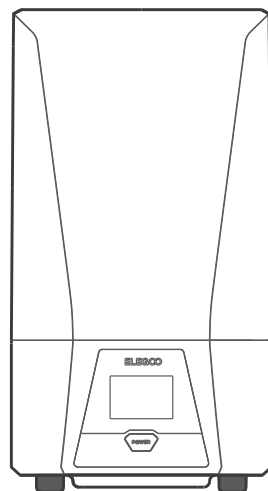# ELEGOO

SATURN 3
3D Printer

User Manual

Notice:

- **Please keep the 3D printer and its accessories out of the reach of children.**

- **Please fill the resin tank no less than 1/3 of its volume, but do not exceed the MAX line position.**

- **Please place the printer in a dry environment and protect it from rain and moisture.**

- **If you run into an emergency during use, please turn off the power supply of the 3D printer first.**

- **Please use the printer indoors and avoid direct sunlight and a dusty environment.**

- **Please keep the original packaging box for 30 days for return/exchange (only ELEGOO original packaging boxes are accepted).**

- **Please use 95% (or higher) ethyl alcohol or isopropyl alcohol to wash your model unless you are using water washable resin.**

- **If the printing fails, you need to clean the excess cured resin in the resin tank and change the resin, otherwise, it may cause damage to your printer.**

- **When operating the 3D printer, please wear a mask and gloves to avoid direct skin contact with the photopolymer resin.**

- **When you use the 3D printer for the first time, please level the build platform according to the leveling tutorial before printing.**

- **If the release film in the resin tank is whitened, scratched, or has no elasticity, the printing failure rate is high, please replace the release film in time.**

- **If you have any problems with the printer, please contact us at 3dp@elegoo.com. Please do not disassemble or modify ELEGOO 3D printers by yourself, otherwise, the warranty will expire.**
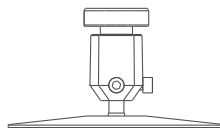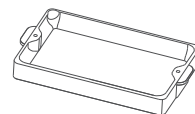
Packing List
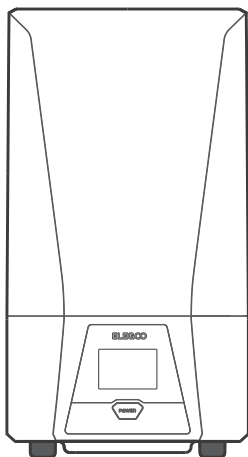
USB Air Purifier

Build Platform

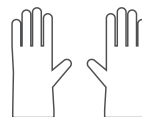**Resin Tank**

U Disk

Mask

Gloves

Funnel

Backup Screws

User Manual

Adapter

Tool Kit
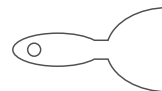
Scraper

SATURN 3 3D Printer
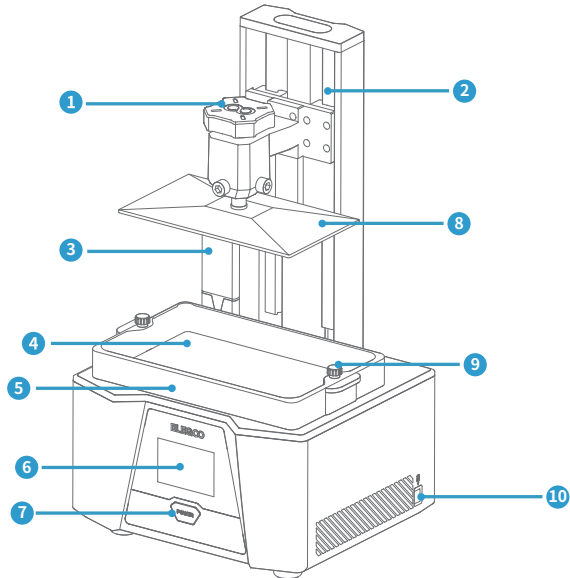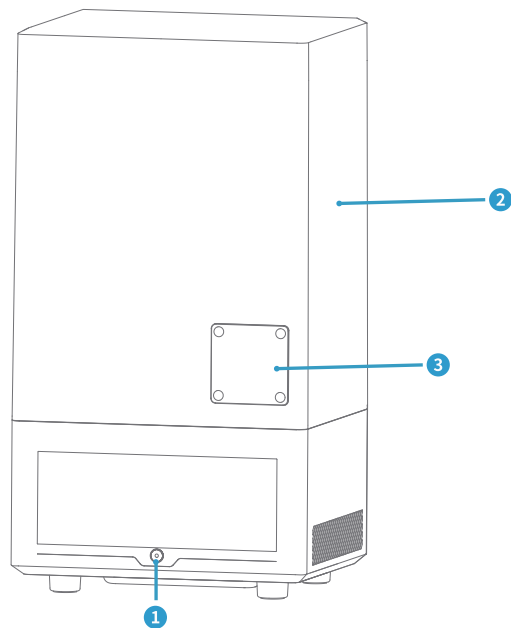
Printer Introduction

❶ Screw Knob   ❷ Z Axis   ❸ USB Air Purifier   ❹ LCD Display Screen   ❺ Resin Tank

❻ Touch Screen   ❼ Switch   ❽ Build Plate   ❾ Screw Knob   ❿ USB Interface
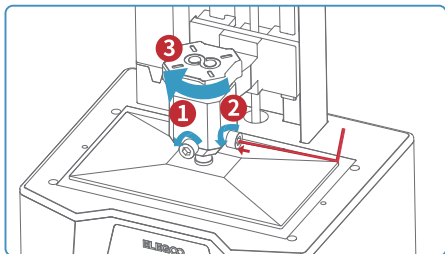
Printer Introduction

❶ **DC Socket**　　　❷ **Anti-UV Cover**　　　❸ **Extension Port**

Leveling

(Picture 1)

1. Remove the resin tank, lock the screw knob (3) of the build plate, and then loosen the 2 fixing screws (1 2) of the build plate until the build plate can move freely. (See Picture 1)

0.10mm   1.00mm   10.00mm
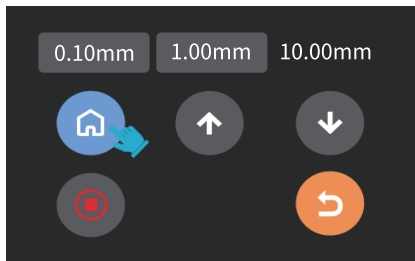
(Picture 2)
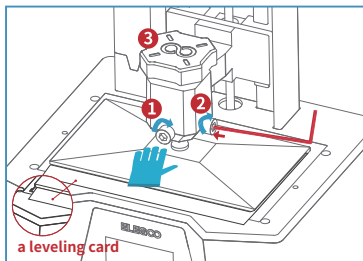
a leveling card

(Picture 3)

2. Place a leveling card between the build plate and the LCD screen, then click "Move Z axis to zero" (See Picture 2). After the printer stops moving, press the top of the build plate with one hand, and lock the fixing screws (1 2) with the other hand. (See Picture 3)

Leveling

3. Pull the leveling card. If you find there is a slight resistance during this process, you can go directly to step 5. (Note: If there is no resistance when pulling out the leveling card, please click the Z-axis "down" button (in steps of 0.1mm) until ther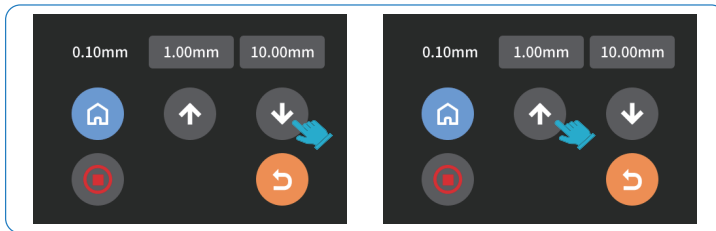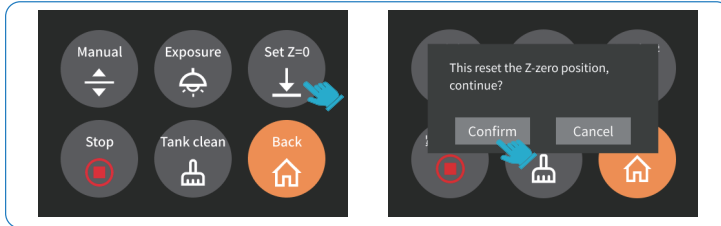e is a slight resistance to pull the leveling card. If there is too much resistance or the leveling card cannot move, please click the Z-axis "up" button (in steps of 0.1mm) until there is slight resistance to pull the leveling card.) (See Picture 4)

(Picture 4)

(Picture 5)

4. After completing the above operations, back to the previous menu, and click "Set Z=0", then a confirmation pop-up window will appear in the interface, click "Confirm" to complete the setting. At this time, the current Z-axis position is reset to the new initial height of the first printing layer. (See Picture 5)

Leveling
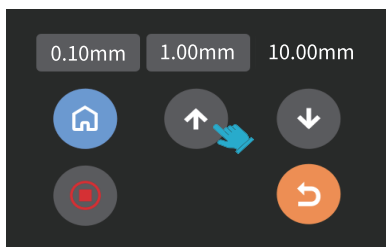
(Picture 6)

5.Click back to the "Manual" page, and click the Z-axis "up" button to raise the Z-axis by a certain distance. (about 100mm) (See Picture 6)
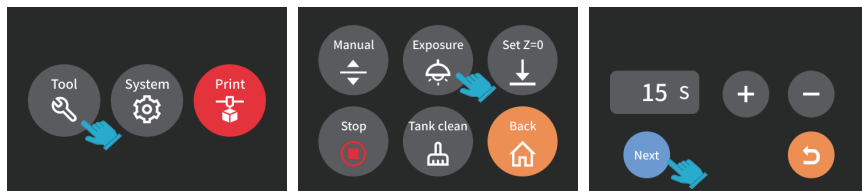
(Picture 7)

6. Take away the leveling card, and click the "Tool" - "Exposure" - "Next" buttons to test the LCD screen and LED light source. If the LCD can display "ELEGOO TECHNOLOGY www.elegoo.com", then the 3D printer works perfectly. At this time, the leveling is completed, install the resin tank and ready for printing. (See Picture 7)

Test Printing

1. Model Printing

Plug the USB air purifier into the USB port **(See Picture 8)**, then slowly add resin to the resin tank (do not exceed the MAX line height). Cover the printer and then insert the U disk into the printer and select the pre-sliced test model for printing.
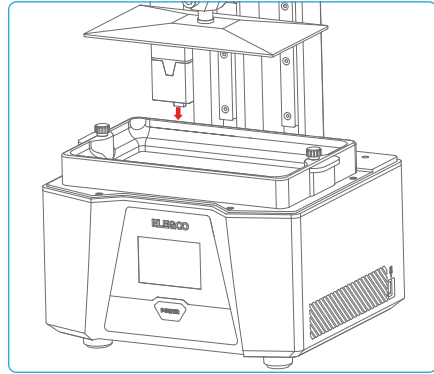
(Picture 8)

2. Model Processing

After the printing is completed, wait until the resin on the build plate stops dripping, then loosen the screw knob of the build plate to remove it and remove the model with a scraper. You can use ELEGOO's cleaning and curing machine to post-process the model. **(See Picture 9)**
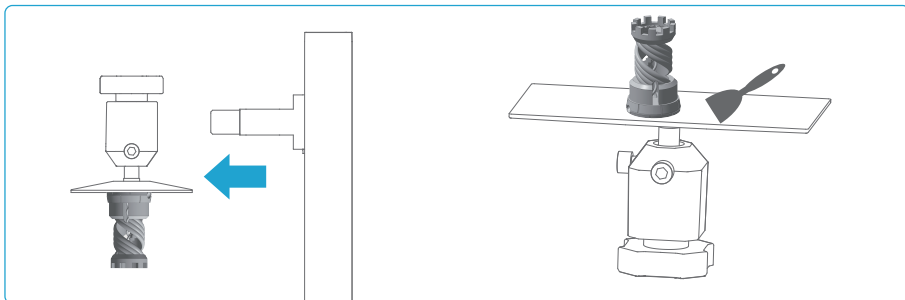
(Picture 9)

Software Installation and Setup

The printer can install and use Chitu Box and Voxeldance Tango slicing software in the USB flash drive, here we take Chitu Box as an example.

1. Install Chitu Box

Select the right version of slicing software on the USB flash drive and install it on your computer.

2. How to Use Chitu Box

After the installation is complete, run the Chitu Box software. Click "File-Open File", then open your 3D model file (.stl type). By left-clicking on the model and using the options on the left menu, you can control and change the viewing angle, size, and position of the model.

Other Operations:

1) Long press the left button and drag the model to the position you want.

2) Scroll the mouse wheel to zoom in or zoom out the model.

3) Long press the right mouse button to view the different perspectives of the model.
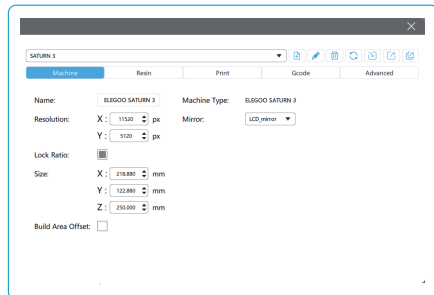
3. Chitu Box Setting

3.1 Machine Configuration Parameters

Click "Parameter Settings" and select ELEGOO SATURN 3 as your default printer. (See Picture 10)

(Picture 10)
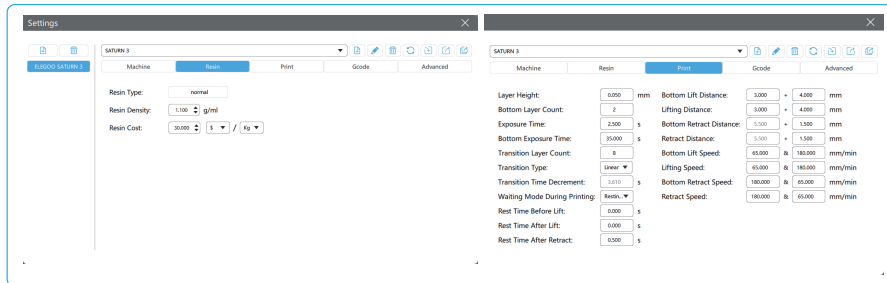

(Picture 11)

3.2 Build Volume

You don't need to change the default parameters (See Picture 11), and X indicates the maximum print size in the X-axis direction, and so on.

Software Installation and Setup

3.3 Resin Parameter (See Picture 12)
Resin Density: 1.1g/ml
Resin Cost: You can input the real price of the resin you purchased, and the slicing software can calculate the resin costs for each model you print.

(Picture 12)

3.4 Parameters (See Picture 12)

Layer Height: The thickness of each printed layer, the recommended height is 0.05mm, but you can set it from 0.01-0.2mm. The higher thickness you set, the longer the exposure time will be required for each layer.

Bottom Layer Count: The set number of initial printing layers. If the number of bottom layers is n, the exposure time of the first n layers is the exposure time of the bottom layer. The default setting is 2.

Exposure Time: The exposure time for normal printing layers. The default exposure time is 2.5s, the thicker the print layer setting, the longer the time required.

Bottom Exposure Time: The setting of bottom layer exposure time. Properly increasing the bottom layer exposure time can help to increase the bonding strength between the printed model and the printing platform, and the default setting is 35s.

Transition Layer Count: The number of transition layers after the bottom layers for a tighter bonding between layers. Except for the exposure time, other parameters of the transition layer are the same as the normal layer.

Software Installation and Setup

Transition Type: Set the transition type of exposure time when transitioning from bottom layers to normal layers, the default is linear transition.

Rest Time Before Lift: The time difference between the end of the exposure and the start of the build platform moving away from the exposure surface, the default setting is 0 seconds.

Rest Time After Lift: The time difference between the build platform starts to standstill and starts to return after the build platform lift, the default setting is 0 seconds.

Rest Time After Retract: After the build platform moves to the printing surface, the time difference between the build platform starting to stationary and starting to exposure, the default setting is 0.5 seconds.

Bottom Lift Distance: During the bottom printing process, the distance that the build platform moves away from the printing surface each time, the default setting is 3+4mm.

Lifting Distance: In the normal layer printing process, the distance that the build platform moves away from the printing surface each time, the default setting is 3+4mm.

Bottom Retract Distance: During the bottom printing process, the retract distance of the build platform, please do not change if not necessary.

Retract Distance: In the normal layer printing process, the retract distance of the build platform, please do not change if not necessary.

Bottom Lift Speed: During the bottom printing process, the moving speed of the build platform away from the printing surface each time, the default setting is 65+180mm/min.

Lifting Speed: In the normal layer printing process, the moving speed of the build platform away from the printing surface each time; the default setting is 65+180mm/min.
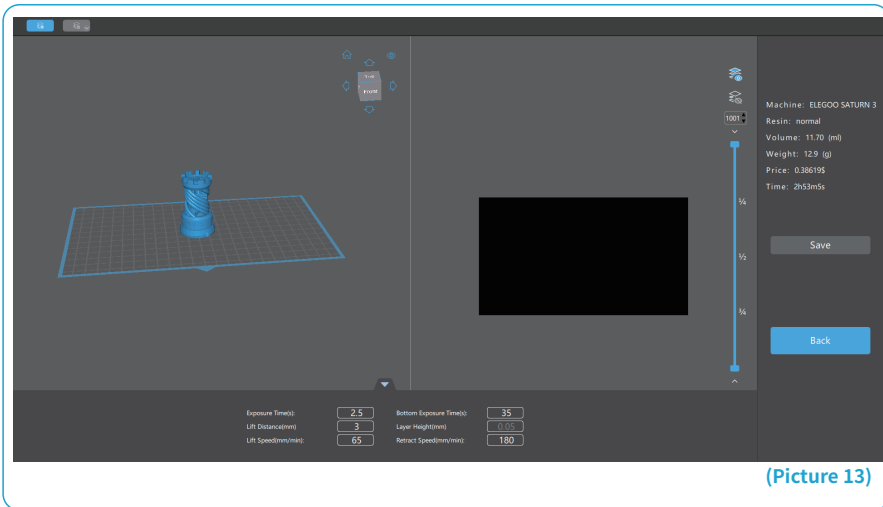
Bottom Retract Speed: During the bottom printing process, the moving speed of the build platform is close to the printing surface; the default setting is 180+65mm/min.

Retract Speed: In the normal layer printing, the moving speed of the build platform is close to the printing surface; the default setting is 180+65mm/min.

Software Installation and Setup

4. Save the Model

After setting up all the parameters, click "Slice", and once it's done, click "Save" to export the sliced file and copy it to U Disk; then insert the U disk into your printer, and start printing. (See Picture 13)

Machine: ELEGOO SATURN 3
Resin: normal
Volume: 11.70 (ml)
Weight: 12.9 (g)
Price: 0.38619$
Time: 2h53m5s

Save

Back

Exposure Time(s):	2.5	Bottom Exposure Time(s):	35
Lift Distance(mm):	3	Layer Height(mm):	0.05
Lift Speed(mm/min):	65	Retract Speed(mm/min):	180

(Picture 13)

Machine Maintenance

- **Please do not use sharp or pointy tools to scrape the resin tank to avoid damaging the release liner film.**

- **Please clean up the resin tank before changing the resin to another color.**

- **Before and after printing, clean the build plate with paper towels or alcohol to ensure that there are no bumps or burrs on the build plate.**

- **Before each printing, daily check the exterior of the machine and all mechanical parts for any obvious damage, defects, or abnormalities.**

- **Try to keep the printing environment at 25-30 degrees Celsius when printing, and ventilate the printing room as much as possible to facilitate heat dissipation of the machine and resin odor volatilization.**

- **If the Z-axis keeps making friction noise, please add some lubricant to the lead screw. Please check and apply lubricant grease at least every 2-3 months, and increase the frequency of application as the printing frequency increases.**

- **If you don't use the printer in the next 48 hours, please pour the remaining resin from the resin tank back into the resin bottle and seal it well. If there is any residue, please use a filter to filter it out.**

- **Check the condition of the release film before each printing, and observe whether the release film is loose, whether there are scratches or severe whitening on the surface, and if so, replace it in time. The release film is a vulnerable part, please replace it at least once every 1-2 months, and increase the replacement frequency as the printing frequency increases.**

- **Please be careful when removing the printing platform to prevent damaging the LCD screen. The service life of the screen is about 2000+ hours and will decrease with increasing printing frequency. Do a good job of daily screen cleaning, and unplug the machine in time after printing. If there is a screen exposure problem or service life has seriously affected the print quality, please replace the screen in time.**
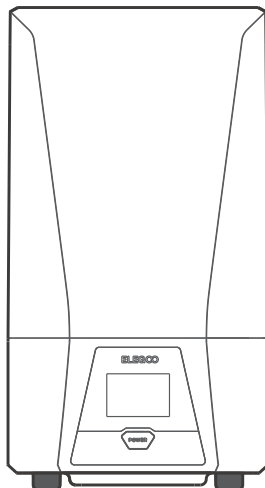
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