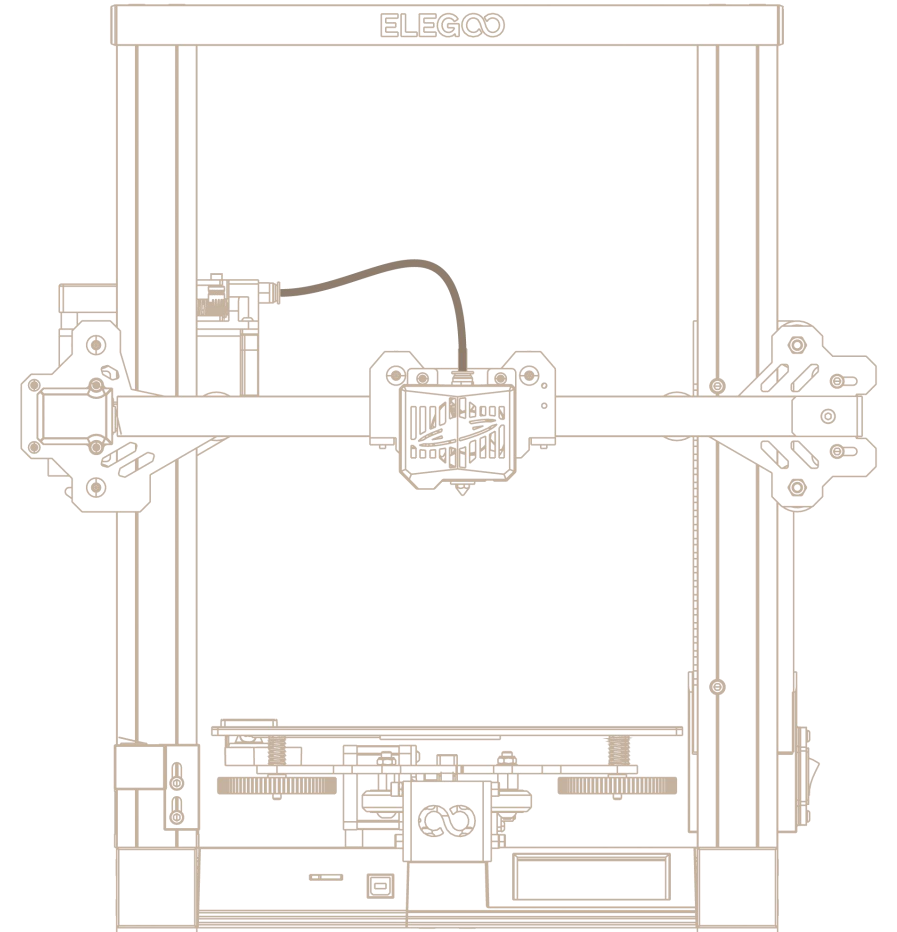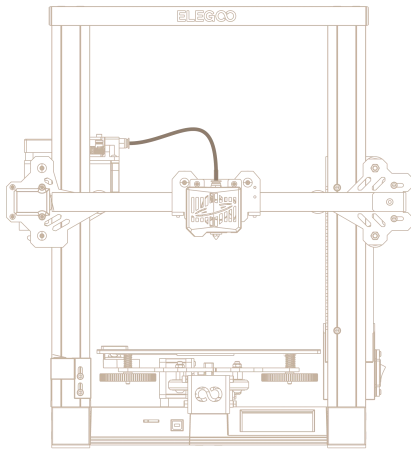# User Manual
# for Neptune 2 \ Neptune 2S
# 3D Printer

Pictures are only for illustration purpose, please take actual product as standard.

# Thank you for choosing ELEGOO product!

For your convenience, please read this instruction manual carefully before use, the cautions and tips in this manual can help you better avoid incorrect installation and use.

For questions or problems not covered in this manual, please contact us at this email address: 3dp@elegoo.com.

ELEGOO team is always ready to provide you with quality service.

To give you a better experience of our products, you can also gain knowledge of the operation of the equipment in the following ways：

1.The instruction manual: You can find the relevant operating instructions and videos on how to operate the machine in the TF Card.

2.ELEGOO official website: www.elegoo.com You can go to our official website to find the relevant operating instructions for the machine and contact information.

# Cautions

1. Do not place the printer in vibrating or other unstable environments, as the shaking of the machine will affect the print quality.

2. Do not touch the nozzle and heatbed when the printer is working to prevent high-temperature scald and personal injury.

3. After printing, please take advantage of the residual temperature of the nozzle and clean the filaments on the nozzle with the help of tools. Do not touch the nozzle directly with your hands during cleaning to avoid scald.

4. Please do product maintenance frequently, and regularly clean the printer body with a dry cloth to wipe away dust and sticky print material under the situation of power off.

5. 3D printers contain high-speed moving parts, so be careful not to get your hands caught.

6. Children must be supervised by adults when using the machine to avoid personal injury.

7. In case of emergency, please cut off the power directly.

# Contents

# Machine Parameters

## Print Parameters

Print Principle：FDM（Fused Deposition Modeling）
Build Volume：220X220X250(mm³)
Print Precision：±0.1mm
Nozzle Diameter：0.4mm
Print Speed：30~180mm/s（60mm/s is recommanded）

## Temperature Parameters

Ambient Enviroment Temperature：5°C~40°C
Maximum Temperature of Nozzle：260°C
Maximum Temperature of Hotbed：100°C

## Software Parameters

Slicer Software：Cura
Input Format：STL、OBJ
Output Format：Gcode
Connection Type：TF Card、USB Wire

## Power Supply Parameters
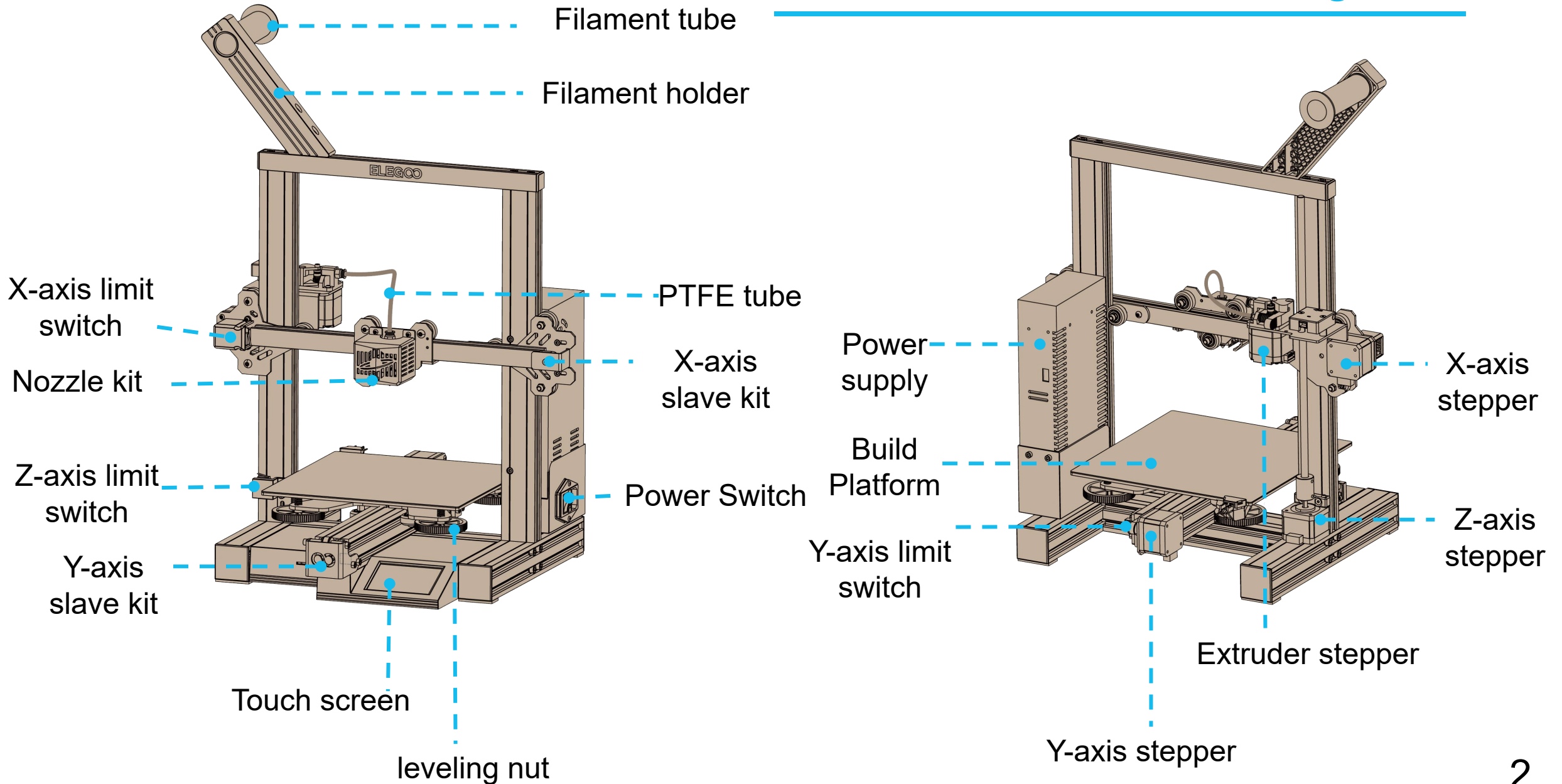
Power Input：100-120V/200-240V
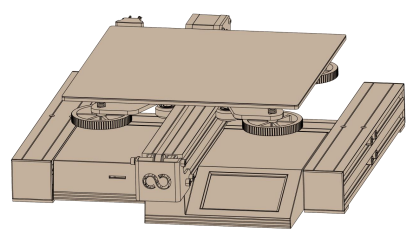Power Output：24V

## Physical Parameters

Machine Dimensions：430X426X613
Neptune 2 Machine Weight：6.9kg
Neptune 2S Machine Weight：7.3kg
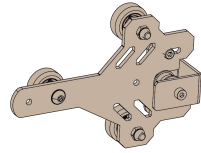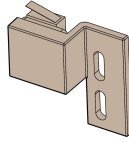
# Machine Structure Diagram



Filament tube

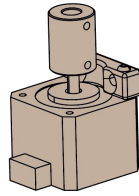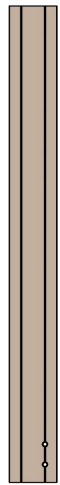Filament holder

X-axis limit switch

Nozzle kit

Z-axis limit switch

Y-axis slave kit

Touch screen

leveling nut

PTFE tube

X-axis slave kit

Power Switch

Power supply

Build Platform

Y-axis limit switch

X-axis stepper

Z-axis stepper

Extruder stepper

Y-axis stepper

# Packing List
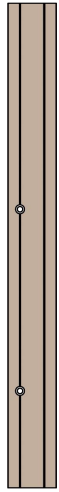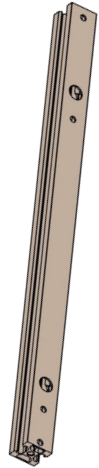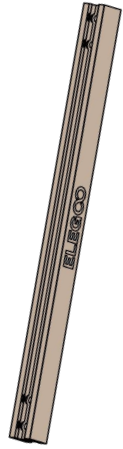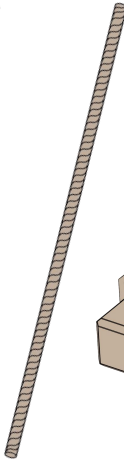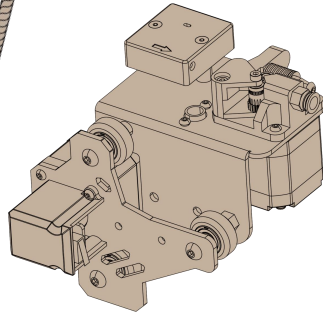
| | | | | |
|---|---|---|---|---|
| 01 | 02 | 03 | 04 | 05 |

| | | | | |
|---|---|---|---|---|
| 06 | 07 | 08 | 09 | 10 | 11 | 12 |

| | | | |
|---|---|---|---|
| 13 | 14 | 15 | 16 | 17 |
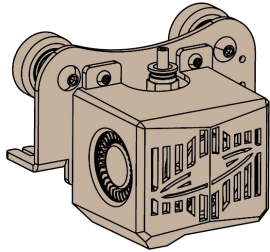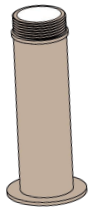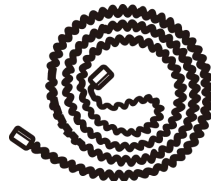
## Spanner

(HM5*25) 4pcs

(HM5*45) 4pcs

(PM4*18) 4pcs

(KM4*20) 2pcs

(HM4*20) 2pcs

(HM4*18) 2pcs

(SW M4) 2pcs

ELEGOO 3D Printer

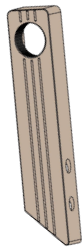## Tools

3
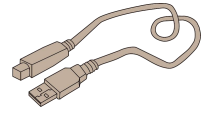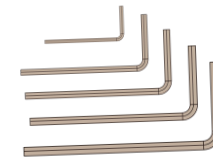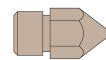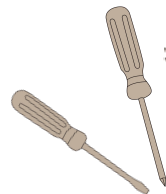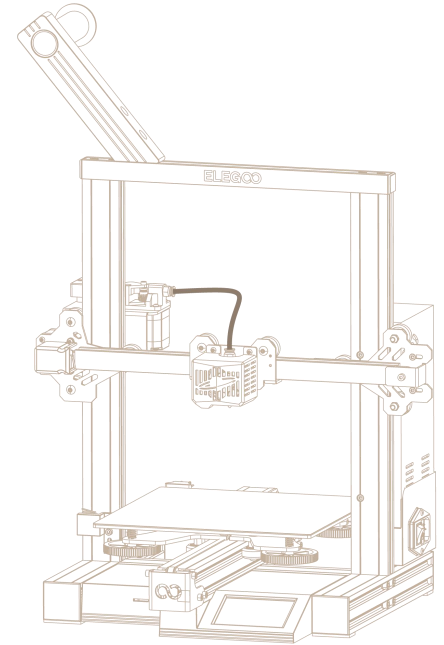
# Machine Installation

The TF card of the machine comes with an installation instruction video.

The end with long holes distance

01

06

07

The end with holes of the aluminum profile should face down

The end with short holes distance

(HM5*45) 4pcs

(HM4*20) 2pcs+(SW M4) 2pcs

02

Installation height
is about 5mm

04

(HM4*18) 2pcs

10

05

(KM4*20) 2pcs

(PM4*18) 2pcs

The end with long
holes distance

The end
with long
holes
distance

The end
with short
holes
distance

08

11

17

6
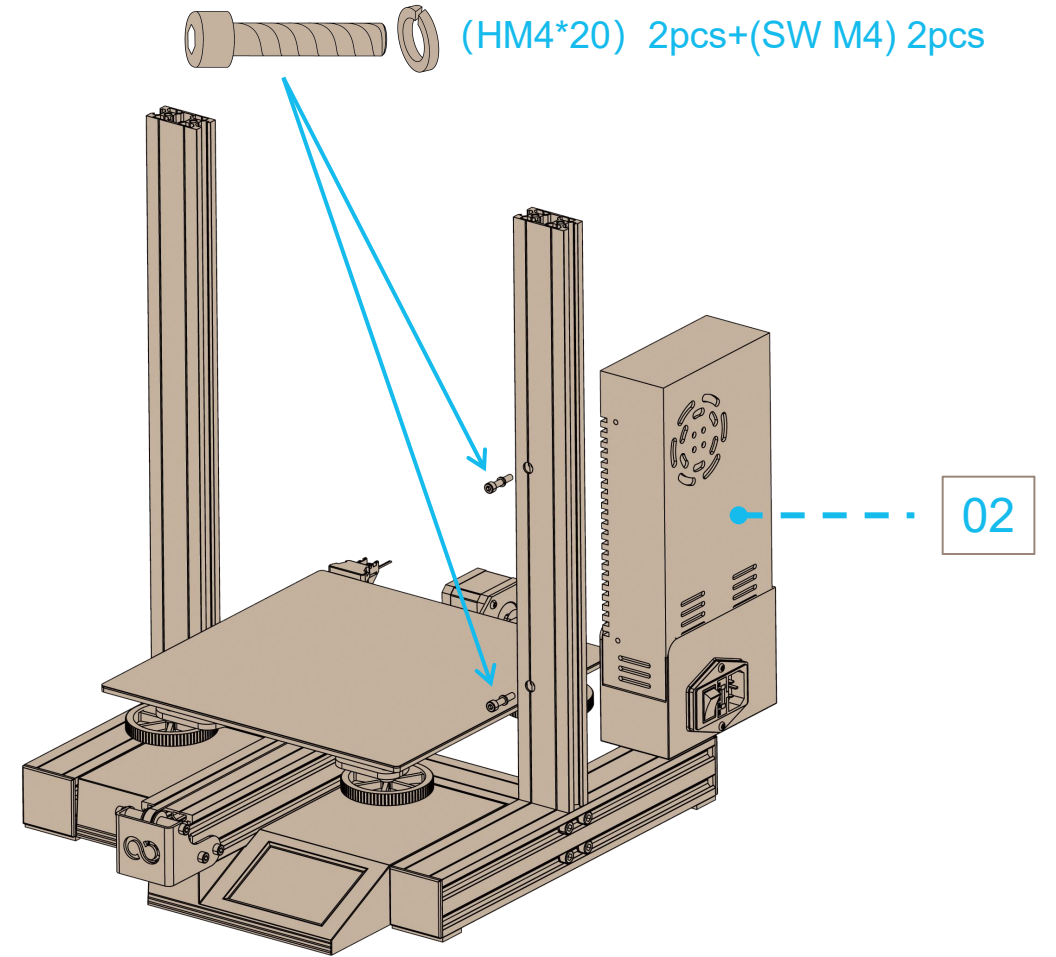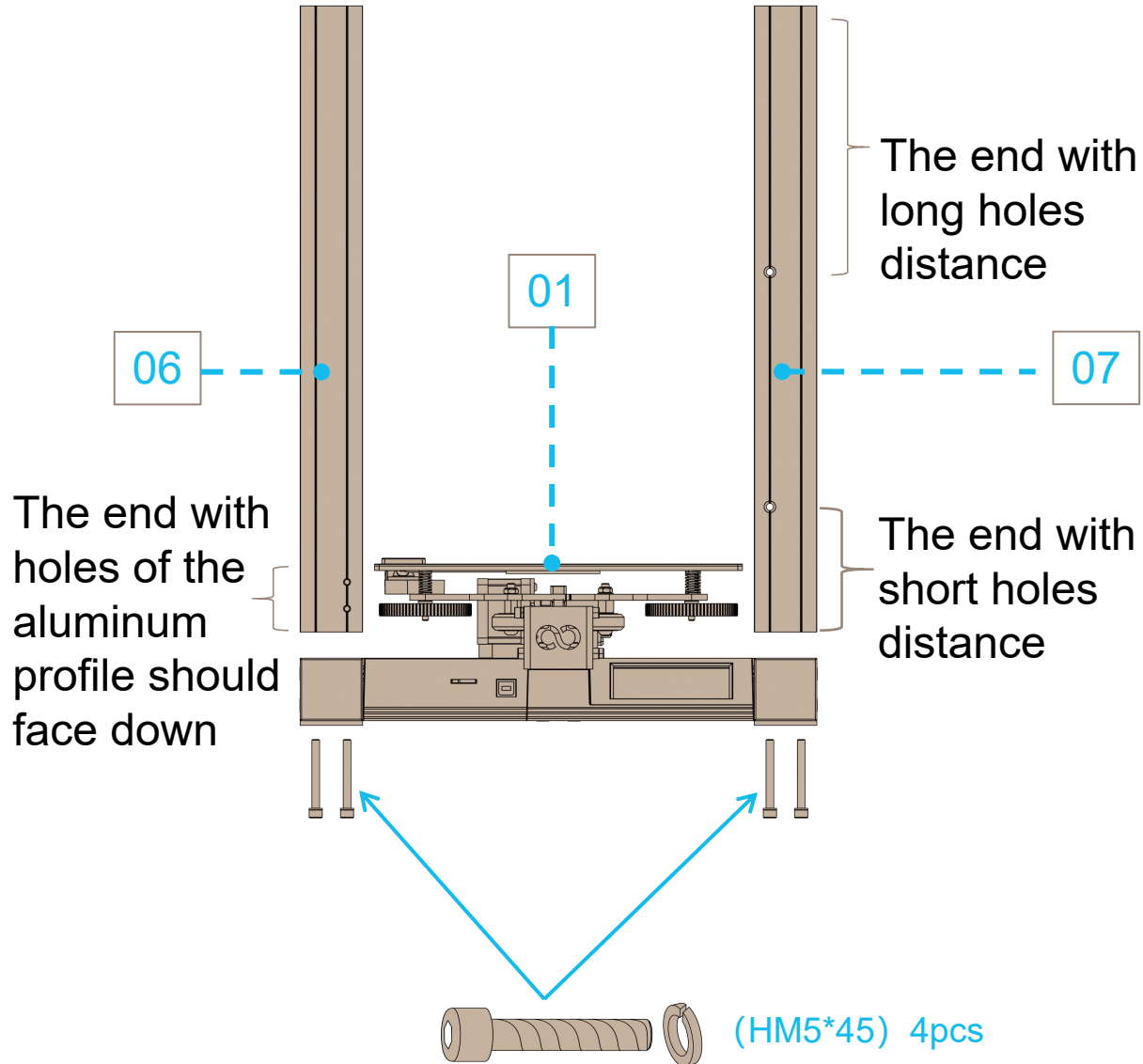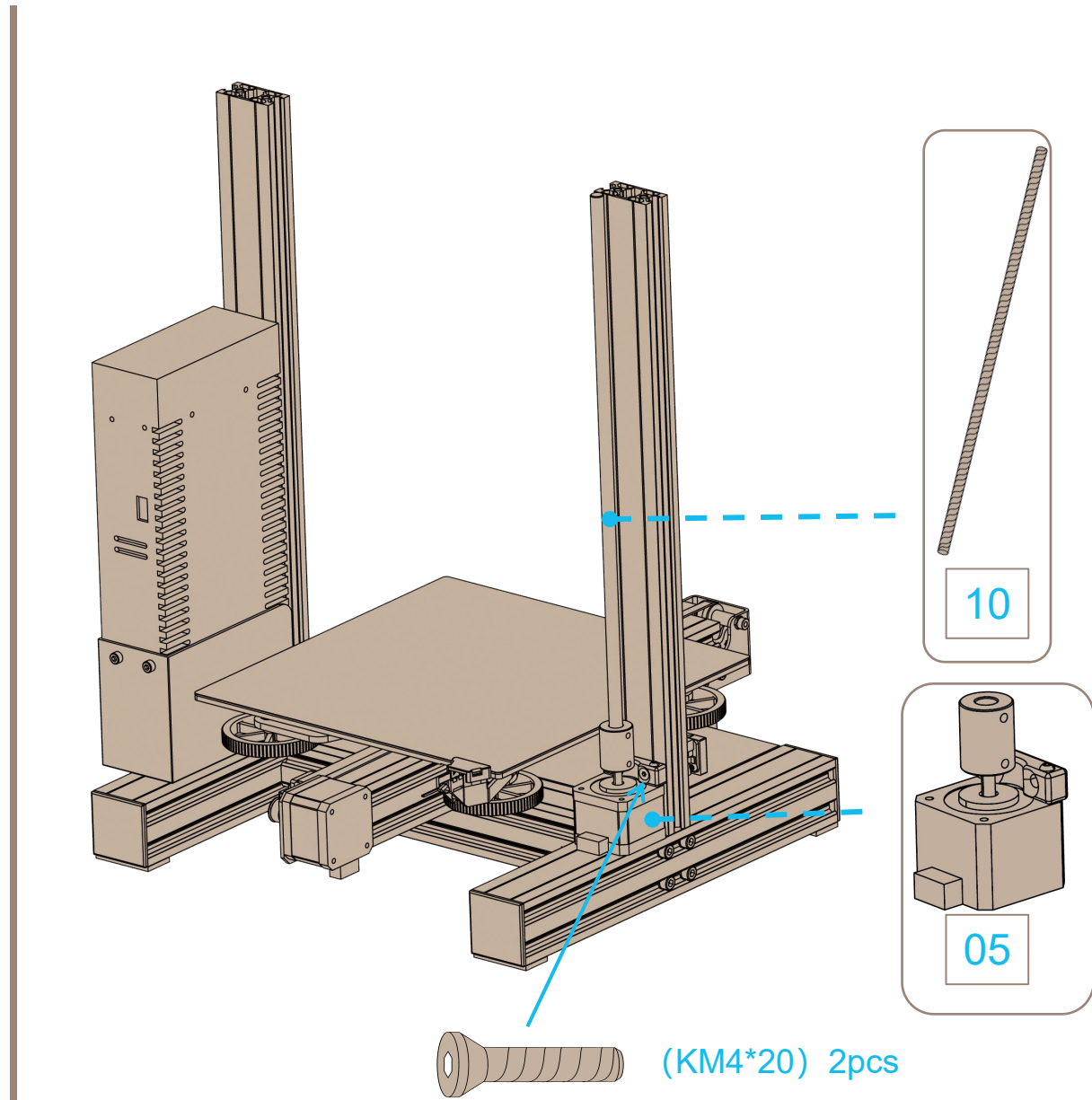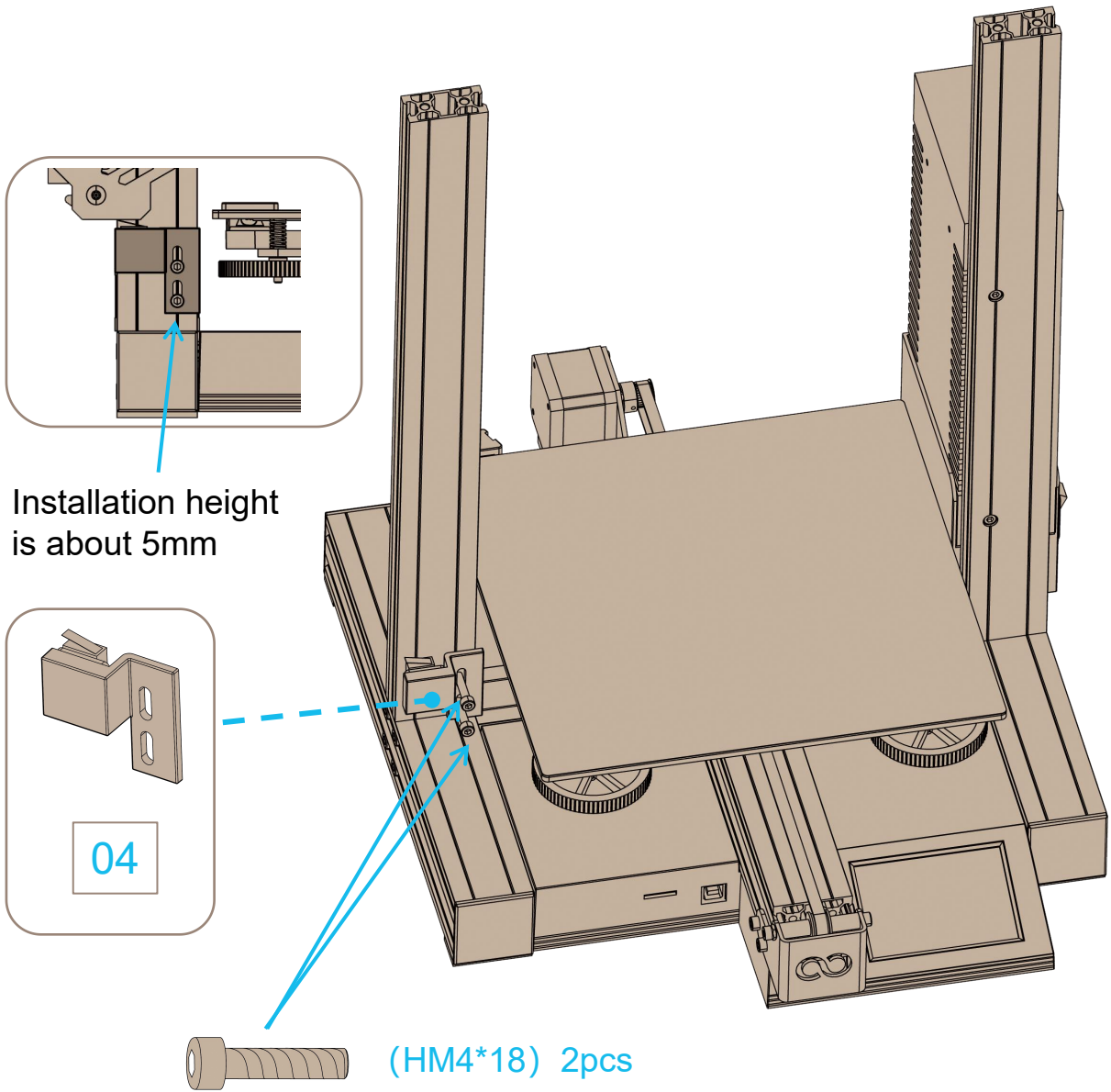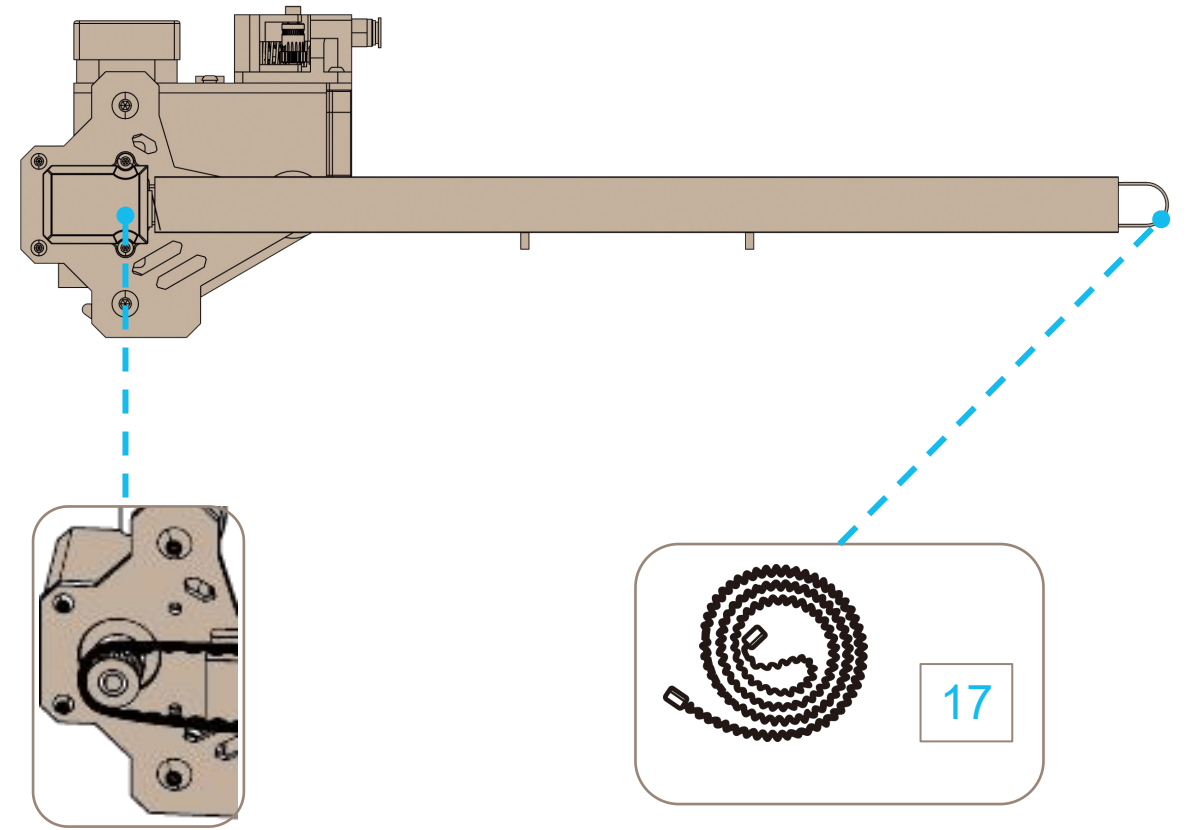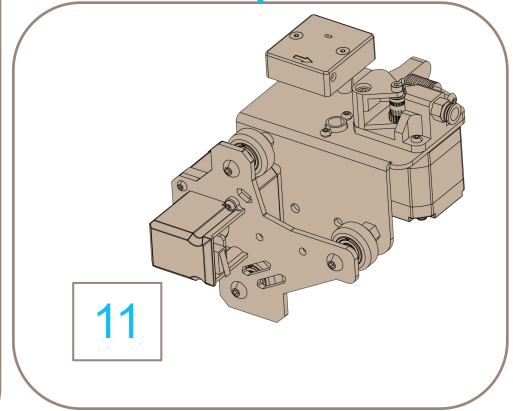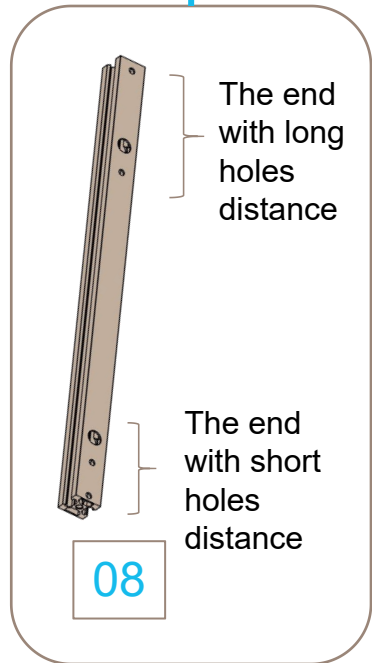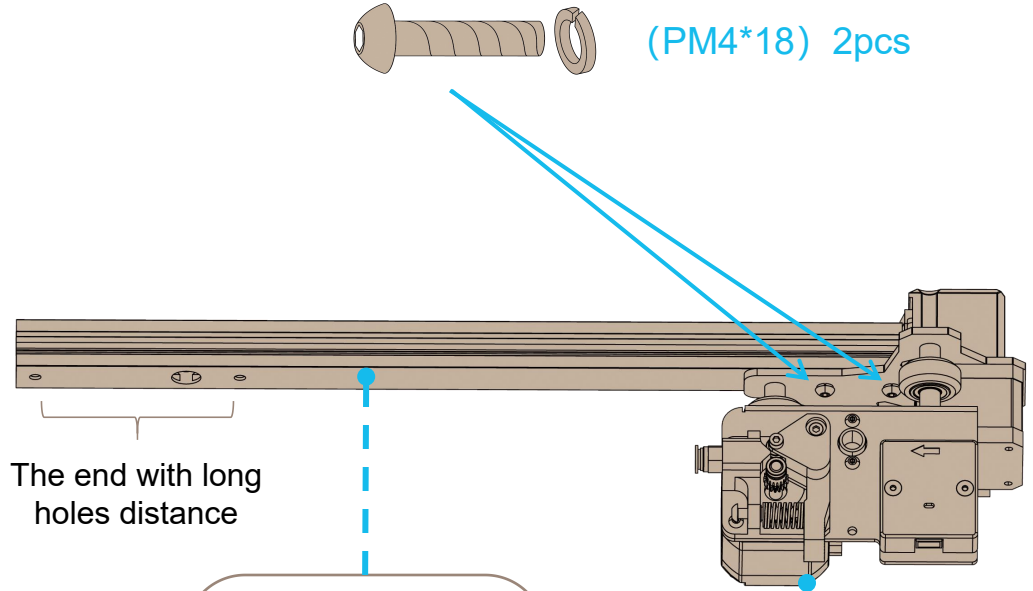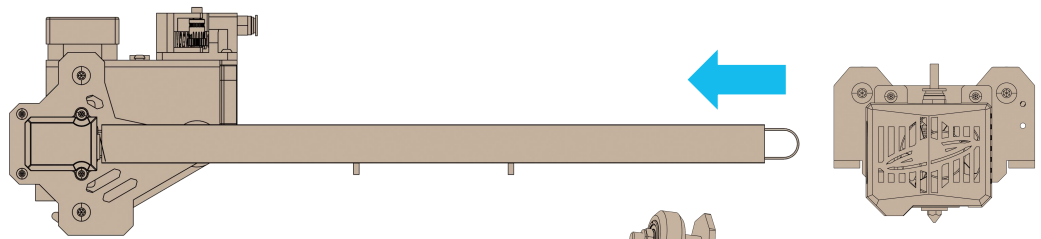
The metal eccentric spacer can be loosened before installation so that the pulley slides smoothly into the profile, and after installation the metal eccentric spacer can be properly tightened again so that the print head does not wobble.
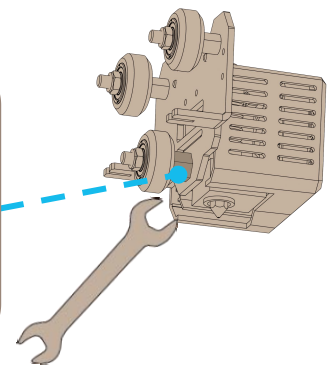
12
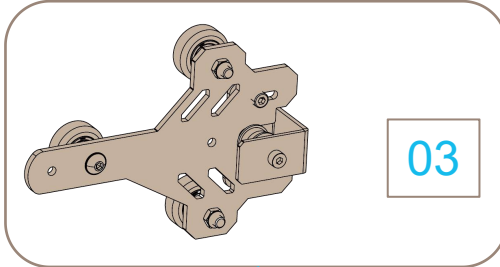
03
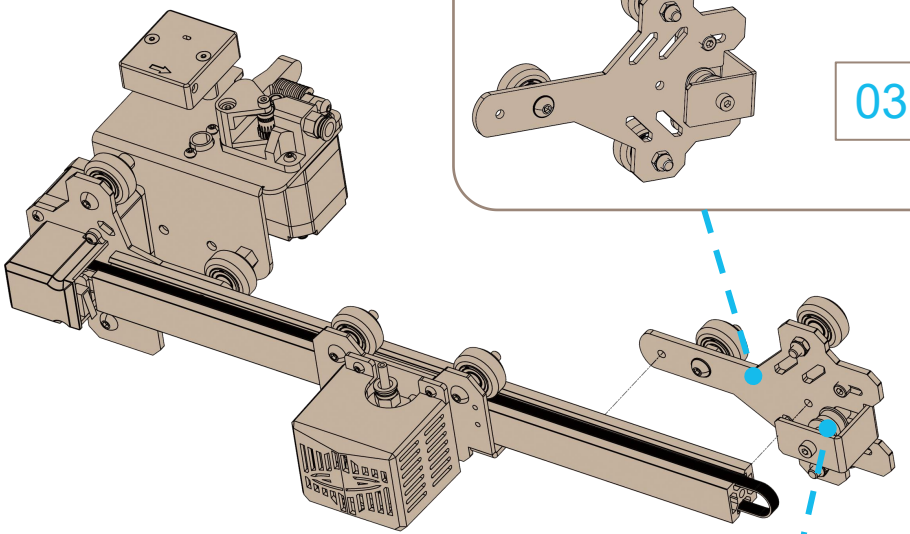
Mounting the synchronous belt around the bearing
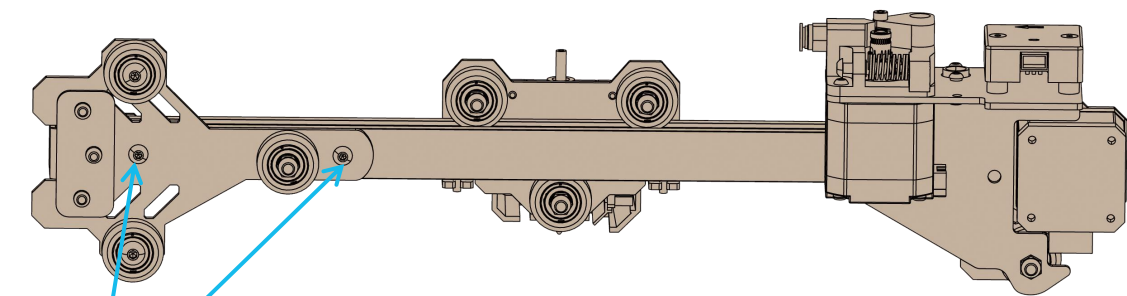
(PM4*18) 2pcs
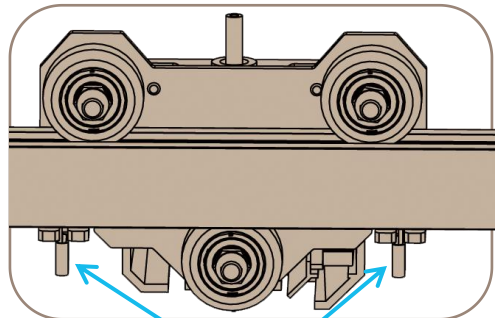
Belt chute
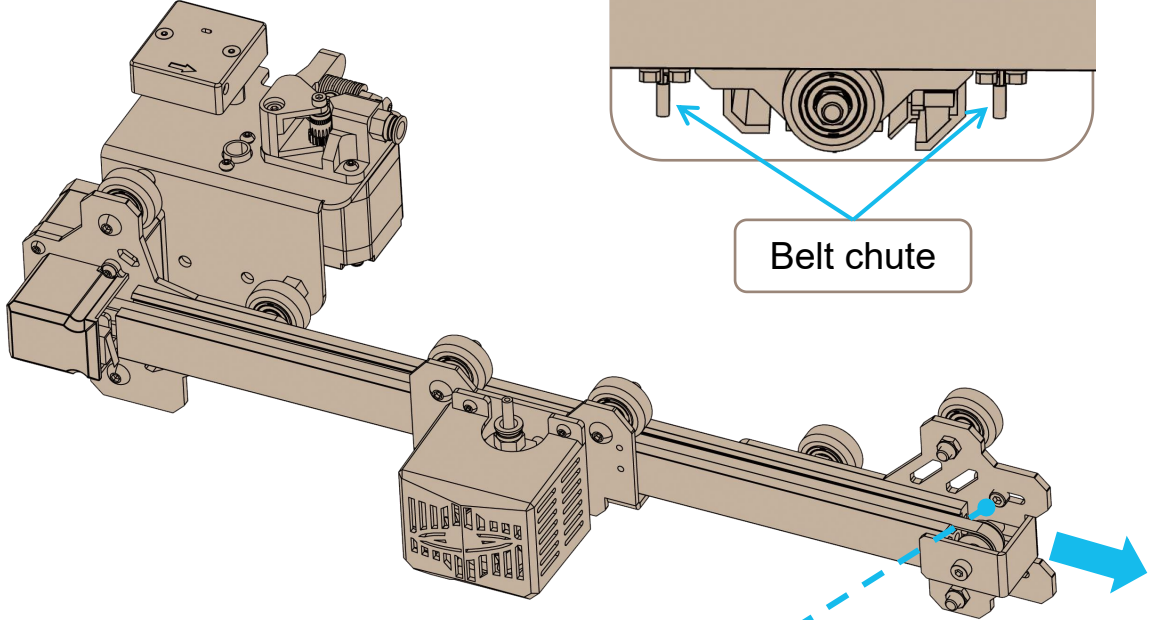
Tighten the synchronous belt and lock the screws

7
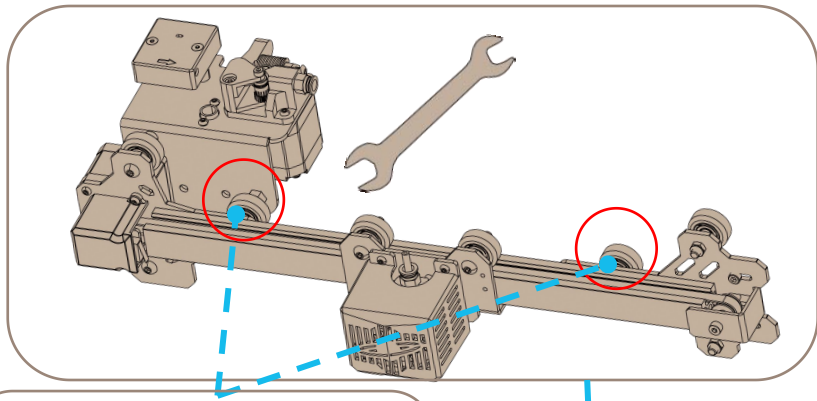
The metal eccentric spacer here can be loosened before installation to allow the pulley to slide smoothly into the profile and then tightened appropriately after installation.

Once the installation is complete the screws on the screw nuts here can be properly tightened.

09

(HM5*25) 4pcs

13    14

Filament
detector

E

Y

X

X

Z

Y    Z

9
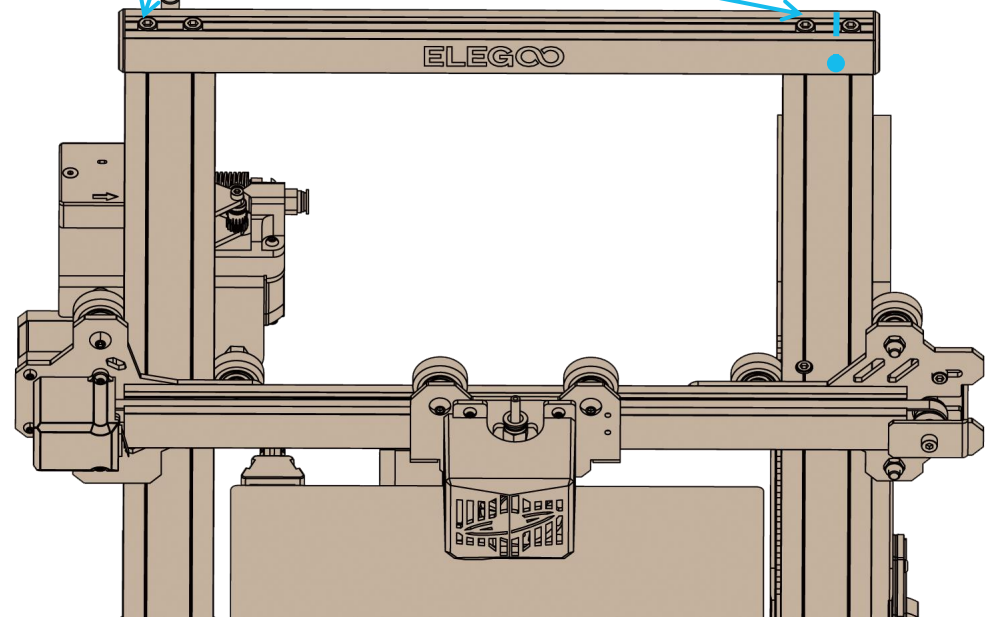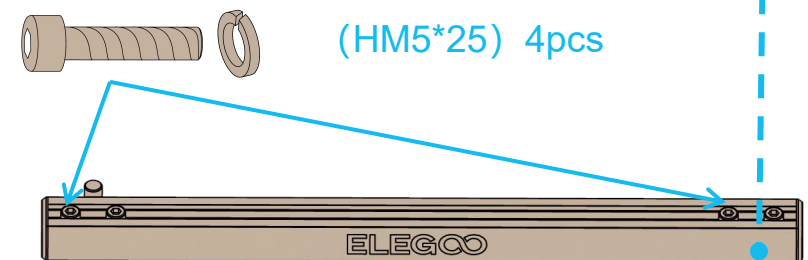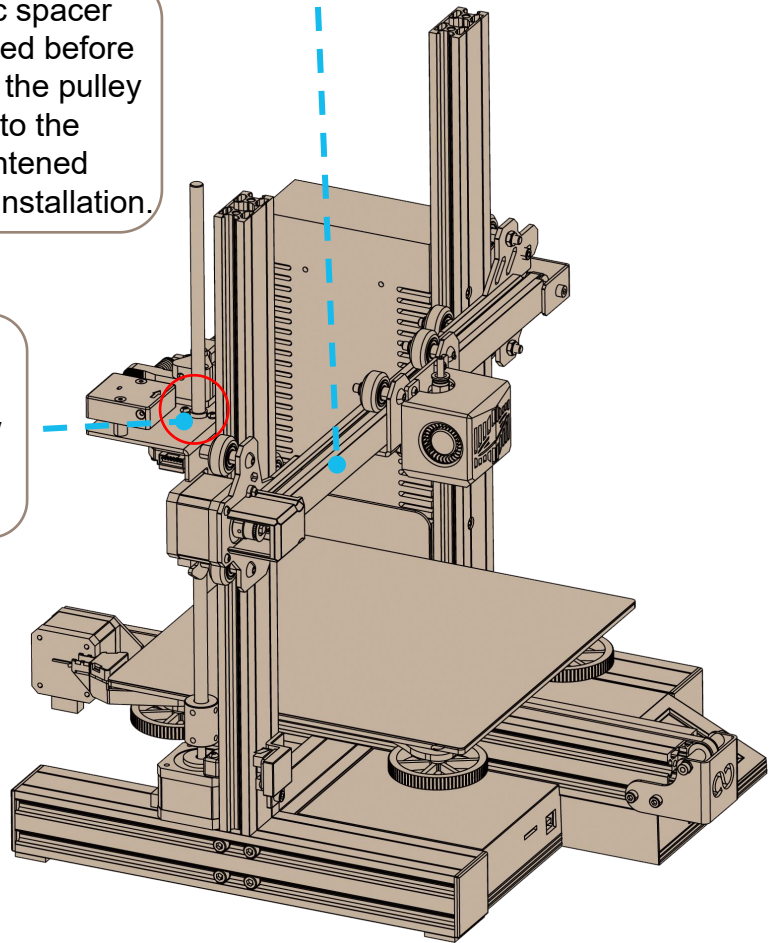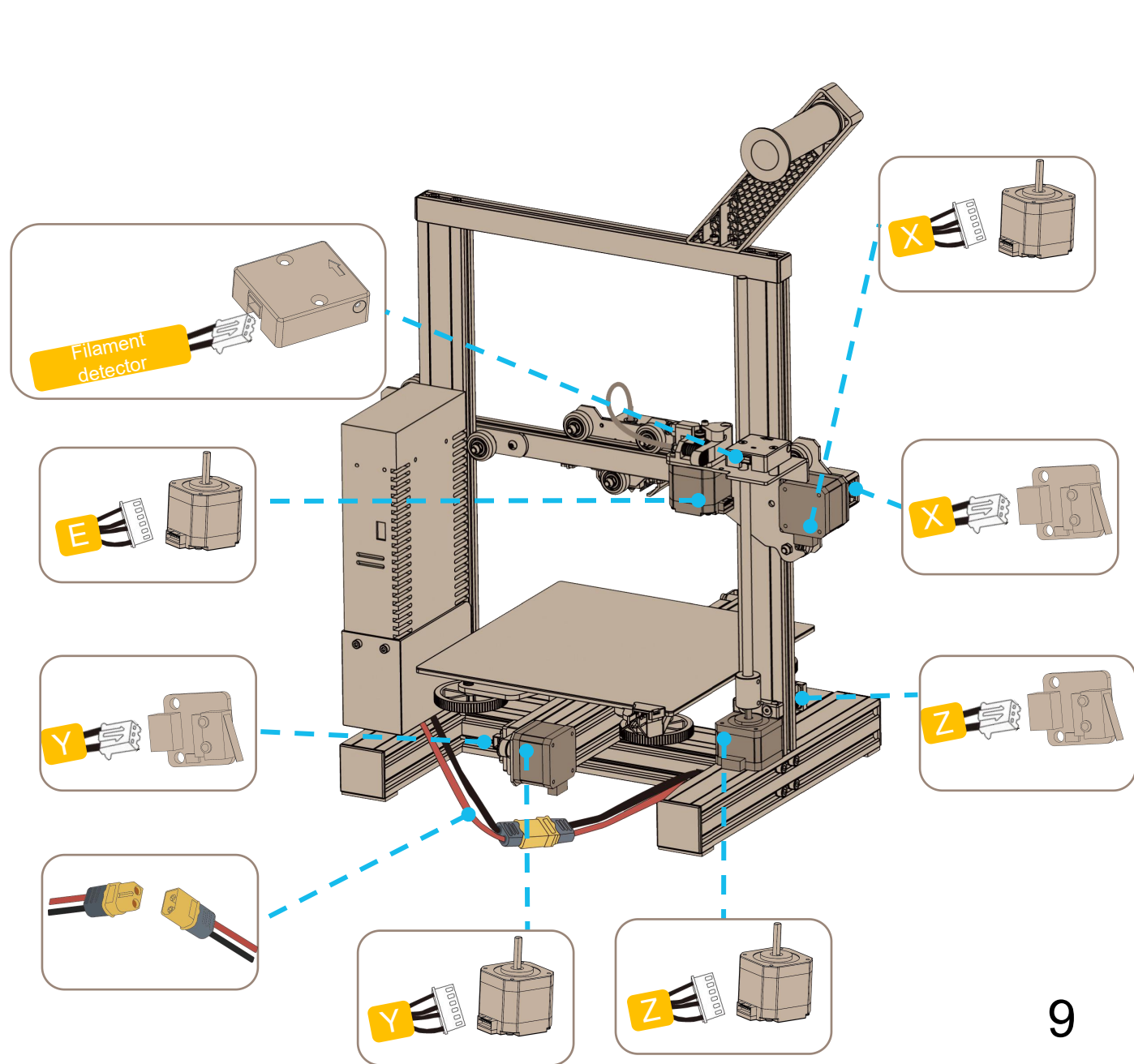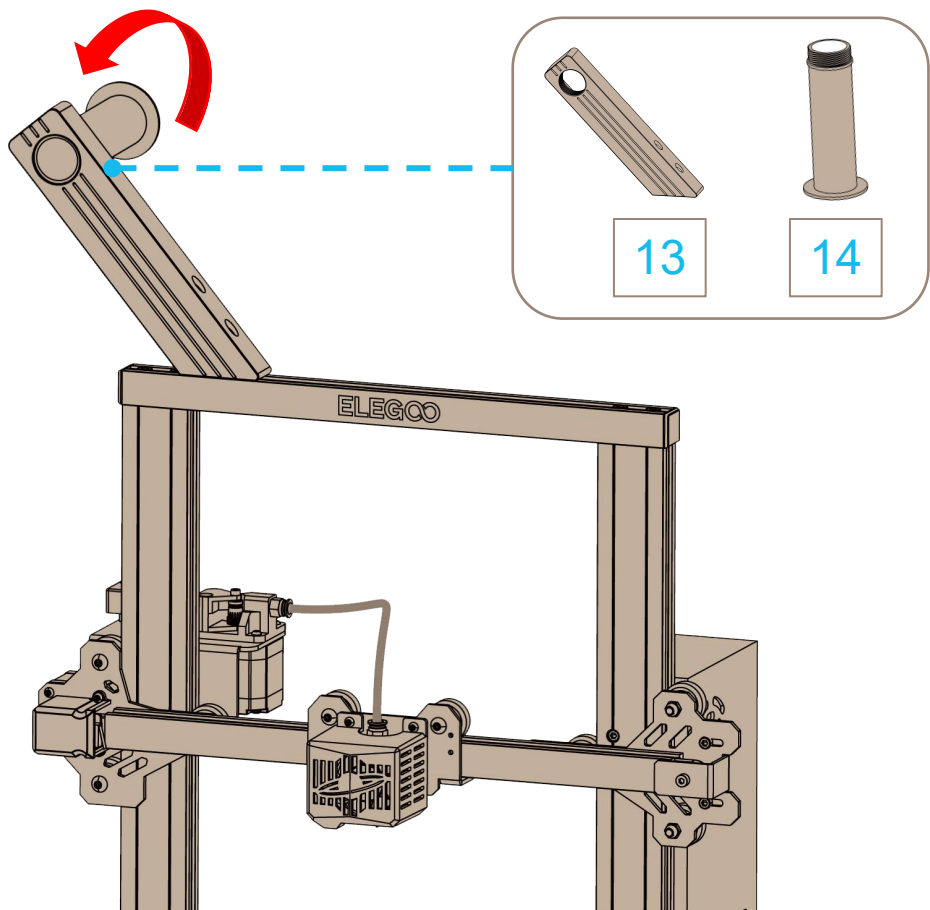
# Operation Screen Introduction

## Main Menu

Tool： Click to enter the tool interface, the machine can be tested to preheating, leveling, moving, extruding, etc.

Settings： Click to enter the settings interface to set the language and fan or query the firmware version as required.

Printing： Click to enter the printing interface, select the print file, and then start printing.
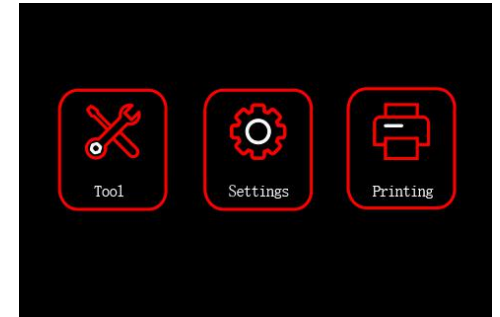
## Tool Interface

Preheat： Click to enter the preheat interface, select 【Extrusion】 or 【HeatBed】 and set the temperature to start heating. (You can switch to 【HeatBed】 by clicking 【Extrusion】)

Move： Click to move the X-axis, Y-axis, and Z-axis manually.

Home： Set all axes back to the zero position or select one of the axes and set it to the zero position.

Extrude： First heat the nozzle, set the length of the filaments, and then check if the nozzle is discharging properly by clicking 【In】 and 【Out】.

Leveling： Leveling five points, fine-tune the distance between the nozzle and the platform by leveling nut under the heatbed when the nozzle is moving to the position of each point.

Filchange： The filaments can be replaced by clicking 【Filchange】.

10

# Operation Screen Introduction

## Settings Interface

Fan： Control side fan operation.

About： Check the firmware version.

Language： Click to change languages: Japanese, German, English, Russian, Spanish, French,Italian, Chinese.

Motoroff： Turn off the stepper that is running or free a locked stepper.

Continue： Continue printing at a certain layer position of the model.

## Printing Interface

File： Select the model file and comfirm to start printing.

Up Arrow/Down Arrow: Page up and page down.

Crooked Arrow： Back to the main menu.

## Description of Special Function：

Continue：
- This function allows you to resume printing if you want to continue printing after the model has been interrupted by a misoperation.
- First click 【Tool】- 【Home】, observe if the model will collide by setting the X/Y/Z axis to zero in sequence. (If a collision occurs, turn off the power immediately, this function cannot be used.)
- Then click 【Back】- 【Move】, move the Z-axis to the height of model interruption, then move the X/Y axis again, and move the nozzle to the top of the model. Observe whether the nozzle is level with the model section or there is a gap of about 0.1mm. (The print head should not be lower than the height of the model interruption position, or model collision will occur during printing.).
- Finally, select 【Settings】 on the menu, click 【Continue】, and then select the model file you want to continue printing.
- Wait for the temperature of the nozzle and heatbed to reach the preset temperature, in the meanwhile, start to read the previous printing information up to the height of the interrupted printing position, then the X and Y axes will back to zero one after another, and then it will start printing.



12
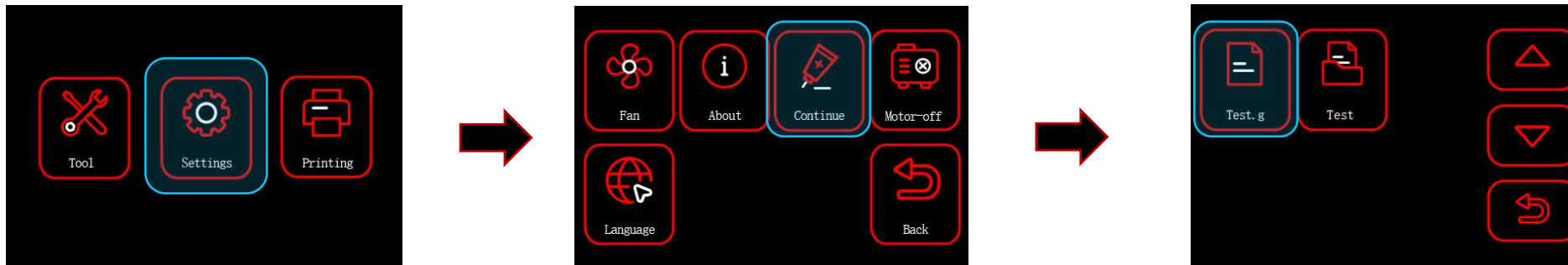
Continue： If you want to continue printing because of a sudden power outage or accidentally turn off the power of the machine, this function does not need to be set manually. When the printer is reconnected to the power supply and turned on,  just click resume to continue.

Filaments Detection： This function is designed to effectively prevent the model from being scrapped after running out of filaments during the printing process by alerting the user that filaments need to be replaced before the model can be printed again.

# Platform Leveling

- In the process of printing, we need to level the platform in order to make the base of the model stick to the build platform and not falling off.
- The best distance between the nozzle and the platform is 0.1mm-0.2mm, and you need to prepare an A4 paper to assist in leveling.

1.First, make sure that all the cables are connected, and then turn on the printer.

2. Click【Tool】in the main menu to enter the tool interface and then click【Leveling】.

3. Place a piece of A4 paper between the nozzle and the platform. Click the leveling point, and the nozzle will move to each point of the platform accordingly. Adjust the leveling nut under the platform. (Loosen the nut clockwise, then the platform will rise; otherwise, the platform will fall).

4. Make sure the nozzle and A4 paper just touch, the paper can move smoothly and there is friction force when moving the paper.

5. Level the point 2, 3, 4 and 5 in the same way.

- After the leveling is completed, the distance between the platform and the nozzle must be verified (1-2 times) according to the above steps ① → ② → ③ → ④ to avoid scratching the platform plate.

A4 paper

14
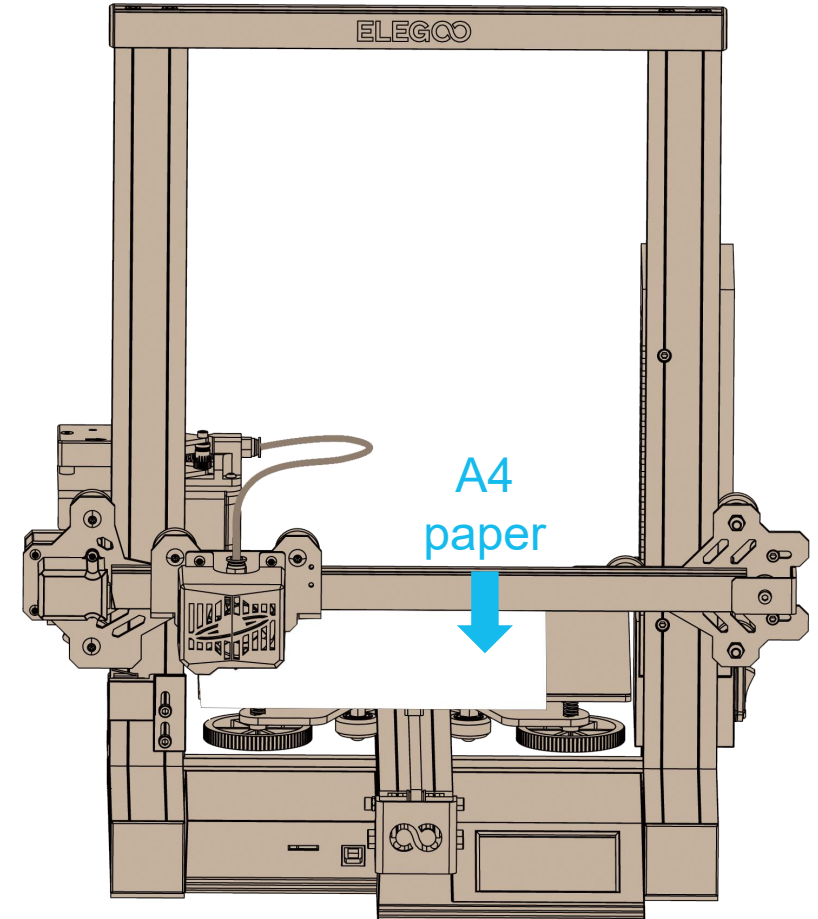
# Supplymentary Introduction

## Special Case 1:

①: When the machine returns to zero, the nozzle is far lower than the platform. (Even if the four leveling nuts below the platform are tightened, the nozzle is still pressing against the platform.)

②: When the machine returns to zero, the nozzle is far higher than the platform. (Even if the four leveling nuts below the platform are loosened, the nozzle is still a certain distance from the platform.)

Solution: Adjust the Z limit switch up (down) to the proper position.
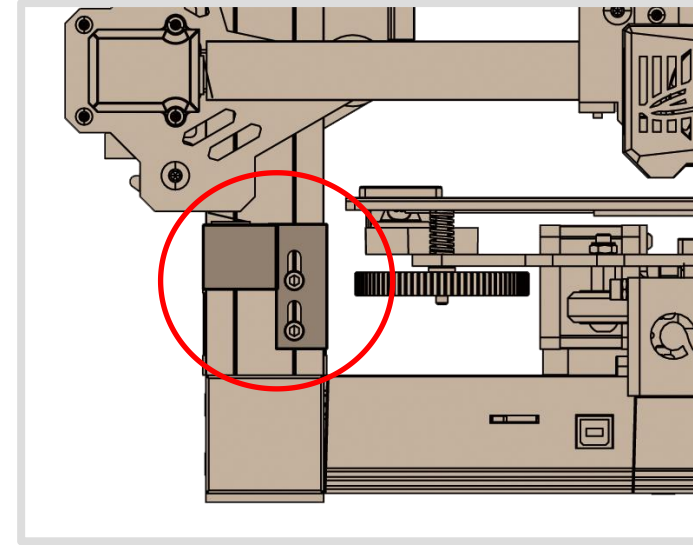
## Special Case 2:

①: The bottom slide block has been adjusted before leaving the factory, but the pulley of the machine may become loose due to the transportation. If the build platform of the machine is shaky and loose, an open spanner can be used to slowly twist the eccentric isolation column under the platform until the slide block slides smoothly and does not shake.

15
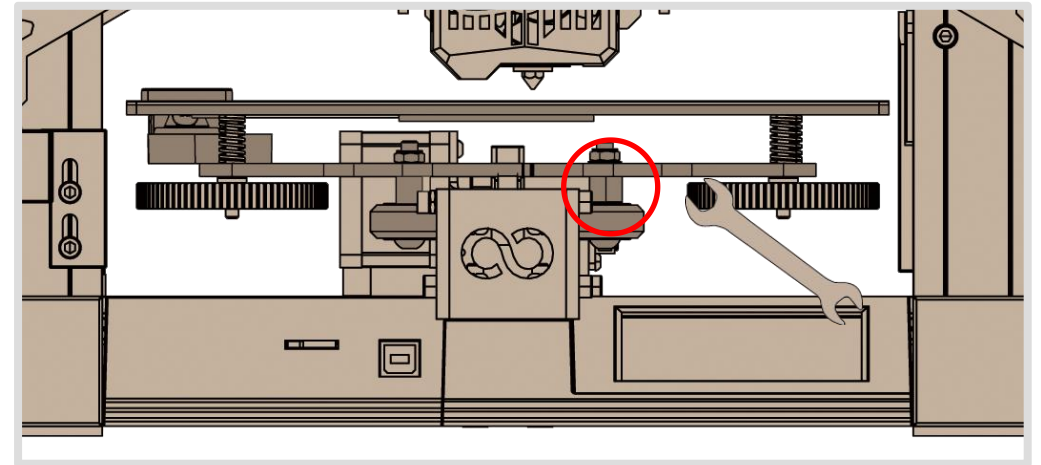
# Model Test

## Extrusion inspection

1) Push the filaments to the bottom of the print head.

2) Click【Tool】-【Extrude】, and then click【In】, the nozzle temperature will be automatically heated to 200°C.

3) After the nozzle is preheated to 200°C, click [In], and the filaments can be spun out normally from the nozzle. The speed of extrusion can be selected as low, medium or high.

4) Please clean off the extruded filaments from the nozzle before printing.



## Start printing

1) Insert the TF card into the card slot of the printer.

2) Click【Printing】on the main menu and select the model file.

3) When the nozzle and the heatbed reach the preset temperature, the X, Y, Z axis will return to zero, and then start printing.

Tips：

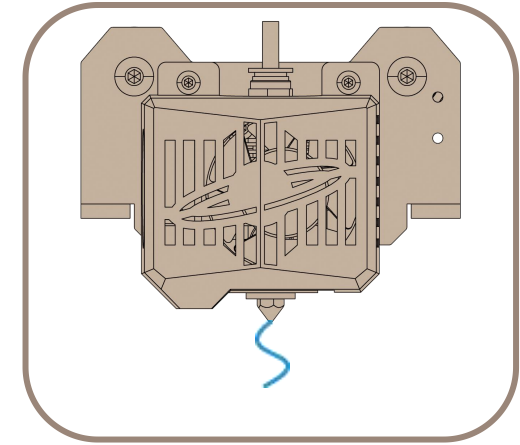When printing the test model, please observe the printing situation of the first layer. If the situation of A and C appears in the first layer, it proves that the five-point leveling is not well adjusted, so it is necessary to fine-tune the leveling nut under the platform or reset the platform. If the situation of B appears in the first layer, it proves that a good printing distance has been reached between the nozzle and the platform, and printing can be continued.

The nozzle distance to the platform is too close, so the leveling nut under the platform needs to be tightened to fine-tune or re-level.

The distance between the nozzle and the platform is moderate, extruding the right amount of filaments, and evenly adhering to the platform.

The nozzle is too far away from the platform, and the adhesion is not good, which may easily cause the model to leave the platform during the printing process, so it needs to be releveled.



A ⚠️    B ✔️    C ❌

# Software Installation

Tips： You can use a card reader to copy the data in the TF card to the computer for storage.

Our slice software is modified form Cura open source slice software, in order to better match with our company's machines for printing and meet the needs of our customers.

The software installation steps are as follows：

Open the TF card of the machine to select the path \ Software and Software Drivers folder \ ELEGOO Software folder \ Double-click the ELEGOO-Cura-4.7.0-win64 application to install it.

Follow the prompts in the installation process to the next step.

Finally, select the corresponding model of our company as shown below to complete the settings.

Neptune 2 and Neptune 2S machines share the same slicing model "ELEGOO NEPTUNE 2".
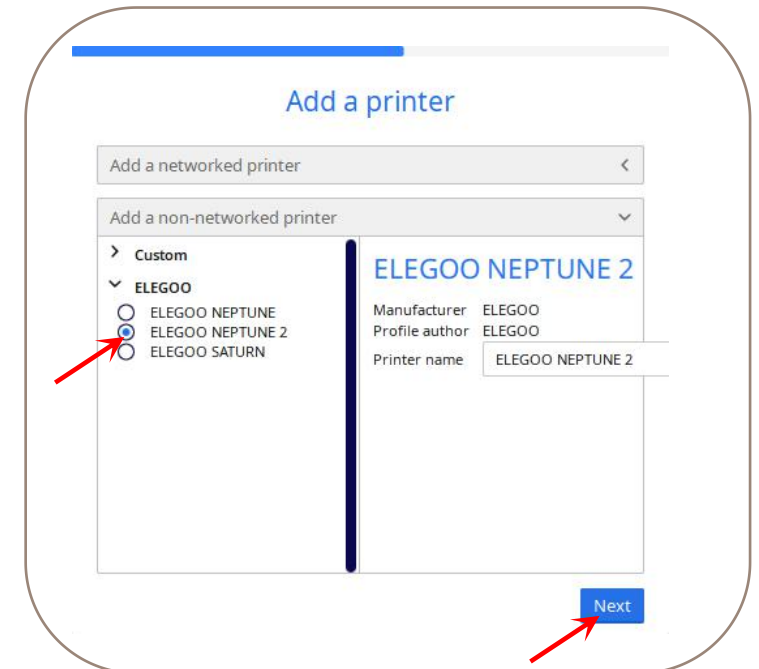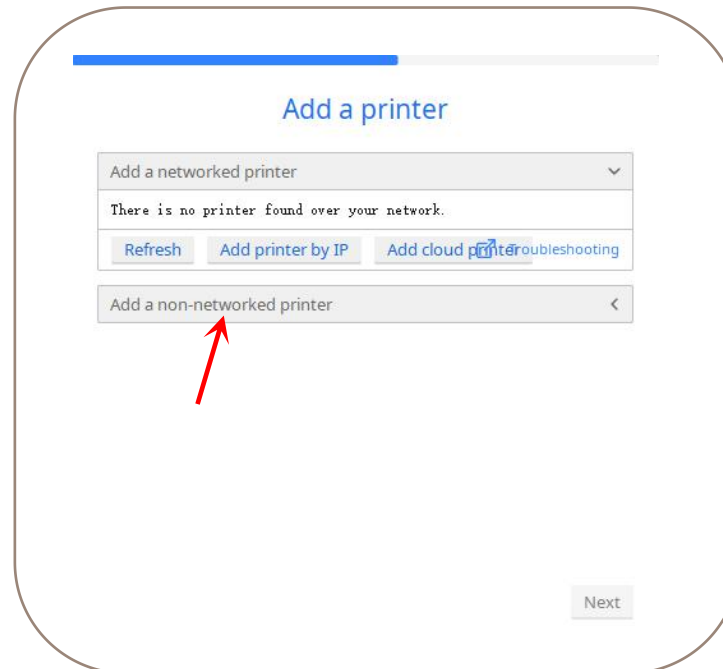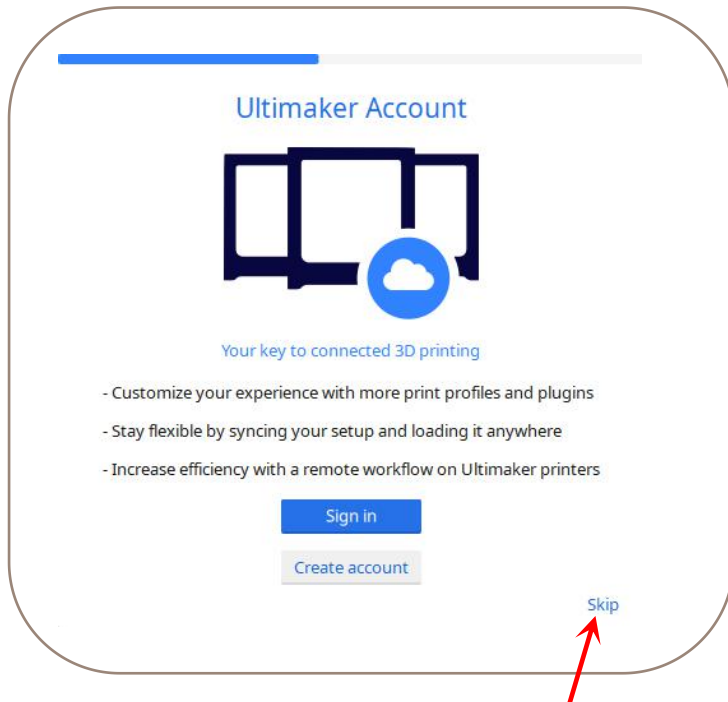
# Instructions for Use
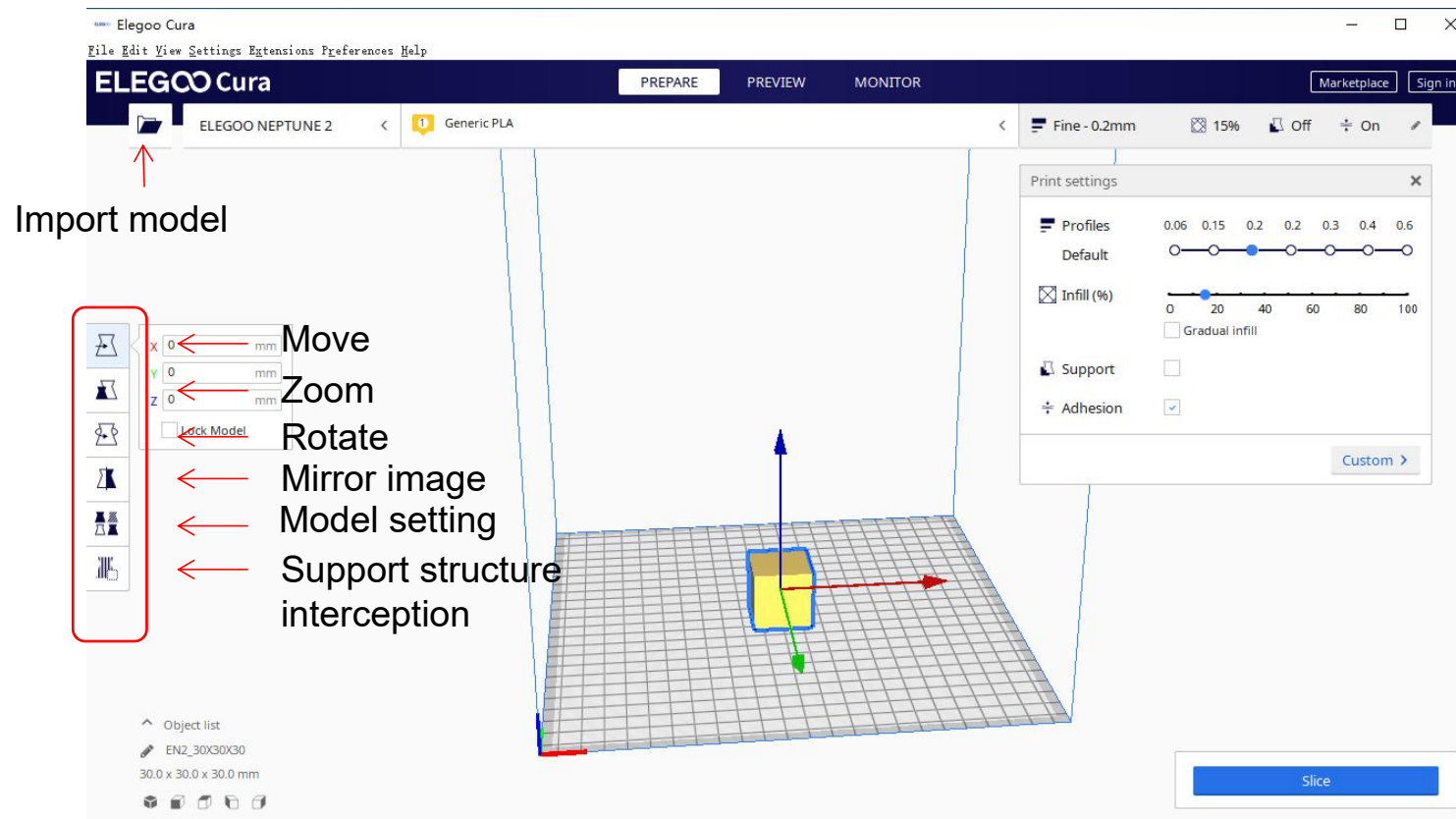


Import model

Move
Zoom
Rotate
Mirror image
Model setting
Support structure interception



Preview image function
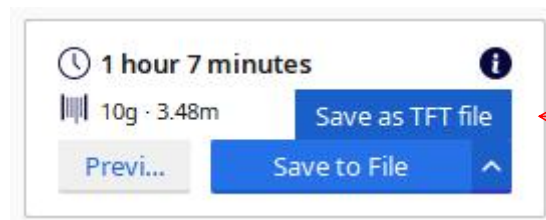
## Other operation tips：

① Scroll the middle mouse wheel to zoom the viewpoint, and hold down the middle wheel to move the platform position.
② Press and hold the right mouse button to move the mouse to change the viewpoint.
③ Click the right mouse button will bring up a pop-up selection.

Model setting： When printing multiple models, you can configure individual slice settings for the specified model.



Support sturcture interception： You can set the intercept region on the model so that the set region does not generate support structure.

Preview image function: Gcode files saved in TFT file format can use to preview the model image in the selection file on the printer, which can identify the printed file more visually.

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# Online Print

- Connect the printer and computer with USB cable, double-click to open the slicing software, select the corresponding model and then click on the monitor, if the interface shows a blank then it proves that the connection is not successful, you need to install the driver.
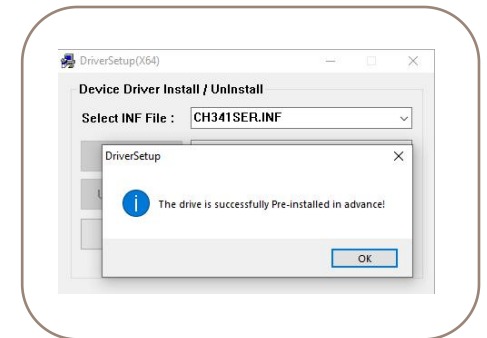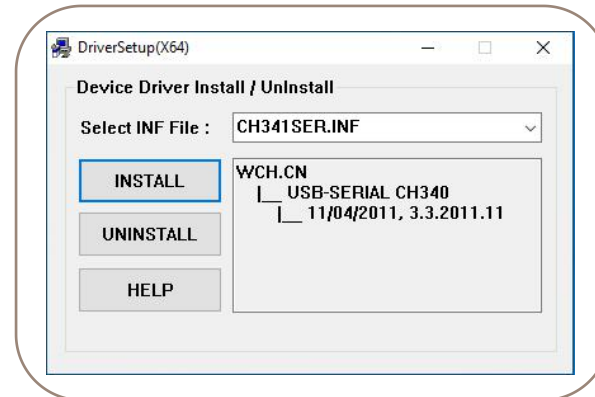
- The driver installation method is as follows: Open the profile of the TF card to select the path \ Software and Software Driver Folder \ Software Driver Folder \ CH340G USB Driver Folder \ Double-click the [DRVSETUP64] file to run it and click to install it. (As shown in the picture below.) Please note that this driver software  has no virus, so please feel free to install it. If your antivirus software determines that it is a virus, you can close your antivirus software for a while and then continue to install the driver software.

- After the driver installation is complete, reconnect the USB cable, open the ELEGOO slicing software, and then click on the monitor, if it display the printer model and other information, the computer has been successfully connected.

- After importing the model, set the print temperature, layer thickness and other relevant information, and then click on the 【slice】, select the USB online printing.

- The power cannot be cut off and the computer cannot go into screensaver or hibernation mode when connected to printing via USB cable to prevent data transfer failure.
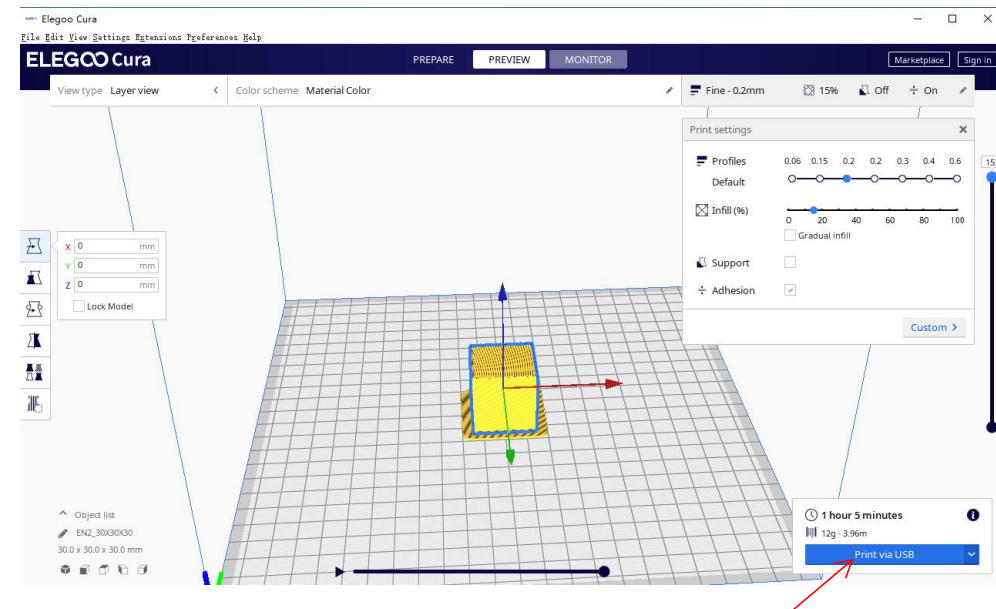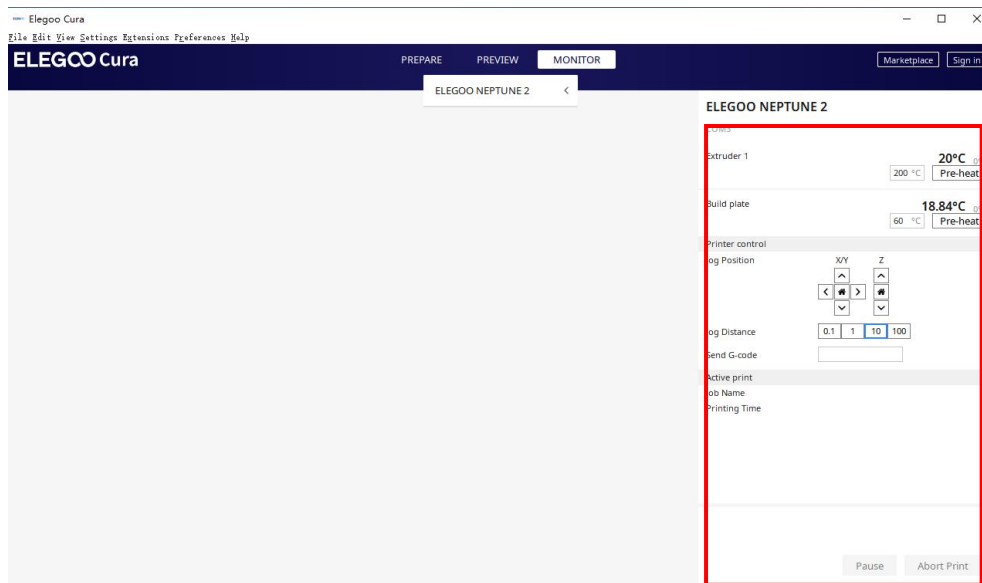
# Troubleshooting Guide

## A stepper of the X/Y/Z axis is not moving or making a noise when zeroed

① The stepper cable is loose. Please recheck the wiring connection.

② The corresponding limit switch does not trigger properly, please check whether there is any interference in the movement of the corresponding shaft and whether the limit switch wire is loose.

## Nozzle kit extrude anomaly

① Check that the extruder stepper cable is not loose.

② Check whether the set screw of the extruder gear is locked to the motor shaft.

③ The heat dissipation of nozzle kit is not enough, make sure that the nozzle kit's cooling fan is working properly.

④ For clogged nozzles, try briefly heating the nozzle to 230°C and squeezing the filaments by hand to remove the clog, or use a fine needle to unclog the nozzle while it is warming up.

## Model does not stick to the platform or warpage

① The key to whether the model can stick to the platform is the filaments are attached to the platform when printing the first layer. When printing the first layer, if the distance between the nozzle and the platform is more than 0.2mm, it will seriously reduce the model's attachment to the platform, so it needs to be adjusted.

② Set up the build platform attachment in Cura, and select the attachment type 【Brim】, which will help to enlarge the attachment surface and prevent warping and other problems.

## Model misalignment

① The travel speed or print speed is too fast. Please try to reduce the speed.

② The belt of X/Y axis is too loose or synchronizer pulley is not securely tight.

③ Drive current is too low.

## Severe wire drawing

① Insufficient retraction distance, set the retraction distance larger when slicing

② If the retraction speed is too slow, set the retraction speed higher when slicing.

③ When slicing, tick the box "Z Hop When Retracted" and set the "Z Hop height" to about 0.25mm.

④ Print temperature is too high, which causes the filaments to become sticky.

# Circuit wiring

X axis stepper

Y axis stepper

Z axis stepper

E axis stepper

E1 axis stepper

Laser fan

Laser signal

Model fan

Main board fan/print head fan

Heating head interface

Heatbed interface

Power interface

X- axis limit switch

Y- axis limit switch

Z- axis limit switch

Filament detector

BL -TOUCH

Heatbed thermosensitive

TF Card slot

Heating head thermosensitive

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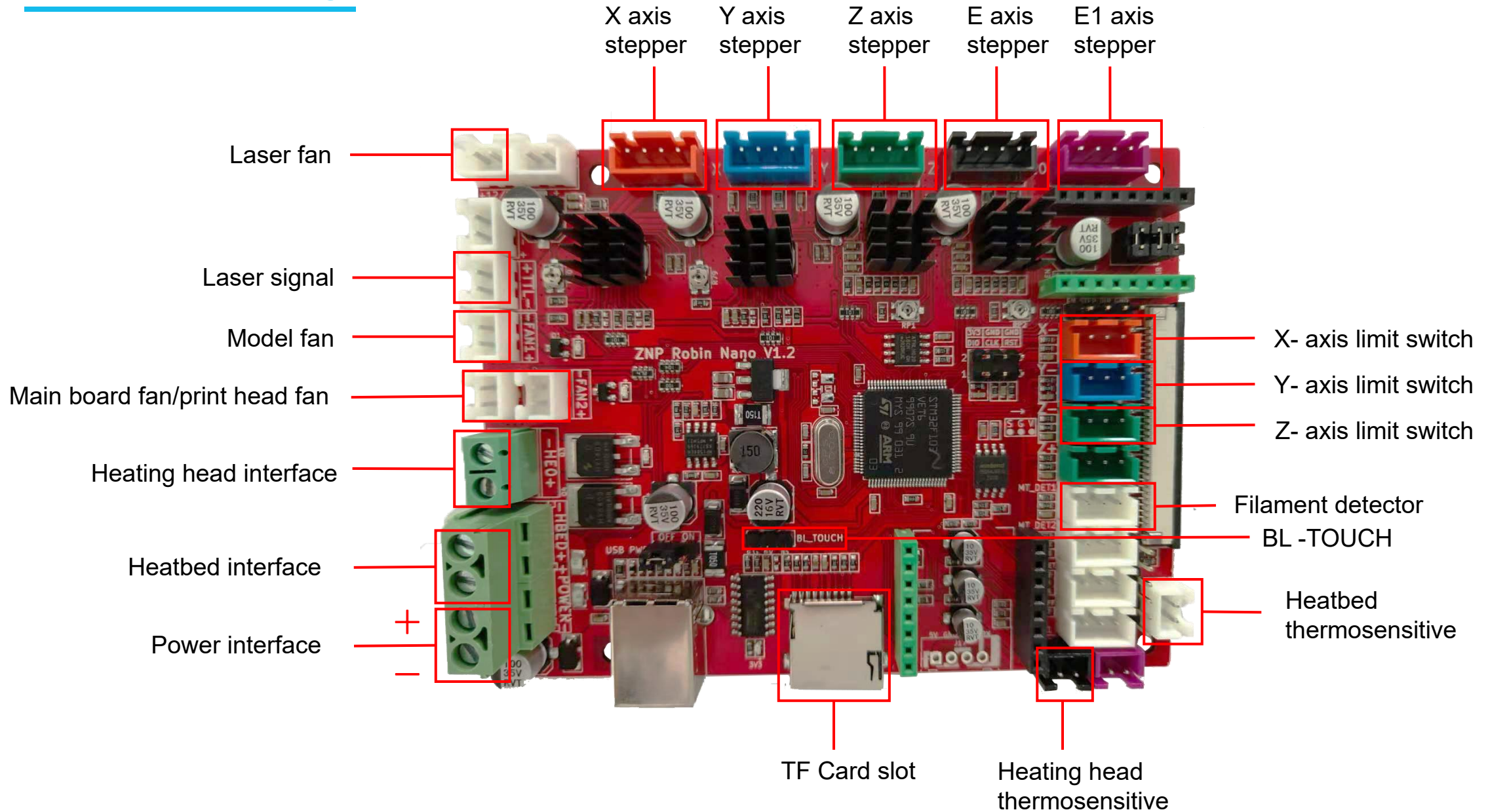
# After-sales service registration card
# 售后服务登记卡

Date of purchase
购买日期：_____

Place of purchase
购买地点：_____

Printer
机器：_____

S/N
序列号：_____

Fault description
故障描述：_____

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_____

Contact
联系人：_____

Phone number
电话号码：_____

Address
地址：_____

ELEGOO website：www.elegoo.com