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› ATOMSTACK A20 Pro V2 20W Laser Engraver and Cutter with F30 V2 Air Assist User Manual

ATOMSTACK MAKER A20 Pro V2

ATOMSTACK A20 Pro V2 20W Laser Engraver and Cutter User Manual

Model: A20 Pro V2 with F30 V2 Air Assist

1. INTRODUCTION

The ATOMSTACK A20 Pro V2 is a high-performance 20W laser engraver and cutter designed for precision and efficiency. It features advanced technology for stable operation and is capable of engraving and cutting a wide range of materials. This manual provides essential information for the safe and effective use of your device.

ATOMSTACK A20 PRO V2

Big Upgrade, Small Budget



Mobile App
control



Upgraded 20W
laser output



400mm/s
high speed



15mm wood board
10mm black acrylic in one pass

The ATOMSTACK A20 Pro V2 laser engraver and cutter, highlighting its main features and capabilities.

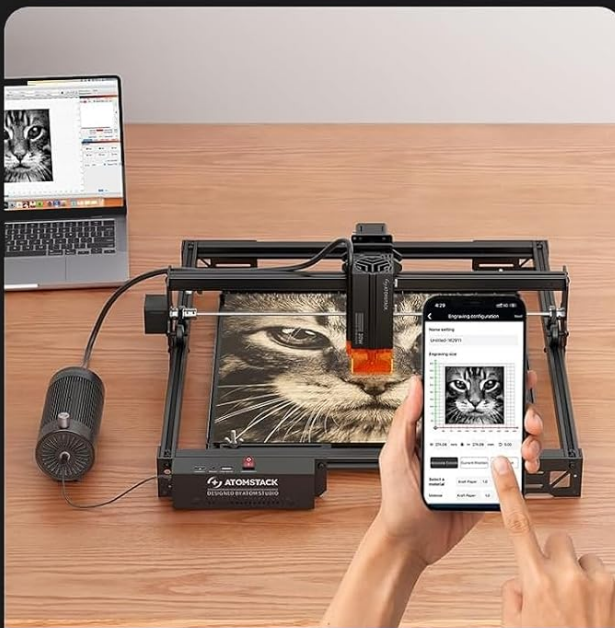
2. SETUP

2.1 Assembly

The ATOMSTACK A20 Pro V2 is designed for quick assembly. It features an integrated linear guide system that simplifies the setup process while ensuring high precision and extending the machine's lifespan. The aluminum alloy frame and modular design contribute to durability and optimized laser movement.



Quick Assembly



Quick Connection



Direct Engraving

Visual guide demonstrating the quick assembly process, mobile app connectivity, and direct engraving functionality of the ATOMSTACK A20 Pro V2.

2.2 Software Installation and Connection

The device supports multi-functional human-computer interaction via USB or Type-C connections. It is compatible with ATOMSTACK App/PC software, LightBurn, and LaserGRBL for flexible control. Install the necessary software on your computer or mobile device before operation.

3. OPERATING INSTRUCTIONS

3.1 Engraving and Cutting Capabilities

The ATOMSTACK A20 Pro V2 delivers a powerful 20W laser output, enabling high-energy cutting and precise engraving. It can effortlessly cut 25mm thick wood boards and 30mm thick black acrylic in a single pass. The engraving speed reaches up to 400 mm/s, significantly reducing processing time.

20W

ONE PASS



Paulownia

ONE PASS



Black Acrylic

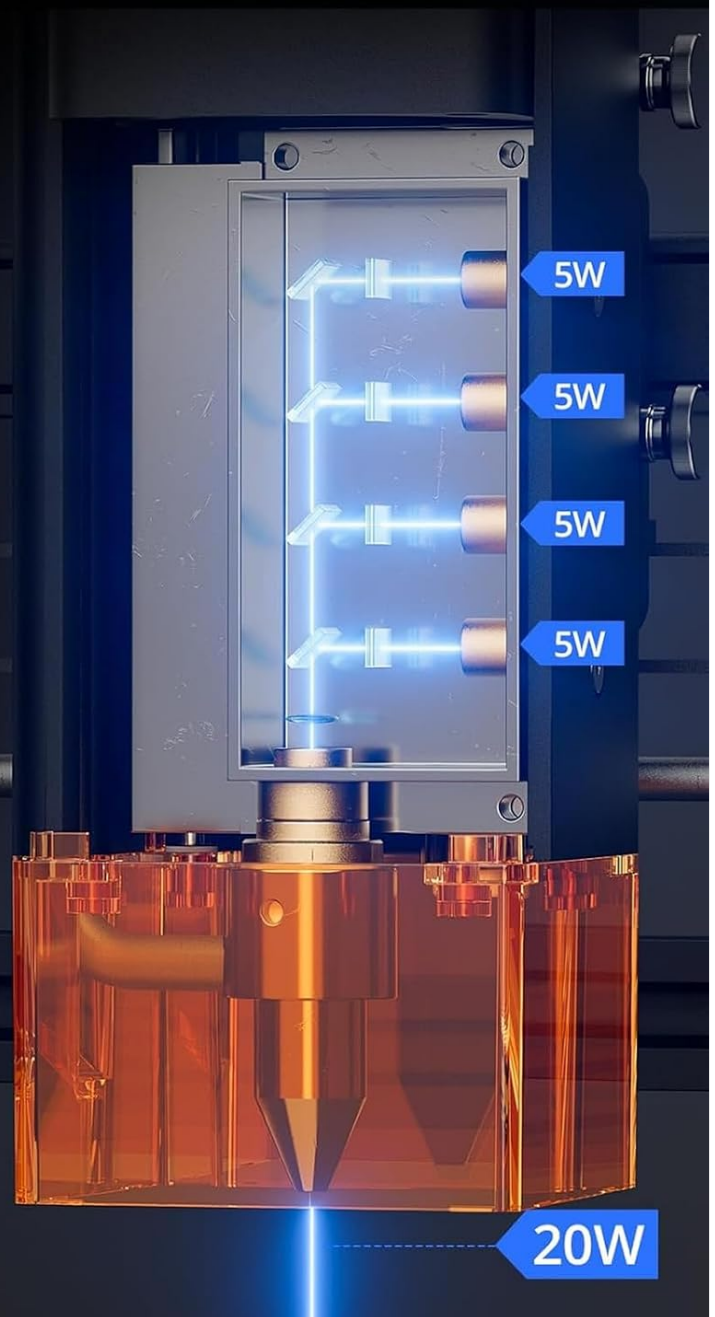


Illustration of the 20W laser's cutting power, demonstrating its ability to cut 15mm Paulownia wood and 10mm black acrylic in a single pass.

400mm/s

X-axis Speed

40%



A20 PRO V2



Others

A20 PRO V2

400mm/s

Others

200mm/s

Comparison illustrating the high X-axis engraving speed of the ATOMSTACK A20 Pro V2, reaching up to 400mm/s.

3.2 Precision Engraving

The unique spot compression technology provides a precise spot size of 0.08 x 0.1 mm, ensuring high engraving accuracy of 0.01 mm. The fixed laser focusing mode eliminates the need for manual focusing.

0.01mm Precision Engraving

0.01mm



Comparison of Engraving Accuracy

A20 PRO V2

Spot Size
0.08*0.1mm

Others

Spot Size
0.15*0.15mm

The ATOMSTACK A20 Pro V2 offers 0.01mm precision engraving due to its optimized spot size.

3.3 Resume Engraving Function

The second-generation application allows activation of the resume engraving function. If work is interrupted due to an unexpected power failure, the operation can be continued from the original position, provided the relative position between the machine and the workpiece remains unchanged. This feature minimizes material waste.

Resume Engraving

Continue work seamlessly after unexpected power outages, minimizing material waste



Safe to Use



Flame Detector



Gyroscope

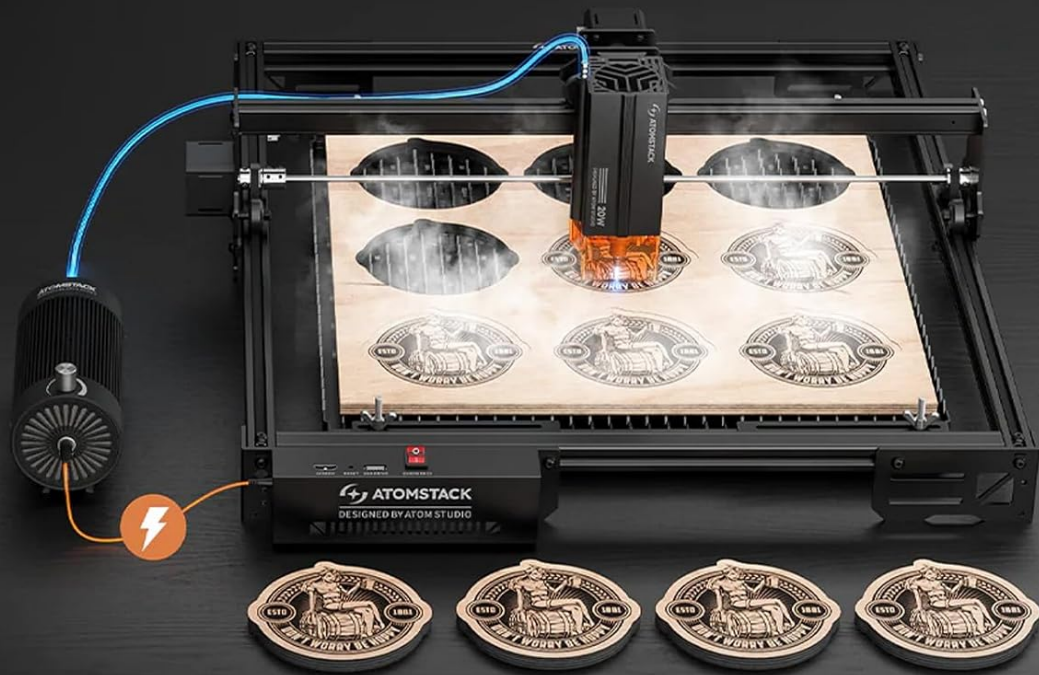
The 'Resume Engraving' feature allows continuation of work after power interruptions.

4. MAINTENANCE

4.1 Air Assist System

The ATOMSTACK F30 V2 Air Assist system is crucial for maintaining optimal laser performance. It features an adjustable airflow of 10-30 L/min, effectively removing smoke and dust generated during laser cutting and engraving. This prevents smoke and dust from attenuating laser energy, ensuring stable and consistent results. Regularly check and clean the air assist nozzle to ensure proper function.

Automatically Controlled Air Assist System



With Air Assist



Without Air Assist

The ATOMSTACK A20 Pro V2 with the F30 V2 Air Assist system, illustrating how air assist improves engraving quality by removing smoke and debris.

4.2 General Cleaning

Keep the machine clean from dust and debris. Use a soft, dry cloth to wipe down surfaces. Ensure the linear guides are free from obstructions to maintain smooth laser movement.

5. SAFETY INFORMATION

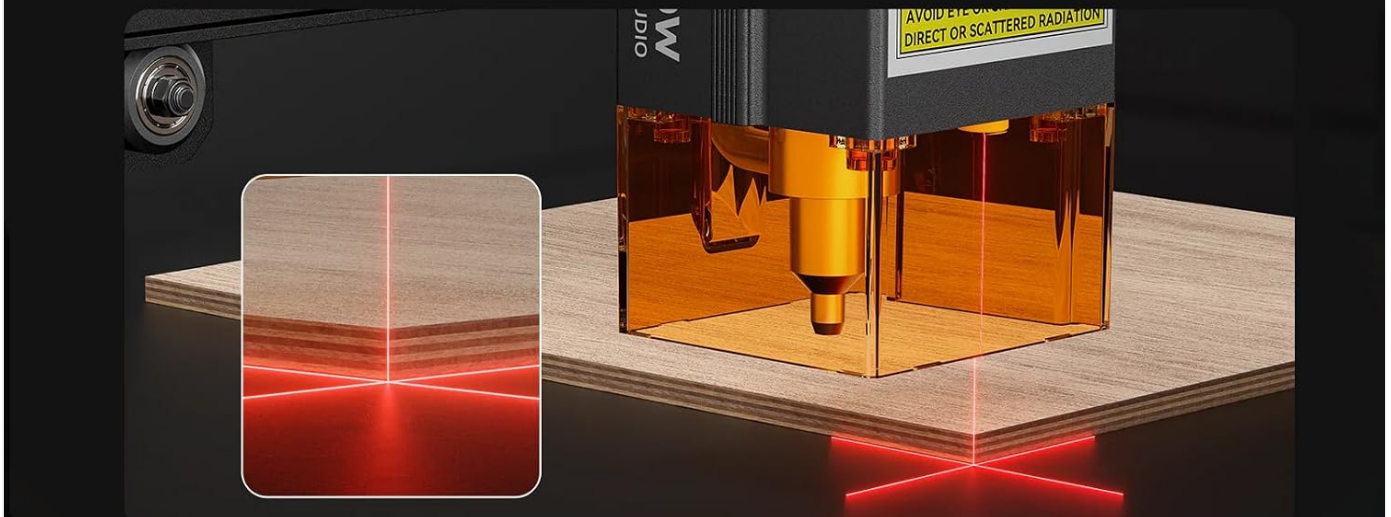
The ATOMSTACK A20 Pro V2 incorporates several safety features to protect users during operation:

- **Laser Shield:** A protective laser shield is integrated to protect the user's eyes, eliminating the need for additional protective glasses in some cases. However, always use the provided safety glasses for maximum protection.
- **Eye Protection Design:** The laser module features a magnetic filter cover that blocks 97% of intense light. This cover is easily disassembled for cleaning.

- **Limit Switches:** Integrated limit switches (one for X-axis, one for Y-axis) prevent the laser head from exceeding the engraving area.
- **Tilt Safety Alarm:** The device is equipped with a gyroscope that triggers an audible safety alarm if the machine is tilted beyond 15 degrees.
- **Flame Detector:** A flame detector is included to enhance safety during operation.
- **Pet Safety:** The laser shield also helps prevent pets from detecting the laser point.

Precise Cross Cursor Alignment

Achieve perfect precisely aligned and eliminate the need for secondary processing



Eye Protection Design

The magnetic filter cover blocks 97% of intense light and is easily disassembled for cleaning, ensuring strong eye protection and convenience.



The laser module features an eye protection design with a magnetic filter cover and requires the use of safety glasses.

400mm/s

X-axis Speed

40%



A20 PRO V2



Others

A20 PRO V2

400mm/s

Others

200mm/s

Safety mechanisms include a flame detector and gyroscope with an audible alarm for enhanced user protection.

6. TROUBLESHOOTING

This section provides general guidance for common issues. For specific technical support, please refer to the manufacturer's official support channels.

- **Poor Engraving/Cutting Quality:** Ensure the material is clean, the laser focus is correct (fixed focus), and the air assist system is functioning properly to remove smoke and debris. Verify laser power and speed settings are appropriate for the material.
- **Machine Not Responding:** Check all cable connections (USB, power). Ensure the software is correctly installed and communicating with the machine. Restart the machine and computer if necessary.
- **Unexpected Stops:** Check for power interruptions. The 'Resume Engraving' function can be used if the workpiece has not shifted. Ensure no safety alarms (e.g., tilt sensor) have been triggered.

7. SPECIFICATIONS

Feature	Specification
Device Power	130 W
Laser Power	90 W
Optical Laser Power	20-24 W
Laser Wavelength	455 ± 5 nm
Engraving Accuracy	0.01 mm
Focusing Mode	Fixed laser, no focusing
Engraving Size	400 x 365 mm
Engraving Materials	Wood, bamboo, cardboard, plastic, leather, PCB, aluminum oxide, non-galvanized and painted metal (back side), 304 stainless steel, glass, ceramic, cotton, slate
Cutting Materials	Cardboard, non-woven fabric, wood, acrylic, thin plastic sheets, sponge
Limit Switches	2 (X-axis 1, Y-axis 1)
Operating System	LaserGRBL, LightBurn, supports Windows XP/Win 7/Win 8/XP/Win 10
Supported File Formats	NC, BMP, JPG, PNG, DXF
Data Transmission	USB connection
Power Supply Input	100–240 V AC, 50/60 Hz
Power Supply Output	24 V, 5 A
Product Weight	5 kg
Package Weight	6 kg
Package Dimensions (L x W x H)	59 x 26 x 18 cm
Manufacturer	ATOMSTACK MAKER
Part Number	A20 Pro V2 + F30 V2
Model Number	A20ProV2 F30V2
Power Source Type	AC
Included Components	1 x ATOMSTACK A20 Pro V2 Laser Engraving Machine, 1 x ATOMSTACK F30 V2 Air Assist

Feature	Specification
ASIN	B0FLPRD4JT
First Available Date	August 8, 2025

8. WARRANTY AND SUPPORT

Specific warranty details and direct support contact information are not provided within this document. Please refer to the product packaging, the manufacturer's official website, or your point of purchase for comprehensive warranty terms and customer support options.

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question