extruder: Default |

- **Standby Temperature (°C):** Sets the temperature of the second extruder when not actively printing.
- **Prime Tower Size (mm):** This is the extrusion width of the prime tower. The prime tower is a location that the printer will use to switch nozzles during dual extrusion to prevent a gap in the model by printing a small amount of filament at the prime tower location.
- **Ooze Shield Distance (mm):** This is the size of the circle of protection layers printed on the edge of the model.
- **Support Extruder:** Selects which extruder to use for printing support structures.
- **Support Interface Extruder:** Selects which extruder to use for printing supports.
- **Build Plate Adhesion Extruder:** Selects which extruder to use for printing the initial layer.
- **Infill Extruder:** Selects which extruder to use for printing the infill.

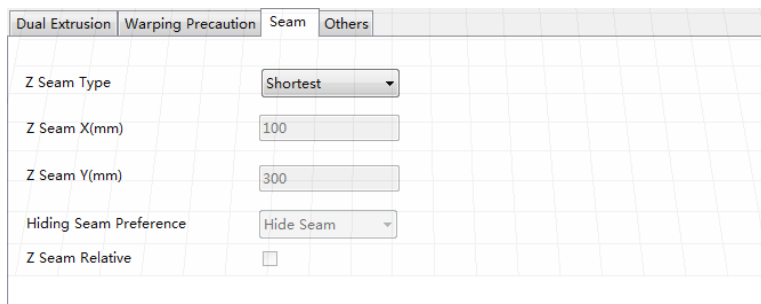
Warping Precaution Tab



The screenshot shows the 'Warping Precaution' tab selected. It contains three input fields: 'Z Offset(mm)' with a value of 0, 'Extra Skin Wall Count' with a value of 1, and 'Initial layer Increment(°C)' with a value of 20. The background of the window has a light gray grid pattern.

- **Z Offset (mm):** When the Z axis bias is set to negative, the nozzle will print closer to the build platform, which helps reduce warping on large models.
- **Extra Skin Wall Count:** This value sets the number of contours on the outer surface of the model.
- **Initial Layer Increment (°C):** This value is used to increase the printing temperature of the first layer, which helps reduce warping on large models.

Seam Tab



The screenshot shows the 'Seam' tab selected. It contains five settings: 'Z Seam Type' is a dropdown menu set to 'Shortest'; 'Z Seam X(mm)' is an input field with the value 100; 'Z Seam Y(mm)' is an input field with the value 300; 'Hiding Seam Preference' is a dropdown menu set to 'Hide Seam'; and 'Z Seam Relative' is an unchecked checkbox. The background of the window has a light gray grid pattern.

Note: The Z Seam is where the printer finishes its motion when printing the skin (outside layer) of a model. This can result in a small blob or zit where the printer changes the Z height. If in alignment, there can be a noticeable line up the side of the print, referred to as a Z Seam, because the filament continues to ooze at the start/stop location. The options on this screen are used to mitigate this effect.

- **Z Seam Type:** Determines where the Z Seam will appear.
 - **Shortest:** This option selects the most time efficient start/stop location.

- **User Specified:** This option allows you to specify the X and Y start/stop location, which determines where the Z Seam will appear.
- **Random:** With this option, the printer will randomly choose the start/stop location, which prevents building a column.
- **Sharpest Corner:** The start/stop location and the Z Seam will appear in the sharpest corner of the model.
- **Z Seam X (mm):** This option is the X location of the Z Seam. This option can only be set when the Z Seam Type is set to **User Defined**.
- **Z Seam Y (mm):** This option is the Y location of the Z Seam. This option can only be set when the Z Seam Type is set to **User Defined**.
- **Hiding Seam Preference:** This option is only available when the Z Seam Type is set to **Sharpest Corner**. It determines whether the Z Seam will be on the inside or outside of the corner.
- **Z Seam Relative:** Checking this box will set the Z Seam in respect to the object's center, whereas leaving the box unchecked will set the Z Seam along the absolute position on the build plate. This option is only available when the Z Seam Type is set to **User Defined**.

Others Tab

| Dual Extrusion | Warping Precaution | Seam | Others |
|---------------------------|-------------------------------------|-----------------|--------|
| Skin Layers Thickness(mm) | 0.8 | Wall Line Count | 2 |
| Horizontal Expansion(mm) | 0 | | |
| Skin Alternate Rotation | <input type="checkbox"/> | | |
| Enable Print Cooling | <input checked="" type="checkbox"/> | | |
| Enable Draft Shield | <input type="checkbox"/> | | |

- **Skin Layers Thickness (mm):** This option determines the thickness of the top and bottom skin layers.
- **Horizontal Expansion (mm):** Thermoplastics tend to shrink when cooling. This option allows you to fine tune the part size to offset shrinkage for prints that require tighter tolerances.

- **Skin Alternate Rotation:** Typically, a 3D printer will print solid layers for the top and bottom layers. When doing this, it changes direction 90 degrees from layer to layer. This setting changes that behavior to add an additional 45 degrees of rotation every two layers.

The following images illustrate the normal print direction of the first three layers.



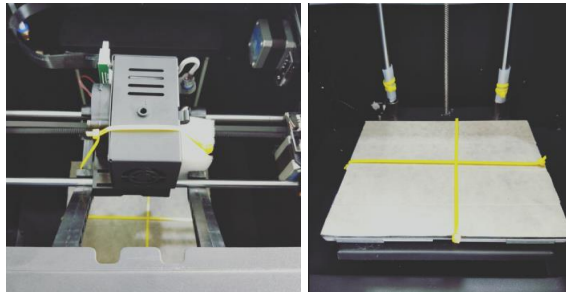
The following image illustrates the print direction of layer three when the **Skin Alternate Rotation** option is enabled.



- **Enable Print Cooling:** When enabled, cooling air will be directed at the printed part.
- **Enable Draft Shield:** When enabled, this printer will print a wall around the model to prevent environmental breezes or drafts from affecting the cooling. This is typically used when **Enable Print Cooling** is disabled for filament that needs a longer cooling time, such as ABS.
- **Wall Line Count:** This option determines the number of walls to print.

GETTING STARTED

1. Open the box and remove the printer from the protective foam. Set it on a flat, stable surface, then remove the plastic film.
2. Use a pair of scissors or side cutters to remove the zip ties and silicon rubber sheets on the Z-axis.



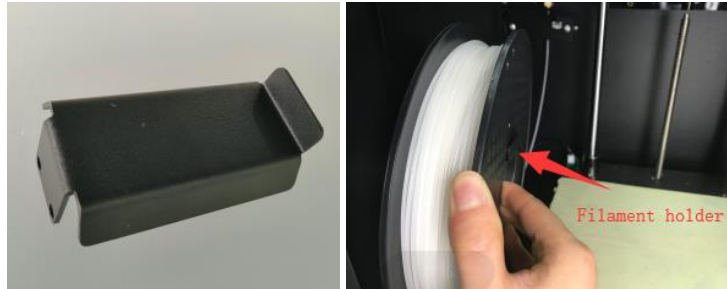
3. Use the included 2mm Allen wrench and the included spanner to remove the fixed support on the Z-axis.



4. Remove the microSD™ card from the accessory box and insert it in the card slot to the left of the display. Next, remove the included AC power cord, plug one end into the AC power socket on the left side of the printer, then plug the other end into a nearby AC power outlet.



- Remove the filament holder from the accessory box and install it inside the printer. Remove the spool of filament and hang it on the filament holder, then insert the end of the filament into the sensor until it comes out of the tube.



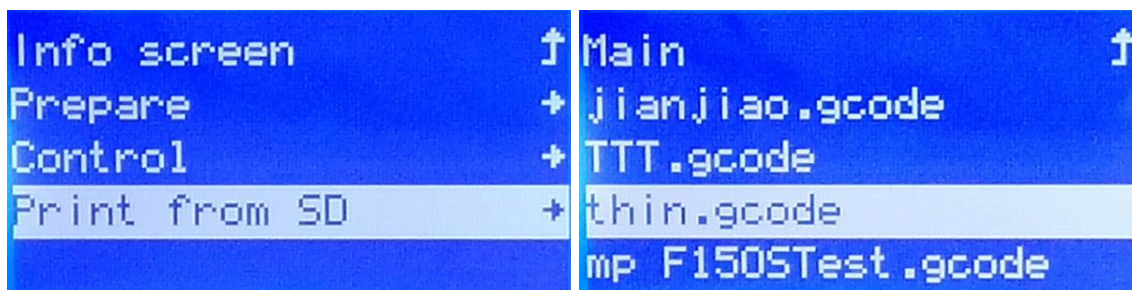
- Press the extruder handle, then insert filament into the hold to a depth of about 4cm.



- Open the **Control** menu, then choose the **Filament In** options. Wait for the filament to finish loading.



- Go back to the **Main** menu, then select the **Print from SD** option. Locate and select one of the gcode files on the microSD™ card to start your first print.



CARE AND MAINTENANCE

All 3D printers require periodic maintenance, including several maintenance tasks that should be performed daily.

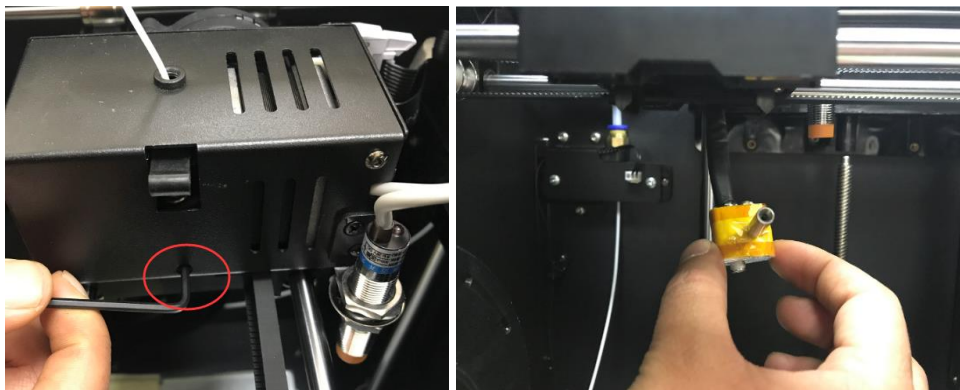
Cleaning the Nozzle

Extruded filament and filament particles can accumulate around the nozzle. Use tweezers and a cleaning cloth to remove extraneous filament.

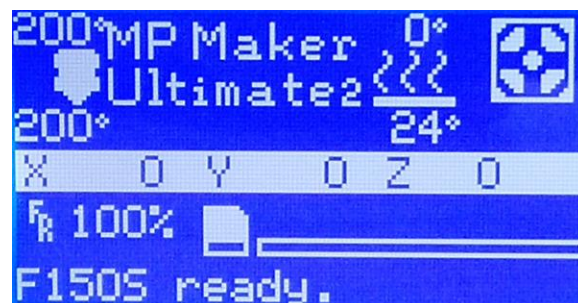
Clearing a Blocked Nozzle

The nozzle can become blocked from time to time. Perform the following steps to clear a blocked nozzle.

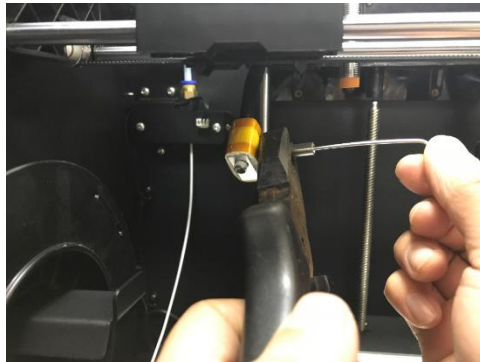
1. Use a 2.5mm Allen wrench to loosen the screw shown in the image below and to the left, then unplug the nozzle.



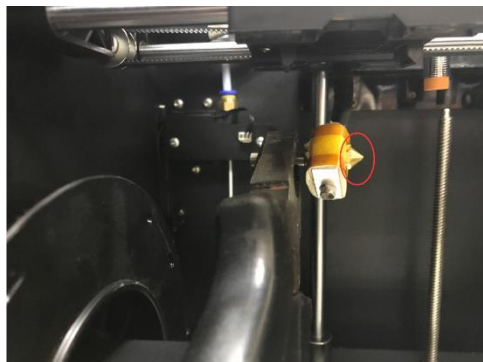
2. Heat the nozzle to 200°C.



3. Grasp the heated nozzle with a pair of pliers, then use a 1.5mm Allen wrench to clear the blockage.



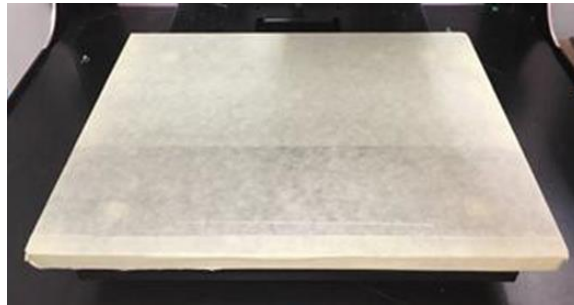
4. Reinstall the nozzle, then secure it in place with the screw.



Replacing the Tape on the Build Platform

Check the surface of the tape on the build platform for wear and unevenness. If it becomes worn, it should be replaced to ensure that the model can adhere properly to the platform. Perform the following steps to replace the tape.

1. Slowly remove the existing tape, taking care to remove any residue.
2. Using the included roll of tape, carefully cover the build platform. Take care to ensure that there are no bubbles under the tape or gaps between the strips of tape.



Optical Shaft and Screw Rod Maintenance

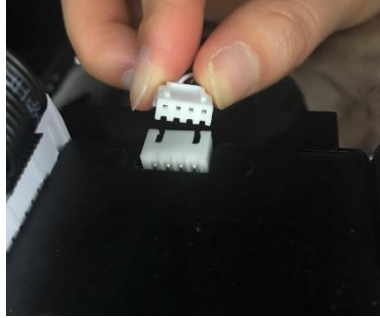
After about 1000 hours of use, the optical shaft and screw rod should be lubricated using silicon grease (not included). After lubrication, run the machine through its full movement range several times to spread the lubrication evenly.

Cleaning the Feed Gear

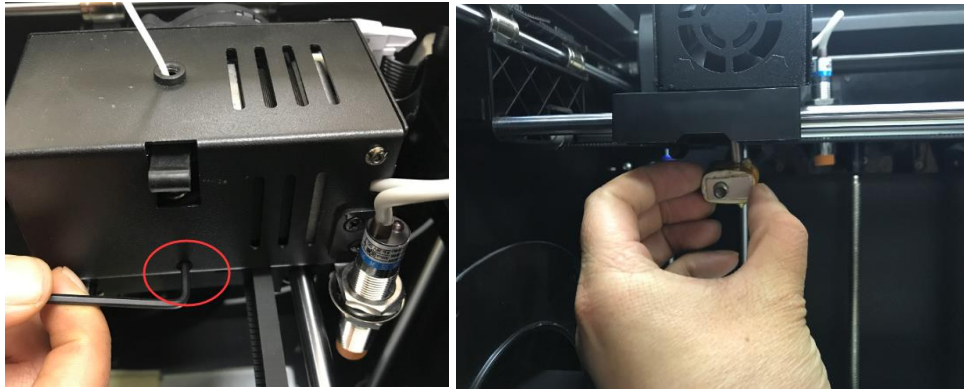
As the printer is used, the feed gear will gradually accumulate filament dust and debris, which can affect its operation. Perform the following steps every 500 hours to clean the feed gear.

1. Ensure the printer is completely shut down.

2. Unplug the cable connecting the nozzle motor.



3. Using a 2.5mm Allen wrench, loosen the screw shown in the image below and to the left, then unplug the nozzle.



4. Completely unscrew the two hex head screws on the right side, then remove the motor and cooling fan.



5. Use tweezers to clean the filament debris on the motor gear.
6. Reinstall the motor and cooling fan, then secure them in place with the two hex head screws removed in step 4 above.
7. Plug the nozzle back in, then tighten the screw loosened in step 3 above.
8. Plug the motor connection cable back into the motor.

SPECIFICATIONS

| | |
|-----------------------------|---|
| Model | 36045 |
| Maximum Printing Area | 7.9" x 5.9" x 5.9" (200 x 150 x 150 mm) |
| Filament Diameter | 1.75mm |
| Nozzle Diameter | 0.4mm |
| Printing Speed | 20 ~ 150 mm/sec |
| Positioning Accuracy | XY Axis: 0.011mm Z Axis: 0.0025mm |
| Supported Filament Types | ABS, PLA, PLA Pro, TPU, TPE, PET, Metal fill, Wood fill, etc. |
| Supported Software | WiiBuilder, Cura, Simplify3D, Slic3r, Kisslicer |
| Supported File Formats | .STL, .gcode, .OBJ |
| Print Interface | USB, microSD™ card |
| Supported Operating Systems | Microsoft® Windows®, Mac® OS X® |
| Input Power | 24 VDC, 10A |
| AC Adapter Input Power | 100 ~ 240 VAC, 50/60 Hz |
| Dimensions | 15.0" x 13.4" x 16.5" (380 x 340 x 420 mm) |
| Weight | 33.1 lbs. (15kg) |

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** or through email by sending a message to **tech@monoprice.com**. Check the website for support times and links.

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

Modifying the equipment without Monoprice's authorization may result in the equipment no longer complying with FCC requirements for Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

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: xxxxxxxx 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
- 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 near the equipment and its access must be easy

WARNING: Use this product in a well-ventilated area

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