

## ATOMSTACK A24 Ultra

# ATOMSTACK A24 Ultra Laser Engraving Machine User Manual

Model: A24 Ultra | Brand: ATOMSTACK

For assistance, please visit the [ATOMSTACK Official Store](#).

## 1. INTRODUCTION

The ATOMSTACK A24 Ultra is a high-performance laser engraving and cutting machine designed for precision and efficiency. Featuring a powerful 24,000mW diode laser, a built-in enclosure with a camera, and an integrated exhaust system, it is suitable for a wide range of materials and applications. This manual provides essential information for the safe and effective operation and maintenance of your device.

## 2. SAFETY INFORMATION

The ATOMSTACK A24 Ultra is a Class 1 diode laser engraver. Adherence to safety guidelines is paramount to prevent injury and ensure proper operation. This machine incorporates several safety features:

- **Safety Lock:** Prevents unauthorized use.
- **Position Movement Detection:** If the machine tilts by 15-20 degrees, an alarm triggers, and operation halts automatically.
- **Limit Switches:** Four-way X & Y axis limit switches prevent collisions with the machine's edges.
- **Dual-Layer Protection:** The enclosure is equipped with two interlocks that automatically shut off the laser when the cover is opened, providing continuous double-layer eye protection.

Always wear appropriate laser safety glasses when operating the machine, even with the enclosure closed, as an additional precaution. Ensure proper ventilation to dissipate smoke and fumes.

# All-around Safety Protection



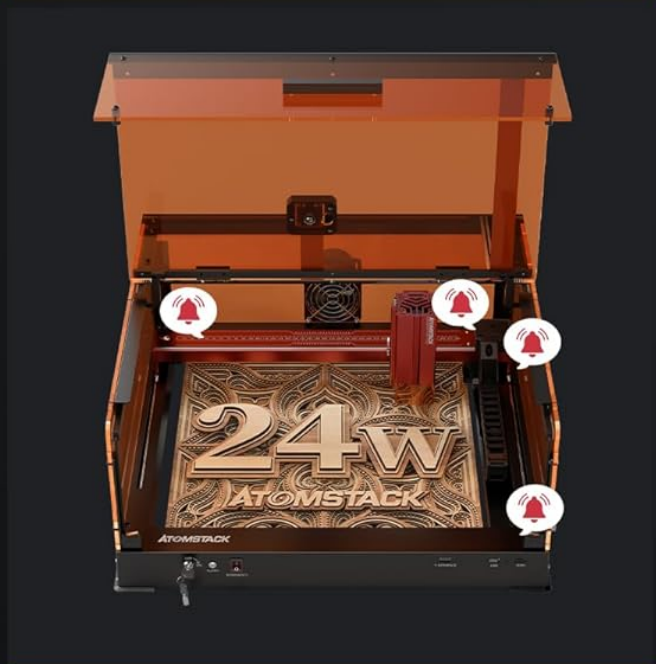
Position Movement Protection



Double-layer Eye Protection



Enclosure has two interlocks  
auto laser shut off when cover is open



Limit Switches (4 Directions)

Figure 2.1: All-around Safety Protection features of the ATOMSTACK A24 Ultra. The machine is designed with multiple layers of safety, including tilt detection, interlocks that stop the laser when the cover is opened, and limit switches to prevent movement beyond the working area.

## 3. PRODUCT FEATURES

The ATOMSTACK A24 Ultra offers advanced features for superior engraving and cutting:

- **Powerful 24,000mW Diode Laser:** Delivers deep cuts and rapid engravings. Capable of cutting through 15mm wood and 10mm black acrylic in a single pass.
- **Ultra-Fine Laser Spot:** A precise 0.06\*0.06mm laser spot focus achieves an accuracy of 0.004 inches, comparable to industrial CNC machines.
- **Integrated Enclosure with Camera:** The built-in enclosure enhances safety by containing fumes and laser light. The high-resolution camera allows for enhanced visualization and efficient batch processing when connected to PC software.
- **Efficient Exhaust System:** A high-performance exhaust system with a built-in 7500RPM fan effectively filters and removes smoke and dust, improving efficiency and reducing noise.
- **Broad Material Compatibility:** Engraves and cuts a wide variety of materials including paper, wood, leather, acrylic, metal, glass, and fabric.
- **Robust Construction:** Crafted from anodized full aluminum alloy with a unibody frame for durability and stability.

# Powerful 24W Diode Laser Output

Thicker cutting, higher efficiency



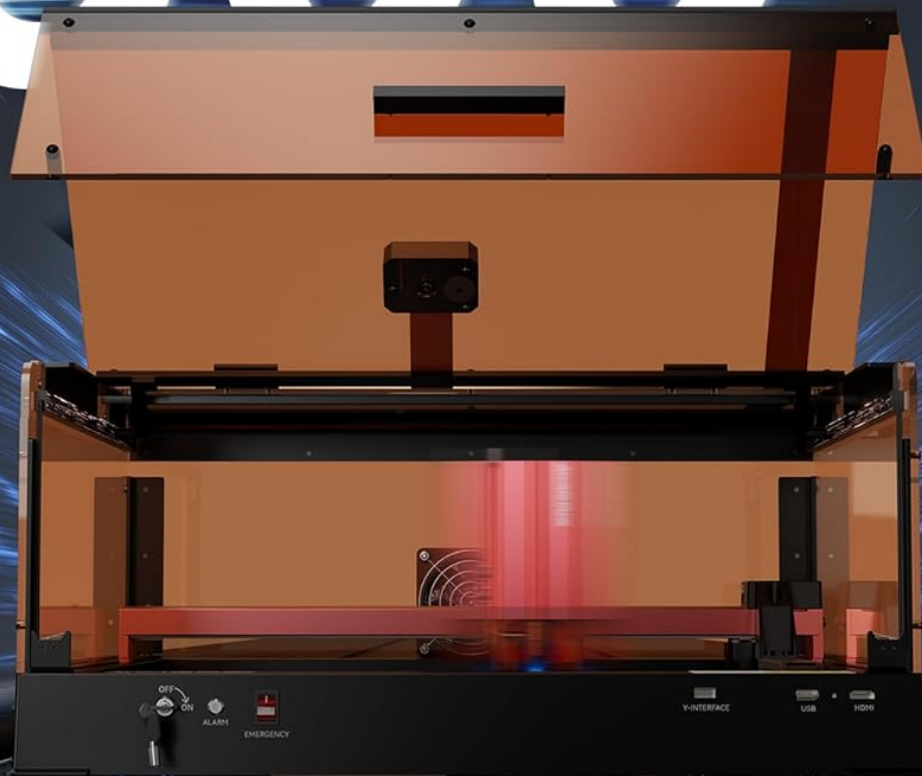
Figure 3.1: The powerful 24W diode laser output enables single-pass cutting of thick materials like 15mm basswood and 10mm black acrylic.



# Engraving Speed of 600mm/s

Faster speed, higher productivity

# 600 mm/s



## A24 Ultra



A24 Ultra

Others

13min35s

## Others



41min07s

Figure 3.2: The A24 Ultra boasts an engraving speed of 600mm/s, significantly increasing productivity for various projects.

# Built-in 5MP Camera for Batch Engraving

With a smart HD camera and batch processing capability complete all the designs in one go to maximize productivity

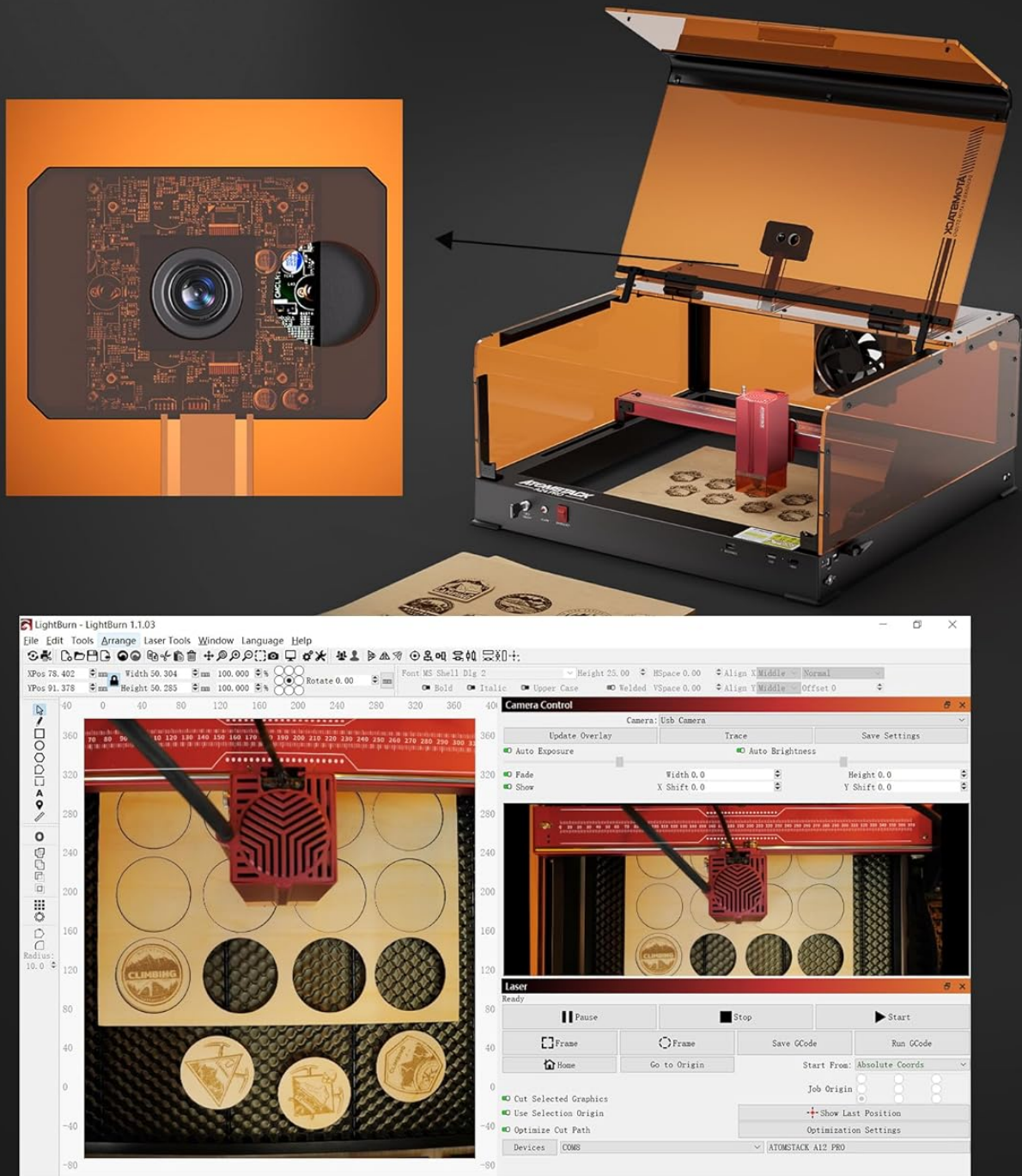


Figure 3.3: The integrated 5MP camera facilitates precise positioning and efficient batch engraving, streamlining your workflow.

## 4. SETUP

The ATOMSTACK A24 Ultra is designed for straightforward setup. The main frame comes pre-assembled, requiring minimal effort to get started.

1. **Unboxing:** Carefully remove all components from the packaging. The package includes the laser engraving machine, the enclosure with camera, and a compatible exhaust pipe.
2. **Laser Module Installation:** Attach the laser module to the crossbar. Ensure it is securely fastened.



3. **Cable Connections:** Connect the necessary power and data cables to the machine.
4. **Enclosure Assembly:** If not already assembled, follow the instructions in the included Installation Manual (PDF) to set up the B3 enclosure around the machine.
5. **Exhaust Pipe Connection:** Connect the provided exhaust pipe to the integrated exhaust system on the enclosure to ensure proper smoke and dust filtration during operation.
6. **Software Installation:** Download and install the ATOMSTACK application on your Windows PC or mobile device (available on App Store and Google Play). The machine is also compatible with engraving software like LaserGRBL and LightBurn.
7. **Connect to Device:** Follow the in-app instructions to connect your device to the machine, typically via Wi-Fi. The default password for Wi-Fi connection is usually 12345678.

For detailed visual instructions, refer to the Installation Manual (PDF) provided with your product.





Figure 4.1: The ATOMSTACK A24 Ultra, shown with its enclosure, is designed for easy setup and immediate use.

## 5. OPERATION

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Operating the ATOMSTACK A24 Ultra is intuitive, especially with the dedicated mobile application and PC software.

1. **Power On:** Turn on the machine using the main power switch.
2. **Material Placement:** Place your desired material on the engraving bed.
3. **Focus Adjustment:** Adjust the laser focus using the newly incorporated knob. This typically involves sliding the laser until it touches the focusing block, then tightening the screw and removing the block.
4. **Software Interface:** Open the ATOMSTACK app or compatible software (LaserGRBL, LightBurn).
5. **Image Selection/Creation:** Select an image from your gallery, create a new design, or use the built-in camera to scan and extract patterns directly from objects for batch processing.
6. **Parameter Settings:** Adjust engraving parameters such as power, speed, and material type within the software.
7. **Start Engraving/Cutting:** Initiate the process from the software. The machine will begin engraving or cutting your design.
8. **Monitoring:** Monitor the process through the enclosure's transparent cover and the software's real-time visualization via the camera.
9. **Resume Function:** The machine features a resume function that allows seamless continuation after a power outage, preventing material waste.

Always ensure the enclosure is closed during operation to maintain safety and optimize smoke extraction.



# Protective Cover for Laser Engraver

Enjoy Safe and Worry-free Engraving & Cutting



Noise reduction



Fire-proof



Efficient Ventilation



Eyes protection

7500RPM fan



Figure 5.1: The protective cover and efficient exhaust system ensure a safe and clean engraving environment.

# Various Software and File Format Support

APP USB-cable Wi-Fi TF-card



Figure 5.2: The A24 Ultra supports multiple software platforms and connectivity options for flexible operation.

## 6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your ATOMSTACK A24 Ultra:

- **Cleaning:** Regularly clean the laser lens and the engraving bed to remove dust and debris. Use a soft, lint-free cloth and appropriate cleaning solutions.
- **Exhaust System:** Periodically check and clean the exhaust fan and pipe to ensure efficient smoke and dust removal.
- **Belt Tension:** Verify and adjust the belt tension as needed to maintain precise movement and engraving accuracy.
- **Lubrication:** Apply a small amount of lubricant to the moving parts of the X and Y axes to ensure smooth operation.
- **Firmware Updates:** Check the ATOMSTACK official website or app for any available firmware updates to ensure your machine has the latest features and improvements.

## 7. TROUBLESHOOTING

If you encounter issues with your ATOMSTACK A24 Ultra, consider the following common troubleshooting steps:

- **Machine Not Powering On:** Ensure the power cable is securely connected and the power outlet is functional. Check the emergency stop button to ensure it is not engaged.
- **Laser Not Firing:** Verify that the safety interlocks on the enclosure are properly engaged (cover fully closed). Check the laser module connection.
- **Engraving Inaccuracy:** Check the belt tension and ensure all moving parts are clean and lubricated. Re-adjust the laser focus.
- **Software Connectivity Issues:** Ensure your device is connected to the machine's Wi-Fi network. Restart both the machine and the software/app.
- **Excessive Smoke/Fumes:** Verify the exhaust pipe is properly connected and unobstructed. Clean the exhaust fan and filter if necessary.

For persistent issues or complex problems, refer to the detailed troubleshooting section in the Instructions for Use (IFU) PDF or contact ATOMSTACK customer support.

## 8. SPECIFICATIONS

Feature	Detail
Brand	ATOMSTACK
Model Number	A24 Ultra
Laser Output Power	24000 Milliwatts (24W)
Laser Spot Size	0.06*0.06mm
Engraving Accuracy	0.004 inches
Engraving Speed	Up to 600mm/s
Product Dimensions	23.23 x 23.23 x 14.96 inches
Item Weight	30.8 pounds
Color	Black & Red
Materials Supported	Paper, Wood, Leather, MDF, Stainless steel, Opaque acrylic, Bamboo, Fabric, Dark glass, Ceramic, Jade, Marble, Shale, Cement, Brick, Plated metal, Painted metal
Included Components	1*Laser Engraver, Enclosure with Camera, Exhaust Pipe
Safety Class	Class 1 Diode Laser

## 9. WARRANTY AND SUPPORT

The ATOMSTACK A24 Ultra comes with a **1-year warranty** from the date of purchase. For warranty claims, technical support, or any inquiries, please contact ATOMSTACK customer support through the official channels provided in your product packaging or on the ATOMSTACK Official Store website.

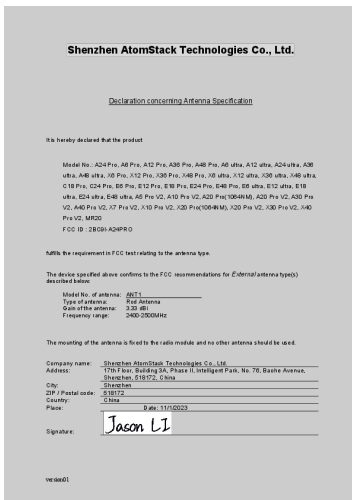


## Documents - ATOMSTACK – A24 Ultra



[\[pdf\]](#) Instructions

6 ATOMSTACK A24 Ultra 24000mW Output Laser Engraving Machine for Bulk Cutting with Enclosure Camera Wood Acrylic Leather Stone Metal B3 EnclosureA24 Instructions Use IFU ATOMSTACK B0D8PGR5ZX B0D7MQYLS6 B0F4D4N8TZ B0CRTNDV65B1xeWvmlt6Lm media amazon images I B1xeWvmlt6L ||| English B3 Protective Case Instructions for use 01 English 39 Italia 13 Deutsch 52 Espaa 26 Franais 65 Statement The camera function requires LightBurn to control the ATOMSTACK, please download the official version of the LightBurn software. LightBurn is third-party software, so the ATOMSTACK... lang:en score:31 filesize: 3.31 M page\_count: 79 document date: 2023-12-11



## Antenna Specification Declaration for AtomStack Products

Official declaration from Shenzhen AtomStack Technologies Co., Ltd. detailing antenna specifications, FCC compliance, and supported product models including A24 Pro, A6 Pro, and others, for external rod antennas with 3.33 dBi gain and 2400-2500MHz frequency range.

lang:en score:23 filesize: 100.55 K page\_count: 1 document date: 2023-11-01