JGMAKER®

Magic
User Manual

Preface

This is the user manual for the Magic 3D Printer.

We recommend that you read this user manual thoroughly and understand the information, prior to operating the Magic 3D Printer ("Printer")
The user manual contains important instructions and information about how to use the printer in a safe and skilled manner.

Note: Please make sure that this manual is always available near the printer!

Failure to follow the information contained in this manual may lead to personal injury, inferior results or damage to the Magic 3D Printer.

The conditions or methods you may choose for assembling, handling, storage, use or disposal of the device are beyond our control. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, injuries, damage, or expense, arising out of or in any way connected with the assembly, handling, storage, use or disposal of the Magic 3D Printer. The information in this document was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.

JGMAKER will assume no responsibility for direct / indirect damage resulting from improper knowledge / operation / lack of maintenance or any other use of the machine as intended is this manual. Any modification to the Magic 3D Printer without proper written consult action and permission by JGMAKER will automatically void any right to warranty.

Precautions

1. Do not place the 3D Magic Printer near flammables, explosives or heat sources. It is best to place it in a well- ventilated, low-dust environment.

2. Take care to avoid touching hot parts, including but not limited to heat blocks, extruder nozzle, extruded filament, or the hot bed.

3. Do not expose the Printer to violent vibration or any unstable environment.

4. The filaments recommended by the manufacturer are preferred as to avoid clogging in the hot end, or damaging the Printer.
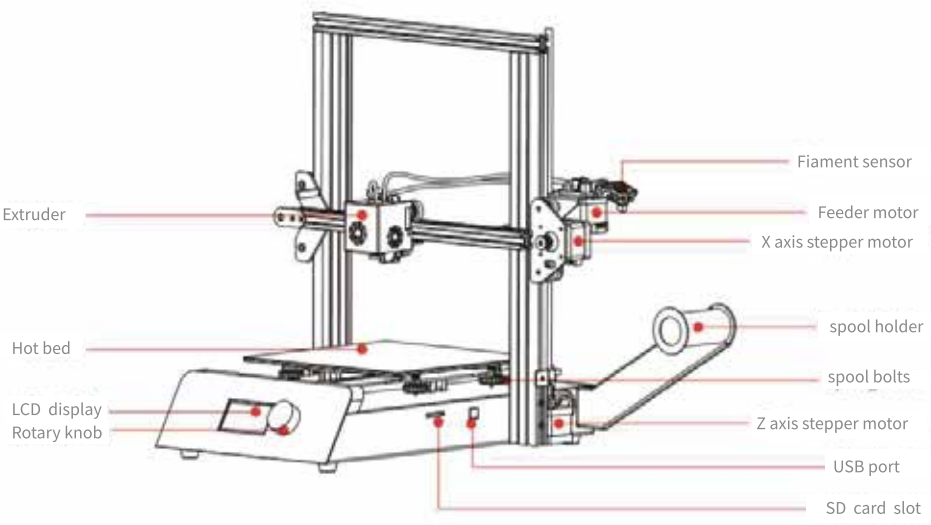
5.   Do not use any other power cable, other than the one supplied. Use a grounded power outlet.

6.   Do not keep the nozzle or bed working continuously more than 96 hours at high temperature. Ensure 1~3 hours break between use.

7.   Clean off filament from the nozzle tip with the provided pliers before the nozzle cools. Do not touch the nozzle directly. This can cause personal injury.

8.   Clean the Printer frequently. With the machine powered off, clean the printer body with a dry cloth to remove dust, adhered printing materials and foreign objects on guide rails. For consistent results, use glass cleaner or isopropyl Alcohol to clean the print surface before every print.

9.   When not using the printer for extended periods of time, power off the printer and disconnect the AC adapter from the outlets.

10.   Children under 10 years of age should not use the Printer without supervision.

Product Introduction

■ Product Specification

Model: Magic	Dimension: 443*450*472mm
Layer thickness：0.05~0.3mm	Net weight: 8kg
Printing speeed：10~150mm/s (recommend 30~60mm/s)	Shipping dimension：550*465*175mm
Nozzle Temperature; Room temperature 245℃	Shipping weight: 9.6kg
Nozzle diameter：0.4mm	Build size: 220*220*250mm
Hot bed temperature: Room temperature~110℃	Build surface: FA specially made platform
Supported materials: PLA/ABS/Wood, etc.	Control panel: LCD display + Control dial
Filament diameter: 1.75±0.05mm	Connectivity: SD card/USB
Language: Simplified Chinese/English	Supported file types: STL, OBJ, G-Code
Operating environment: Temperature 5℃~40℃ Humidity 20~50%	Supported OS：Windows7/Windows10/XP
Power requirements: AC 110/220V Optional	Software: Cura (Win/Linux/Mac)/JGcreatWindows 64 bit)

◤ Product Overview

Fiament sensor

Extruder

Feeder motor

X axis stepper motor

spool holder

Hot bed

spool bolts

LCD display
Rotary knob

Z axis stepper motor

USB port

SD card slot

What's in the box

◤ Main body

Accessories

Accessories

① : Filament sensor   1

② : Z-axis limit switch   1

③ : Bags of screws: 4 (including M5*40 screws, M5*25 screws, M5*8 screws, M3*8 screws)

④ : Tool kit: 1

⑤ : Cut pliers   1

⑥ : Spatula   1

⑦ : USB cable   1

⑧ : Sample filament   1

⑨ : Quick start guide   1

⑩ : SD card and reader   1

Assembly Process

JGMAKER has improved the overall assembly process for you. The main components have been assembled at the factory, in order to simplify the user assembly experience.

Z-axis unit mounted

Mount the two 2040 aluminum profiles to each side of the base with the M5*40 screws, using the Allen wrench. Make sure that the stepper motor faces the back of the Printer.

Note: Do not fully tighten the screws on the bottom, leave a little loose for future adjustment.
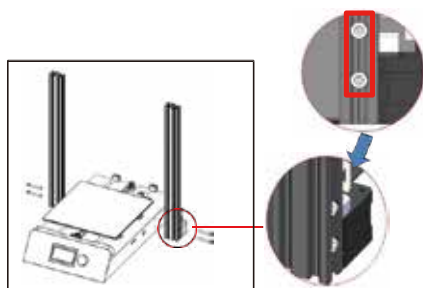
X-Axis unit mounted

① : Insert the timing belt into the slot before mounting the extruder. Make sure the Timing belt's geared side faces down.

② : Mount the extruder on the X-axis unit and hook the belt on the slot underneath extruder.

③ : Tighten the screw to make sure that the belt is straight, but also with enough tension.


Timing Belt
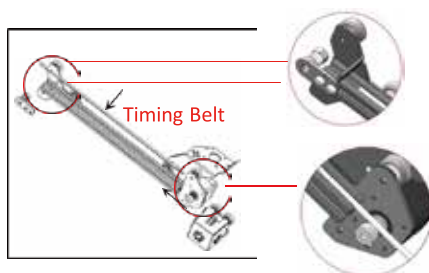
Mount the X-axis assembly unit to the Z-axis unit, ensuring that all rubber wheels are in the slot properly, and are able to glide through the slot up and down smoothly.

Note: We recommend putting the folded packing materials on the bed to let the hot end rest on it.
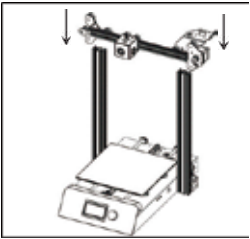
Mount the 2020 aluminum profile-340 and secure it in position with screw M5*25 and wrench.

Note: If you find the screws cannot be properly tightened, please try to adjust the screws on the bottom that you've previously left slightly loose, and then tighten up again.
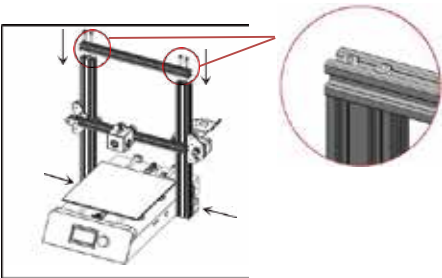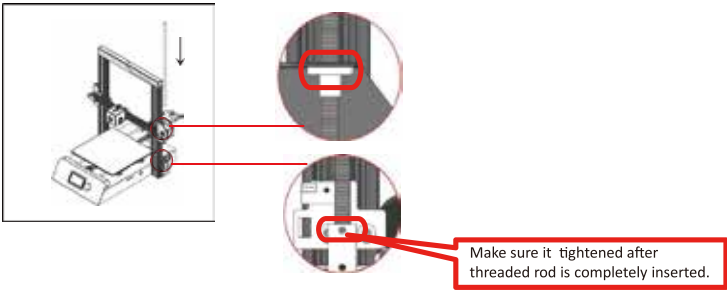

Attach the decorative cover , and secure with the M5*8 screw and wrench
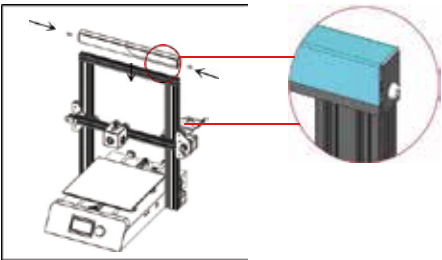
Insert the threaded rod through the coupler and then tighten up with screw M5*8 and wrench.

Note: Please loose the upper screw on the bottom before threaded rod is inserted and then tighten up the screw to ensure normal operation.

Make sure it tightened after threaded rod is completely inserted.

Mount the filament sensor module to the X-axis right pulley.
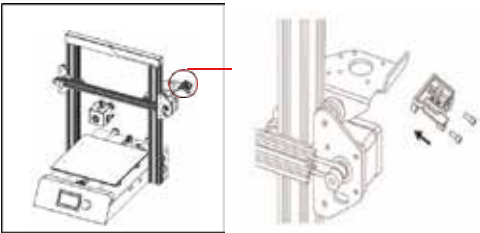
Mount the Z-axis limit switch to the Z-axis. It can also be mounted prior to the Z-axis assembly.
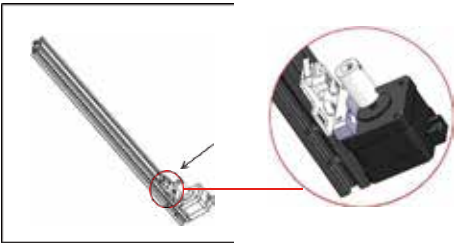
Mount the spool holder to the base as shown to the left. The spool holder can also be mounted after you are done wiring the printer.
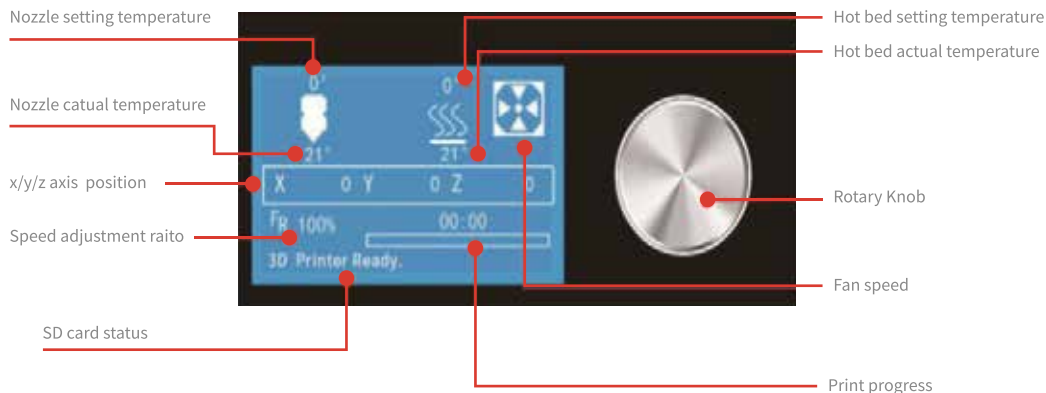
Cable connection

Feeder motor

X-axis motor

Z-axis motor

Filament sensor

Z-axis limit switch
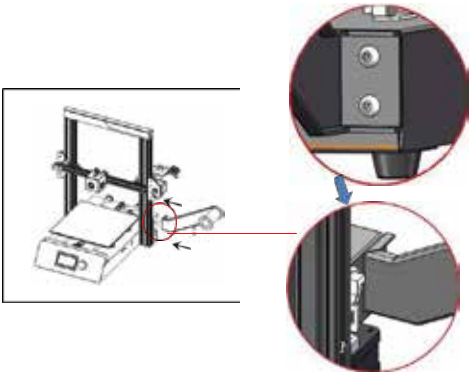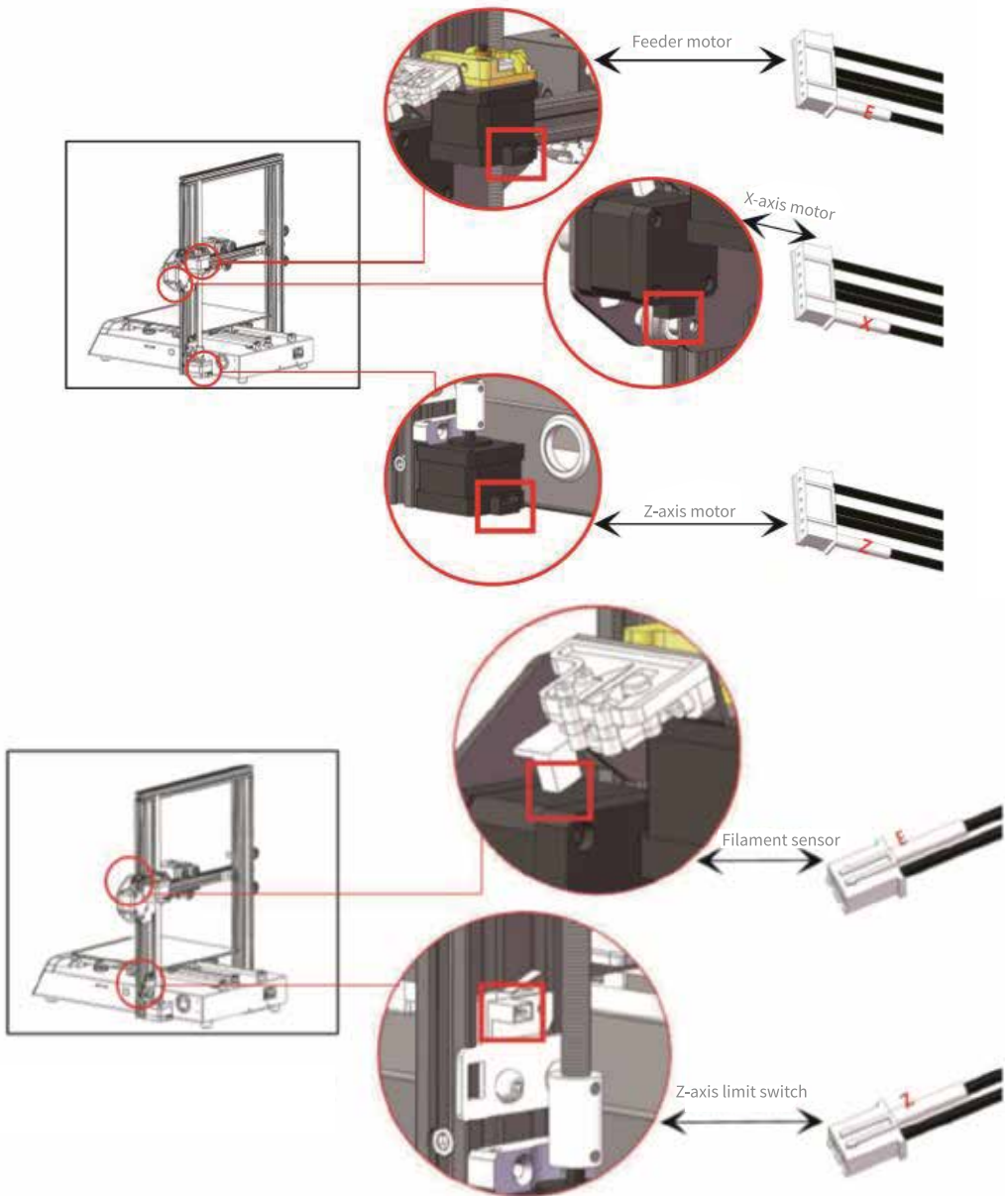
Note: Please refer to video tutorials or contact us directly for any problems in cable connection.

Introduction to Printer Operation

Control Panel

Nozzle setting temperature

Nozzle catual temperature

x/y/z axis position

Speed adjustment raito

SD card status

Hot bed setting temperature

Hot bed actual temperature

Rotary Knob

Fan speed

Print progress

Control Panel

Info screen
Prepare
Control
Print from SD card

Change filament
Preheat PLA
Preheat ABS

Prepare: Auto home, preheat, cooling, disable steppers and change filament, etc.

Control: Advanced settings for setting temperature, motion and filament.

Print from SD: Only showed when SD card is inserted.

Preheat PLA/ABS: Preheat both nozzle and hot bed.

Preheat PLA/ABS/ END: Preheat nozzle only.

Preheat PLA/ABS BED: Preheat hot bed only.

◗ Function introduction

Move X/Y/Z axis

Move X: Nozzle moves along the X axis. X+ means away from the ZERO point while X– means the opposite.

Move Y: Nozzle moves along the Y axis. Y+ means away from the ZERO point while Y– means the opposite.

Move Z: Nozzle moves along the Z axis. Z+ means away from the ZERO point while Z– means the opposite.

Extruder: Manually load or unload filament.

Move 10/1/0.1mm: Rotate the control knob to set the units for each move.

Auto home: Both nozzle and hot bed go back to ZERO point.

Disable stepper: Disable steppers motors to move nozzle and hot bed manually.

Change filament: Load or unload filament.

■ Overall Procedure

```
                    Check input voltage
                              │
                              │         Compatible with local power supply
                              ▼
                         Power on
                              │
                              ▼
                         Leveling
                              │
                              │   Leveling check with AA paper, slight
                              │         resistance but remains intact
                              ▼
    Software installing    Load Filament
                              │
                              │         Filament comes out smoothly
                              ▼
    Slice and save  ──→  Insert SD card and
    file in SD card       choose G-code file
                              │
                              ▼
                         Printing
                              │
                              ▼
                   Printing finished and
                      model achieved
```
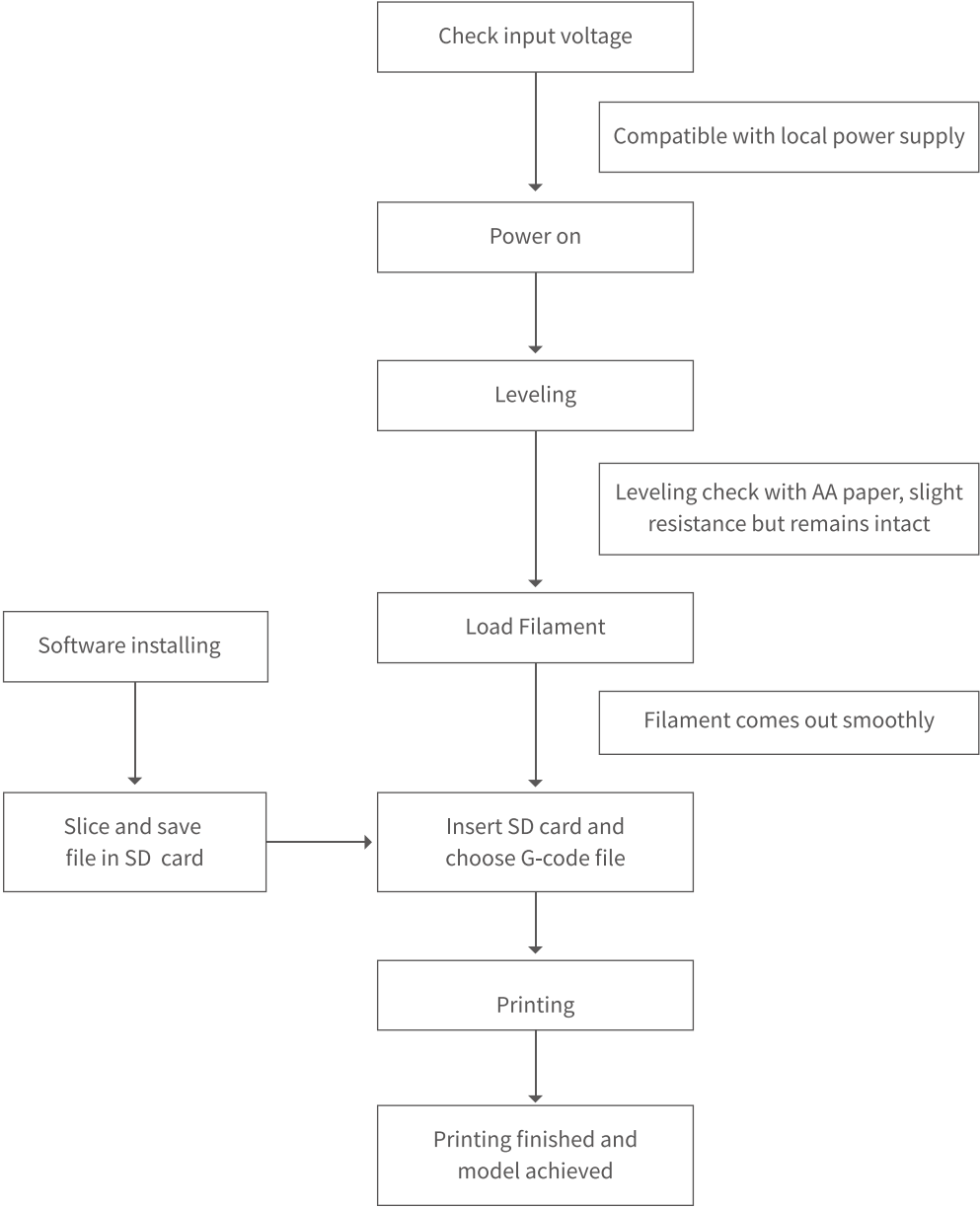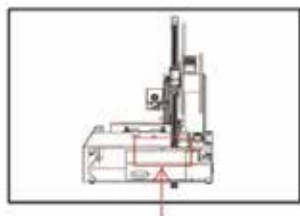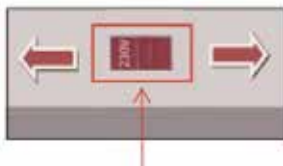
🔹 Compatible power supply

The Magic 3D printer can use an input voltage of 110V or 230V.
Set the input voltage to match available power by adjusting the switch on the power supply.
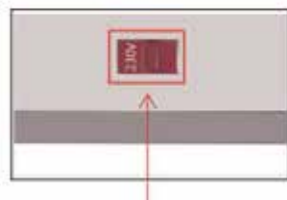Please check the input voltage through the observation hole at the bottom of the rear side of the device, and adjust the voltage as shown.

Check the input voltage   Press to toggle between 110V and 230V   230V indicates the current voltage is compatible.

🔹 Leveling the bed

Press the Control knob on the display, then select…

Auto-home: The nozzle moves to the zero point of XYZ axis. After homing, select…

Level Corners: Nozzle moves to first point for adjustment. Use a piece of A4 paper on the hot bed under the nozzle, and adjust the knob to make sure the paper can slide smoothly with just a bit of friction.

**Next Point:** Nozzle moves to remaining points and waits for you to adjust the knob.

Tips: At each point, turn the adjustment knob **counterclockwise** to **increase** the distance between hot bed and nozzle or turn **clockwise** to **decrease** the distance.

▪ Loading Filament

① : Heat the nozzle: Press/Rotate the Control knob to **Prepare >Preheat PLA >Preheat PLA END** to heat the nozzle according to the temperature range of the filament you are going to use. (Reference Temperature: PLA≈200℃, ABS≈240℃)

② : Load the filament into the spool holder and feed the end of filament through the sensor then into extruder as you press the spring latch during the preheating process.

③ : Push the filament into extruder through the small hole of the extruder until it comes out of the nozzle smoothly.
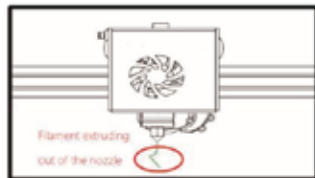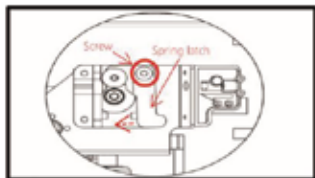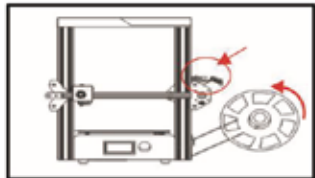

▪ Printing Test

We highly recommend users to have a printing test after loading filament.

Testing step as follows:

① : Insert the SD card, and press/rotate the control knob to select the file that you'd like to print.

② : Press/Rotate the control knob to set to heat nozzle and hot bed with enough temperature.
It will start to print when temperature reaches the target, then, check to see that filament comes out smoothly and the first 1or 2 layers stick to the hot bed.
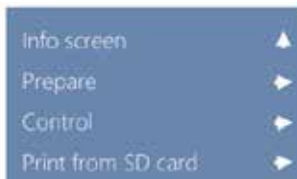

▪ Replacing Filament

Reload the filament as follows, if filament is about to run out during printing:

① : Press/Rotate the control knob to select **Tune > Change filament** to confirm and wait until the printing stops.

② : Printer unloads the filament while screen is prompting **Wait for filament unload.**

③ : Press the button **(Wait for filament load)**, and loading completes until it comes out of nozzle. Select **Continue** to finish loading.

④ : Select **Purge more** if filament fails to come out of nozzle.
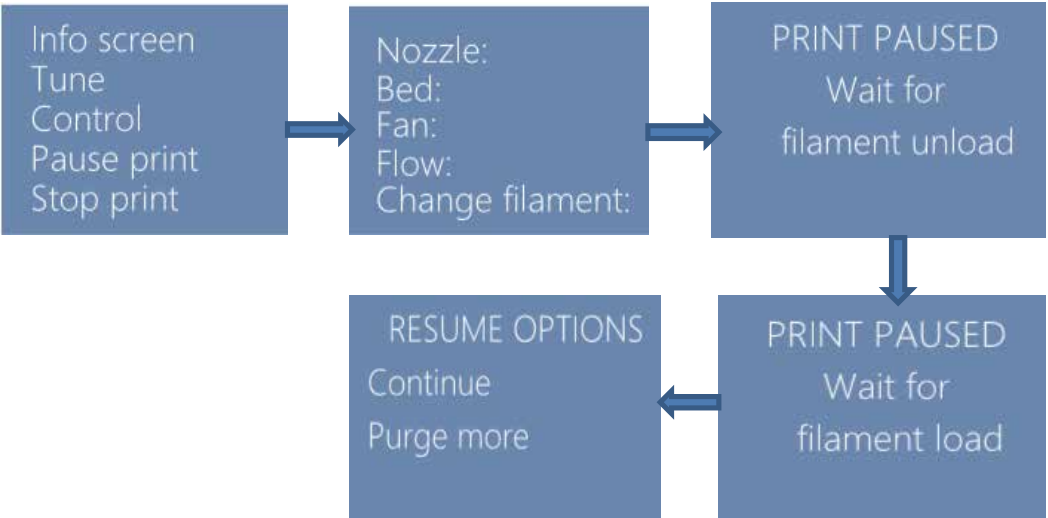
Note: Always pull out the remaining filament gently and carefully, so no damage is done to the nozzle/extruder.

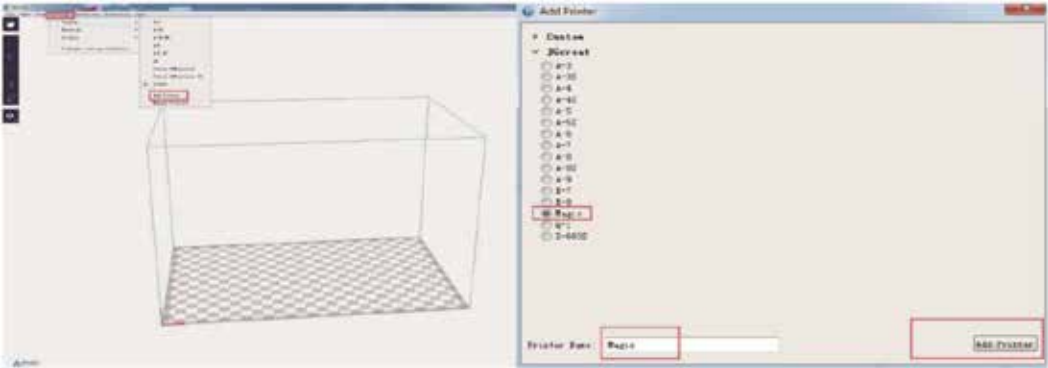## Introduction to Printer Operation

🔹 Install JGcreat

Copy and paste the file from SD card to your computer, and double click the JGcreat .exe file. Choose a folder path to install to, and finally click **Finish** to complete the installation.
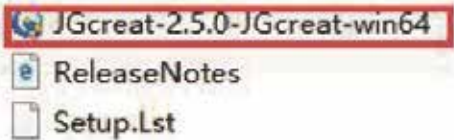
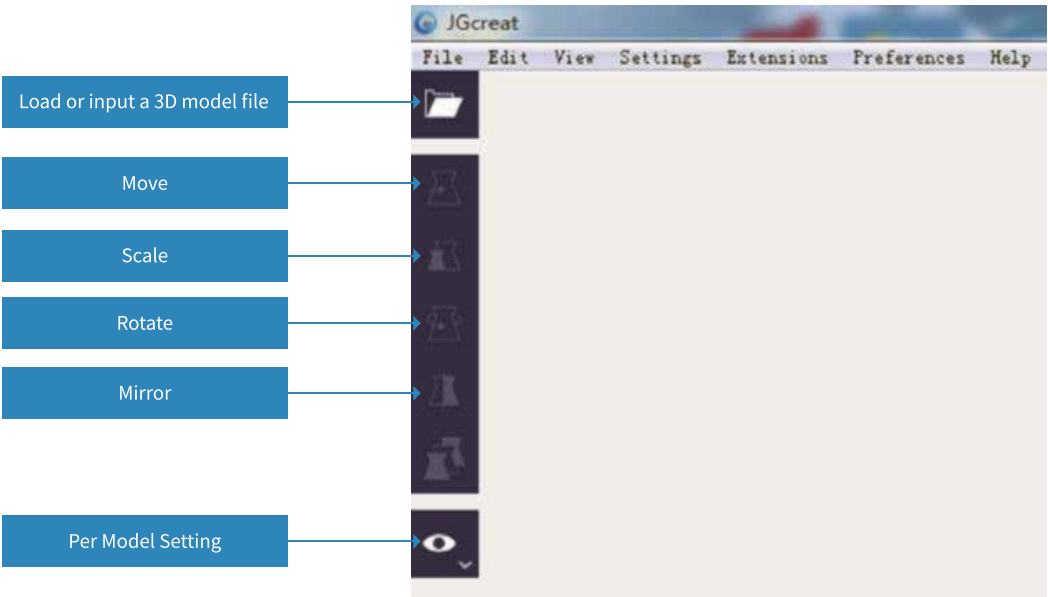|	
JGcreat-2.5.0-JGcreat-win64	2017/11/15 15:47
ReleaseNotes	2016/4/5 14:02
Setup.Lst	2016/4/5 14:02

▰ Open JGcreat and add a new printer

Double click JGcreat to start and select **Settings – Printer – Add printer** to add our Magic 3D printer.

▰ Software Interface

|	
Load or input a 3D model file	
Move	
Scale	
Rotate	
Mirror	
Per Model Setting	

Import the model you would like to print using the software and select the print quality. JGcreat will slice and generate a G-code file with the paths and parameters for the printer.

Note: The existing parameters are default, if you want advanced settings, click Custom.
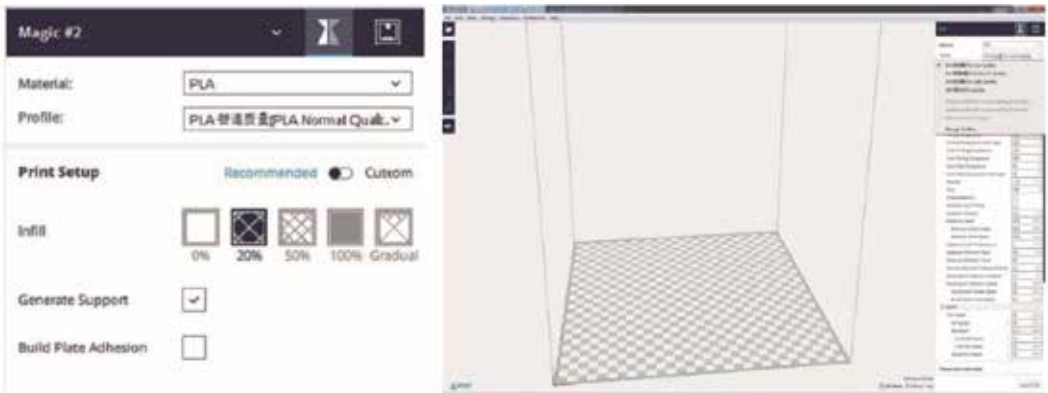
◤ Save the G-Code

Save the G-code file in SD card and make sure it is under the root directory.
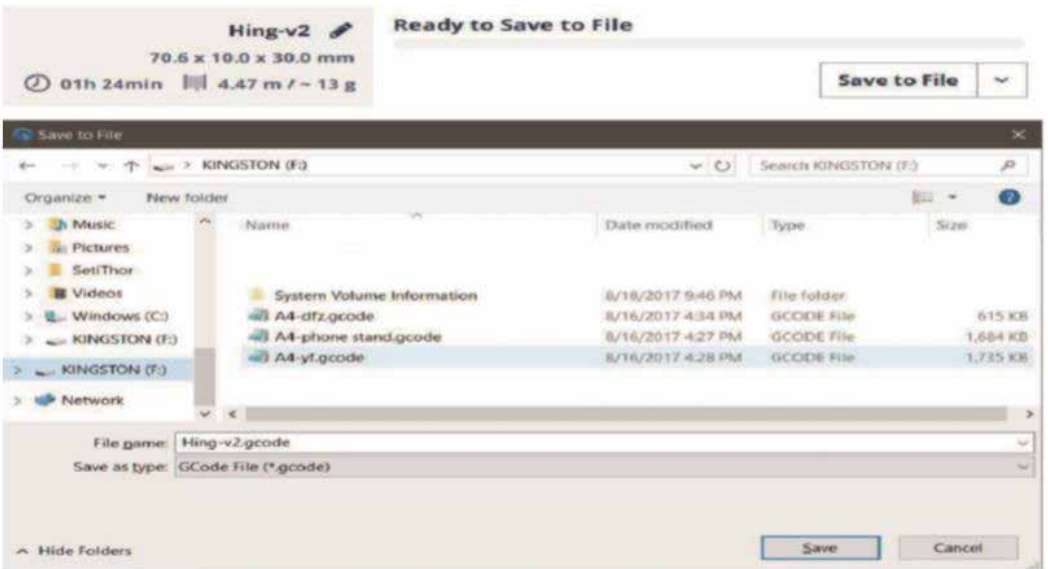
Troubleshooting

Possible failure mode

Symptom	Solutions
Filament breaks at the feeding port of extruder	① : Replace the filament. ② : Keep the filament sealed in cool and dry place. ③ : Clean the tube.
Filament slides from the extruder (won't extruder)	Cut off the thin part of the filament and reinstall
Abnormal temperature	Replace with a new temperature sensor
Misaligned during printing	Tighten up the screws and timing belts tension
Warping during printing	Re-adjust the bed leveling
Fail to generate G-code file	① : Choose the correct machine type ② : Select proper save path
Fail to install software	Install the compatible one for your operating system
SD card can not be read	① : Take out the SD card, power off the printer and wait for 10s to restart and insert card again for few seconds. ② : Try to save G-code file on computer first, then copy to SD card. ③ : Try to change a new SD card.

Refund Policy

⬛ Returns & Exchanges

Mount the two 2040 aluminum profiles to each side of the base with the M5*40 screws, using the Allen wrench. Make sure that the stepper motor faces the back of the Printer.

⬛ Refunds (if applicable)

Once your return is received and inspected, we will send you an email to inform you that we have received your returned item. We will also inform you of the approval or rejection of your refund.
If you are approved, then your refund will be processed, and a credit will automatically be applied to your credit card or original method of payment, within a certain amount of days.

⬛ Replacement requirement

① : The appearance of the product is intact, without damage, cracks, deformation, etc.;

② : Machine is complete including all parts, tools, original box, and foam padding;

③ : Provide a valid purchase invoice, product numbers should be the same.

Note: Regarding the returned printer, we do not undertake the shipping costs if it's not the printer itself problem, and if the return to China is required, we also do not undertake the tax that may occur.

Warranty

⬛ Warranty coverage

① : The following accessories are not included in the warranty coverage (unless damaged by transportation): platform sticker, platform forming plate, acrylic cover, card reader and TF card, platform glass, USB cable, filament, rack and tools, etc.

② : Profile: Small blemishes in the black paint due to testing or shipping are not covered in the premise that blemish does not affect normal use.

③ : Nozzle assembly (nozzle, heating block, throat pipe, heat sink, Teflon tube, etc.) warranty period is 3 months, If damage occurs after the warranty expires, you will be responsible for replacement;

④ : 12 month warranty on the motherboard, LCD display, power suppler, heated bed. The free warranty maintenance is provided by the original factory over the warranty period. After warranty expires, original factory maintenance is available, but the customer is responsible for shipping and maintenance costs.

⬛ Not included in warranty coverage

① : It will be difficult to provide an effective warranty service if you can not provide a correct serial number;

② : The whole machine and components exceed the warranty period;

③ : Equipment failure or damage caused by unauthorized modification of the equipment (private modification includes: a) modification of the nozzle assembly; b) modification of the machine structure; c) use of third-party components;

④ : Equipment failure or damage due to incorrect installation and use;

⑤ : Equipment failure or damage caused by use in a non recommended working environment specified by this manual (Unstable, dusty, moisture);

⑥ : Equipment failure or damage due to improper use (beyond workload, etc.) or maintenance;

⑦ : Equipment failure or damage due to the use of other branded components or other inferior consumables.

Supports & Service

JGMAKER support team is on standby and ready to help you with any problems you may have with your Magic 3D printer. If the issues or questions are not covered in this User Guide, visit our official web site at **www.jgmaker3d.com,** or contact us via email or telephone below.

Note: ①：Please refer to the warranty card for details of the warranty policy.

②：When contacting support, please have your serial number ready.

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www.jgmaker3d.com

Facebook Group

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