Migbot S1

Desktop 3D Printer

USER MANUAL

MIGBOT® Made in China migbot@foxmail.com +86-755-66604440 www.migbot.com

ShenZhen Eternal Feat Technology Co.,Ltd.

Migbot S1

USER MANUAL

ETRNAL FEAT

3D Printer—May Dreams Come True

Dominated by professional R&D group, Shenzhen Eternal Feat Tech. Co.,Ltd. extends its business all over the world to provide all-dimensional rapid prototyping solution. Within one year's R&D and production, Migbot has accumulated abundant products' experience, becoming the capital 3D printer professional manufacturer in Asian-Pacific region, selling products to more than 30 countries and regions.

We have went through many international certification like: CE, FCC, ROHS. And we are applying for a number of product patents as well. We can provide you OEM/ODM and sincerely invite you to join us!

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Building C, East Zone NO.1 Shangxue Industrial Area
Longgang District, Shenzhen City,China.

- 3D Printer Produces
- 3D Printer OEM/ODM
- SLA/DLP Photocuring
- 3D Printer Filament Processing

TABLE OF CONTENTS

This User Guide is designed to start your journey with the Migbot S1 Desktop 3D Printer in the right direction. Even if you are familiar with earlier Migbot S1 machines. it is essential that you read through this guide, as there are several important and exciting updates with the Migbot S1.

In chapter A and B, you will learn the basics of the Migbot S1, how to unbox safely, and how to get set up. Chapters C~E will take you though leveling, printing, maintenance, and troubleshooting,

Migbot is excited to welcome you to the world of the Migbot S1. Following this guide will help ensure that you are getting the most out of your machine, and that you continue to make amazing things.

WARNING : The Migbot S1 generates high temperatures and includes moving parts that can cause injury. Never reach inside the Migbot S1 while it is in operation. Always allow the Migbot S1 to cool down before reaching inside.

WARNING : Do not leave the Migbot S1 unattended during operation.

WARNING : If opening the Migbot S1 for service, ensure that the power supply is turned off and the cord is disconnected.

SPECIFICATIONS

PRINTING

Print Technology:	FDM Technology
The Max Printer Size:	28*20*19cm
Nozzle Diameter:	0.1-0.4mm
Layer Resolution:	XY:11 microns{0.0004in} Z:4micons{0.00016in}
Filament Diameter:	1.75mm{0.069in}
Nozzle Diameter:	0.4mm{0.015in}

PHYSICAL DIMENSIONS

Without Spool:	48*37*41cm
With Spool:	48*50*41cm
Shipping Box:	58*45*52cm
Net Weight:	15kg
Shipping Weight:	18kg

TEMPERATURE

Ambient Operating Temperature:	15°-32℃[60°-90°F]
Storage Temperature:	0°-32℃[32°-90°F]

MECHANICAL

Chassis:	Stainless Steel
Body:	304 STEEL
Build Platform:	Aluminum heating plate
XYZ Bearings:	Wear-resistant,oil-infused bronze
Stepper Motors:	1.8° step angle with 1/16 micro-stepping

ELECTRICAL

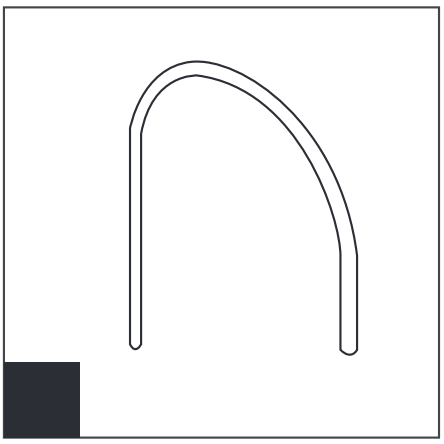
AC Input:	100-240V, ~2amps, 50-60Hz
Power Requirements:	24V DC @ 6.25amps
Connectivty:	USB, SD card[FAT 16,max. 2GB]

SOFTWARE

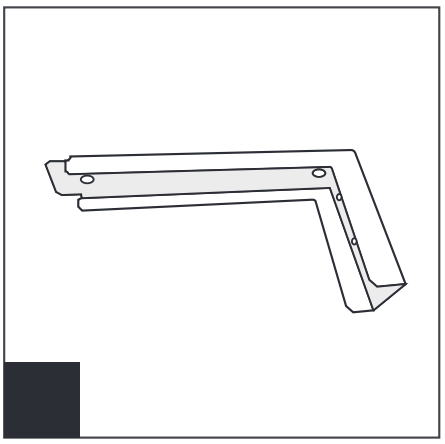
Support Software:	Cura, Slic3r
File Types :	.stl, .Gcode
Supports:	Windows(XP/7/8) Linux(Ubuntu 10.04+) Mac OS X(10.7/10.8)

WHAT IS IN THE BOX

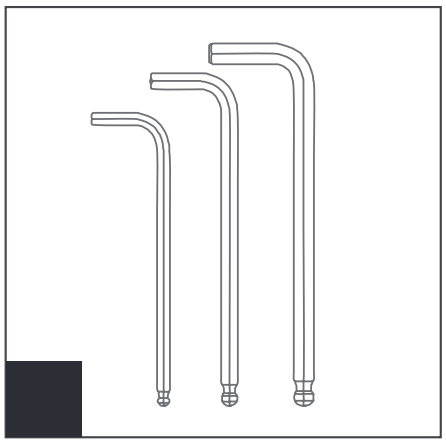
Pliers



1 PC Filament Guide Tube

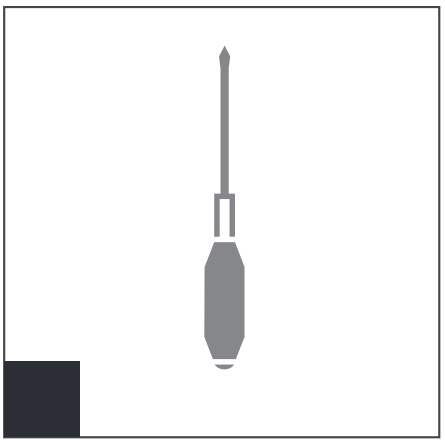


1 PC Spool Holder

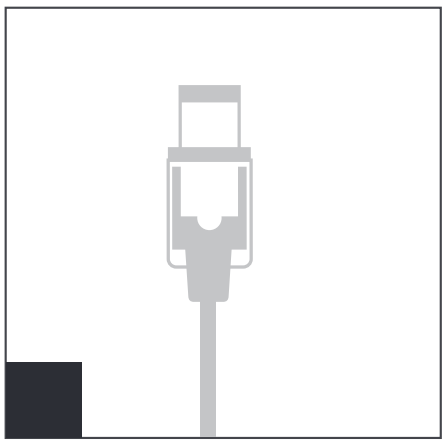


Hex Wrenches

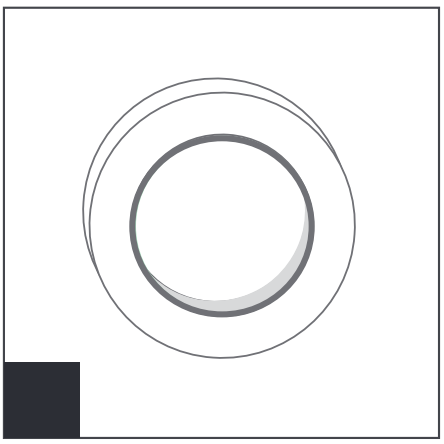
1 PC SD Card



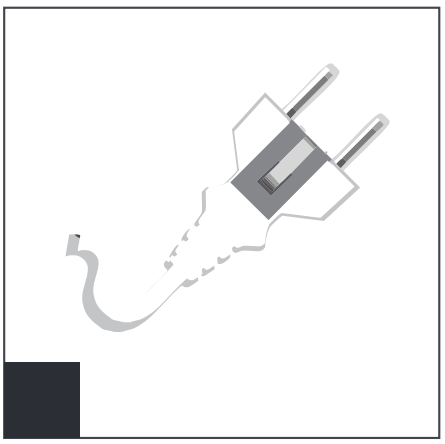
Screwdriver



USB Cable

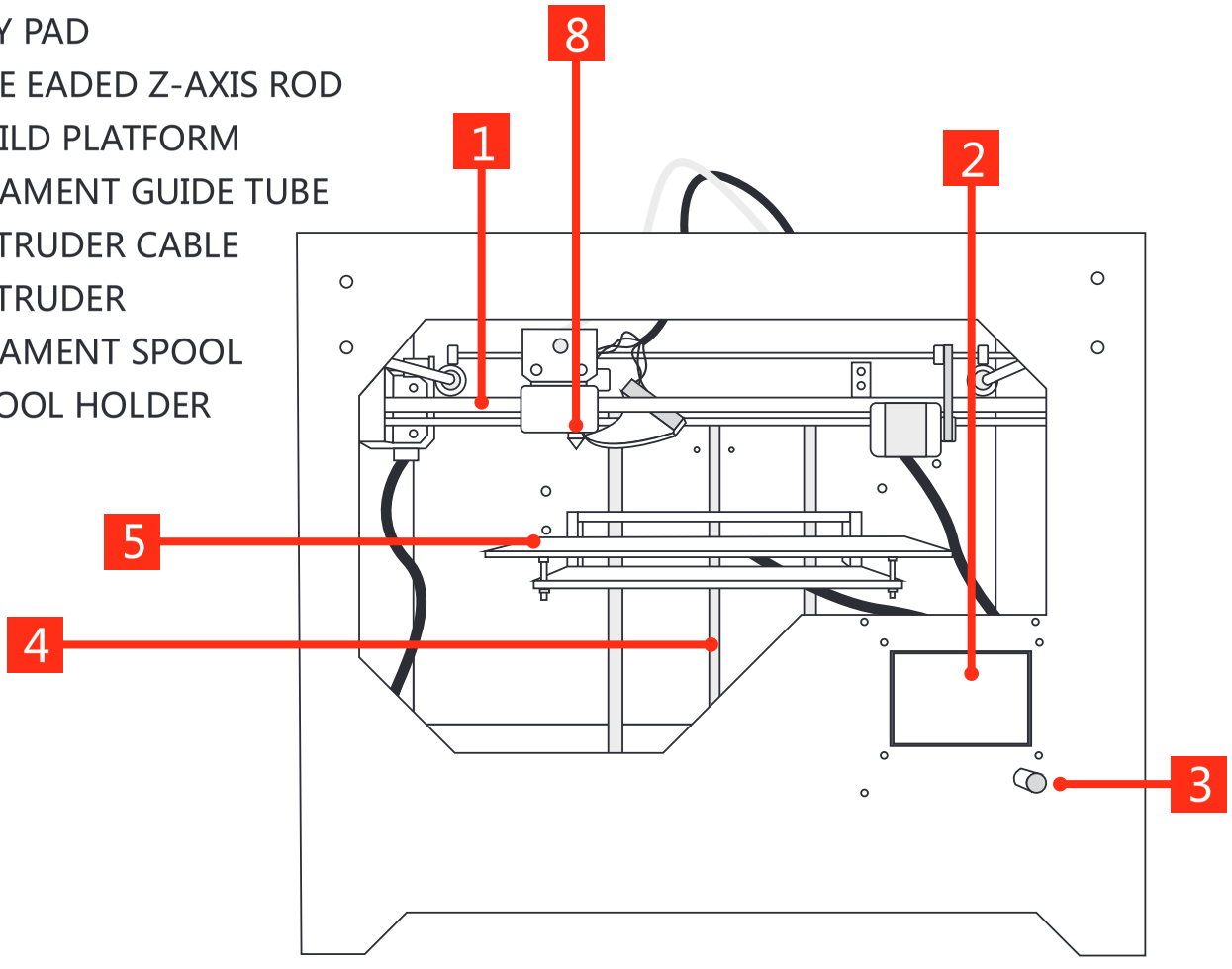


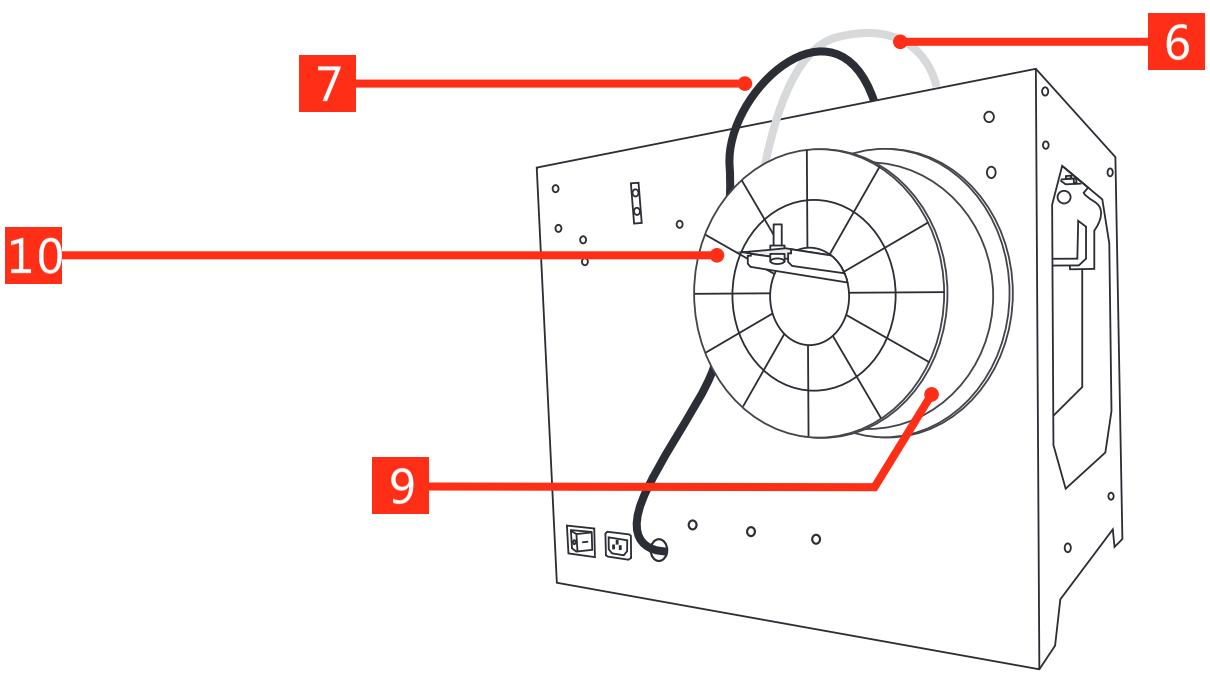
1 PC Textured Plastic



Power Cord

[1] GANTRY SYSTEM
[2] LCD PANEL
[3] KEY PAD
[4] THE EADED Z-AXIS ROD
[5] BUILD PLATFORM
[6] FILAMENT GUIDE TUBE
[7] EXTRUDER CABLE
[8] EXTRUDER
[9] FILAMENT SPOOL
[10] SPOOL HOLDER

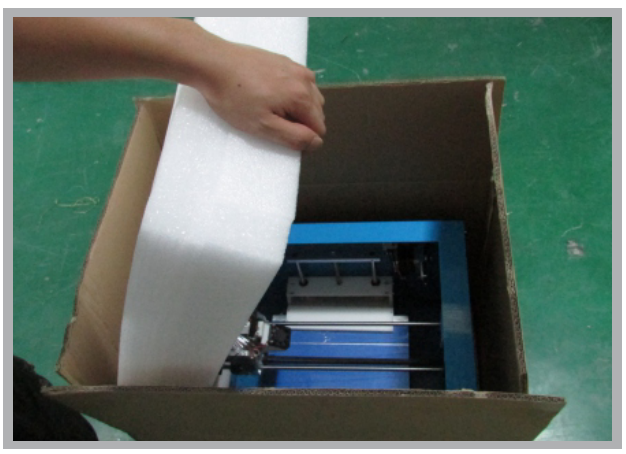




Opening the Box

A. Place the Migbot S1 box on the ground.

B. Open the box and remove the sponge at top of the box。



Removing the Migbot S1

A. Using hand-held live on both sides of the machine, the machine is removed from the carton, flat on the floor or on the desktop.

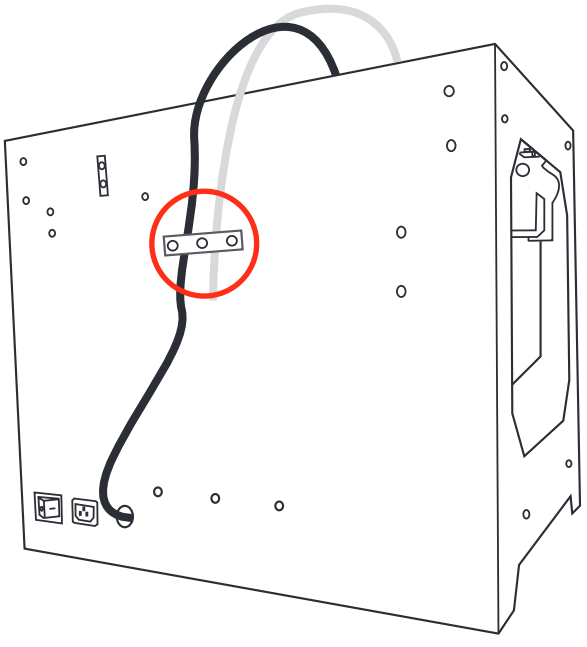
B. Find package manuals, inventory packaging accessories. If you find that the package is missing parts, please contact our sales staff or sales department.
migbot@foxmail.com

NOTE: Your Migbot S1 should now be fully unpacked. We recommend that you keep the box and foam inserts in case you need to transport you

Installing the filament Guide Tube

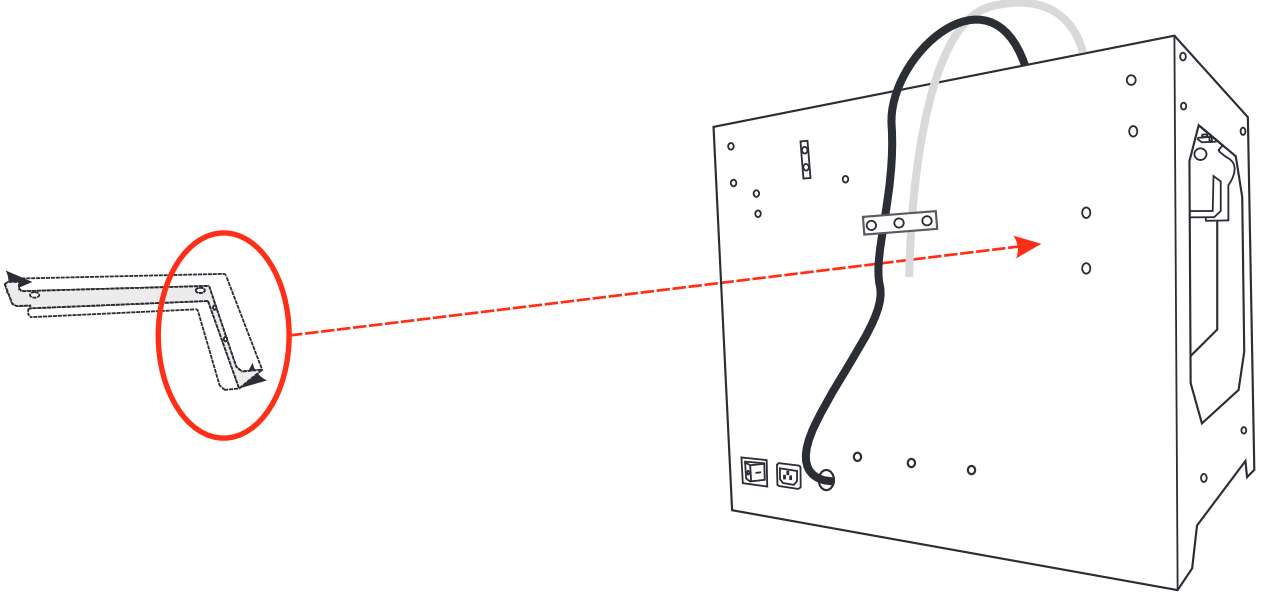
A. Locate the filament guide tube. Insert one end into the hole at the top of the extruder and push the tube in as far as it will go.

B. Insert the other end of the filament guide tube into the left guide tube holder(when viewed from the back)on the back of the Migbot S1. Make sure that the end of the filament guide tube is flush with the bottom of the guide tube holder. The filament guide tube should not hang down past the bottom of the guide tube holder.



Installing the Spool Holder

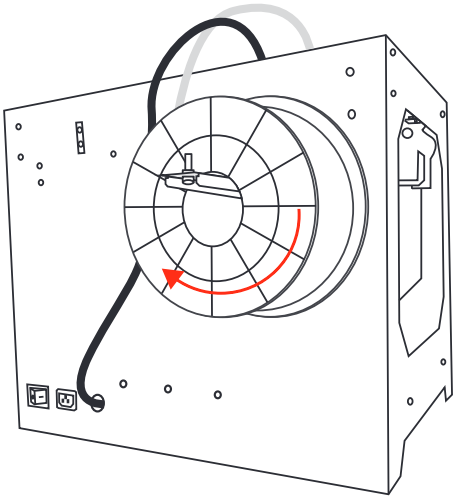
A. Locate the spool holder.Tighten it with the screws.



Mounting the Filament Spool

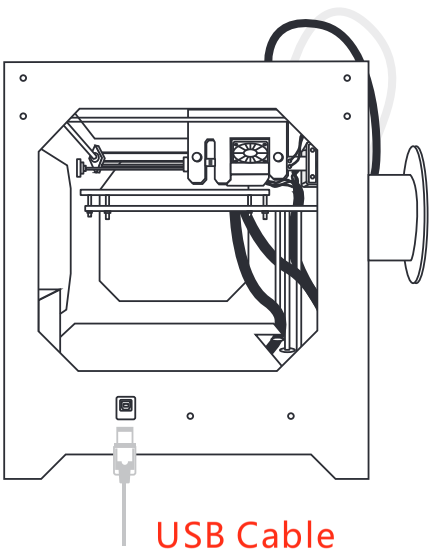
A. Open the box containing the ABS/PLA filament. Remove the spool from its bag.

B. Fit the spool onto the spool holder. Ensure that the ABS/PLA filament unwinds
clockwise(When viewed form the back).Squeeze the spool holder.



Attaching the USB Cable

A. Locate the USB-A to USB-B cable. Insert the USB cable into the USB-B Port on the right of the Migbot S1. Do not attach the other end of the USB cable to anything.
Do not plug the AC power cord into an electrical outlet until the following steps.

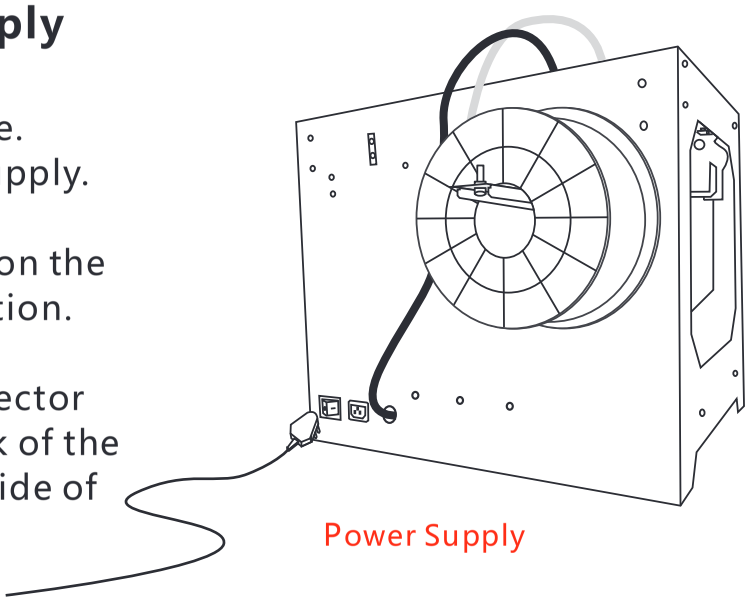


Attaching the Power Supply

A. Locate the power supply cable. Attach the cable to the power supply.

B. Ensure that the power switch on the Migbot S1 is set to the OFF position.

C. Insert the power supply connector into the power input on the back of the Migbot S1. Ensure that the flat side of the connector faces down.

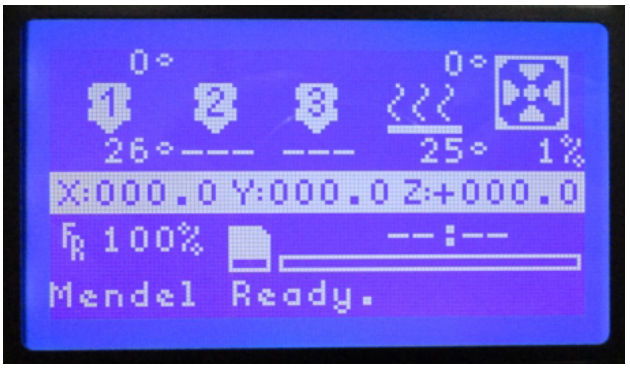


Powering on the Migbot S1

A. Plug the AC power cord into an electrical outlet.

B. Set the power switch on the ON position.

C. The Migbot will display "Mendel Ready" text on the LCD panel
This is the beginning of the startup script that will guide you through initial calibration and your first build.



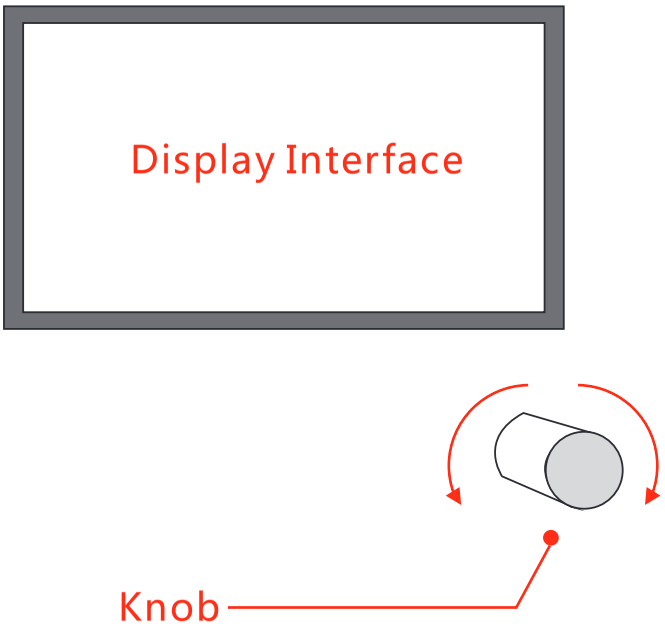
Knob Operation

•The display can be done by metal knobs below the display control.

•When you press the knob to access the menu options.

•By turning the knob to the left and right to select menu items.

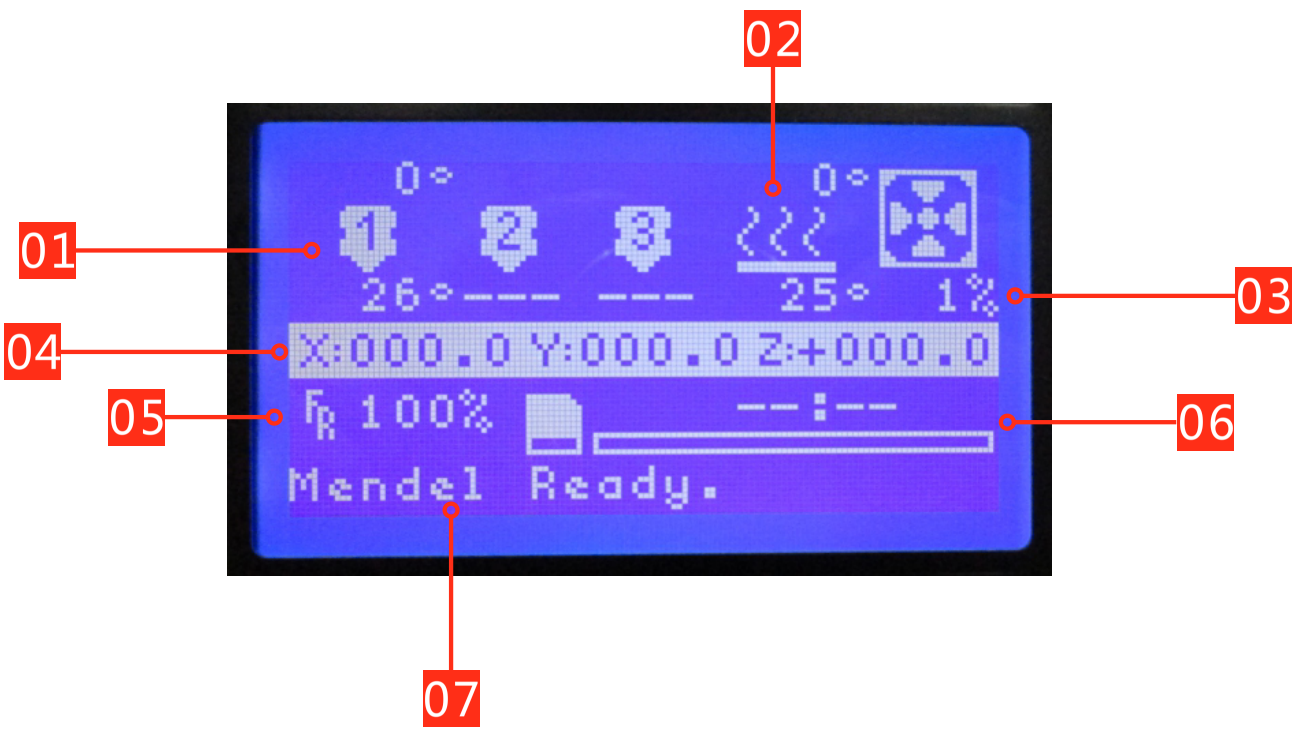
•After selecting the option, press the knob again, you can confirm the operation.



Display Menu

Info screen	The current status of the printer is displayed
Prepare	Preparation before boot-related printing operations
Control	Temperature Action Restart the printer
No card (Print from SD)	Select the SD card File Print

* Detailed Analysis of Observation Surface



[1] Nozzle Temperature
[2] bed Temperature
[3] rate progress
[4] XYZ axis position
[5] Print speed
[6] Progress Bar And Time-consuming
[7] Printer Status

! Why Leveling is Important

•If the build platform is too far from the extruder nozzle, or if one part of the plate is farther away from the nozzle than another part, your builds might not stick to the build plate.

•If the build platform is too close to the extruder nozzle, the build plate can block the Printer PLA filament from extruding from the nozzle.

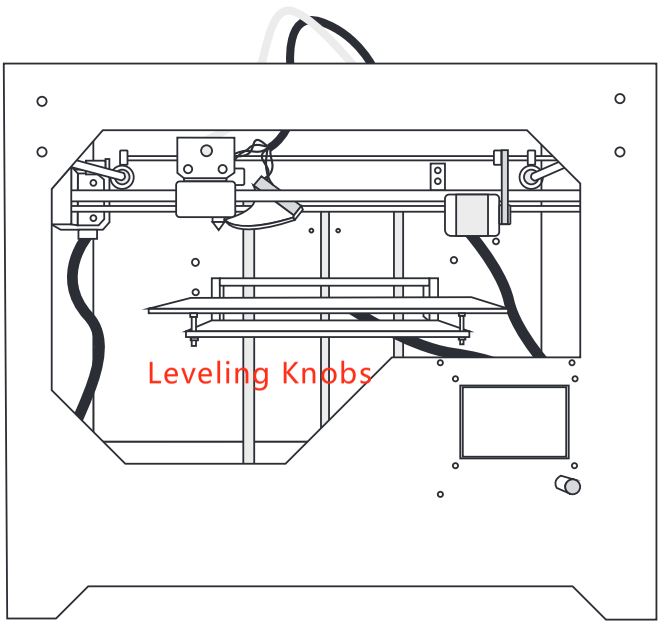
•Leveling your build plate often will help ensure that objects adhere well to the plate.

* How to Level the Build Plate

To level the build plate, you must adjust the four knobs which under the build platform. These four knobs lower and raise the build plate.

•Tightening the knobs [turning them to the right] moves the build plate away from the extruder nozzle.

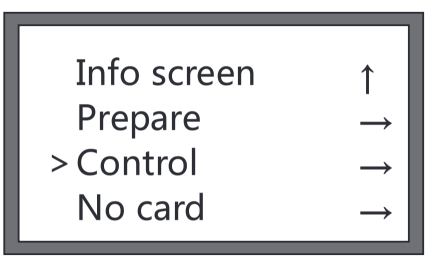
•Loosening the knobs [turning them to the left] moves the build plate closer to the extruder nozzle.

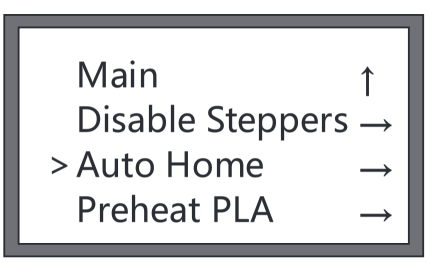


Step 1、Auto Home

A. Enter the main menu, select "Prepare"

C. Enter this option, Select "Auto Home"

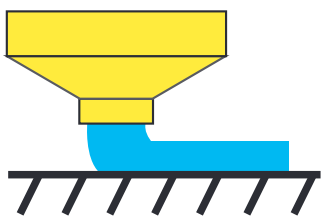


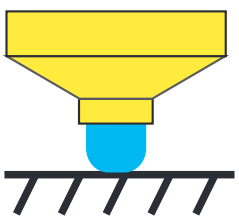


Step 2、Leveling Knobs

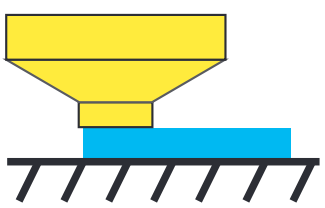
As you adjust each knob, make sure A4 Paper just slides between the nozzle and build plate. You should fell some friction on the A4 Paper but still be able to easily pass the Paper between the plate and the extruder nozzle without tearing or damaging the Paper.

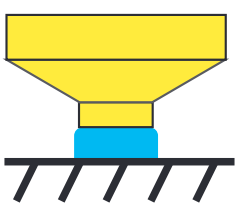
Compare you printed raft with the following Nozzle height checking diagram to ensure you have the correct nozzle height and filament width.



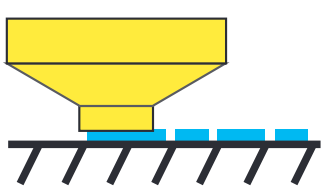


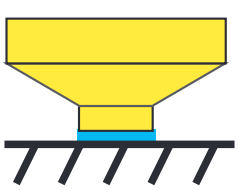
NOZZLE TOO HIGH:
Not enough pressure on the filament into the bed, therefore small contact area between filament and bed. Raft may detach in mid print .





OK:
Filament pushed into the bed slightly to maximise surface area contact with bed, but still maintain extrusion flow.





NOZZLE TOO LOW:
Not enough clearance for the filament to be extruded, damaging either the extruder or the bed.

Feed the Filament Through the Filament Guide Tube

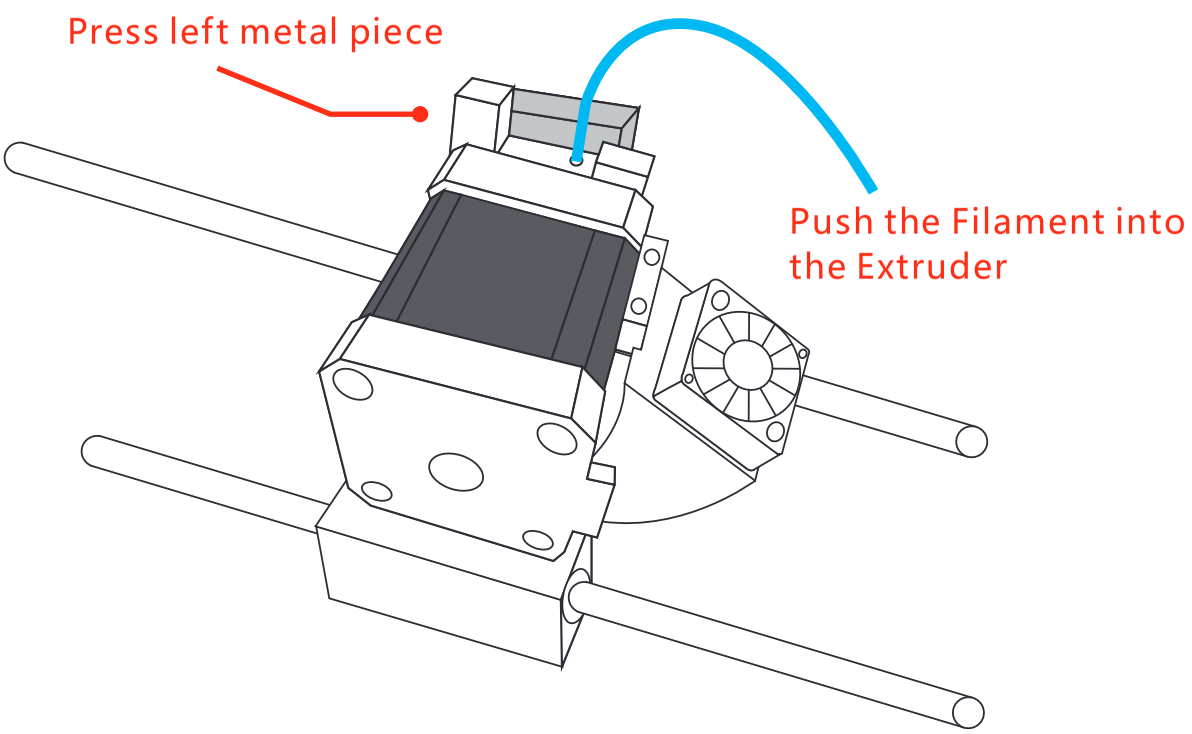
Free the end of the PLA Filament from the filament spool, With a pair of scissors, cut a clean edge. Feed the end of the PLA filament into the end of the guide tube where it attaches to the back of the Printer. Feed the PLA Filament through the guide tube until it emerges from the other end of the tube.

Push the Filament into the Extruder

A. To use one hand to push the loading button down and take the end of the PLA filament closest to the extruder and firmly push it into the bole in the top of the extruder. Ensure that the filament goes into the center of the opening and doesn’ t get caught at the edge of the opening.

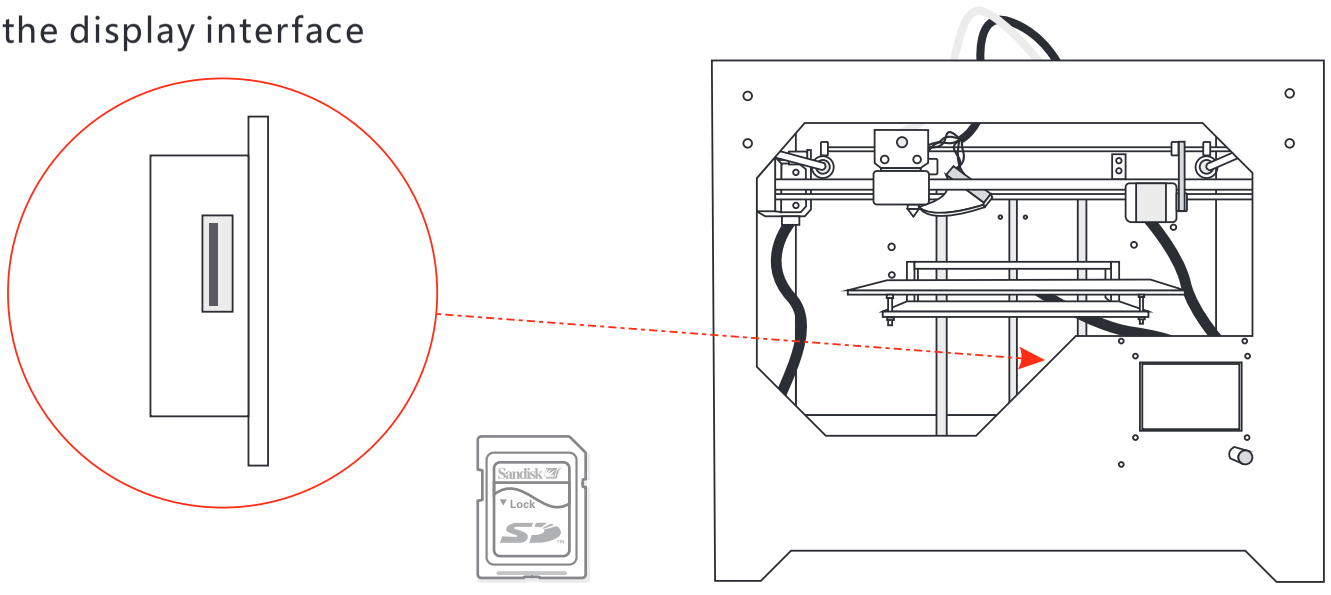
B. Press down on the piece of metal, hard pushed to PLA Filament the bottom of the extruder.

C. Loosen metal piece, pull the PLA filament slightly to make sure filament into the extruder.



Locate the SD Card

The Migbot S1 package includes an SD card pre-load with files for making test objects.
Insert the SD card into the left rear of the display interface



Select a Project from the SD Card

After you have successfully leveled the build platform and loaded the PLA Filament into the extruder, You will be able to print test.

•Press the knob and select "Print from SD".

•To select a model, press the knob.

•The Printer will begin to build your object. You can use the LCD panel to monitor the temperature of the extruder and the status and progress of your object.

Install Migbot Software

A. Install Migbot software from the CD-ROM

B. Use the supplied USB cable to connect your Migbot to your computer.

Open Migbot Software

[1]Zoom in and out : You can also use the scroll wheel on your mouse to zoom in and out.

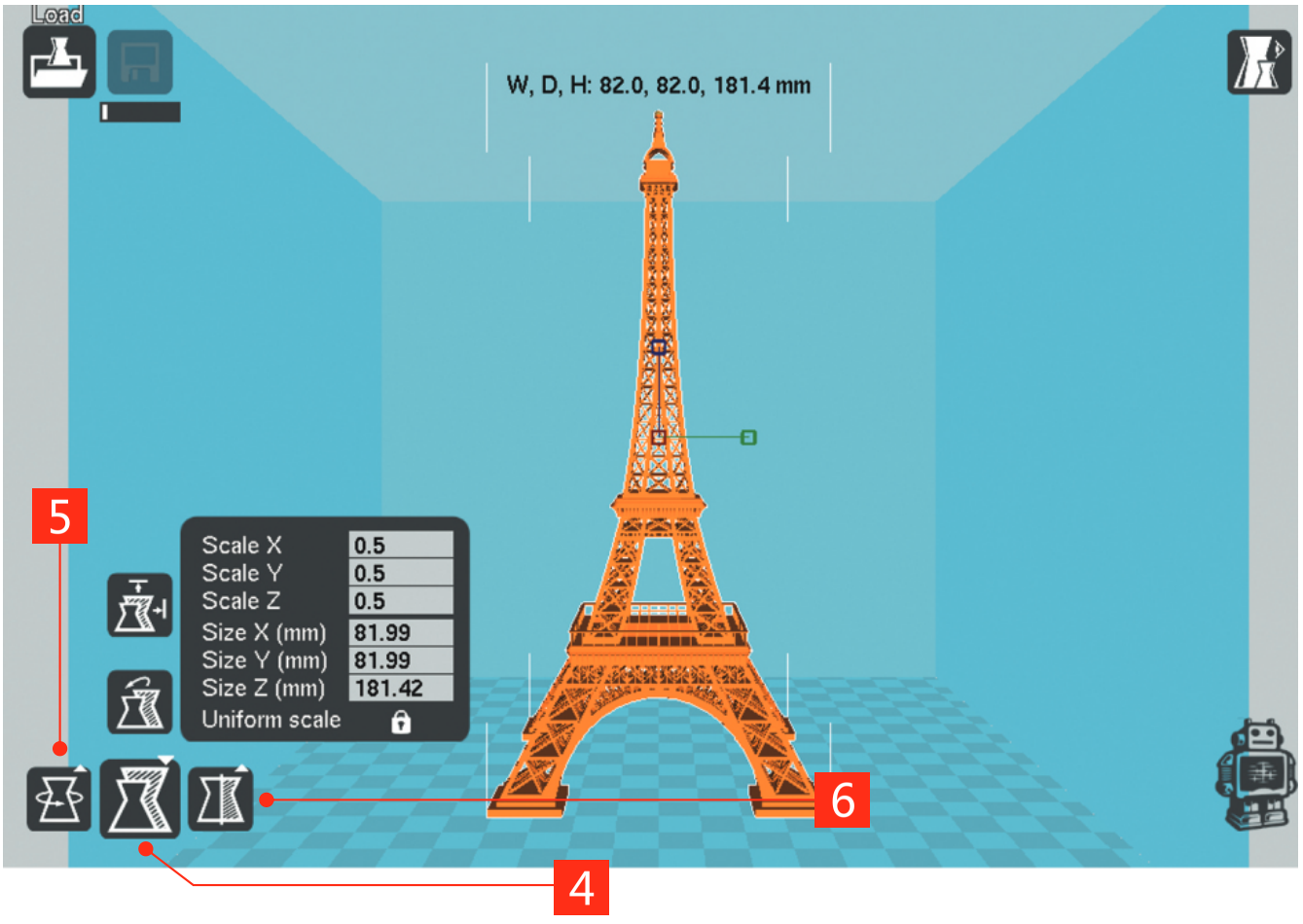
[2]View : Click and drag with your mouse to rotate the plate and the object

[3]move : Click and drag with your mouse to move an object around the plate.

[4]Scale : Changing the print volume of the object

[5]Rotate : Click and drag with your mouse to rotate the object in all directions.

[6]Mirror : Reflect the object in X,Y,Z respectively.



Open the .stl in Migbot

A. Click on the "File". Navigate to the location of the file .stl and select it. The file will open at the center of the build plate.

B. Use the buttons on the right side to adjust the object's size, location, etc. Then detailed setup to printing specification on the left options.

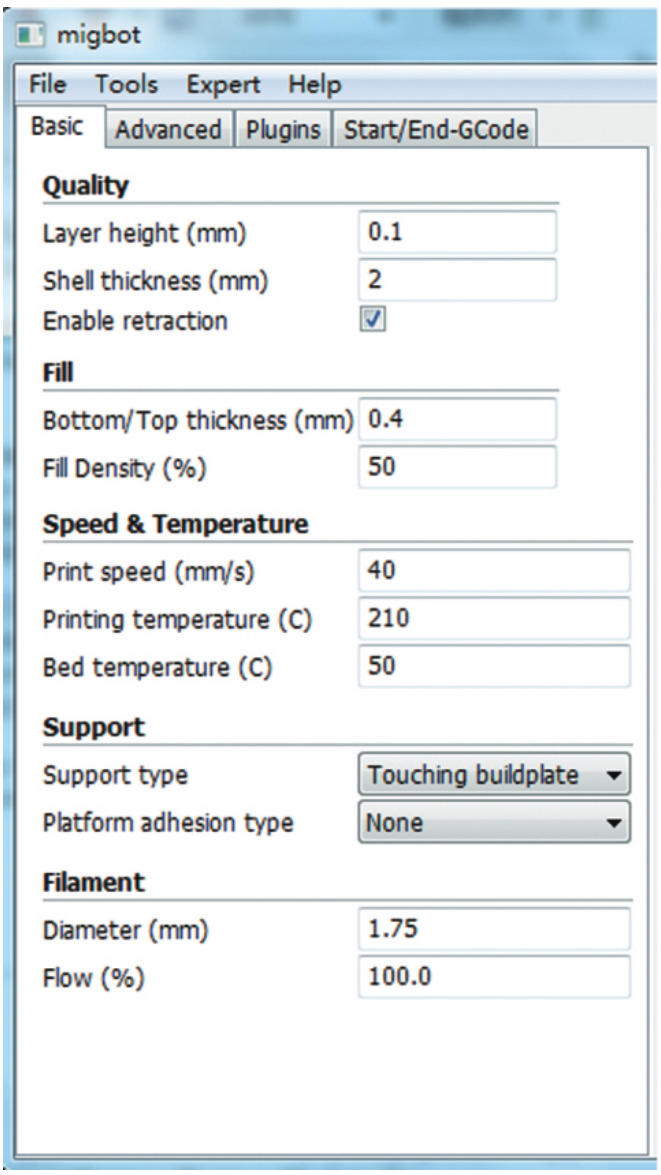
[1]Quality: Select this to adjust layer height and shell thickness.

[2]Fill: Select this to make your object infill rate. It's better to make 10%.

[3]Speed & Temperature: Select this to adjust printing speed, suggested speed: 50; suggested printing temperature: 200-220.

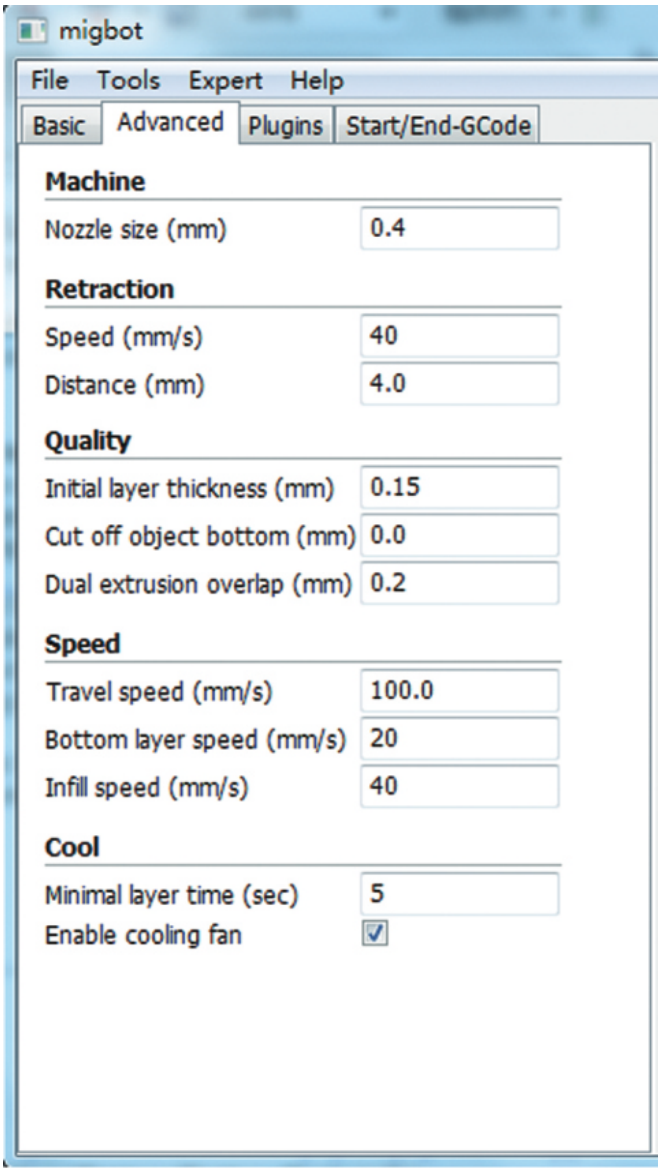
[4]Support: Select this to have your object include easily removable support structures under overhanging parts of the object.

[5]Filament: Select this to set the filament diameter: 1.75mm.



Advanced Options

It is set when you come to this page. Little tip: Do not set up this specification otherwise it will affect the print.



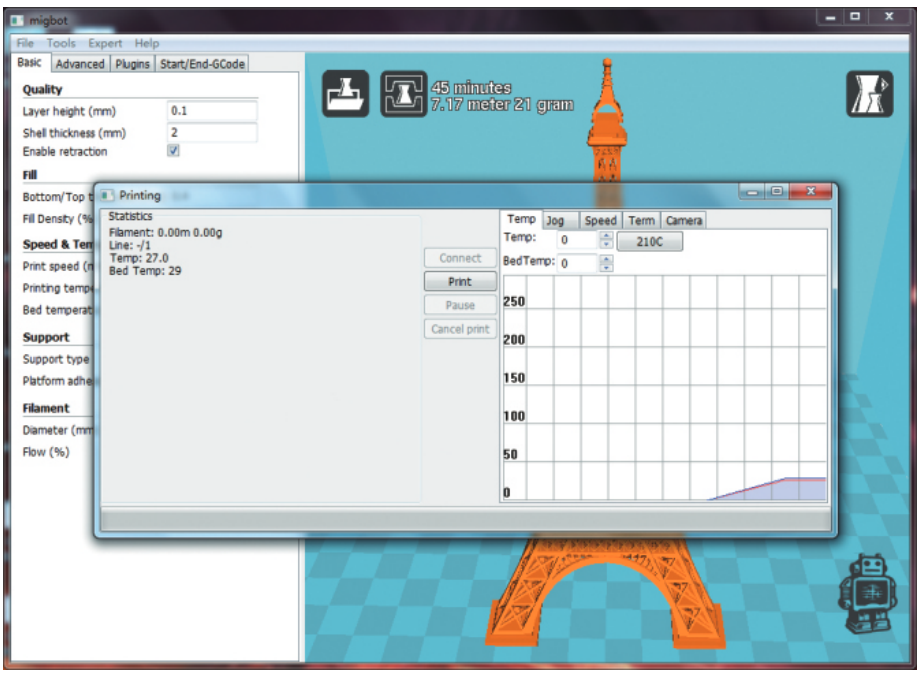
Build from SD Card

A. Click "File" after set up all the specification, navigate to "save as .gcode". The file will automatic generation to ".gcode" format.

B. Save .gcode file to your SD card. Put the SD card to the card slot and choose the saved file to print.

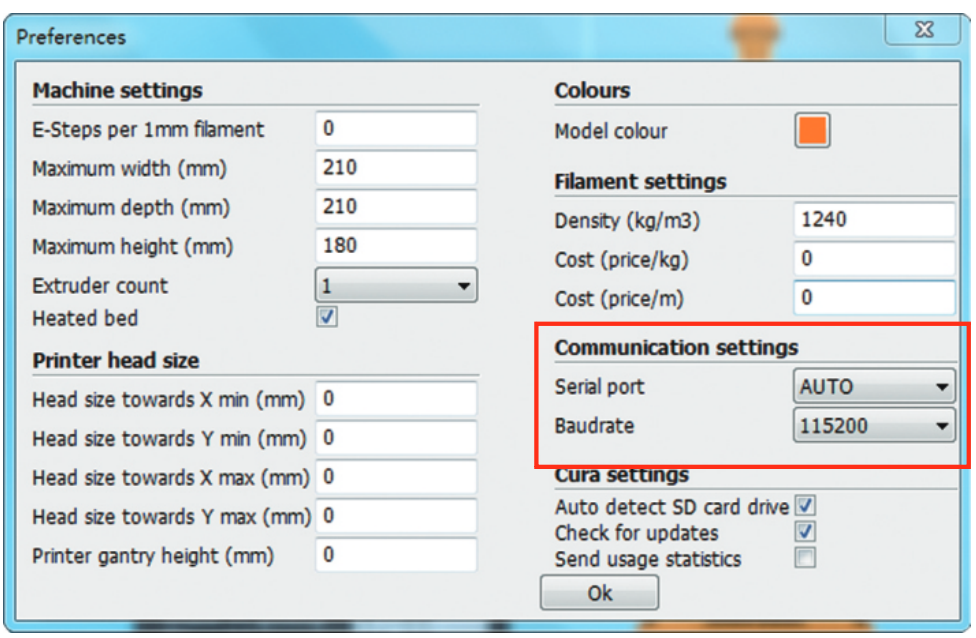
Build with Computer

Click "File", select "Print..." (Ctrl+P), then choose "Print".



! First time printing need to connect your printer.

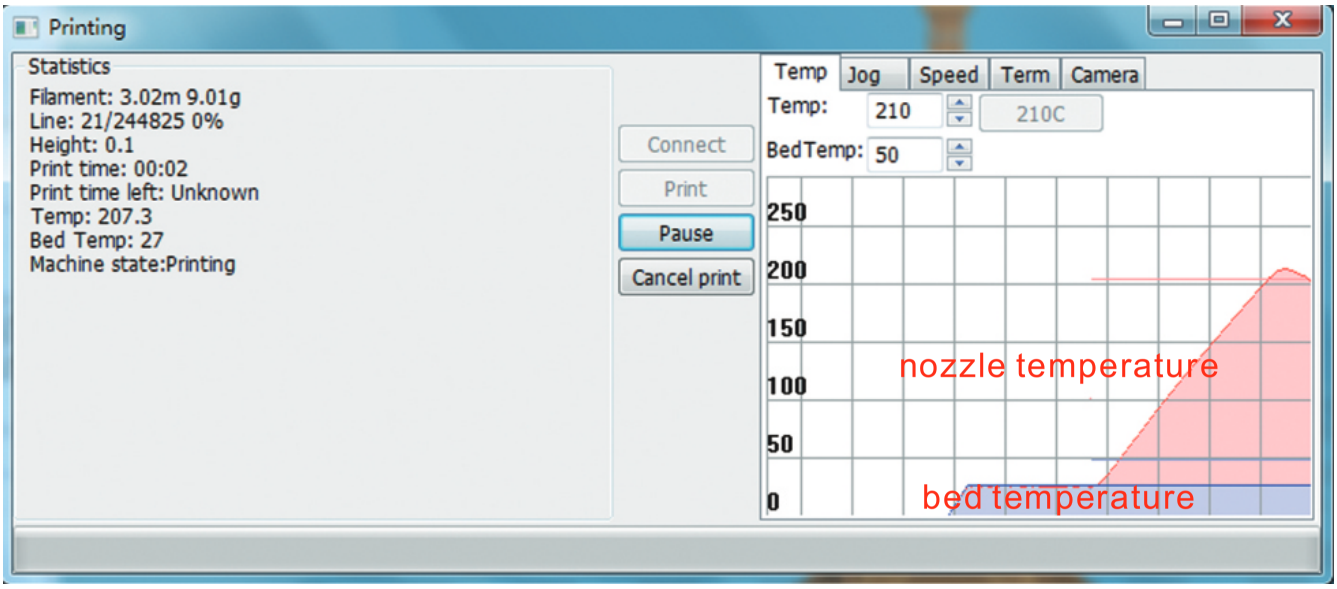
Click the "File" to press the "Preference". Choosing USB port on the port column.



*If it can not connect with printer, you need to reboot the software or change USB port(pay attention to whether you plug USB stable).

Printing Operation Interface with Computer

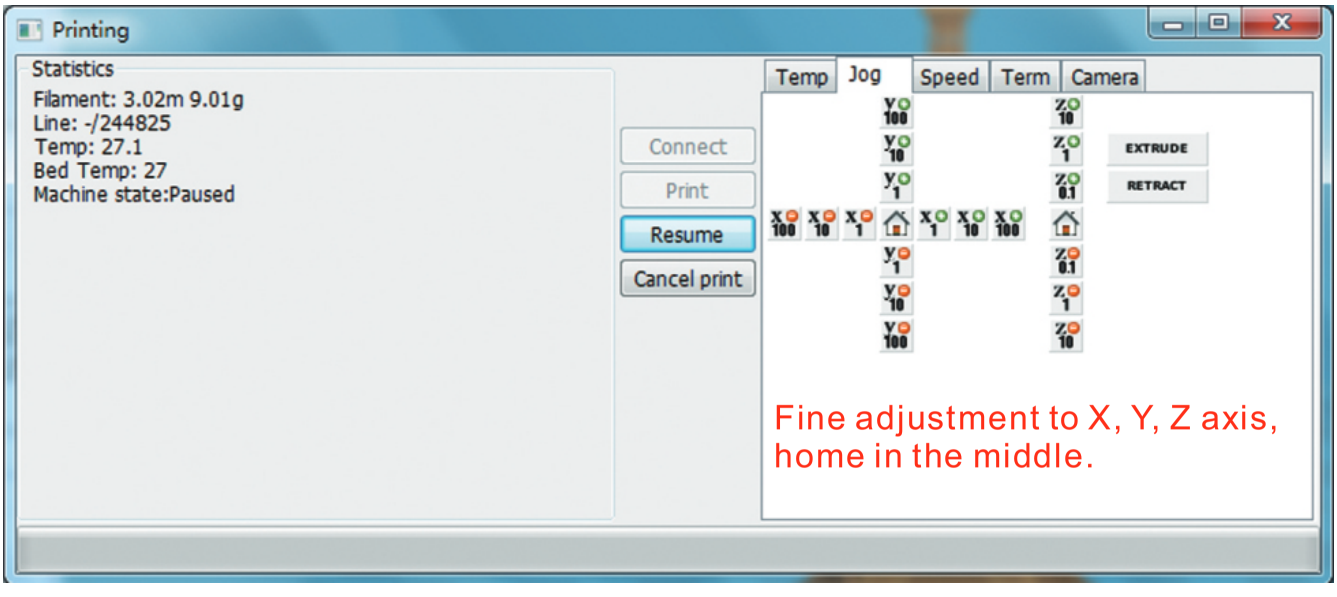
Shown as below:



*This operation interface can adjust nozzle temperature and bed temperature.

Printing Platform Fine Adjustment

Refer to the following description before or being-in printing if you want to fine adjustment.



*EXTRUDE：Filament operation to make sure loading filament naturally.

FREQUENTLY ASKED QUESTIONS

PROBLEM	SOLUTION
1. Can’ t load Filament into the extruder	Make a fresh cut at the end of the Filament. Cut the Filament at an angle-a narrow tip will help with loading. Use more force when pushing the Filament into the extruder. Grasp the filament firmly and push it into the middle of the hole on top of the extruder. Ensure that you insert the Filament straight down into the extruder, not diagonally. After you fell the motor grab the filament, continue to maintain pressure on the filament for another five seconds.
2. Object is stuck to build plate	Wait for the object to cool down. Objects will detach more easily after they have cooled. If the object is still stuck, take a thin metal craft spatula and care fully work the blade under the edge of the object. When the blade is most of the way under the object, twist the handle slightly. The Object should come free.
3. Can’ t remove the Filament from extruder	Run the filament load script in the onboard screen menu and preheat PLA for about 15 seconds. After finished heating, push filament into 2-3cm, then pull out the filament.