ATOMSTACK ATOMSTACK A5 PRO BK US

ATOMSTACK A5 Pro Laser Engraver Instruction Manual

Model: ATOMSTACK A5 PRO BK US

Overview   Safety Information   **Package Contents**   Setup   Operation   Maintenance

Troubleshooting   Specifications   **Warranty & Support**

1. PRODUCT OVERVIEW

The ATOMSTACK A5 Pro is a versatile commercial-grade laser engraver and cutter designed for precision work on a wide range of materials. Featuring a 5W output power laser module and a 32-bit MCU motherboard, it offers efficient and stable performance for both engraving and cutting tasks. Its robust aluminum alloy construction ensures durability and a longer service life, making it suitable for continuous 7x24H operation in commercial and DIY environments.

Figure 1.1: The ATOMSTACK A5 Pro Laser Engraver, a robust machine designed for commercial and DIY engraving and cutting.

Key Features:

- **Commercial-Grade Performance:** Supports 7x24H continuous engraving, ideal for mass production and commercial DIY needs.
- **Durable Construction:** Made of aluminum alloy with a black anti-oxidation and anti-rust coating for enhanced stability and longevity.
- **Upgraded Laser Technology:** Equipped with a 5-5.5W powerful laser module and a 0.08mm x 0.08mm compressed spot for precise engraving and clear patterns.
- **Wide Material Compatibility:** Capable of engraving and cutting metal, wood, stainless steel, cylinder, rubber, leather, glass (requires blackening), PCB boards, acrylic, and more.
- **Advanced Motherboard:** 32-bit MCU motherboard ensures faster data processing and smoother operation.
- **Software Compatibility:** Compatible with LaserGRBL (Windows XP/7/8/10) and LightBurn (Windows/Mac OS).
- **Eye Protection Design:** Features an eye protection cover to reduce laser exposure.
- **Built-in Cooling Fan:** Ensures optimal performance during extended use.

Figure 1.2: Overview of the ATOMSTACK A5 Pro's key features, including its durable aluminum alloy body, 32-bit MCU, eye protection, and continuous engraving capability.

2. Safety Information

Operating a laser engraver involves inherent risks. It is crucial to read and understand all safety warnings and instructions before using the ATOMSTACK A5 Pro. Failure to follow these guidelines may result in serious injury, fire, or damage to the equipment.

General Safety Precautions:

- **Eye Protection:** Always wear the provided protective glasses or equivalent laser safety goggles (OD4+) when the laser is active. Never look directly at the laser beam.
- **Ventilation:** Operate the engraver in a well-ventilated area to dissipate fumes and smoke produced during engraving and cutting. Consider using an exhaust fan or air purifier.
- **Fire Hazard:** Laser engraving and cutting can ignite flammable materials. Keep a fire extinguisher nearby and never leave the machine unattended during operation.
- **Material Safety:** Only engrave or cut materials that are safe for laser processing. Avoid materials that produce toxic fumes (e.g., PVC, vinyl) or are highly reflective.
- **Children and Pets:** Keep children and pets away from the laser engraver at all times.
- **Stable Surface:** Place the engraver on a stable, level, and non-flammable surface.
- **Emergency Stop:** Familiarize yourself with the location of the power switch and be prepared to turn off the machine immediately in case of an emergency.
- **Electrical Safety:** Ensure the power supply is correctly rated for your region and the machine. Do not operate with damaged cables or plugs.
- **Laser Class:** This product is a Class 4 laser device. Exercise extreme caution.

Figure 2.1: The ATOMSTACK A5 Pro features an eye protection cover, but users must still wear protective glasses during operation.

3. PACKAGE CONTENTS

Before beginning assembly, please verify that all components listed below are present in your package. If any parts are missing or damaged, contact ATOMSTACK customer service immediately.

Figure 3.1: Visual representation of the ATOMSTACK A5 Pro package contents.

List of Components:

- Support Beam (Top)
- Control Box
- Foot Bracket (x3)
- Laser Head
- Tool Kit

- Y-axis Left Slide Rail
- Support Beam (Bottom)
- Y-axis Right Slide Rail
- X-axis Rail
- Acrylic Sheet
- Focusing Sheet
- Wire Tie
- Brush
- Synchronous Belt
- Test Wooden Board
- Protective Glasses
- Power Cable
- Adapter
- Data Line (USB Cable)
- Mounting Screws
- Product Manual

4. SETUP AND ASSEMBLY

The ATOMSTACK A5 Pro is designed for easy assembly. Follow these steps to set up your laser engraver.

4.1 Mechanical Assembly:

Refer to the included product manual for detailed step-by-step assembly instructions and diagrams. The machine features an all-metal structure for stability.
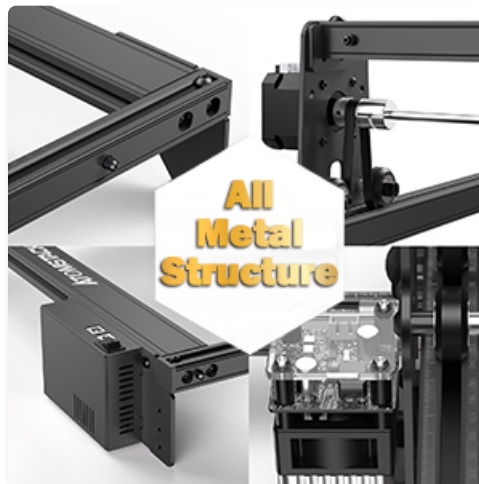
Figure 4.1: The ATOMSTACK A5 Pro boasts an all-metal structure for enhanced durability and precision.

4.2 Software Installation and Connection:

The ATOMSTACK A5 Pro is compatible with popular laser control software. It is recommended to use the latest versions of the software for optimal performance.

- **LaserGRBL:** A free, open-source software suitable for new laser users. Supports Windows XP/7/8/10. Download from the official LaserGRBL website.
- **LightBurn:** A paid, professional laser control software offering advanced features. Supports Windows/Mac OS/Linux. Download from the official LightBurn website.

Connect the engraver to your computer using the provided Data Line (USB Cable). Ensure the power adapter is connected and the machine is powered on before launching the software.

Figure 4.2: The ATOMSTACK A5 Pro offers perfect system compatibility with LaserGRBL and LightBurn software.

4.3 Focusing the Laser:

Proper focusing is critical for achieving precise engraving and cutting results. Use the provided focusing sheet to set the correct focal length for the laser module. The laser module features a quick-release design for easy height adjustment.

Figure 4.3: The laser module utilizes quadruple lens compression technology for a fine, compressed spot, requiring accurate focusing for optimal performance.

5. OPERATION GUIDE

This section provides guidance on operating your ATOMSTACK A5 Pro for various engraving and cutting tasks.

5.1 Preparing Your Design:
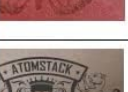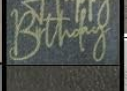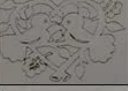
Use your chosen software (LaserGRBL or LightBurn) to import or create your design. The engraver supports various file formats including NC, DXF, BMP, JPG, PNG, etc.

5.2 Material Selection and Parameter Settings:

The ATOMSTACK A5 Pro is capable of working with a wide array of materials. Optimal results depend on selecting the correct laser power, speed, and number of passes for each material. Refer to the material parameter settings table for recommended values. For materials like glass and ceramics, blackening the surface may be required for effective engraving.

Material	Quality	Speed	S-Max	Whether to black out	Perform Multiple Passes	Case illustration
Basswood	10	3000	550	NO	1	
Hardwood	8	3000	500	NO	1	
Paulownia Wood	10	2500	300	NO	1	
Bamboo	8	3000	800	NO	1	
Leather	8	3000	200	NO	1	
Denim	8	3000	200	NO	1	
Ceramics	10	100	800	YES	1	
Alumina	10	100	800	NO	1	
Glass	10	400	800	YES	1	
Plastic	10	200	800	NO	1	
Kraft Paper	8	3000	200	NO	1	
Ceramics	0.1	100	80%	Threhold	YES	1

For more materials information, please scan the QR code

Figure 5.1: Example of material parameter settings for various materials, crucial for achieving desired engraving and cutting quality.
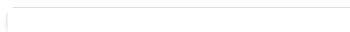
Figure 5.2: The ATOMSTACK A5 Pro supports fine carving on multiple materials including acrylic, stainless steel, paper, wood, leather, glass, and more.

5.3 Starting an Engraving/Cutting Job:

1. Place your material securely on the working area.
2. Adjust the laser focus according to the material thickness.
3. Load your design file into the software.
4. Set the appropriate laser parameters (power, speed, passes) based on your material and desired outcome.
5. Perform a frame test to ensure the design fits within your material.
6. Initiate the engraving/cutting process from the software.
7. Monitor the process closely and ensure proper ventilation.

5.4 Commercial Use and Accessories:

The ATOMSTACK A5 Pro is built for commercial use, supporting continuous operation. For enhanced capabilities, consider compatible accessories:

- **Air Assist Pump:** Improves cutting performance by blowing away smoke and debris, resulting in cleaner cuts and reduced charring.
- **R3 Rotary Roller:** Enables engraving on cylindrical objects like tumblers and bottles.
- **Expansion Kit:** Extends the working area for larger projects.
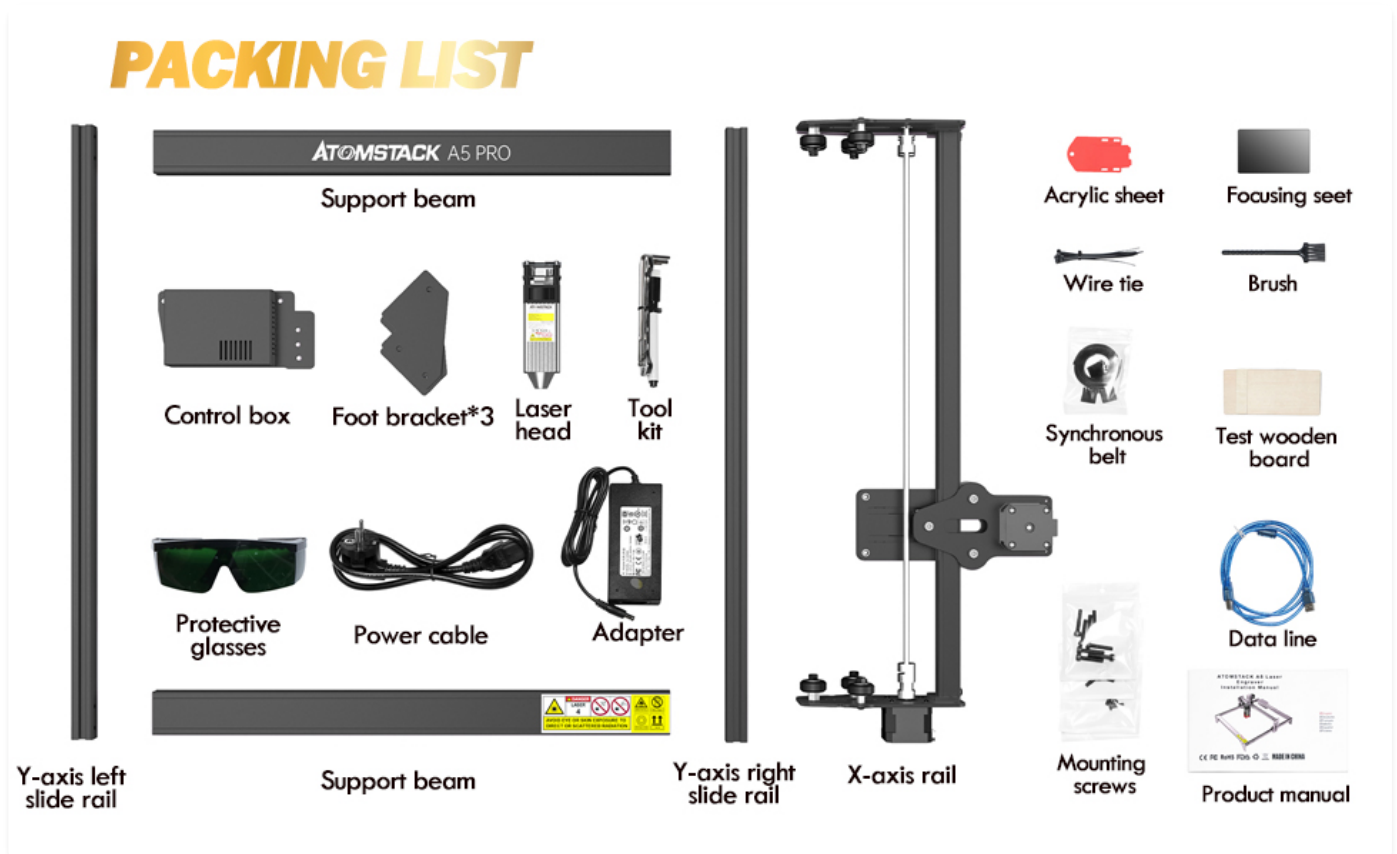
Figure 5.3: Various accessories like the Air Assist Pump, R3 Rotary Roller, and Expansion Kit can enhance the functionality of your ATOMSTACK A5 Pro.

5.5 Product Demonstration Video:

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Video 5.1: A demonstration of the ATOMSTACK laser engraver's capabilities, showcasing the engraving of a motorcycle model. This video highlights the precision and detail achievable with the machine.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your ATOMSTACK A5 Pro.

6.1 Cleaning:

- **Laser Lens:** Gently clean the laser lens with a lint-free cloth and lens cleaning solution specifically designed for optics. A dirty lens can significantly reduce laser power and engraving quality.
- **Rails and Belts:** Periodically inspect and clean the guide rails and synchronous belts to remove dust and debris. This ensures smooth movement of the laser head.
- **General Cleaning:** Wipe down the machine's frame and components with a soft, dry cloth. Avoid using abrasive cleaners or solvents.

6.2 Lubrication:

Apply a small amount of machine lubricant to the guide rails and lead screws (if applicable) every few months, or as needed, to ensure smooth operation.

6.3 Firmware Updates:

Check the official ATOMSTACK website periodically for firmware updates. Keeping your firmware up-to-date can improve performance, add new features, and resolve potential issues. Follow the instructions provided with the firmware update carefully.

7. TROUBLESHOOTING

This section addresses common issues you might encounter and provides potential solutions.

Problem	Possible Cause	Solution
Laser not firing or weak output.	Loose cable connection. Dirty laser lens. Incorrect focus. Incorrect software settings (power too low). Laser module malfunction.	Check all cable connections, especially to the laser head. Clean the laser lens as described in the Maintenance section. Re-focus the laser using the focusing sheet. Verify laser power settings in your software (LaserGRBL/LightBurn). If the issue persists, contact customer support.
Machine not connecting to software.	Incorrect COM port selected. USB cable issue. Driver not installed. Firmware issue (especially with Wi-Fi features).	Ensure the correct COM port is selected in your software. Try a different USB port or cable. Install necessary drivers for the engraver (usually part of software installation). Check for firmware updates and ensure proper installation. If Wi-Fi features are advertised but not working, verify firmware support for those features.

Problem	Possible Cause	Solution
Engraving quality is poor (blurry, inconsistent).	Incorrect focus. Material not flat or secure. Too fast speed or too low power. Dirty lens. Loose belts or mechanical components.	Re-focus the laser. Ensure material is completely flat and secured to the work surface. Adjust speed and power settings according to the material. Clean the laser lens. Check and tighten synchronous belts and other mechanical connections.
Air assist not working (if applicable).	Blocked nozzle. Kinked or disconnected air tube. Air pump malfunction.	Inspect the air nozzle for blockages and clear if necessary. Check the air tube for kinks or disconnections. Verify the air pump is powered on and functioning.

8. TECHNICAL SPECIFICATIONS

Feature	Detail
Model Number	ATOMSTACK A5 PRO BK US
Laser Output Power	5W - 5.5W
Laser Engraving Power	40W (Machine Power)
Spot Size	0.08mm x 0.08mm (Compressed Spot)
Motherboard	32-bit MCU
Product Dimensions	23.23 x 13.39 x 4.8 inches
Item Weight	11.77 pounds
Supported Software	LaserGRBL, LightBurn
Supported File Formats	NC, DXF, BMP, JPG, PNG, etc.
Laser Class	Class 4
Continuous Operation	7x24H

9. WARRANTY AND CUSTOMER SUPPORT

ATOMSTACK is committed to providing excellent customer service and support for your A5 Pro laser engraver.

9.1 Warranty Information:

We provide **12 MONTHS** of free parts replacement from the date of purchase. This warranty covers manufacturing defects and malfunctions under normal use conditions.

9.2 Technical Support:

ATOMSTACK offers **PERMANENT** professional technical customer service. If you encounter any issues, have questions about operation, or require assistance with your engraver, please do not hesitate to contact our support team.
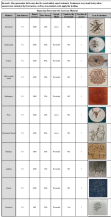**Contact Information:**

- Refer to the contact details provided in your product manual or on the official ATOMSTACK website.
- For Amazon purchases, you can also contact the seller "FKX-ATOMSTACK" through the Amazon platform.

Related Documents - ATOMSTACK A5 PRO BK US

Laser Engraving and Cutting Parameters for Common Materials
A comprehensive guide detailing optimal laser engraving and cutting parameters for a wide range of materials, including wood, leather, acrylic, glass, metal, and more. Parameters cover line interval, speed, power, image mode, and passes, with visual examples.

ATOMSTACK K40 MAX-20W Laser Engraving and Cutting Parameter Guide
A comprehensive guide detailing engraving and cutting parameters for the ATOMSTACK K40 MAX-20W laser module across a variety of common materials. Includes settings for speed, power, line interval, and image modes.

ATOMSTACK A5 Pro Laser Engraving Machine Manual
Comprehensive user manual for the ATOMSTACK A5 Pro laser engraving machine, covering safety, software installation (LaserGRBL and LightBurn), operation, and troubleshooting.

ATOMSTACK A5/A10/A20 PRO V2 Laser Engraver User Manual
Comprehensive user manual for the ATOMSTACK A5, A10, and A20 PRO V2 laser engravers, covering safety, assembly instructions, software setup (LightBurn, LaserGRBL), operation, maintenance, and troubleshooting.

[Atomstack A5 Pro Laser Engraving and Cutting Parameters](#)
Detailed parameter tables for the Atomstack A5 Pro laser engraver and cutter, covering engraving and cutting settings for various materials including Basswood, Hardwood, Bamboo, Acrylic, Kraft Paper, Mirrors, Leather, and Stainless Steel. Includes recommended Speed, S-Max, and pass settings.

[P7 M30 Laser Engraving and Cutting Parameters](#)
Comprehensive parameter tables for AtomStack P7 M30 laser engraver and cutter, detailing settings for various materials like Basswood, Hardwood, Bamboo, Acrylic, Kraft Paper, Mirrors, and Leather for both engraving and cutting operations.