ATOMSTACK C4 Pro

ATOMSTACK C4 Pro CNC Milling Machine

Model: C4 Pro

Manufacturer: ATOMSTACK

1. Introduction and Overview

The ATOMSTACK C4 Pro CNC milling machine is engineered for precision and versatility, offering exceptional repeatability of 0.01 mm and a total tolerance of ±0.1 mm. Its robust and rigid motion system ensures stable, smooth, and precise results for a wide range of complex and professional projects. This manual provides essential information for setting up, operating, and maintaining your C4 Pro machine.

2. Setup and Assembly

The C4 Pro features a modular design for quick and straightforward assembly. Most users can complete the setup in approximately 15 minutes, allowing you to begin your projects without delay. The machine comes 70% pre-assembled with all necessary tools included.

Image: Modular design for easy assembly. The machine is shown in red and black, with components being attached to form the main structure.

Follow the detailed instructions provided in the separate assembly guide for step-by-step installation. Ensure all connections are secure before powering on the device.

3. Key Features and Operation

3.1 High Precision and Stability

The C4 Pro is built with MGH12 linear guides and dual-safety thrust screws, ensuring exceptional stability and minimizing step loss or vibrations. This rigid construction contributes to its ultra-high precision, making it suitable for intricate designs.

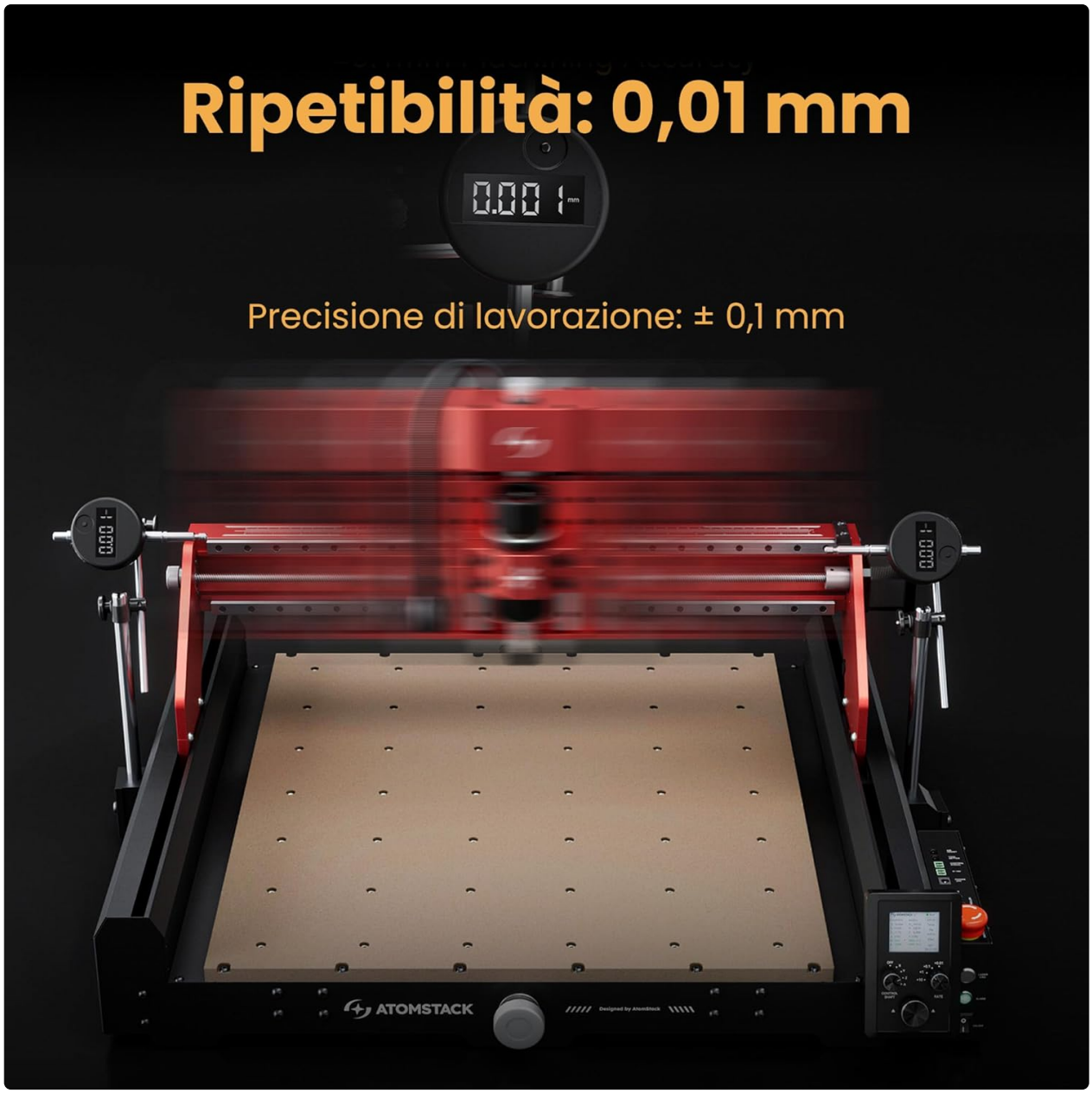

Image: Demonstrating 0.01 mm repeatability, highlighting the machine's precision.

Image: Visual comparison of dimensional precision, showing the C4 Pro's superior ±0.1 mm machining accuracy.

3.2 Powerful Spindle and Large Work Area

Equipped with a 200W high-torque spindle, the C4 Pro can reach speeds of up to 12,000 RPM, enabling rapid and efficient material removal. The generous working area of 420 × 420 × 100 mm allows for larger projects and greater creative freedom.

Image: Highlighting the machine's speed with 2000 mm/min engraving and 12,000 RPM spindle.

Image: Visual representation of the ample 420x420x100mm working area.

3.3 Advanced 4-Axis Control and Offline Operation

The ATOMSTACK C4 Pro features an intelligent 4AXIS V1.0 controller, providing industrial-grade functionalities such as 24/7 continuous operation, efficient XYZ + 4-axis linkage (4th axis sold separately), one-touch centering, precision compensation, and smart software limits. The included offline controller allows for operation without a computer connection.

Image: The offline controller for direct machine control without a computer.

3.4 Material Compatibility and Versatility

The C4 Pro is highly versatile, capable of working with a wide range of materials including wood, plastics, PVC, POM, PCBs, acrylic, aluminum, and brass. It supports various operations such as engraving, milling, and cutting, making it ideal for woodworking, PCB prototyping, metal engraving, and acrylic cutouts.

Image: Examples of diverse materials compatible with the C4 Pro, including wood, metals, and plastics.

3.5 Expandability and Dual Mode Functionality

The C4 Pro comes with a work lamp, milling cutter set, and tool set. It is optionally expandable with a 4th axis, cyclone suction system, laser module, expansion kit, tensioners, and scrap plates. The one-click CNC/laser mode change allows for seamless transitions between fine laser engraving and CNC milling workflows.

4. Product Video Overview

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Video: A comprehensive overview of the ATOMSTACK C4 Pro CNC machine, demonstrating its modular design, precision, material versatility, powerful spindle, work area, speed, handwheel control, 4-point centering, optional vacuum kit, 4-axis linkage, and laser mode capabilities.

5. Specifications

Feature	Detail

Manufacturer	ATOMSTACK
Model Number	C4 Pro
Item Weight	30 Kilograms
Package Dimensions	78.5 x 72 x 28 cm
Power Source Type	AC
Included Components	1 ATOMSTACK C4 Pro CNC Milling Machine
Batteries Included?	No
Work Area	420 × 420 × 100 mm
Spindle Speed	Up to 12,000 RPM
Max Engraving Speed	2000 mm/min
Repeatability	0.01 mm
Machining Accuracy	±0.1 mm

6. Maintenance

Regular maintenance is crucial for ensuring the longevity and optimal performance of your ATOMSTACK C4 Pro. Always disconnect the power before performing any maintenance.

- **Cleaning:** Regularly clean the machine, especially the linear guides and lead screws, to prevent dust and debris buildup. An optional woodworking vacuum kit with two-stage filtration and cyclone separation can help keep your workspace clean and extend machine lifespan.
- **Lubrication:** Apply appropriate lubricant to moving parts as recommended in the detailed product manual (not provided here) to ensure smooth operation.
- **Inspection:** Periodically inspect all components for wear and tear, loose connections, or damage. Replace worn parts promptly.

7. Troubleshooting

If you encounter any issues with your ATOMSTACK C4 Pro, refer to the following common troubleshooting tips. For more complex problems, consult the full product manual or contact customer support.

- **Machine not powering on:** Ensure the power cable is securely connected and the power switch is in the 'ON' position. Check the power outlet.
- **Poor engraving/milling quality:** Verify that the correct tool is installed, the material is properly secured, and the cutting parameters (speed, depth) are appropriate for the material. Check for any loose components or debris affecting movement.
- **Unresponsive controls:** If using the offline controller, ensure it is properly connected. Restart the machine and the controller.
- **Unusual noises:** Immediately stop the machine and inspect for any obstructions, loose parts, or signs of damage.

8. Warranty and Support

Your ATOMSTACK C4 Pro CNC Milling Machine comes with a manufacturer's warranty. Please refer to the warranty card included in your product packaging for specific terms and conditions. For technical support, spare parts, or service inquiries, please contact ATOMSTACK customer service through their official website or authorized distributors.

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