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ELEGOO Mars 4 9K

ELEGOO Mars 4 MSLA 3D Printer User Manual

Model: Mars 4 9K

Introduction

This manual provides essential information for the safe and effective operation of your ELEGOO Mars 4 MSLA 3D Printer. Please read it thoroughly before initial use and retain it for future reference. The ELEGOO Mars 4 is designed for high-precision resin 3D printing, featuring a 7-inch 9K monochrome LCD for detailed models.
Caution: This product uses UV resin. Always wear appropriate personal protective equipment (PPE) such as gloves and eye protection when handling resin. Ensure adequate ventilation in your workspace. Keep out of reach of children. Children should only use this product under adult supervision.

What's in the Box

Verify that all components are present upon unboxing:

- Mars 4 3D Printer Machine
- Build Platform
- Resin Tank
- U Disk (USB Drive)
- Funnel
- Backup Screws
- Adapter
- Tool Kit
- Scraper
- User Manual (this document)



Image: All items included in the ELEGOO Mars 4 packaging.

Setup

1. Unpacking and Placement

Carefully remove the printer and all accessories from the packaging. Place the printer on a stable, level surface in a well-ventilated area, away from direct sunlight and heat sources. Ensure the power switch is in the OFF position before connecting the power adapter.

2. Installing the Build Platform

Attach the build platform to the Z-axis arm. Ensure it is securely fastened using the provided screws. The laser-carved surface of the build plate is designed for excellent adhesion, promoting successful prints.



Image: Detail of the laser-carved build plate, designed for optimal adhesion.

3. Installing the Resin Tank

Place the resin tank onto the LCD screen, aligning it with the designated slots. Secure the tank using the retaining clips or screws, depending on your model's design. Ensure the FEP film at the bottom of the tank is clean and free of damage.

4. Power Connection and Initial Boot-up

Connect the power adapter to the printer and then to a power outlet. Turn on the printer using the power switch. The 3.5-inch touch screen will illuminate, displaying the user interface.



Image: The user-friendly interface on the 3.5-inch touch screen.

5. Leveling the Build Platform (if necessary)

While the Mars 4 features a robust design, initial leveling or re-leveling after transport is crucial for print success. Refer to the on-screen instructions or the detailed PDF manual for precise leveling steps. This typically involves loosening the build plate screws, lowering the plate until it touches the LCD screen (with a piece of paper in between), and then tightening the screws.

Operating Instructions

1. Preparing Your 3D Model

Use a compatible slicing software (e.g., Chitubox, VoxelDance Tango) to prepare your 3D model (.STL, .OBJ, etc.) for printing. This involves adding supports, hollowing the model, and setting print parameters such as layer height, exposure time, and lift speed. Save the sliced file to the provided U Disk.

2. Adding Resin to the Tank

Before pouring, shake the resin bottle well. Carefully pour the UV resin into the resin tank, ensuring it does not exceed the maximum fill line. Always wear gloves and eye protection when handling resin.

3. Starting a Print

Insert the U Disk into the USB port on the printer. On the touch screen, navigate to the print menu, select your desired file, and press 'Print'. The printer will begin the printing process, lowering the build plate and exposing layers of resin to UV light from the COB light source.



Image: Illustration of the COB light source providing uniform UV exposure.

4. Monitoring the Print

The touch screen provides a real-time progress bar and model preview. Monitor the print periodically to ensure proper adhesion and progress. Avoid opening the UV cover during printing unless absolutely necessary.

5. Post-Printing Procedures

Once printing is complete, carefully remove the build platform. Use the provided scraper to detach the printed model. Clean the model using isopropyl alcohol (IPA) to remove uncured resin, then cure it under UV light (e.g., sunlight or a

dedicated curing station) to harden completely.

Maintenance

1. Cleaning the Resin Tank and FEP Film

After each print, or if changing resin colors, clean the resin tank. Pour any remaining resin back into its bottle using a funnel with a filter. Clean the tank and FEP film with IPA and a soft cloth. Inspect the FEP film for any damage or cloudiness; replace if necessary.

2. Cleaning the Build Platform

Clean the build platform with IPA after each print to remove any resin residue. Ensure it is completely dry before the next print.

3. LCD Screen Maintenance

Keep the LCD screen clean and free of dust or resin spills. Use a soft, lint-free cloth and a small amount of IPA to gently wipe the screen. Avoid abrasive materials that could scratch the surface.

Your browser does not support the video tag.

Video: Instructions on how to replace the LCD screen. This video provides a step-by-step guide for users needing to replace the LCD screen, ensuring proper handling and installation.

4. Z-axis Lubrication

Periodically apply a small amount of lithium grease to the Z-axis lead screw to ensure smooth and precise movement. This helps maintain print quality and prolongs the life of the printer components.

Your browser does not support the video tag.

Video: Guide on how to replace the lead screw motor. This video demonstrates the process of replacing the lead screw motor, a key component for Z-axis movement, useful for advanced maintenance.

5. Air Purifier Maintenance

The Mars 4 includes an upgraded air purifier with an activated carbon filter. Periodically check and replace the activated carbon filter to maintain effective odor absorption. Refer to the filter's specific instructions for replacement frequency.



Image: The upgraded air purifier with its protective casing.

Troubleshooting

Problem	Possible Cause	Solution
Print Fails to Adhere to Build Plate	◦ Improper leveling ◦ Insufficient bottom exposure time ◦ Resin temperature too low ◦ Dirty build plate	◦ Re-level the build plate. ◦ Increase bottom exposure time in slicing software. ◦ Ensure room temperature is above 20°C (68°F). ◦ Clean build plate thoroughly with IPA.

Problem	Possible Cause	Solution
Print Detaches Mid-Print	◦ Insufficient supports ◦ Over-exposure (causing too strong adhesion to FEP) ◦ FEP film wear/damage	◦ Add more robust supports in slicing software. ◦ Slightly decrease normal exposure time. ◦ Inspect and replace FEP film if necessary.
Layer Lines or Z-Wobble	◦ Loose Z-axis components ◦ Lead screw issues	◦ Check and tighten all Z-axis screws. ◦ Lubricate the lead screw. ◦ If persistent, consider lead screw motor replacement (refer to maintenance video).
Printer Not Responding to Touch Screen	◦ Software glitch ◦ Hardware issue	◦ Restart the printer. ◦ Contact ELEGOO technical support if the issue persists.

Your browser does not support the video tag.

Video: How to replace the limit switch. This video guides users through the process of replacing the limit switch, which can resolve issues related to Z-axis homing or movement errors.

SPECIFICATIONS

Feature	Detail
Model	Mars 4 9K
LCD Screen	7-inch 9K Monochrome LCD
Resolution	8520x4320
XY Resolution	18μm
Build Volume (LWH)	153.36 x 77.76 x 175 mm (6.04 x 3.06 x 6.89 inches)
Light Source	COB (Chip-on-Board)
Build Plate Surface	Laser-Carved
User Interface	3.5-inch Touch Screen
Connectivity	USB
Product Dimensions	8.94"D x 8.94"W x 17.24"H
Item Weight	16 Pounds
Material	ABS, Aluminum, Polycarbonate
Color	Red

Warranty and Support

ELEGOO provides professional technical support for its products. If you encounter any problems with your ELEGOO Mars 4 3D Printer, please reach out to the ELEGOO professional technical support team. They aim to respond within 24 business hours.
For further assistance, you may refer to the official ELEGOO website or the provided U Disk for additional resources and updated information.

Online Resources:

- ELEGOO Official Store on Amazon
- Official User Manual (PDF)

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