

**M** MONOPRICE



# Maker Select Plus 3D Printer

User's Manual

**PN 16711, 21871, 24165**

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## SAFETY WARNINGS AND GUIDELINES

- The printer is very sensitive to static electricity. Always contact a grounded object before working with this device. It is recommended to wear an anti-static wrist strap when working with this device.
- Power off and unplug the printer from the power source prior to making repairs or alterations.
- The printer operates at high temperatures. Always allow the nozzle, the extruded material, and print bed to cool before touching.
- Some types of filament can emit a strong odor when heated. Always use this printer in a well-ventilated area.
- Do not leave the printer unattended when in operation.
- Do not expose this printer to excessive vibration.
- Do not expose this printer to water or moisture of any kind. Do not place drinks or other containers with moisture on or near the printer. If moisture does get in or on the printer, immediately unplug it from the power outlet and allow it to fully dry before reapplying power.
- Do not place the printer near a heat source, such as a fireplace, heating vent, radiator, etc. Do not leave it in direct sunlight.
- This printer uses a NEMA 5-15 three prong, grounded plug. Do not use a "cheater" plug or otherwise bypass the grounding pin.
- Do not allow the power cord to be crimped, pinched, stepped on, etc. 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.
- This device should only be operated by qualified adults.
- In the event of serious operating problem, stop using the unit immediately.
- Always take care when using the scraper. Never direct scraper action towards your fingers.

## INTRODUCTION

Thank you for purchasing this 3D printer from Monoprice! This printer features a single extruder, which is capable of printing in PLA, ABS, and other materials. You can print from a Windows® or Mac® PC using a USB connection or can print from 3D model files stored on a SD™ card, without the need for a PC connection of any kind. This printer is easy to setup and easy to use following the instructions in this manual.

## FEATURES

- Single extrusion print head
- Heated print bed
- Can print PLA, ABS, and other materials
- LCD touchscreen menu system
- Open frame design for ease of use and maintenance
- Includes PLA filament for printing right out of the box
- Includes 4GB SD card with preinstalled sample 3D models

## 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](http://www.monoprice.com) during normal business hours (Mon-Fri: 5am-7pm PT, Sat-Sun: 9am-6pm PT) or via email at [support@monoprice.com](mailto: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 Monoprice 3D printer (extruder tower and heated print bed)

1x Filament spool holder

1x Filament spool stand

1x AC power cord

1x USB cable

1x 4GB SD™ card with sample 3D model files

1x Scraper

1x PTFE tube

1x Hex key set

6x Hex bolts

2x Cable ties

1x Sample roll of PLA filament (10m/32ft)

2x Print bed mats

1x User's manual

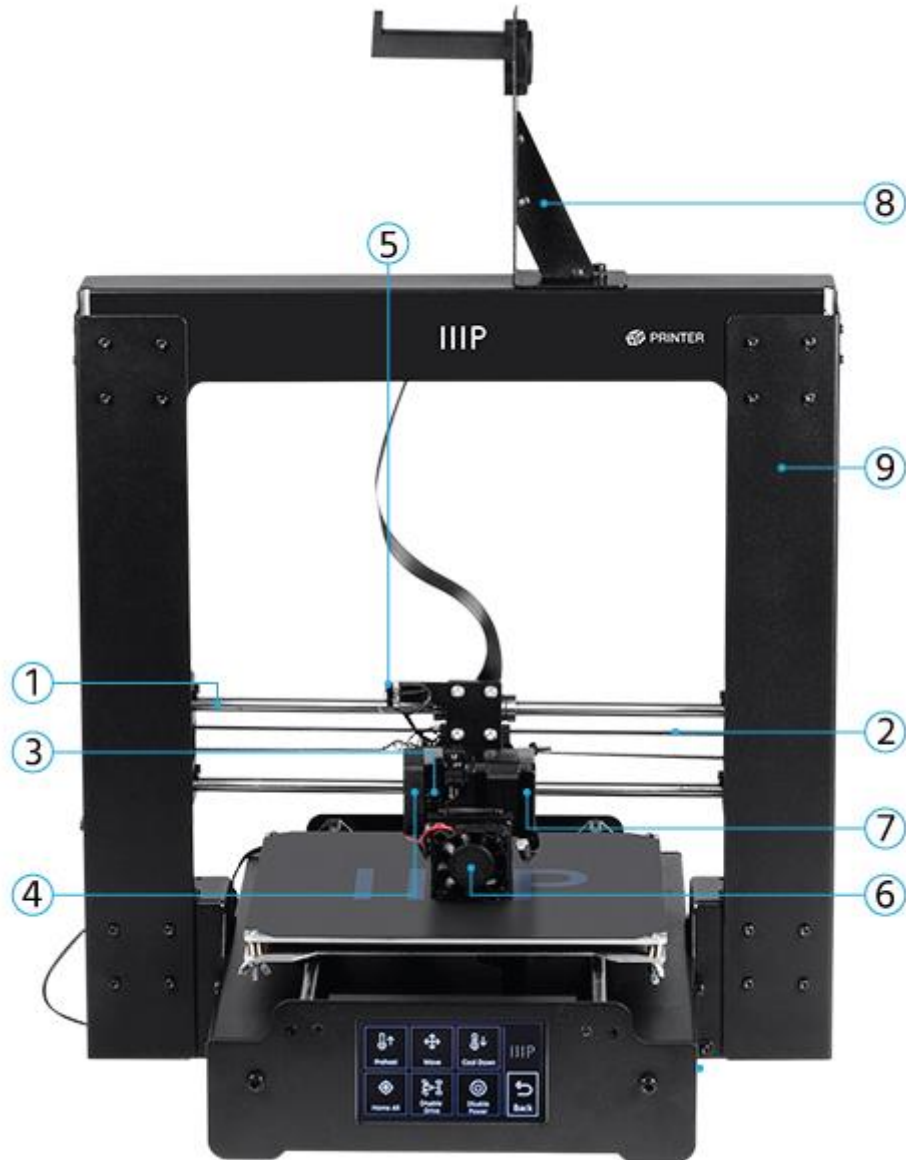
1x Quick install guide

1x Thank you card



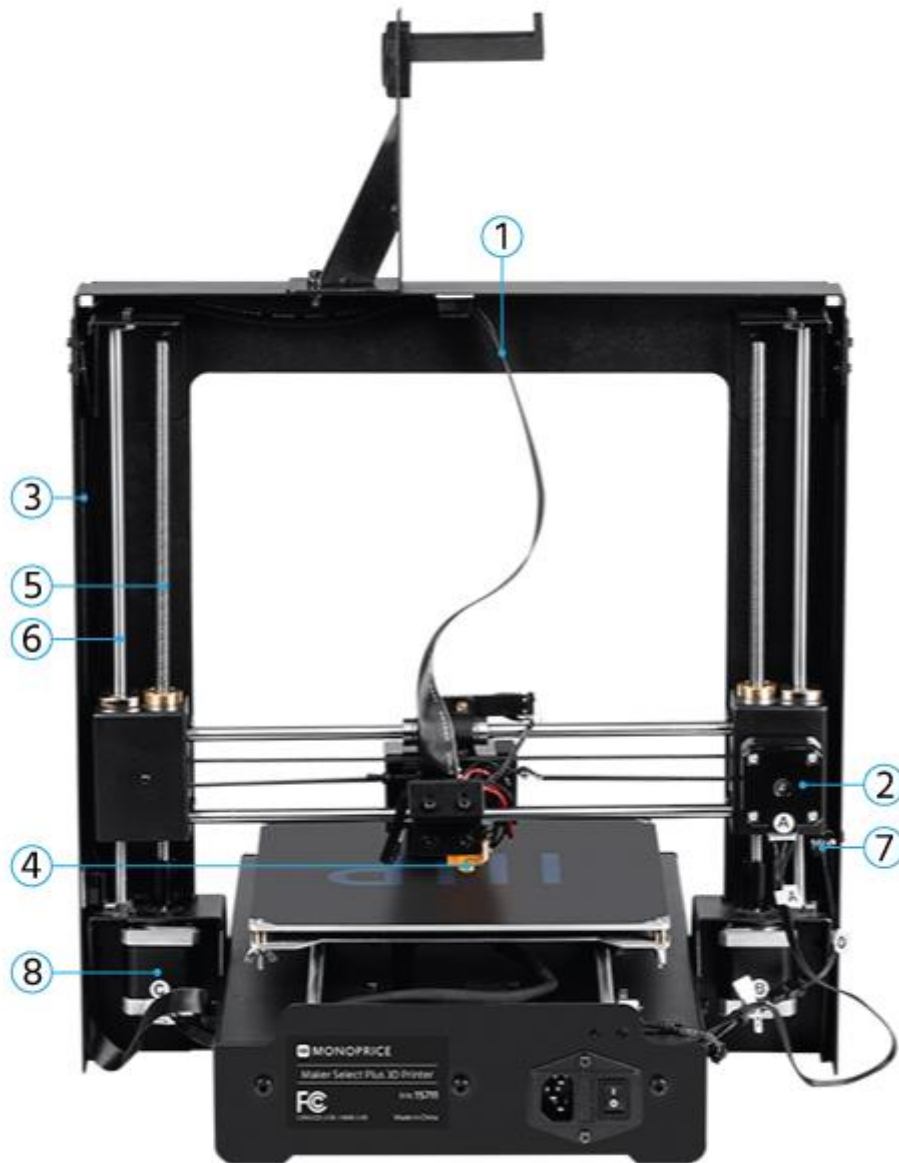
# PRODUCT OVERVIEW

## Front View



- |                          |                                   |
|--------------------------|-----------------------------------|
| 1. X Rail                | 6. Filament Cooling Fan           |
| 2. X Belt Drive          | 7. Extruder Driving Motor         |
| 3. Extruder Spring Lever | 8. Filament Spool Holder Assembly |
| 4. Extruder Cooling Fan  | 9. Tower Frame                    |
| 5. X Stop Micro Switch   |                                   |

## Rear View



- |                         |                         |
|-------------------------|-------------------------|
| 1. Extruder Cable       | 5. Z Drive Screw        |
| 2. X Axis Stepper Motor | 6. Z Rod                |
| 3. Extruder Cable Way   | 7. Z Stop Micro Switch  |
| 4. Extruder             | 8. Z Axis Stepper Motor |



## Bed Assembly



1. Y Stop Micro Switch
2. Heated Print Bed
3. Printing Mat
4. Leveling Wing Nut

5. Print Bed Frame
6. Heating Bed Cable
7. Y Belt Drive
8. Y Rail

## Front and Rear Panels



1. LCD Display
2. Touchscreen
3. SD Card Slot

4. USB Port
5. AC Power Connector
6. Power Switch

# USING THE MENU SYSTEM

This printer uses an LCD touchscreen menu system. Simply press the "button" on screen to activate a function or to change a value. The menu system presents the following options.

## Main Menu

**System:** Displays the System menu.

**Tools:** Displays the Tools menu.

**Print:** Displays the Print menu, which allows selection of gcode files on the SD™ card and editing of printer temperature settings.

## System Menu (Main > System)

**中/En:** Toggles between English and Chinese language in the menu system.

**Home X Y Z:** Moves the extruder and print bed to the "home" position.

**PID:** Displays the PID menu, which determine how the printer determines how much to change temperatures as it prints and moves. This should only be adjusted by advanced users.

**Motor:** Displays the Motor menu.

**Factory Settings:** Resets all printer settings to the values set at the factory.

## PID Menu (Main > System > PID)

**PID-P:** 0-300

**PID-I:** 0-300

**PID-D:** 0-300

## Motor Menu (Main > System Motor)

**X axis:** 0-300

**Y axis:** 0-300

**Z axis:** 0-600

**Extruder:** 0-600

## Tools Menu (Main > Tools)

**Preheat:** Displays the Preheat menu.

**Move:** Displays the Move menu.

**Cool Down:** Disables preheating and allows the bed and extruder to cool down to room temperature.

**Home All:** Moves the extruder and bed to the "home" positions in all three axes.

**Disable Motors:** Disables the stepper motors, but leaves the printer on and leaves the sensors and heaters active.

**Disable All:** Disables the stepper motors and sensors, but leaves the printer powered on and heaters active.

## Preheat Menu (Main > Tools > Preheat)

**ABS:** Begins preheating the extruder to 210°C and the printing bed to 70°C, which are suitable for printing ABS material.

**PLA:** Begins preheating the extruder to 185°C and the printing bed to 50°C, which are suitable for printing PLA material.

## Move Menu (Main > Tools > Move)

**X Axis +/-:** Moves the extruder to the left (-) or right (+).

**Y Axis +/-:** Moves the printing bed back (-) or forward (+).

**Z Axis +/-:** Moves the extruder down (-) or up (+).

**Extruder:** Feeds filament material into/through the extruder (+) or out of the extruder (-).

**Disable Motors:** Disables the stepper motors, but leaves the printer on and leaves the sensors and heaters active.

**Home X:** Moves the extruder to the home position in the X axis only.

**Home Y:** Moves the extruder to the home position in the Y axis only.

**Home Z:** Moves the extruder to the home position in the Z axis only.

## Print Menu (Main > Print)

**SD Card:** This area displays the files on the SD™ card. Use the **Up** and **Down** buttons to move the highlight and allow selection of a different file.

**Status:** Displays the Status menu, which allows you to start and control printing. It also displays temperatures and printing progress.

## Status Menu (Main > Print > Status)

**Continue:** Starts printing the selected file. Also continues a paused print.

**Pause:** Pauses the print.

**Settings:** Displays the Settings menu, which allows you to adjust the Printing Speed, Extruder Temperature, Bed Temperature, and Fan Speed.

**Stop:** Cancels the print in progress and returns to the Main menu.

## Settings Menu (Main > Print > Status > Settings)

**Printing Speed:** Allows adjustment of the print speed settings, from 10% to 300% in 1% increments.

**Extruder Temp:** Allows adjustment of the extruder temperature, from 0°C to 300°C in 1°C increments.

**Bed Temp:** Allows adjustment of the print bed temperature, from 0°C to 125°C in 1°C increments.

**Fan Speed:** Allows adjustment of the fan speed, from 0% to 100% in 1% increments.

**OK:** Changes the settings to the displayed values and returns to the Printing menu.

## UNPACKING, ASSEMBLY, AND SETUP

1. Open the box and remove the large foam assembly containing the printer and accessories.



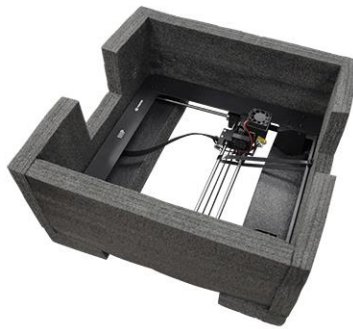
2. Remove the cardboard accessories box.



3. Remove the **Printer Base** assembly.



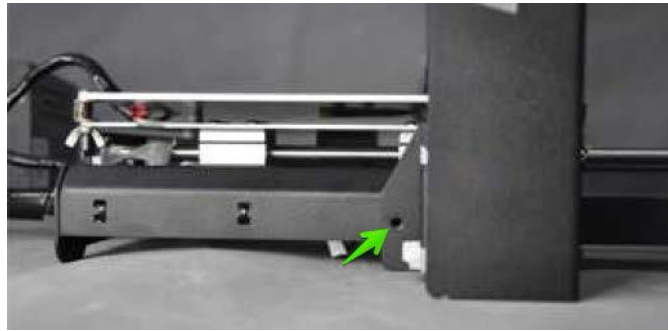
4. Remove the middle foam layer, then remove the **Tower Frame** assembly.



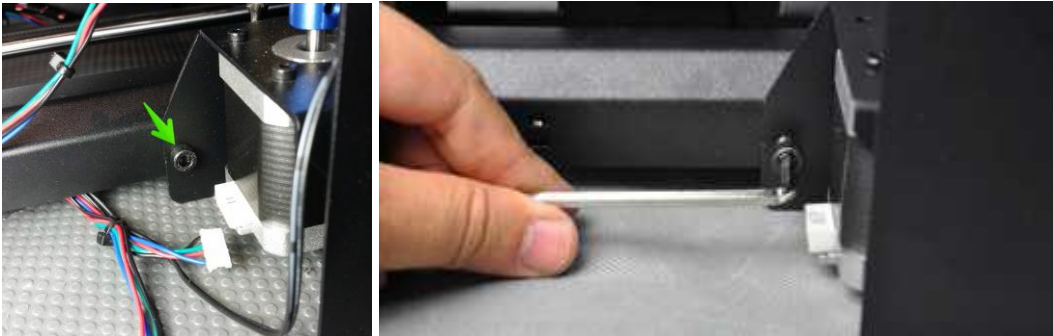
5. Stand the **Tower Frame** up vertically on the flat surface. Carefully cut the zip tie that holds the extruder in place.



6. Insert the **Printer Base** into the **Tower Frame** and align the screw holes on the frame with those on the base.



7. Open the accessories box and remove four **Hex Screws** and the **Hex Wrench** that fits. Insert a screw into the hole on the frame on the left side and tighten it using the hex wrench. Repeat the process on the right side.

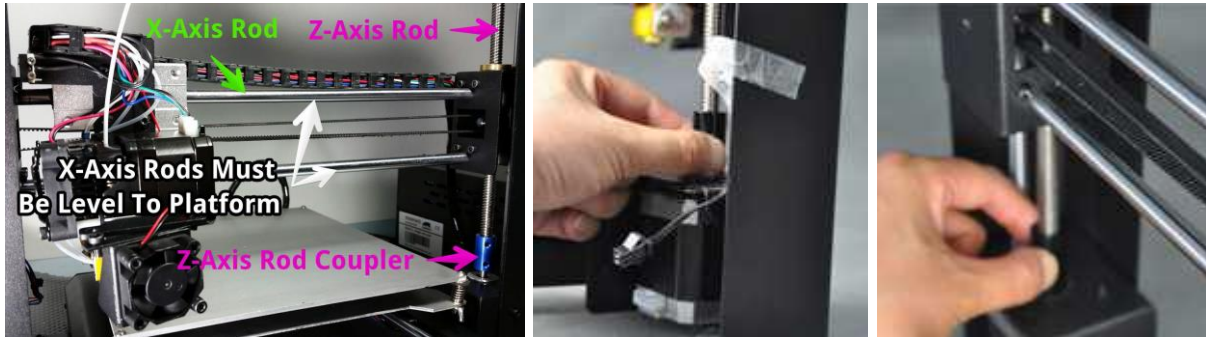


8. Flip the printer onto its left side, then insert a screw from inside the base and secure it to the frame using the hex wrench. Flip the printer onto the other side and repeat the process.





9. Use a carpenter's level to ensure that your flat surface is level. If it is not level, locate a level surface and place the printer on top of it. Next use the carpenter's level to check that the X-axis guide rods are level. If not, raise or lower either side by manually turning the Z-axis couplers on either side of the frame.



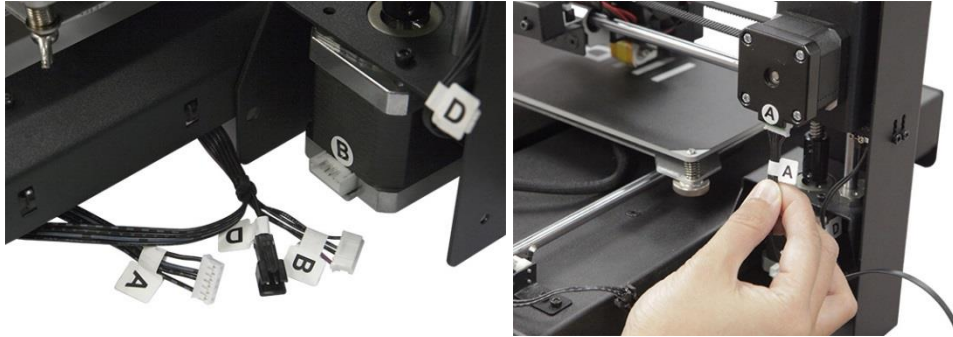
10. Remove one of the plastic nuts from the threaded end of the **Spool Holder**, but leave the second nut in place. Insert the threaded end of the spool holder through the **Filament Stand**, from the side opposite the base support. Thread the plastic nut onto the spool holder and tighten the plastic nuts on each side of the filament stand.



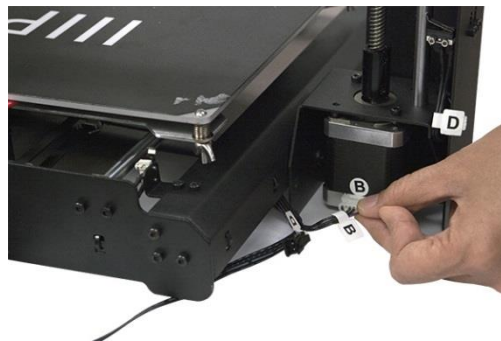
11. Use two hex screws and the hex wrench to attach the Filament Stand to the top of the Tower Frame. Ensure that the spool holder is mounted over the center of the build area.



12. The cable assembly on the left side of the base has three cables coiled and secured with a zip tie. Carefully remove the zip tie. On the left side, insert the white connector labeled **A** into the white connector on the bottom of the X-axis stepper motor, also labeled **A**.



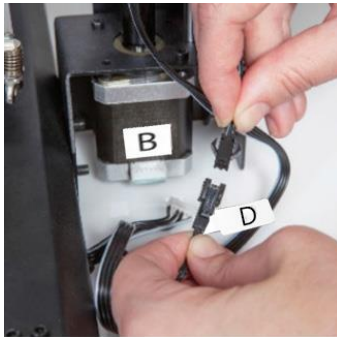
13. On the left side, insert the long cable connector labeled **B** into the motor connector, also labeled **B**.



14. On the left side, insert the white connector labeled **C** into the white connector on the stepper motor, also labeled **C**. Attach the ribbon cable to the cable connector on the left side of the base.



15. Mate the two-pin black cable connector labeled **D** with the corresponding black connector on the cable also labeled **D**, which is attached to the stop switch.



16. One by one, squeeze each corner of the built platform and tighten the knurled nut to compress the spring and reduce the distance between plates to the minimum.

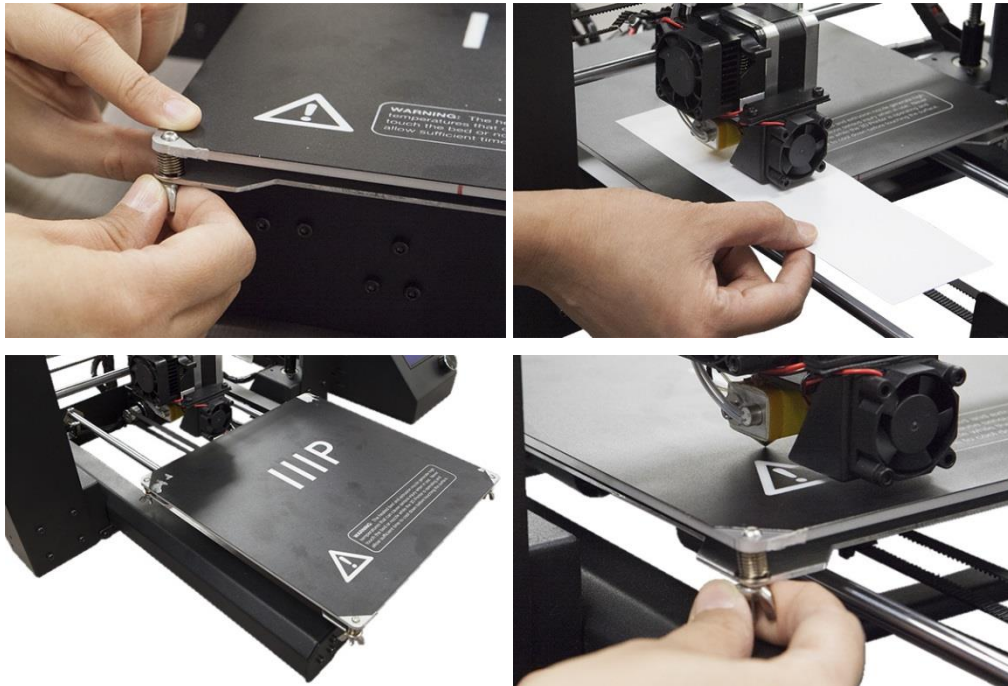


*Note that the above image shows a wingnut. The new printer version uses knurled nuts instead of wingnuts.*

17. Ensure that the power switch is in the OFF position (**O** side depressed). Plug the C13 end of the included **AC Power Cable** into the C14 panel connector on the **Printer Base**, then plug the other end into a nearby AC power outlet. Depress the **I** side of the power switch to power the printer ON.

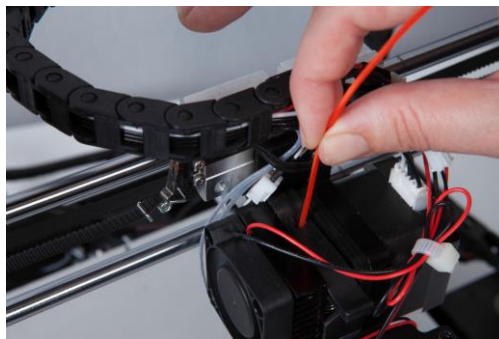


18. Wait for the printer to warm up and initialize. When it is ready, the Main menu will display on the LCD screen.
19. Select the **Tools** button on the Main menu, then press the **Home All** button. Turn the printer off again.
20. Now that the printer is off you can manually move the extruder around the build platform. Because most printing is done near the center of the platform, you should check the nozzle height at points about 2 inches from each corner. Use a single sheet of ordinary printer paper as a guide. The nozzle is at the correct height when you can just slide a single sheet of paper between the build platform and the nozzle. There should be some resistance to free movement, but moving the extruder should not cause the paper to be dragged with the extruder. To raise the build platform, loosen the nuts under the build platform. To lower the build platform, tighten the nuts under the build platform. Note that you may need to slightly squeeze the platform to more easily tighten the nuts. Continue adjusting the platform height until it is at the correct height at all points on the platform.

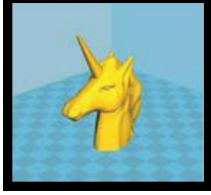

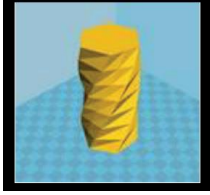



21. Switch the printer on and wait for it to initialize. Press the **Tools** button, then press the **Move** button. Press the **+** button for the **Z Axis** entry several times to raise the extruder until it is at least an inch above the build platform.

22. Press the **Back** button to return to the Tools menu. Press the **Preheat** button, then press the **PLA** button to quickly preheat the nozzle and build platform for use with PLA filament. Press the **ABS** button instead if using ABS filament.
23. The display will show the current and target temperatures. Once the target temperatures have been reached, press the **Back** button, then press the **Move** button.
24. Place a roll of PLA filament on the filament holder. Using a pair of scissors or side cutters, diagonally cut about an inch off the end of the filament. Press down on the lever on the front of the extruder assembly, then feed the filament into the hole in the top of the extruder until you meet significant resistance. Release the lever, then press the **+** button next to the **Extruder** entry on the LCD screen several times, until filament starts to extrude out of the nozzle.



25. Wait for filament to stop extruding, then carefully clean the extruded filament from the nozzle and build platform.
26. Insert the included SD™ card into the slot on the side of the printer base. Press the **Back** button twice to return to the Main menu, then press the **Print** button. The display will show several of the available model files on the SD card. You can use the **Up** and **Down** buttons to scroll up or down through the list. Locate a file you wish to print, then press the filename to select it. The following table shows the included models and the estimated print times.


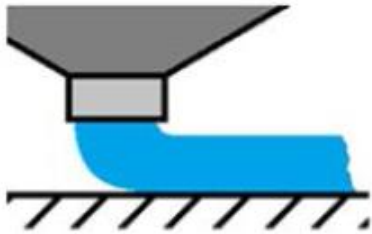
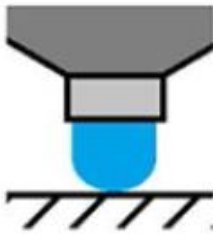

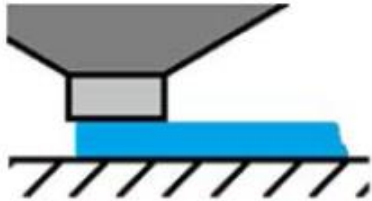
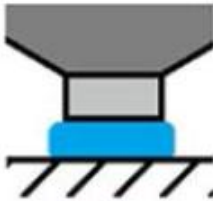

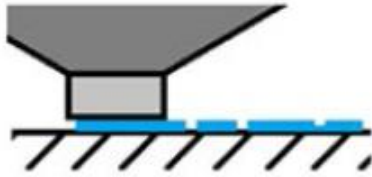
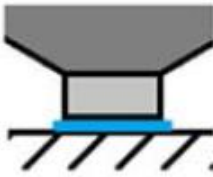
				
<b>Filename</b>	Unicorn	M3 Thumbscrew	Vase	Bot
<b>Size (LxWxH)</b>	47 x 19 x 51 mm	19 x 19 x 4 mm	50 x 50 x 100 mm	26 x 34 x 15 mm
<b>Infill %</b>	100%	100%	0%	20%
<b>Resolution</b>	0.2mm	0.2mm	0.2mm	0.2mm
<b>Print Time</b>	50 min.	6 min.	1 hr. 43 min.	36 min.



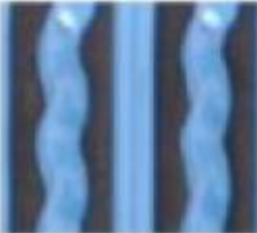
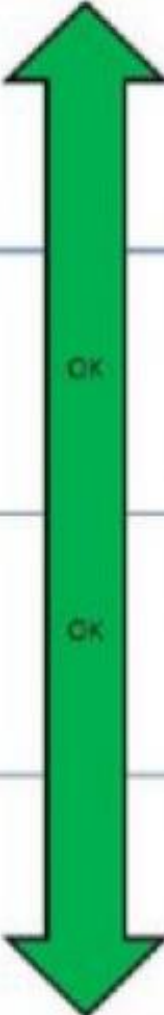







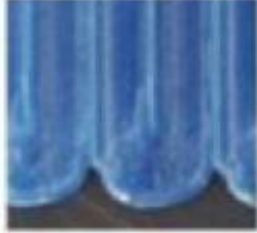



27. The display will change to the Status menu showing the temperatures, filename, and printing progress. Press the **Continue** button to start printing the selected model.

*Congratulations, you have successfully setup your new 3D printer and are printing your first model!*

## FINE TUNING PLATFORM HEIGHT

Getting the platform height correct is critical to a successful print. Examine the extruded material and compare it to the following charts to determine if your build platform is a tad too high, a tad too low, or just right. You may need to make several passes at height adjustment before you are ready for a large, complicated print job.

	SIDE VIEW	END VIEW	COMMENTS
			<b>Nozzle Too High:</b> Insufficient contact area resulting in poor adhesion and extrusion skipping.
			<b>OK:</b> Filament pushed into the build surface slightly to maximize surface area contact while still allowing good extrusion flow.
			<b>Nozzle Too Low:</b> Not enough clearance for the filament to be extruded...this will result in damage to the extruder and/or build surface.

	RAFT	MAGNIFICATION	NOTES
			<b>NOZZLE TOO HIGH:</b> Wavy tracks, or tracks narrower than 1.2mm (use vernier callipers to check)
			
			
			
			
			<b>NOZZLE TOO LOW:</b> Tracks sides pushed over neighbouring tracks.



# MAINTENANCE

Regular maintenance is necessary for printer longevity and proper operation.

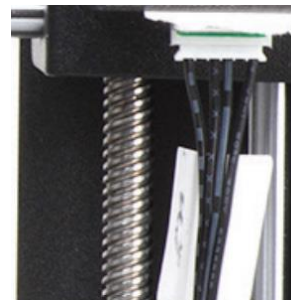
## Nozzle Cleaning

If the nozzle becomes blocked, you can clean it out by using a 0.4mm drill bit. Perform the following steps to clean the nozzle:

1. Starting from the Main menu, press the **Tool** button, then press **Preheat** and press either the **ABS** or **PLA** button, depending on which type of filament is installed. Wait for the nozzle to preheat to the appropriate temperature.
2. Press the **Back** button to return to the Tools menu. Press the **Move** button, then press the - button next to the Extruder entry. Once the filament stops moving on its own, depress the lever on the extruder pull the filament out of the extruder.
3. Press the + button next to the Z Axis entry to raise the extruder to a point where you can insert the drill bit into the nozzle.
4. Press the **Back** button twice to return to the Main menu. Press the **Print** button and then the **Status** button to get to the Status menu. Press the **Settings** button, then press the + button next to the Extruder Temp entry to increase the temperature to at least 215°C. Press the **OK** button save the values and return to the Status menu.
5. Wait until the actual temperature is within a few degrees of the target temperature.
6. While twisting a 0.4mm drill bit in a clockwise direction, insert the drill bit into the nozzle, then remove it. Repeat this process several times until all the excess filament material is cleared from the nozzle.

## Lubricating the Z-Axis

You can use a Teflon<sup>®</sup> grease, such as Magnalube-G to lubricate the Z-axis threaded rods. Place 10 drops of grease evenly along the length of each threaded rod, then raise and lower the platform to spread the lubrication.



## **Lubricating the X and Y Axes**

To lubricate the X and Y axis guide rods, add a single drop of sewing machine oil to each guide rod, then move the extruder and print bed through the full motion in the X and Y axes. Remove any excess oil to prevent dust accumulation.

## **Motor Connections**

Periodically check the cable connections to all the stepper motors and sensors to ensure that they are securely connected.

## **Print Mat**

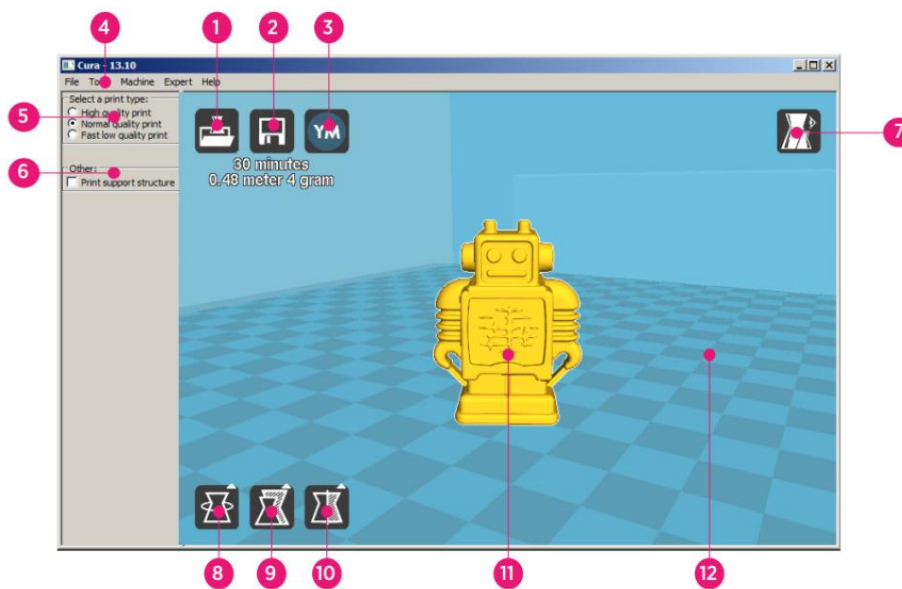
Periodically check the print mat for defects. When the mat becomes worn, it should be replaced. Remove the old mat, then apply the new one. If you do not have any additional mats, you can use ordinary masking tape, painter's tape, or Kapton® tape.

# INSTALLING CURA

While this printer is compatible with many popular 3D printing software packages, the preferred software is Cura. A special version of Cura, with information about this printer already setup, is available for download from our website. To download the software, use your browser to go to [www.monoprice.com](http://www.monoprice.com), type **15711** into the search bar, then scroll down to the Support Files section and click the Cura download link.

After downloading the software, extract it from the .zip file and run the installer. Follow the installation instructions to install the software and any necessary drivers. After installing and launching Cura, the software will ask which 3D printer you are using. Select the **I3/Plus** option.

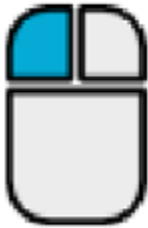
When Cura starts, you will see the following screen with the following elements.



1. **Load File Button:** Click this button to open the file browser, which allows you to select and load a compatible 3D print model.
2. **Save Toolpath Button:** Click this button to save the prepared toolpath to a file on the local hard drive or SD card.
3. **Share Button:** Click this button to share your 3D print file on YouMagine.com
4. **Menu Bar:** The menu bar allows you to select the various options and functions.

5. **Print Profiles:** Use the radio buttons to select one of the print profiles, which determine the print quality.
6. **Print With Support Structure:** When printing models with overhanging elements, it might be a good idea to add support structures.
7. **View Modes Button:** Use this button to select different views of the loaded model.
8. **Rotate Model Button:** Use this button to rotate the model in three dimensions.
9. **Scale Model Button:** Use this button to change the scale/size of the model.
10. **Mirror Model Button:** Use this button to flip/mirror the model in three dimensions.
11. **Loaded 3D Model:** This is the 3D model object.
12. **3D Print Area:** The background area represents the build area and build volume of this printer.

The buttons and wheel of your mouse perform the following functions:



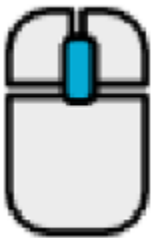
**Left Mouse Button:** Click an object to select it. Click and hold the button, then move the mouse to drag the 3D object around the print area.



**Right Mouse Button.** Click and hold the button, then move the mouse to move the camera around the model.



**Left and Right Mouse Buttons:** Click and hold both buttons, then move the mouse to zoom the camera in or out.



**Scroll Wheel:** Use the scroll wheel to zoom the camera in or out.



**Right Mouse Button + Shift Key:** Hold down one of the shift keys, then click and hold the right mouse button and move the mouse to pan the 3D view.

# MANUAL CURA SETUP

If you have a different version of Cura installed or if you want to set the printer information manually for Cura or another software package, use the settings contained in the following images to configure your software to work with the i3 Plus printer.

*Note that the ideal temperatures to use depend on the type of filament material used. ABS should have a bed temperature of 50 ~ 100°C and extruder temperature of 210 ~ 240°C. For PLA, the ideal temperatures are 0 ~ 50°C and 180 ~ 210°C, respectively. Refer to the temperatures indicated by the filament manufacturer.*

Basic	Advanced	Plugins	Start/End-GCode
<b>Quality</b>			
Layer height (mm)	<input type="text" value="0.1"/>		
Shell thickness (mm)	<input type="text" value="0.8"/>		
Enable retraction	<input checked="" type="checkbox"/>		
<b>Fill</b>			
Bottom/Top thickness (mm)	<input type="text" value="0.6"/>		
Fill Density (%)	<input type="text" value="20"/>		
<b>Speed and Temperature</b>			
Print speed (mm/s)	<input type="text" value="50"/>		
Printing temperature (C)	<input type="text" value="195"/>		
Bed temperature (C)	<input type="text" value="50"/>		
<b>Support</b>			
Support type	<input type="text" value="Everywhere"/>		
Platform adhesion type	<input type="text" value="Raft"/>		
<b>Filament</b>			
Diameter (mm)	<input type="text" value="1.75"/>		
Flow (%)	<input type="text" value="100.0"/>		

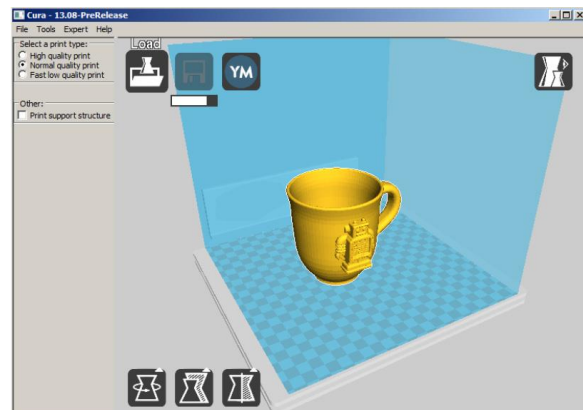
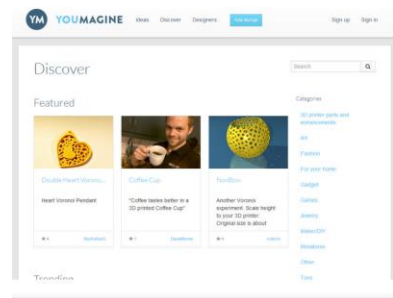
Basic	Advanced	Plugins	Start/End-GCode
<b>Machine</b>			
Nozzle size (mm)	<input type="text" value="0.4"/>		
<b>Retraction</b>			
Speed (mm/s)	<input type="text" value="40.0"/>		
Distance (mm)	<input type="text" value="7"/>		
<b>Quality</b>			
Initial layer thickness (mm)	<input type="text" value="0.3"/>		
Initial layer line width (%)	<input type="text" value="100"/>		
Cut off object bottom (mm)	<input type="text" value="0.0"/>		
Dual extrusion overlap (mm)	<input type="text" value="0.15"/>		
<b>Speed</b>			
Travel speed (mm/s)	<input type="text" value="80.0"/>		
Bottom layer speed (mm/s)	<input type="text" value="20"/>		
Infill speed (mm/s)	<input type="text" value="50"/>		
Top/bottom speed (mm/s)	<input type="text" value="15"/>		
Outer shell speed (mm/s)	<input type="text" value="15"/>		
Inner shell speed (mm/s)	<input type="text" value="30"/>		
<b>Cool</b>			
Minimal layer time (sec)	<input type="text" value="5"/>		
Enable cooling fan	<input checked="" type="checkbox"/>		

# CREATING A GCODE FILE

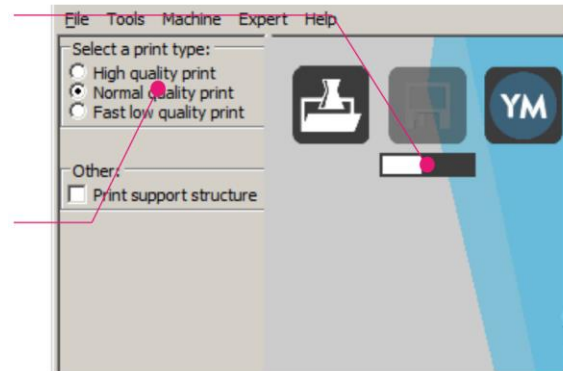
Before making a print, you need a gcode file, which contains all the model information as well as machine specific information about your printer. You can create the proper file using a basic model file in STL format.

YouMagine.com is an online community website dedicated to allowing users to share and download various basic model files, which can be used to create the gcode file. You can freely download and use designs created by other people and can upload your own designs for others to enjoy! Perform the steps in this section to download a model and create the gcode file in Cura.

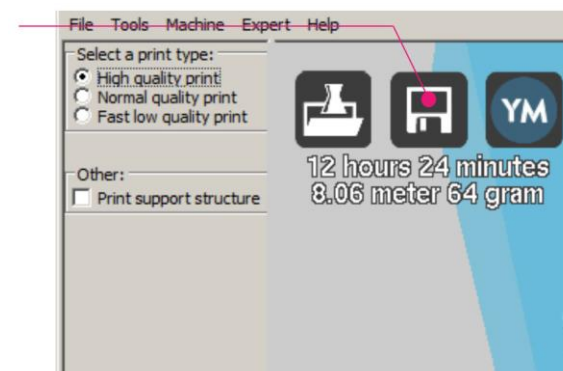
1. Open your internet browser and navigate to **www.youmagine.com**
2. You can browse the site to find models of interest. For this example, we will select the Ultimaker Coffee Cup mode. Click in the search field next to the magnifying glass at the top of the page and type **Coffee Cup**, then press enter.
3. Locate the **Ultimaker Coffee Cup** model and click the link to go to the details and download page. Click the **Download** button and save the file to your system.
4. Launch Cura, click the load button, then locate and select the STL file you downloaded.



5. Once Cura has finished loading the file, it will automatically begin preparing the model for printing on your selected printer model (i3 Plus). A progress bar will appear under the **Save Toolpath** icon. While Cura is working, you can set the print type (quality) and can instruct it to print support structures. This model will require a support structure, so check the support structure box.



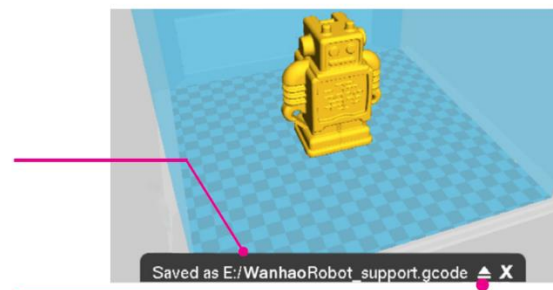
6. Once Cura has finished preparing the model, the **Save Toolpath** icon will activate. Beneath the Save Toolpath icon is an estimate of the amount of time it will take to print the model, as well as the length and weight of filament that will be required.



7. If you have an SD™ card mounted on your computer, the Save Toolpath icon will change to the **Save Toolpath to SD** button. For best results, we recommend that you print from an SD card, rather than using the USB connection and printing from your computer. Click the **Save Toolpath** or **Save Toolpath to SD** button to save the model.



8. When the file save is complete, a message will be displayed on screen indicating the full path and filename of your model file. If you printed to SD card, click the **Eject** button to safely remove the SD card from your computer. If you did not save the file to an SD card, you should copy it to an SD card before proceeding.





9. Ensure that the printer is powered off, then insert the SD™ card with your saved file into the SD card slot to the left of the display on the front of the printer. Power the printer on.
10. Press the **Print** button. Locate a model on the SD card and press the filename to select it. The Status screen will display.
11. Press the **Continue** button to start printing the selected file.
12. While printing is in progress, you can **Pause**, **Resume**, or **Stop** the print by pressing the appropriate buttons. You can also adjust the **Print Speed**, **Bed Temperature**, **Extruder Temperature**, and **Fan Speed** by pressing the **Settings** button.
13. When the print operation is completed, the printer will start to cool down. A progress bar will help you predict the amount of time needed for cool down.
14. Once the cool down process has finished, you can remove the print from the build plate. The best way to do so is with the included scraper.

## 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](http://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](mailto:tech@monoprice.com)

## TROUBLESHOOTING

- Q1: There is a clicking sound from one of the stepper motors.
- A1: One of the stepper motors may not be connected properly. Check each connection and then inspect the cable routing for any faults.

Q2: The GCODE file on the SD™ card is not printing.

A2: Remove the SD card and insert it into your computer. Open the GCODE file using a text editor (e.g., Notepad), and check whether the GCODE is readable or not. If the file consists of multiple ÿÿÿÿ symbols (for example), the file has been corrupted. Try reformatting your SD™ card and reloading the GCODE file. Note that this will delete all files on the SD card.

Q3: Filament is not extruding from the nozzle when a print is started.

A3: Ensure that the nozzle temperature is set to the correct value for the type of material being printed.

Q4: The 3D object is not sticking to the heated print bed.

A4: Check the following issues:

- Ensure that the print bed is clean and free from dust.
- Check that the temperature of the heated print bed is correct for the type of material being printed.
- Check that the bed is level and is the proper distance from the extruder nozzle, which is the thickness of a sheet of printer paper.
- Check to see if there are defects or scratches in the printing mat and change it as necessary. You can use one of the included printing mats, ordinary masking tape, painter's tape, or Kapton® tape.
- Add a brim or raft to the model.

Q5: The printed model is warping or curling.

A5: Check the following issues:

- Check that the temperature of the heated print bed is correct for the type of material being printed.
- Check the infill % of your GCODE. The higher the infill, the more likely it is for the model to warp.
- Add a brim or raft to your file.

Q6: The model appears very 'stringy'.

A6: Check the following issues:

- Ensure that the filament diameter is set to match your filament spool (1.75mm), then try creating a new GCODE file before printing again.
- Ensure that the nozzle temperature is set to the correct value for the type of material being printed.

Q7: The print stopped during the print process.

A7: Check the following issues:

- Check that the GCODE file is complete and not corrupted.
- Check the original model file.

Q8: The motor does not stop at the end of the axis.

A8: Check that the stop micro switches are aligned with the motor mount and are being activated.

Q9: The print head or bed does not move.

A9: Check the following issues:

- Turn the printer off or disable the stepper motors and verify that the parts can be moved by hand. Clear anything that is blocking the movement path.
- Use the options in the Move menu to verify that the motor is turning. If the motor turns, but the belt does not move, you need to tighten the gear motor gear nut.

Q10: The printer is not powering on.

A10: Verify that the power cord is properly plugged into the base, is plugged into a power outlet, and that the power outlet is live.

## SPECIFICATIONS

Print Technology	Fused Filament Fabrication (FFF)
Build Area	7.9" x 7.9" x 7.1" (200 x 200 x 180mm)
Layer Resolution	0.1 – 0.4mm
Positioning Accuracy	X 0.012mm
	Y 0.012mm
	Z 0.004mm
Extruder Quantity	Single Extruder
Nozzle Diameter	0.4mm
Print Speed	10 - 70 mm/sec
Travel Speed	10 - 70 mm/sec
Supported Print Materials	PLA, ABS, PVA, HIPS, Wood, Flex, Conductive
Ambient Operating Temperature	+59 - +86°F (+15 – +30°C)
Operational Extruder Temperature	+338 - +464°F (+170 - +240°C)
Operational Print Bed Temperature	+86 - +158°F (+30 - +70°C)
Slicer Software	Cura Wanhao Edition 16.01
Cura Input Formats	.STL, .OBJ, .DAE, .AMF
Cura Output Format	.GCODE
Connectivity	SD™ card, USB port
Input Rating	100-120 VAC, 60Hz, 3.5A
Printer Frame Dimensions	15.7" x 16.1" x 15.7" (400 x 410 x 400mm)
Weight	22 lbs. (10kg)

# 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 Conformity with Applicable Directives



This equipment complies with the essential requirements listed below:

- EMC Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC
- Ecodesign/ErP/Energy Efficiency Directive 2009/125/EC
- RoHS2 Directive 2011/65/EU
- WEEE Directive 2012/19/EC

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