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ATOMSTACK A20 PRO V2

ATOMSTACK A20 PRO V2 Laser Engraver and Cutter Instruction Manual

Model: A20 PRO V2

1. Introduction

This manual provides essential information for the safe and effective operation, assembly, and maintenance of your ATOMSTACK A20 PRO V2 Laser Engraver and Cutter. The A20 PRO V2 is a high-performance laser engraving and cutting machine featuring a 20W laser output, a precise 0.08x0.1mm spot size, and robust aluminum alloy construction. It supports app control and is capable of engraving various materials, including 304 stainless steel.

Image 1.1: The ATOMSTACK A20 PRO V2 laser engraver, showcasing its design and capabilities.

2. Safety Information

Operating a laser engraver requires strict adherence to safety protocols to prevent injury and damage. Please read and understand all safety warnings before use.

- **Eye Protection:** Always wear the provided safety glasses or equivalent laser-protective eyewear when the machine is operating. Never look directly at the laser beam.
- **Ventilation:** Ensure adequate ventilation in your workspace. Laser engraving and cutting can produce fumes and particles that may be harmful if inhaled.
- **Fire Hazard:** The laser can ignite flammable materials. Do not leave the machine unattended during operation. Keep a fire extinguisher nearby.
- **Material Compatibility:** Only engrave or cut materials approved for laser processing. Avoid highly reflective materials without proper precautions (see Troubleshooting).

- **Emergency Stop:** Familiarize yourself with the location and operation of the emergency stop button.
- **Children and Pets:** Keep children and pets away from the operating area.

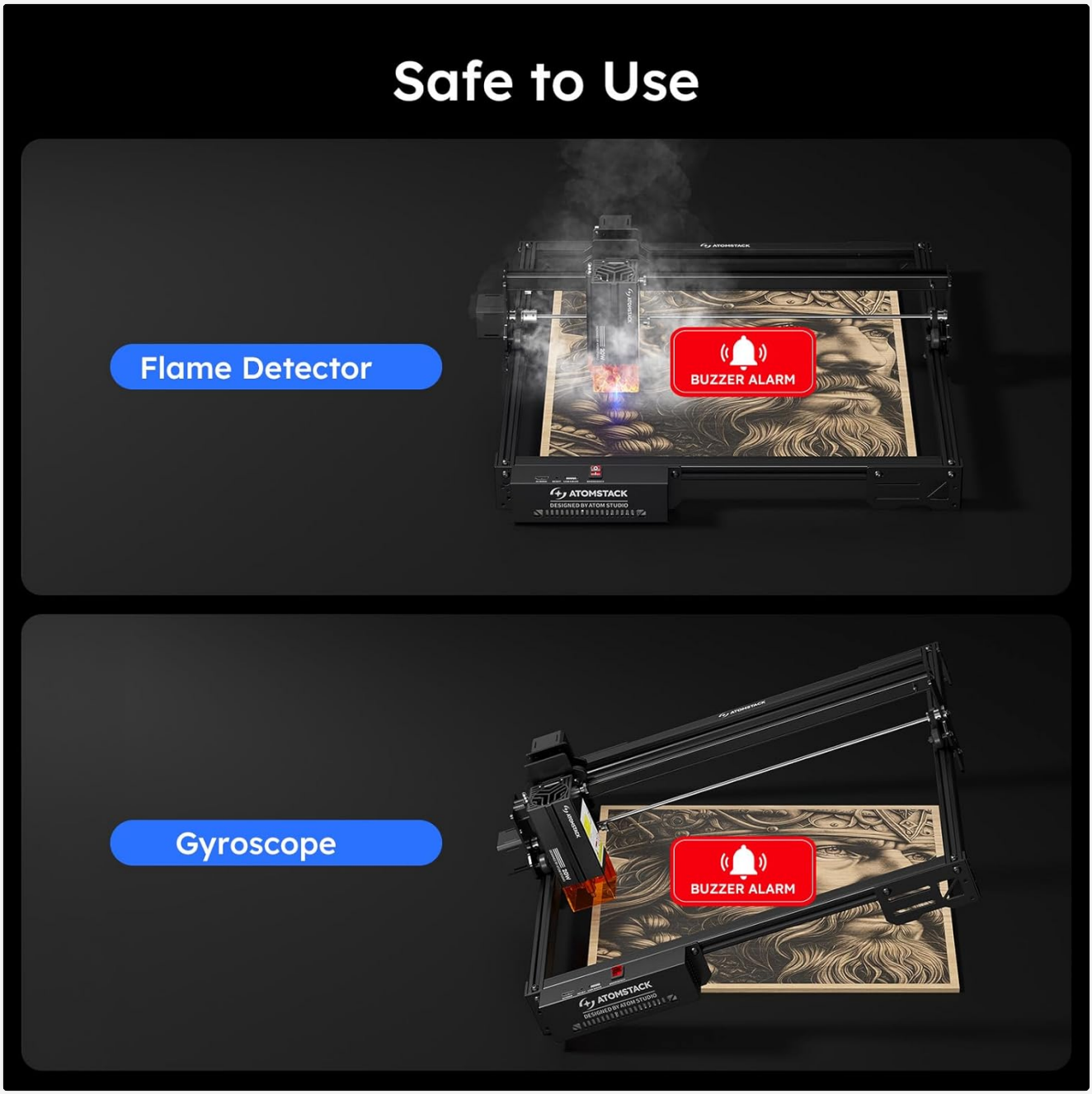

Image 2.1: The ATOMSTACK A20 PRO V2 includes safety features such as a flame detector and gyroscope for enhanced operational safety.

3. Packaging List and Components

Verify that all components are present and undamaged upon unpacking.

Image 3.1: Overview of the items included in the ATOMSTACK A20 PRO V2 package.

- Installation Toolkit
- Power Cable
- Power Adapter
- USB Flash Drive
- Type C Cable
- X-axis Connecting Line
- Focus Shims
- Safety Glasses
- Product Manual

4. Setup and Assembly

The ATOMSTACK A20 PRO V2 is designed for quick assembly. Follow these general steps:

1. **Unpack:** Carefully remove all components from the packaging.
2. **Assemble Frame:** Connect the frame components according to the included assembly guide. Ensure all screws are tightened securely.
3. **Install Laser Module:** Mount the laser module onto the gantry.
4. **Connect Cables:** Connect the power cable, Type C cable, and X-axis connecting line as indicated in the detailed manual.
5. **Power On:** Connect the power adapter and turn on the machine.

Image 4.1: The ATOMSTACK A20 PRO V2 features quick assembly and multiple connection options, including mobile app control.

5. Operating Instructions

The A20 PRO V2 offers versatile operation for engraving and cutting various materials.

5.1. Focusing the Laser

Use the provided focus shims to set the correct focal distance for optimal engraving and cutting performance. Incorrect focus can lead to poor results and reduced laser module lifespan.

5.2. Software and Connection

The machine supports various software options and connection methods, including mobile app control and direct engraving via USB. Refer to the detailed software guide on the USB flash drive for installation and usage.

5.3. Engraving and Cutting Capabilities

The 20W laser module provides significant power for a range of tasks:

- **Cutting:** Capable of cutting up to 15mm Paulownia wood and 10mm black acrylic in a single pass.
- **Engraving:** Achieves 0.01mm precision engraving with a fine 0.08x0.1mm spot size.
- **Speed:** Operates at a high speed of 400mm/s for increased productivity.

Image 5.1: The 20W laser module allows for efficient cutting of materials like 15mm wood and 10mm black acrylic in a single pass.

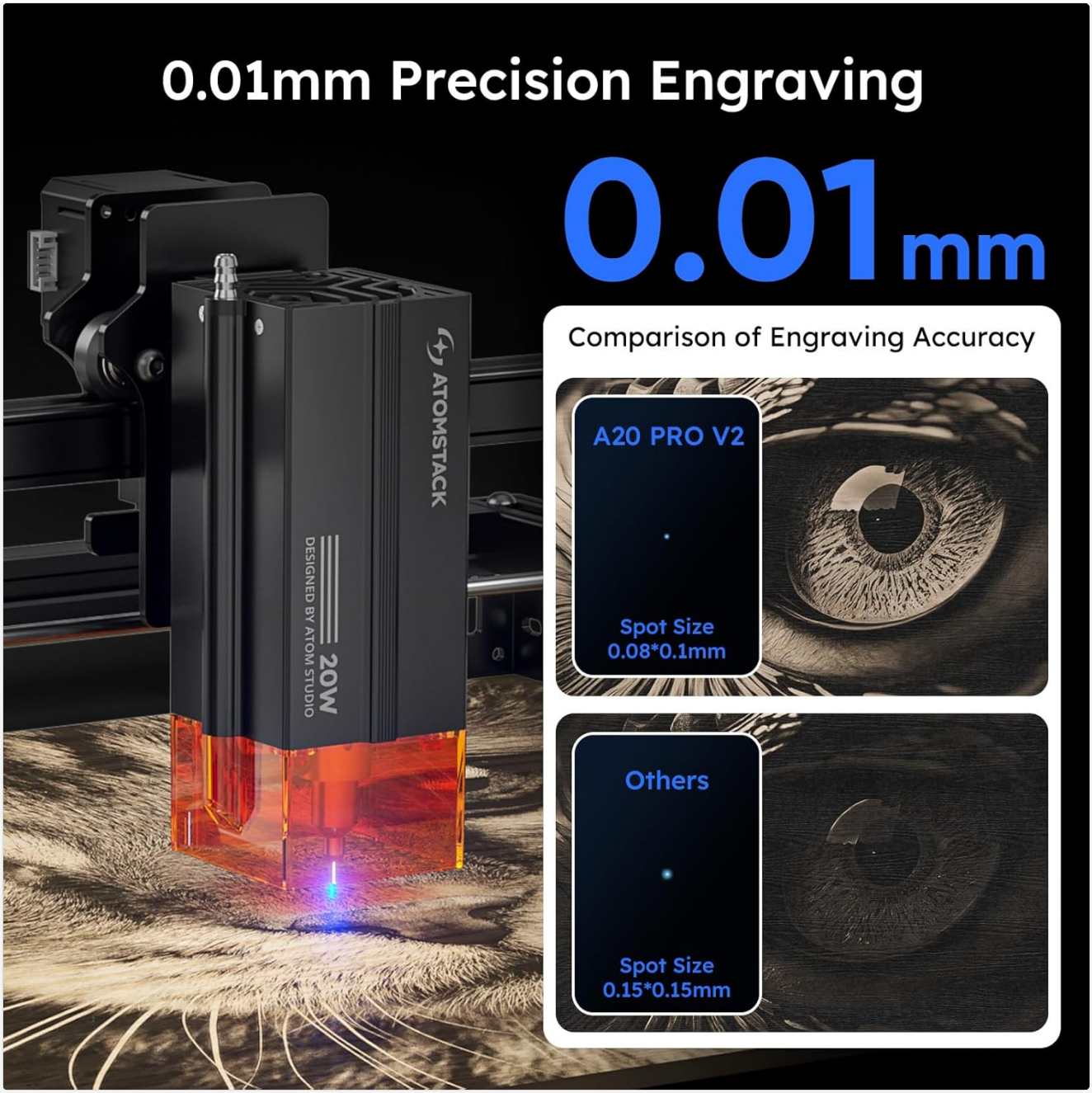

Image 5.2: The A20 PRO V2 offers 0.01mm precision engraving with a small 0.08x0.1mm laser spot.

Image 5.3: The A20 PRO V2 achieves high productivity with an engraving speed of 400mm/s.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your laser engraver.

- **Clean Lens:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution. Dust and debris can reduce laser efficiency.
- **Clean Rails:** Keep the guide rails and wheels free of dust and debris to ensure smooth movement of the laser module.
- **Check Connections:** Regularly inspect all cables and connections for wear or looseness.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates to improve performance and add features.

7. Troubleshooting

This section addresses common issues you might encounter.

7.1. Laser Module Degradation on Reflective Materials

Issue: Reduced laser output or module failure after engraving highly reflective materials, such as stainless steel, especially at high power settings.
Cause: When engraving highly reflective surfaces, a portion of the laser beam can reflect back into the laser module's diode, causing damage and premature degradation.
Solutions:

- **Reduce Reflection:** Before engraving reflective materials, apply a non-reflective coating (e.g., black paint, dry erase marker, or a specialized laser marking spray) to the surface. This absorbs the laser energy and prevents harmful reflections.
- **Adjust Power Settings:** Avoid using 100% laser power when working with highly reflective materials. Experiment with lower power settings that still achieve the desired engraving effect.
- **Consult Material Guidelines:** Always refer to recommended settings for specific materials to minimize risks.

7.2. Other Common Issues

- **Machine Not Powering On:** Check power cable connections and ensure the power adapter is functioning.
- **Laser Not Firing:** Verify software settings, focus, and ensure the laser module is properly connected.
- **Poor Engraving Quality:** Check focus, laser power settings, engraving speed, and material type. Ensure the material is flat and securely placed.
- **Abnormal Movement:** Inspect guide rails for obstructions and ensure belts are properly tensioned.

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8. Technical Specifications

Feature	Specification
Brand	ATOMSTACK (AtomFun)
Model	A20 PRO V2
Laser Output Power	20W
Laser Spot Size	0.08 x 0.1mm
Engraving Precision	0.01mm
Engraving Speed	Up to 400mm/s
Working Area	400mm x 365mm (15.75in x 14.37in)
Frame Material	All-aluminum alloy structure
Safety Features	Flame Detector, Gyroscope

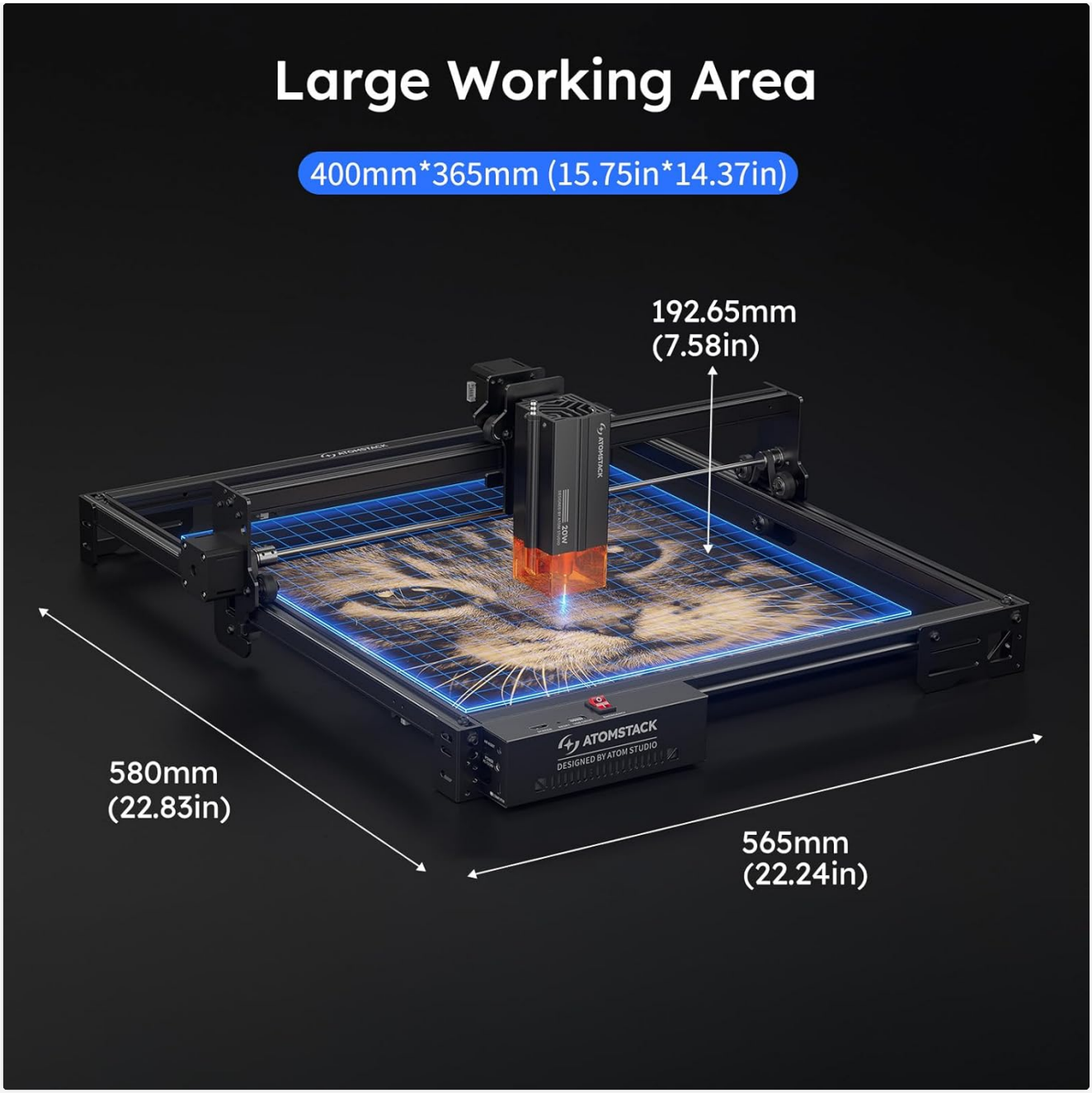

Image 8.1: Dimensions of the ATOMSTACK A20 PRO V2, highlighting its large working area.

9. Warranty and Support

ATOMSTACK is committed to customer satisfaction and product reliability.

- **Customer Service:** Enjoy 365 days of dedicated customer service.
- **Technical Support:** Benefit from lifetime technical support for your ATOMSTACK A20 PRO V2.
- **Parts Replacement:** In case of faulty parts, free replacements are provided.

For support, please refer to the contact information provided on the official ATOMSTACK website or your purchase documentation.

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