Using this manual

Welcome to the Starmeta Portable Laser Engraver.
This manual describes the product's features, usage instructions, and precautions.
Please read this manual carefully.
The illustrations in this manual are for reference only; please refer to the actual product for accuracy.

Explanation of Indicative Symbols

This manual uses various eye-catching symbols to indicate areas that require special attention during operation. The meanings of these symbols are as follows:

Instructions	Provides you with necessary hints, additions, and explanations for your operations.
Attention	Reminds you of important aspects you must pay attention to and follow during operation. Failure to comply may result in unpredictable consequences, such as damage to the equipment.
Warnings	Indicates potentially hazardous situations that, if not avoided, could result in serious personal injury.

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Product Parameter Chart

Power	5w	
Laser source	5000mW OSL450nm (Semiconductor Laser)	
Size	Basic Model 161.5*60*123mm	Professional Mode 165*173*238mm
Size (working)	Basic Model 165*173*238mm	Professional Mode 165*187*238mm
Net Weight	Net Weight 2.28kg	Net Weight 3.56kg
Engraving Area	Basic Model 100*100mm (Effective Metal Range)	Professional Mode 100*2000mm (Effective Metal Range)
Resolution	1K 1.5K 2K	

Preview Mode	Frame Preview
Preview Speed	4000mm/s
Engraving Speed	6.5mm/s-650mm/s
Wireless Connectivity	High-Speed Bluetooth 5.2
Supported File Formats	jpg, png, bmp, G code
Supported Systems	Android
Input Power	12V 5A|100-240V|50-60Hz

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Product Accessory List

Motorized Lifting Bracket

protective glasses

Power Cord / Power Adapter

Laser Shield

Wrenches and screws

Hosts

Rear sight

Data cable

Button/Indicator Description 1

Main Unit / Motorized Lift Stand Indicator

1. Pause Button: Press once to pause, twice for preview, and three times to continue carving.

2. Auto Focus

3. Host Indicator Light

4. Long Press: Continuous rise / Short Press: Rise 0.5 mm

5. Long Press: Continuous down / Short Press: Down 0.5 mm

Button/Indicator Description 2

Power connector

6. Host Power DC Interface

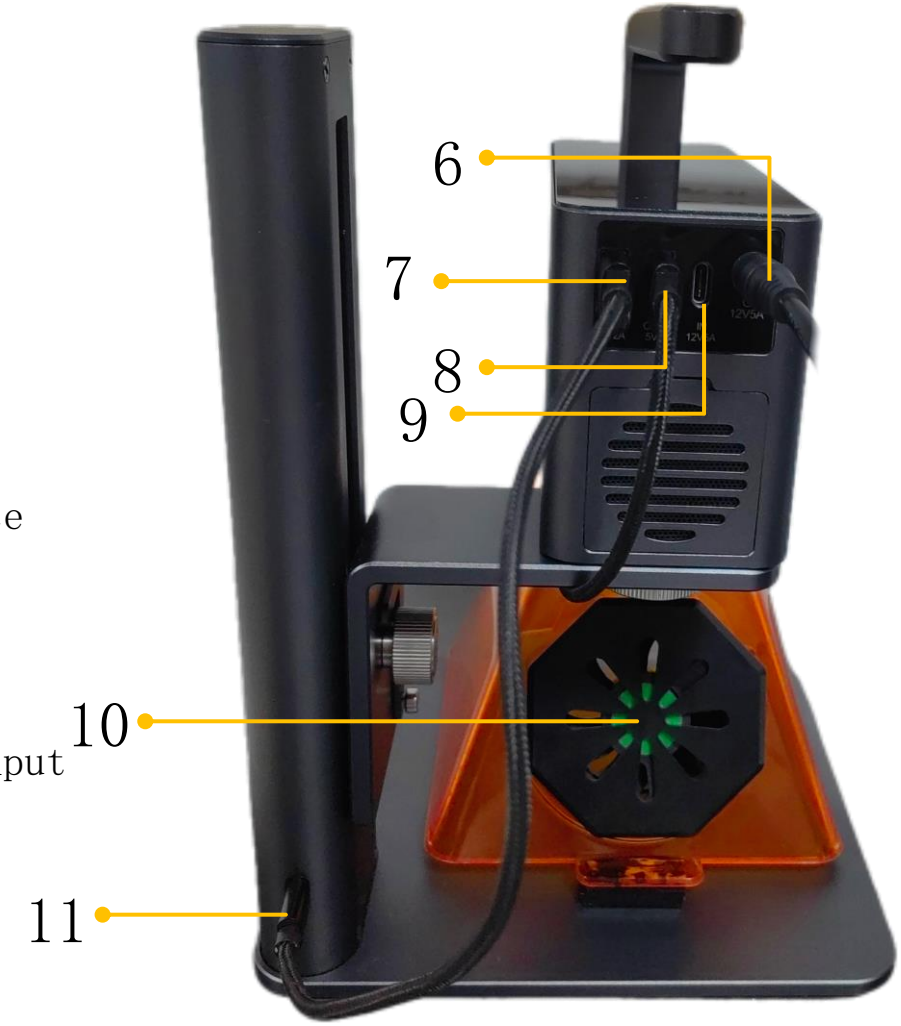
7. Motorized Bracket Power Interface

8. Laser Shield Power Interface

9. PC Interface

10. Smoke Exhaust Fan

11. Motorized Bracket Power Input Interface



Assembly Method: Electric Lift Stand Engraving

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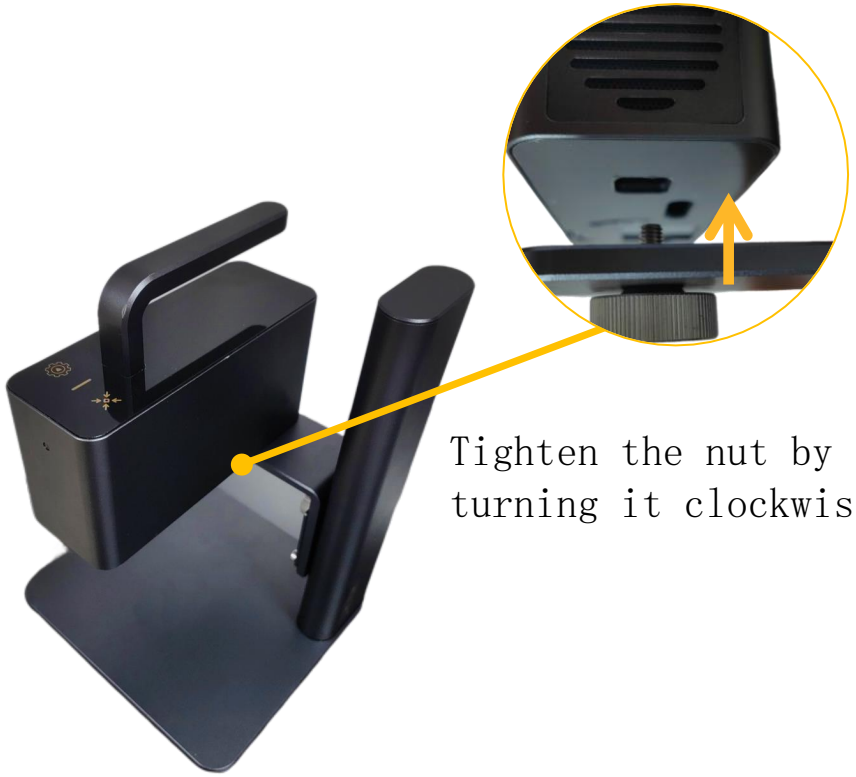
1 Installation of Motorized Lifting Bracket

2 Fix the mainframe to the electric lifting bracket, connect the power supply, and prepare to measure the distance.



Tighten the nut by turning it clockwise

Assembling Method: Motorized Lifting Stand for Engraving.

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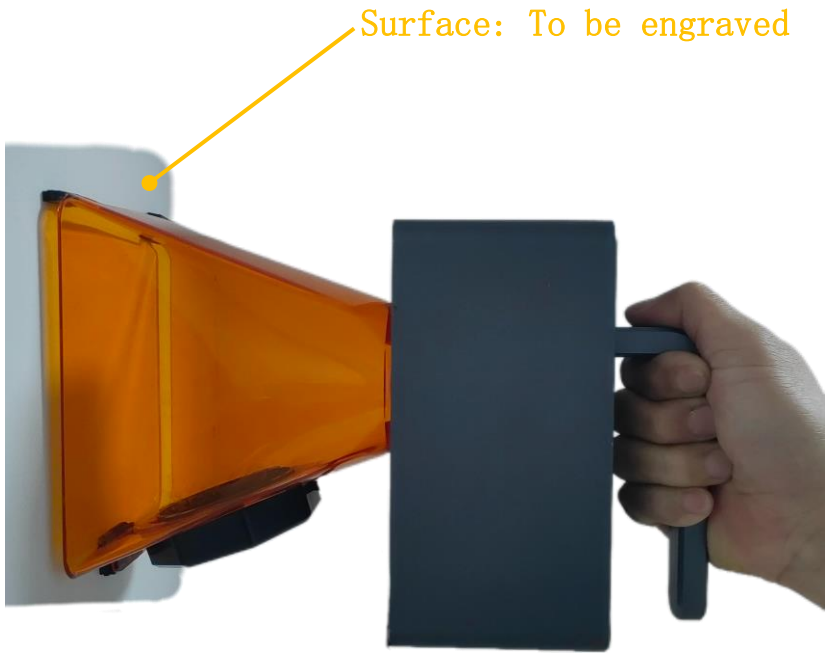
Tilt Engraving

Loosen the screw button, adjust the mainframe to the desired angle, and then tighten the screw button to secure the mainframe for tilt engraving.

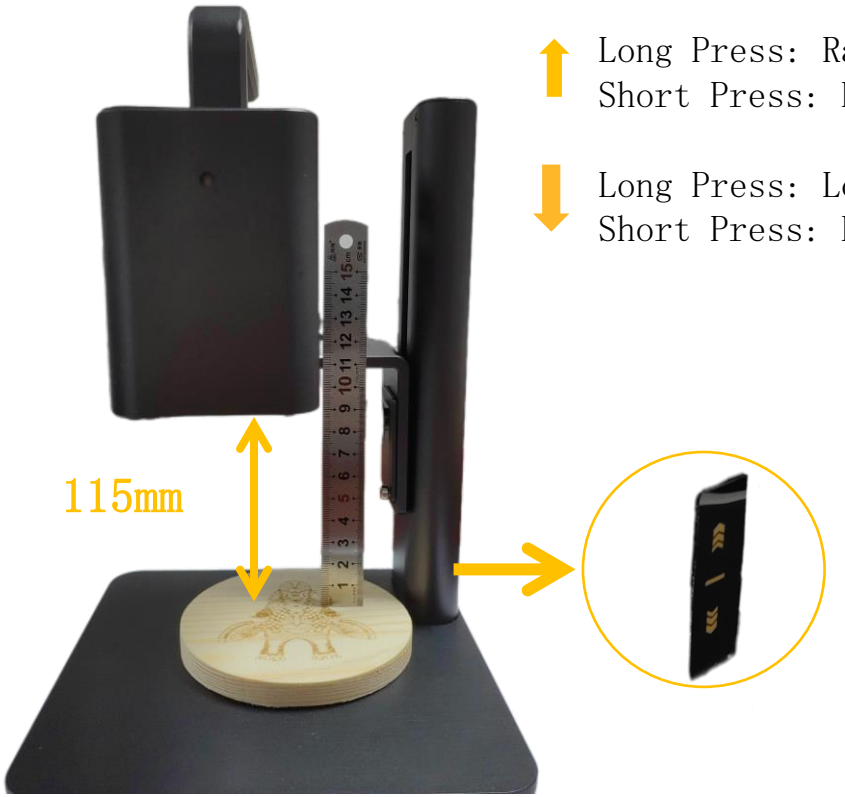
Handheld Engraving

Insert the laser shield into the bottom of the main unit. Connect the power supply, and there is no need to install the automatic lifting bracket. Hold the main unit by its handle and align it with the surface of the object to be engraved.



Ranging Method 1-Distance Measurement with a Ruler

Place the engraved object and adjust the height of the motorized stand. Use a ruler to measure and ensure that the distance between the bottom of the main unit and the surface of the object is 115 mm.

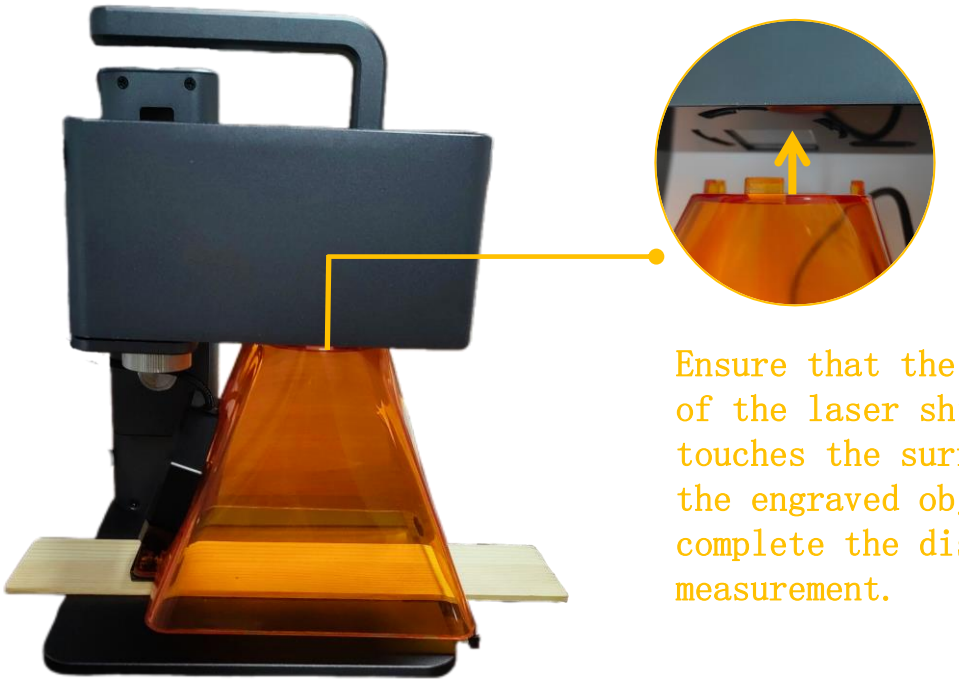


Long Press: Raise continuously
Short Press: Raise 0.5 mm

Long Press: Lower continuously
Short Press: Lower 0.5 mm

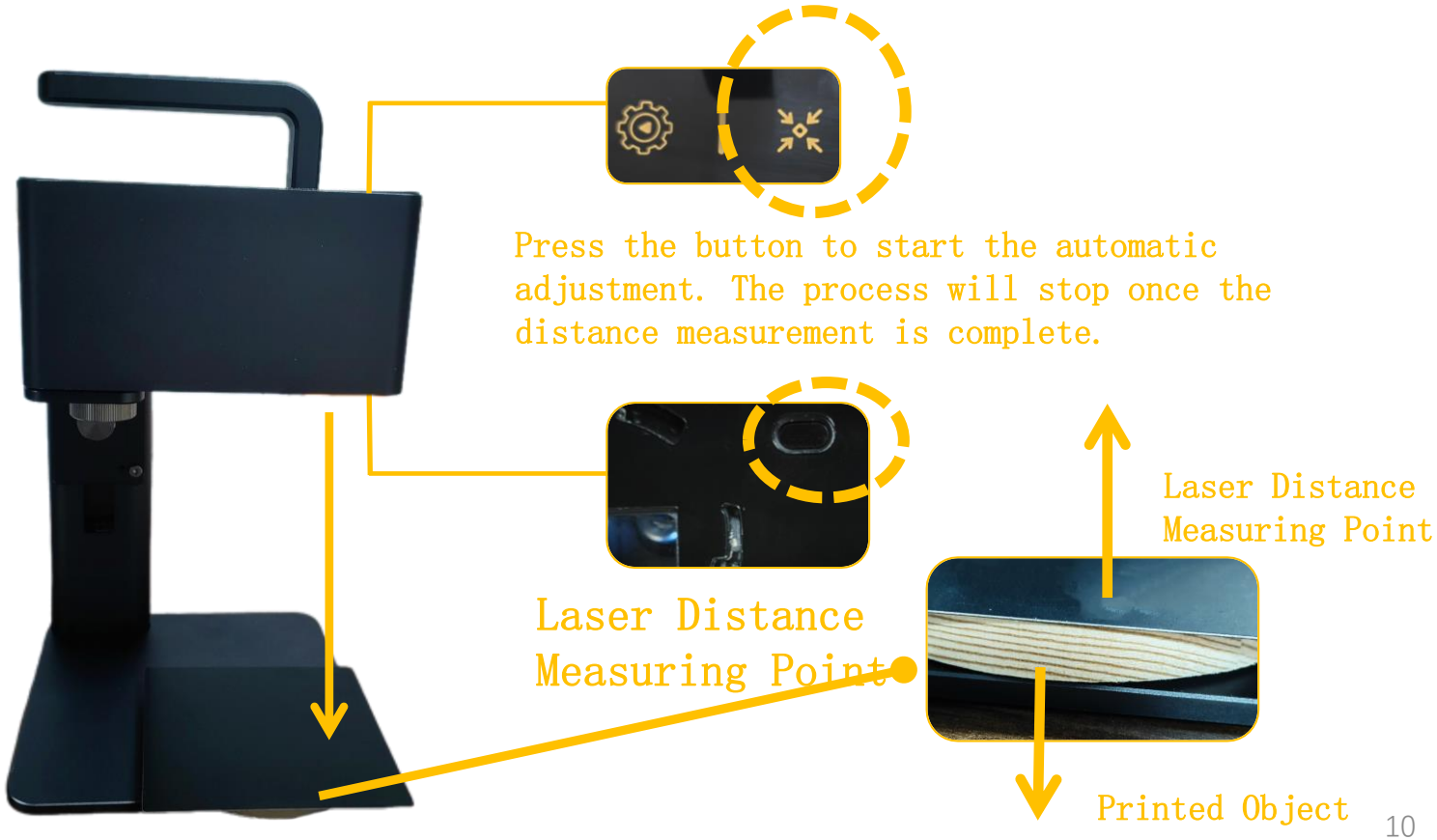
Ranging Method1 2- Ensure that the bottom edge of the protective cover is in contact with the surface of the object.

Insert the laser shield into the bottom of the host. Place the engraved object and adjust the height of the bracket so that the bottom of the laser shield touches the surface of the object. Ensure that the distance between the bottom of the host and the surface of the engraved object is 115 mm.



Ranging Method1 3- Automatic laser distance measurement

Place the items to be engraved directly under the host's laser ranging point, and cover the items with white paper. Press the automatic ranging button to start the distance measurement. The system will automatically adjust to 115 mm. Once the ranging is complete, remove the white paper and begin printing.



Printed Object

1 Once device installation is complete, connect the power supply and the data cables for both the host and the bracket. Open the app and click to connect the device.

2 When the Bluetooth connection is successful, there will be a “beep” sound and the indicator light will be flashing green.

Engraving Options - Gallery

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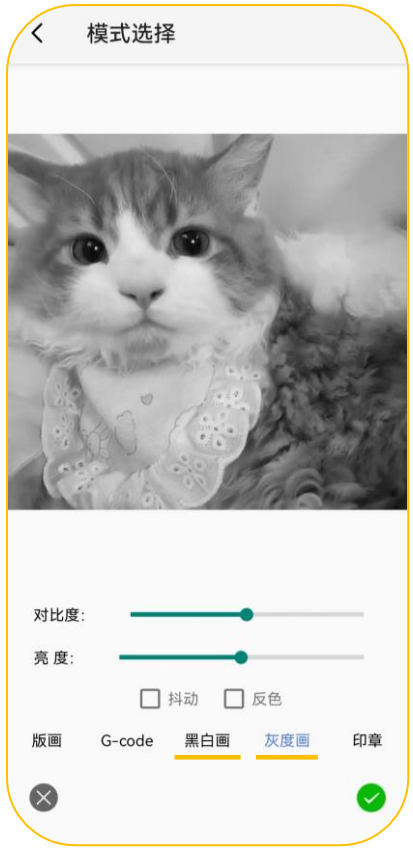
1 Click to select a gallery

2 After confirming the photo, enter the mode selection interface.



Highlight the two commonly used modes:

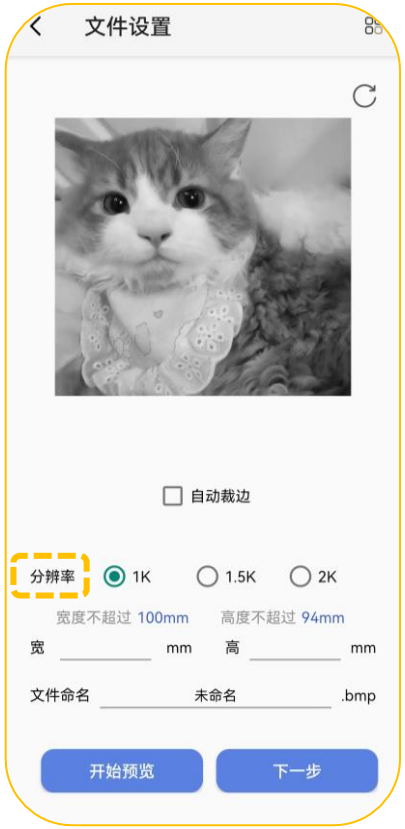
Grayscale Painting: Offers higher resolution and more detailed carving. Recommended for portraits or landscapes for enhanced clarity.

Black and White Painting: Suitable for coarse line images and daily carving tasks.

The remaining modes can be adjusted according to your needs for testing.

3 Go to the Edit Page

4 Document Settings



Edit: Select your desired edits. Click "Next" after completing your adjustments.

Resolution Setting: Higher resolution results in clearer printing but requires more time.

Width and Height Settings: Set according to your design requirements, but do not exceed the maximum limits specified.

Preview: After completing the settings, it is recommended to preview to better confirm the engraving position.

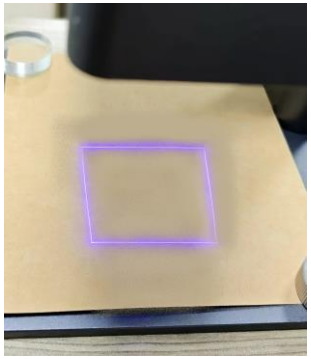
5 Preview

Click to start the preview.

Enter the password: 999999

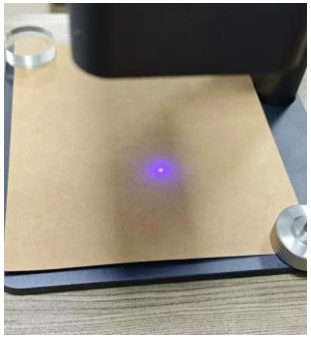
Adjust the height and brightness as desired.

Preview Mode 1 - Scrolling Preview



Displays the set engraving size and position.

Preview Mode 2 - Display Center



Shows the center of the print position.

6 1Laser Engraving Settings

Resolution: Higher resolution results in a clearer printing effect.

Material: Select the material of the print object.

Power: Set to 100 by default; no adjustment is typically needed.

Speed:
Faster speeds leave shallower traces, suitable for softer materials.

Slower speeds leave deeper traces, suitable for harder materials.

The system will suggest a matching speed based on the material selection. Adjust if necessary based on specific requirements, material hardness, or changes in the engraving environment.

Number of Times: Sets the number of times to repeat printing at the same position.
After completing the settings, select Start Laser Engraving to begin.

1Engraving Options - Photo

1 Click to select a photo.

After confirming the print content, follow the same steps as in gallery mode:

Mode Selection: Choose the appropriate mode.

Preview: Determine the engraving size and position.

Enter Password: Use 9999999.

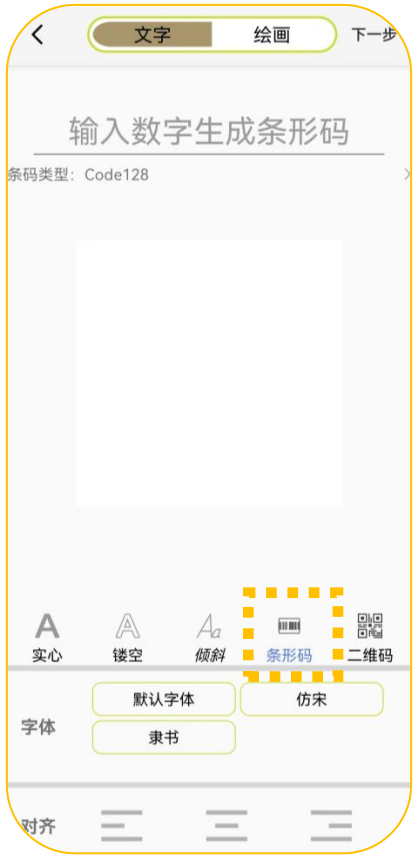
Set Engraving Power and Speed: Adjust as needed.

Confirm Printing: Finalize and start the engraving process.

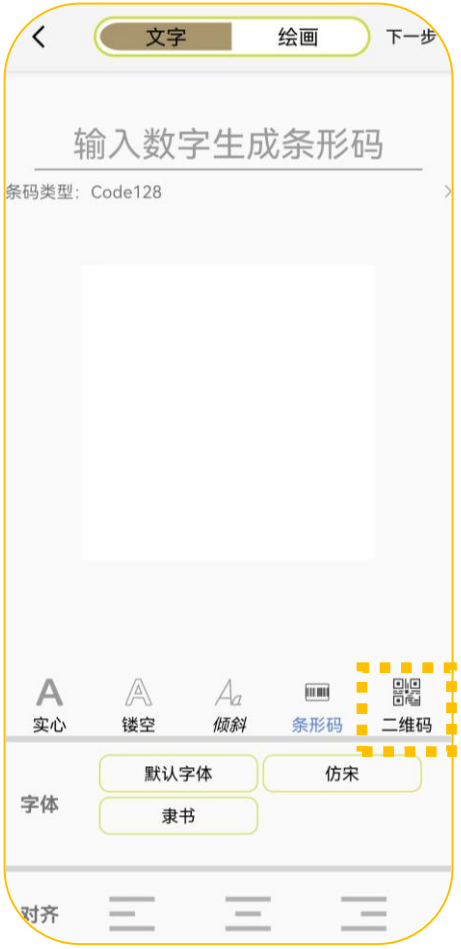
Engraving Selection - Creation

Click to select Creation.

Enter and adjust the text as desired.



Enter the corresponding barcode number below to automatically generate the barcode.



Input the Corresponding QR Code

Enter the QR code.

After confirming the print content, follow the same steps as in gallery mode:

Mode Selection: Choose the appropriate mode.

Preview: Determine the engraving size and position.

Enter Password: Use 9999999.

Set Engraving Power and Speed: Adjust as needed.

Confirm Printing: Finalize and start the engraving process.

Engraving Selection - Material

Click to select the material.

Choose your favorite material

After confirming the print content, follow the same steps as in gallery mode:

Mode Selection: Choose the appropriate mode.

Preview: Determine the engraving size and position.

Enter Password: Use 9999999.

Set Engraving Power and Speed: Adjust as needed.

Confirm Printing: Finalize and start the engraving process.

Main Unit Repair

Dust Screen on the Back of the Main Unit: This can be removed for cleaning.

Undisassembled State:

Disassembled State:

Dust Net:

Starmeta Professional Model

Expansion Axis Instructions

Third Axis Product Accessory List

Data Cable

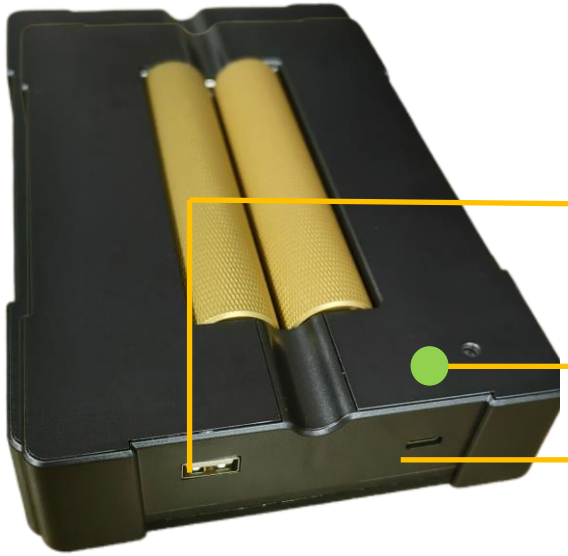
Third Axis Bracket

Third Axis

Third Axis Auxiliary Slide

Indicator and Interface Description:

Interface and Indicator Lights



Connection Diagram

Power Output Connector Host)

Connection Indicator

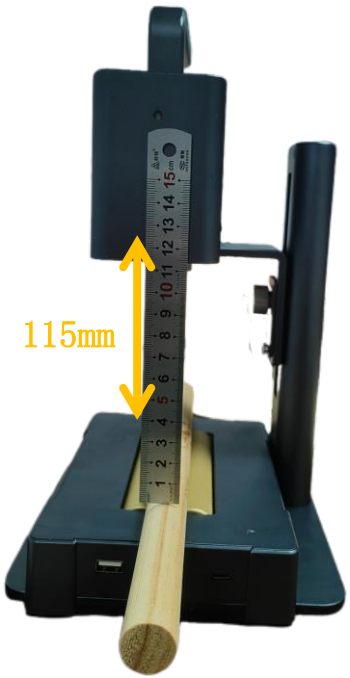
Power Input Connector

Power/Signal Input Connector (Direct Connection to

Distance Measuring Method

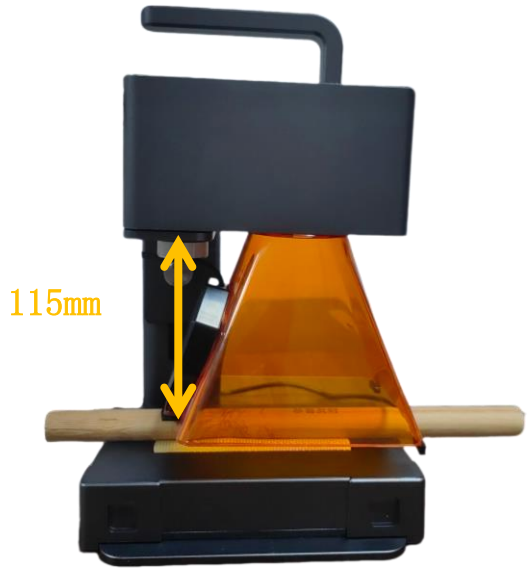
1 Ruler Distance Measurement

Measure the distance from the engraved position of the object to the lower edge of the main unit. Ensure this distance is 115 mm.



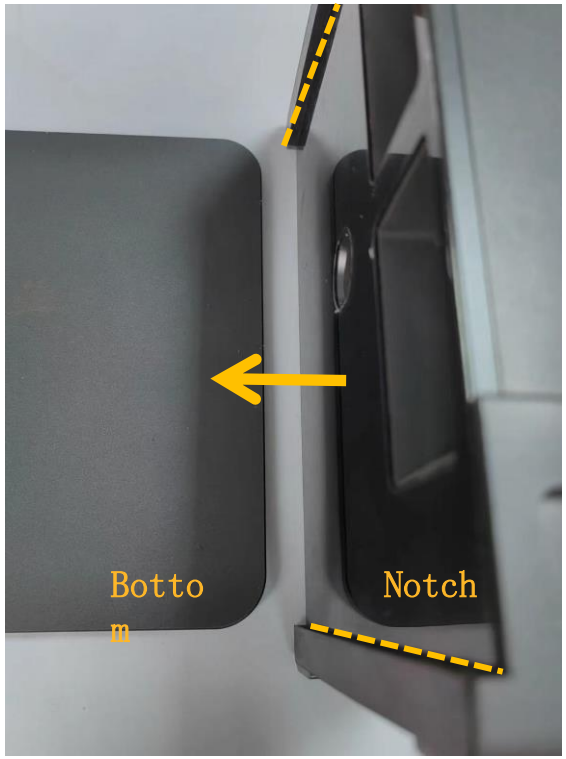
2 Protective Cover Distance Measurement

Adjust the height so that the bottom edge of the protective cover touches the surface of the object to be engraved. At this point, the focal length is exactly 115 mm.



Assembly Method - Flatbed Mode

1 Align the notches on the reverse side of the third axis with the bottom of the bracket.



2 Place the engraved object on the flatbed.
Position the third axis auxiliary slider under the object to ensure it remains balanced during printing.

Assembly Method - Trolley Mode

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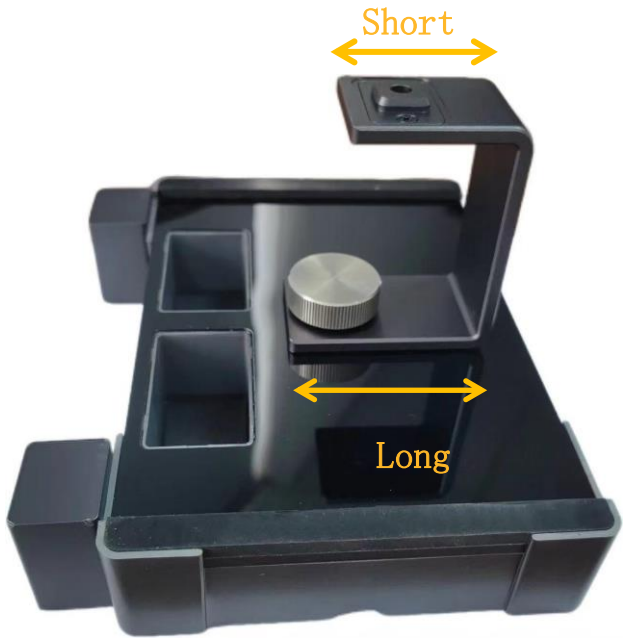
1 Place the third axis roller face down and align the auxiliary slider with the groove for magnetic connection.

Slider Roller Face Down

2 Attach the third axis bracket to the third axis using a round screw. Ensure that the longer section of the bracket is positioned underneath.



Assembling Mode - Trolley Mode + Roller Mode

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3

Trolley Mode:

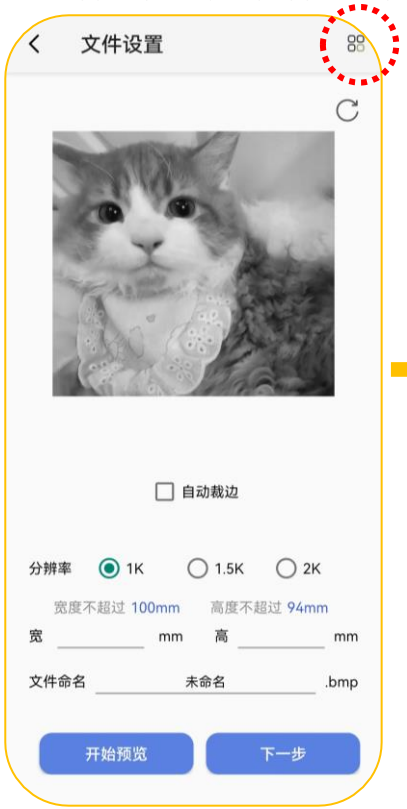
Place the engraved object under the third axis.
Connect the power supply.
Start the engraving setup.

Roller Mode:

Place the engraved object in the center of the third axis roller.
Connect the power supply.
Start the engraving setup.

Engraving Mode - Flat Mode

1 On the file setup page, click the upper right corner to select the mode.



2 Open the third axis

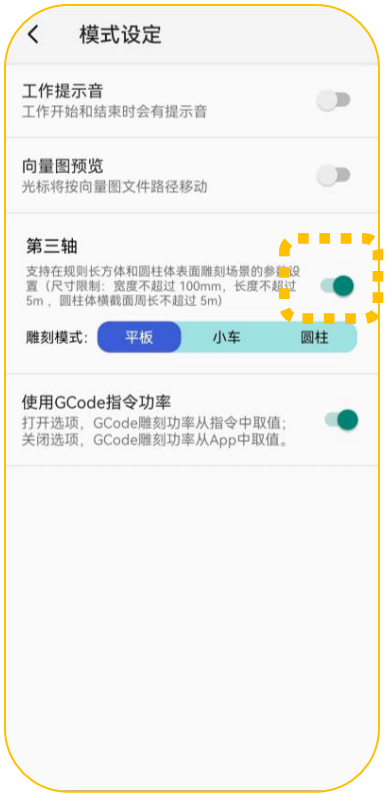
3 Select Trolley Mode.

This mode is used for sliding engraving on flat material.Set the correct focal length to 115 mm.Preview to determine the engraving size and position.Set the engraving power and depth parameters.Start engraving.

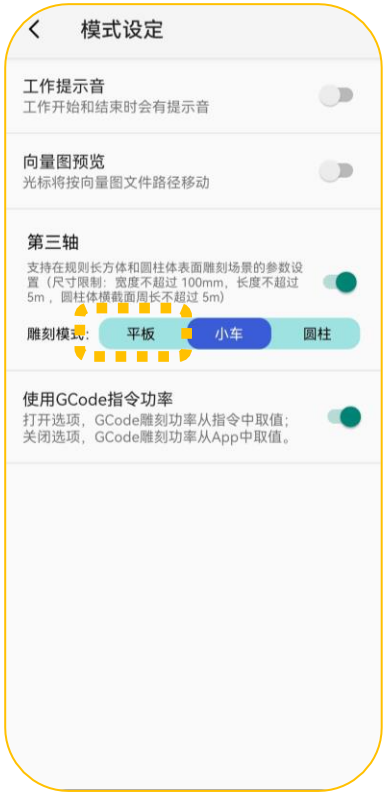
Engraving Mode - Trolley Mode

1 On the file setup page,click the upper right corner to select the mode.

2 Open the third axis.



3 Select Trolley Mode

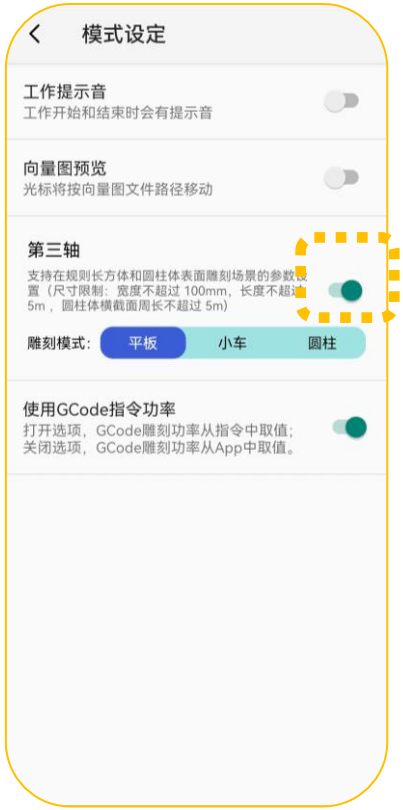


This mode is used for sliding engraving on flat material.Set the focal length to 115 mm.Preview to determine the engraving size and position.Set the engraving power and depth parameters.Start engraving.

Engraving Mode - Cylindrical Mode

1 On the file settings page, click the upper right corner to select the mode.

2 Open the third axis.



3 Choose Cylindrical Mode.

This mode is used for rotary engraving on cylindrical objects. Set the focal length to 115 mm. Preview to determine the engraving size and position. Set the engraving power and depth parameters. Start engraving.

Safe Operation Guidelines and Precautions

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1. **Pre-Installation Check:** Before installing the Daylight Impression, ensure the equipment is intact and the laser mirror is clean and free of dirt.
2. **Installation Specifications:** Refer to the instruction manual to properly secure the main unit to prevent it from falling due to unstable placement.
3. **Power Supply:** Follow the power supply instructions carefully, using a 5V2A adapter as specified.
4. **Safety Measures:**
   Wear goggles to protect your eyes from accidental laser exposure.
   Remove unnecessary items and flammable materials to prevent damage or fire.
5. **During Engraving:**
   Do not move the equipment once the laser has started, as this may cause malfunction or affect the engraving quality.
6. **Moving Equipment:**
   If you need to move the equipment or the engraved object, stop the operation in the APP application first. Do not move the equipment or object while the laser is active.
7. **Keep Away:**
   Do not allow minors, children, or individuals without proper safety awareness near the equipment while it is operational.
8. **Toxic Fumes:**
   Verify that the materials being engraved do not release toxic or harmful gases. Use a fan or operate in a well-ventilated area if fumes are present.
9. **Odor Management:**
   If a peculiar smell or fumes are detected, use a fan to disperse the fumes or relocate the equipment to a ventilated area.
10. **Odor Management:**
    If a peculiar smell or fumes are detected, use a fan to disperse the fumes or relocate the equipment to a ventilated area.
11. **Avoid Direct Irradiation:**
    Do not direct the laser at human or pet skin or eyes to avoid irreversible damage.
12. **Material Limitations:**
    The laser cannot engrave very hard materials like glass, ceramics, or stone directly. Consider using a whiteboard marker or heat transfer layer for such materials.
13. **Acknowledgment:**
    Read the instruction manual thoroughly, understand the proper operation, and agree to the disclaimer.

Warning Information

1. **WARNING:** Before operating this equipment, carefully read the manual and strictly follow all operating procedures.

2. **WARNING:** This equipment uses a Class IV laser (strong laser radiation), which may cause the following hazards:
   Ignition of flammable materials nearby.
   Emission of harmful, poisonous, or strange-smelling gases from the materials being engraved.
   Bodily injury from direct laser irradiation.
   Operators must maintain a safe distance from the equipment and wear protective gear (e.g., goggles, protective shields, protective clothing, or fire equipment). It is strictly prohibited to have flammable or explosive substances near the equipment. Ensure the working environment is well-ventilated.

3. **WARNING:** The laser engraving process may involve risks. Users should carefully consider whether the material of the object being engraved is suitable for laser work.

4. **WARNING:** The operating voltage of this equipment is 5V2A. Only use an adapter with the appropriate specifications. Operating with an overloaded or unstable voltage is strictly prohibited. Do not plug in the power supply if the grounding wire in the power plug or power supply (e.g., power strip) is ineffective, as this poses a severe risk of electric shock.

5. **WARNING:** This product contains precise and dangerous laser components. It is strictly prohibited to place the device near electrical appliances with strong electromagnetic interference, as this may disrupt the device’s function. When the laser source is turned on, it emits a laser beam—avoid direct exposure to this beam. The laser beam must not reflect onto the human body or flammable objects.

6. **WARNING:** It is strictly prohibited to place any unrelated fully reflective or diffusely reflective objects inside the device to avoid the laser light reflecting onto the human body or flammable objects.

7. **WARNING:** Before using this product to engrave objects, ensure that the emissions resulting from laser irradiation comply with local laws and regulations.

Disclaimer

Thank you for purchasing this product. The following content pertains to your safety, legal rights, and responsibilities. Before using this product, please read this document carefully to ensure a thorough understanding of its proper use. Failure to observe and follow the instructions and warnings provided may result in injury to you or others, or damage to the product and surrounding items.

By using this product, you acknowledge that you have read, understood, and accepted the terms of this disclaimer and the accompanying warning information. You agree to take full responsibility for the use of this product and any consequences that may arise from its use. You also agree to use this product only for its intended purposes and to comply with these terms and conditions, as well as any related regulations, policies, and guidelines set forth by JenTi Intelligent Technology Co. Ltd.

JenTi Intelligent Technology Co. Ltd. will not be held liable for any damage, injury, or legal liability resulting directly or indirectly from the use of this product. Users must adhere to all safety guidelines, including but not limited to those mentioned in this document.

Warranty Terms

1. **Exclusive Warranty:** To the extent permitted by law, this warranty is exclusive and supersedes all other warranties, whether express, implied, or statutory, including any implied warranties of fitness for a particular purpose. JenTiSmart Technology shall not be liable for any incidental, special, indirect, or consequential damages, including those arising from the use, misuse, or non-use of the product.

2. **Data Backup:** Consumers are responsible for backing up all important personal data before applying for warranty service. During the repair process, such as when parts are replaced or the product's software version is updated, data may be lost. JenTi Intelligent Technology does not provide data backup services and is not responsible for the integrity of any data or settings.

3. **Shipping and Repair Costs:** For products within 15 days of the shipment date, JenTi Intelligent Technology will cover shipping and repair costs. After 15 days, the consumer will be responsible for shipping costs during the warranty period.

4. **Warranty Period for Replacements/Repairs:** Any replacement or repair of the product will carry either the remaining warranty period of the original product or a 30-day warranty from the date of replacement/repair, whichever is longer.

5. **Non-Mainland China Warranty Service:** For products sold outside mainland China, warranty service may be limited due to varying laws, safety regulations, tariffs, maintenance technology, and parts availability. Consumers in these regions should seek warranty service through the original authorized purchase channel, where inspection and labor costs may apply.
   Any additional tariffs in the recipient's country will be borne by the consumer. Direct warranty service requests to JenTi Intelligent Technology will be handled similarly.

6. **Distributor-Specific Services:** Distributors may sell JenTi products in non-mainland China regions and may offer value-added services that differ from this warranty. Such services are valid only in the distributor's region and are not covered under this warranty.

7. **Exclusions:** Processing quality is highly dependent on the user's operation, processing materials, and environment, and is not covered under this warranty.

8. **Additional Terms:** (Add any further specific terms if needed.)

After-Sales Service

Global Technical Support

This product supports global online technical support services. If you encounter any issues during use, please do not hesitate to contact us.

Email: alice53099@gmail.com

Website: https://starmeta.co

Phone: +86 13925722019

FCC Warnning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference in a residential installation. This equipment generates, uses and can radiateradio frequency energy and, if not installed and used in accordance with the instructions, maycause harmful interference to radio communications. However, there is no guarantee thatinterference will not occur in a particular installation. If this equipment does cause harmfulinterference to radio or television reception, which can be determined by turning the equipmentoff and on, the user is encouraged to try to correct the interference by one or more of thefollowing measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 0cm between the radiator and your body.