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Longer RAY5 10W

LONGER RAY5 10W Laser Engraver and Cutter with Enclosure User Manual

Model: RAY5 10W

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of your LONGER RAY5 10W Laser Engraver and Cutter, along with its protective enclosure. Please read this manual thoroughly before assembly and use to ensure proper functionality and safety.



Image 1.1: The LONGER RAY5 10W Laser Engraver and Cutter shown alongside its protective enclosure, fan, and exhaust hose. Various engraved and cut samples are displayed below the engraver, including a phone case, a leather bracelet, rings, a small wooden house, and a glass jar.

Package Contents

Verify that all components are present in your package:

- LONGER RAY5 10W Laser Engraver
- Protective Laser Engraver Enclosure
- Exhaust Fan and Hose

- Power Adapter and Cables
- USB Cable
- Safety Goggles
- Material Samples for Testing
- User Manual (this document)
- Assembly Tools

2. SAFETY GUIDELINES

WARNING: Laser radiation can cause eye damage and skin burns. Always wear appropriate safety goggles and operate the machine in a well-ventilated area.

- **Eye Protection:** Always wear the provided safety goggles when the laser is active. Never look directly at the laser beam.
- **Ventilation:** Operate the laser engraver in a well-ventilated area or use the provided enclosure with its exhaust system to remove smoke and fumes.
- **Fire Hazard:** Laser engraving and cutting can generate heat and sparks, potentially causing fires. Do not leave the machine unattended during operation. Keep a fire extinguisher nearby.
- **Material Compatibility:** Only engrave or cut materials specified as safe for laser processing. Avoid materials that produce toxic fumes or are highly flammable (e.g., PVC, certain plastics).
- **Children and Pets:** Keep children and pets away from the operating area.
- **Emergency Stop:** Familiarize yourself with the location of the emergency stop button or power switch to quickly shut down the machine if necessary.
- **Stable Surface:** Place the engraver on a stable, level, and non-flammable surface.

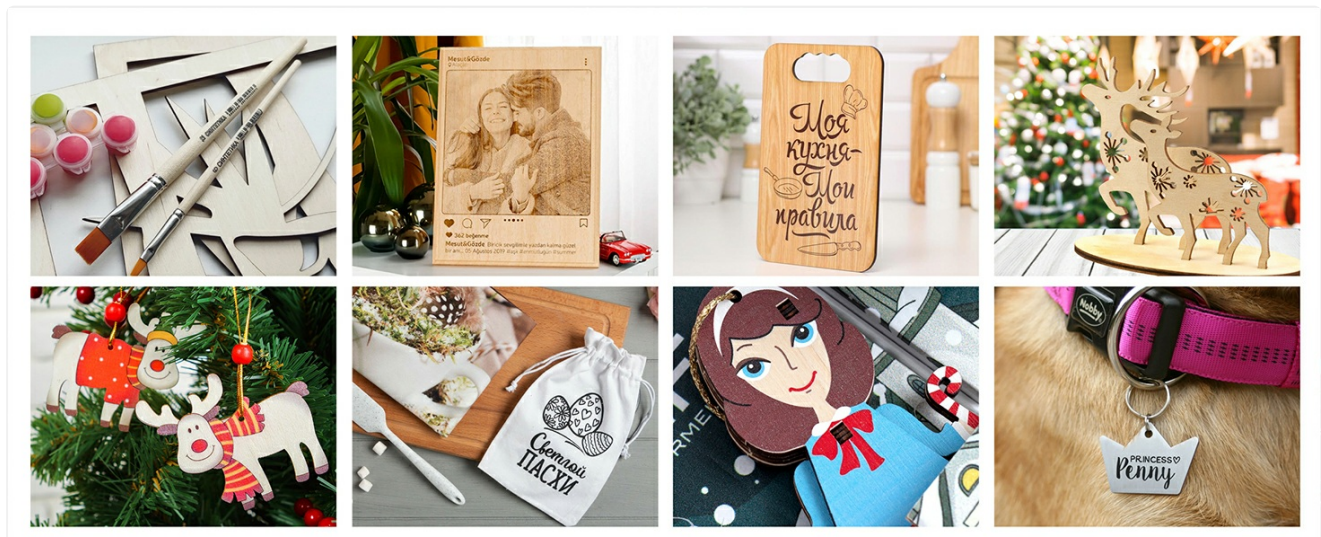


Image 2.1: This image illustrates two key safety features. On the left, a laser engraver is shown with safety goggles placed over the laser path, indicating 'Eyes Protection' and the recommendation to wear protective glasses to avoid eye irritation. On the right, the laser engraver is shown with a flame detection icon, indicating 'Thermal Protection' and the auto-shutdown feature if a flame is detected or the engraving area overheats.



Image 2.2: This image highlights two additional safety mechanisms. On the left, a close-up of the laser engraver's frame shows a 'Limit Switch' designed to prevent abrasion caused by collision between equipment and the edge of the working area. On the right, the engraver is shown with a hand icon, indicating 'Movement Protection' which automatically shuts down the machine if it detects movement during operation.

3. PRODUCT OVERVIEW

LONGER RAY5 10W Laser Engraver

The LONGER RAY5 10W is a high-power diode laser engraver and cutter featuring a compressed laser spot for fine detail and efficient cutting. It includes a 32-bit motherboard for enhanced performance and supports offline control via an app.



Image 3.1: The LONGER RAY5 10W Laser Engraver is displayed with its control screen and several examples of engraved items, including a wooden phone case, a leather bracelet, metal rings, a small wooden house, and a glass jar, demonstrating its versatility across various materials.

Laser Engraver Enclosure with Vent

The included enclosure is designed to enhance safety and improve the working environment by containing smoke, odors, and reducing noise. It features an integrated exhaust system for effective ventilation.

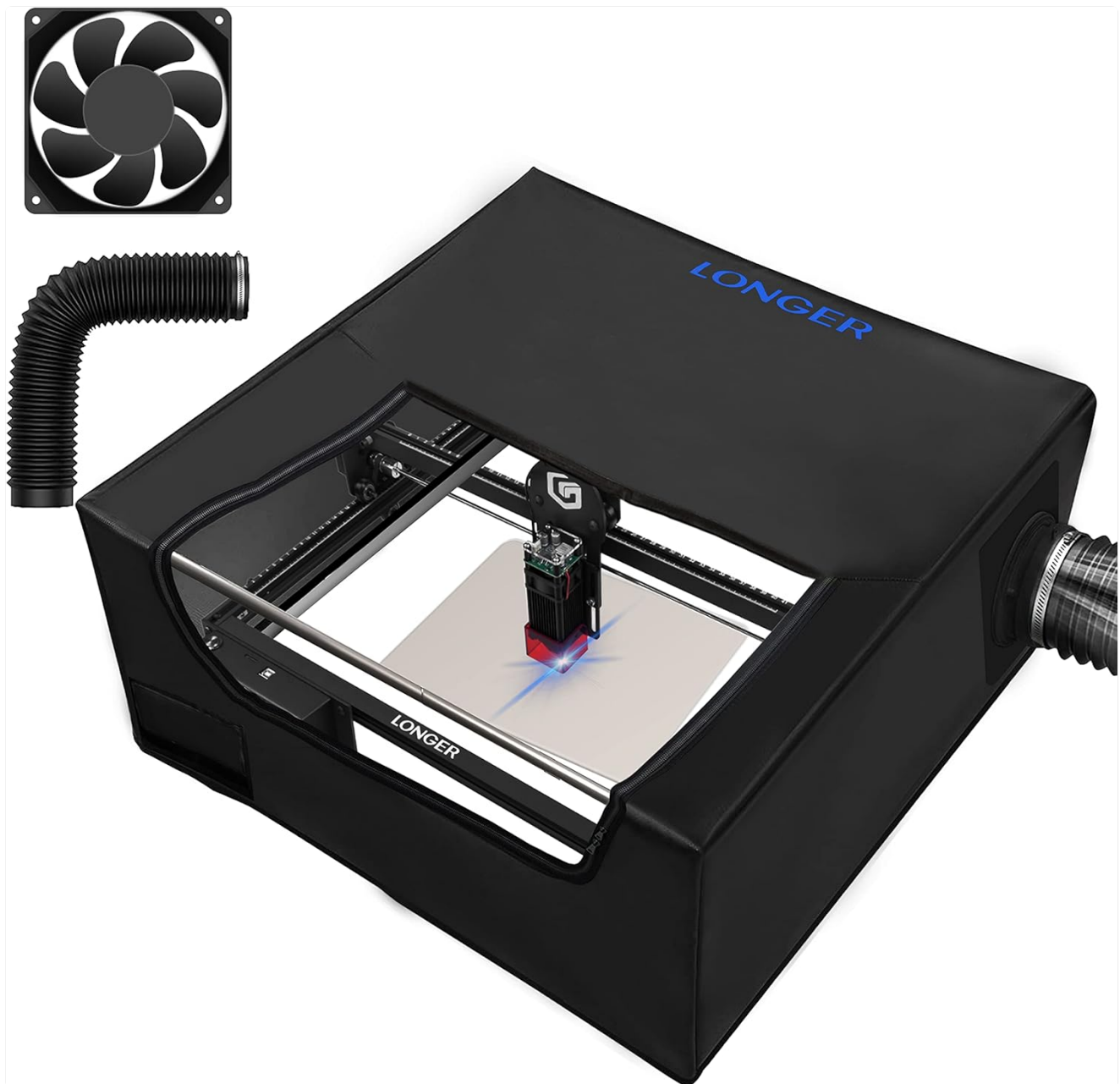


Image 3.2: The black protective enclosure for the laser engraver is shown with a visible exhaust fan and flexible hose. The enclosure features a transparent viewing window, allowing observation of the engraving process while providing protection.

4. SETUP

4.1. Assembly of the Laser Engraver

1. Unpack all components and verify against the package contents list.
2. Follow the detailed assembly instructions provided in the separate assembly guide to construct the laser engraver frame.
3. Install the laser module onto the gantry, ensuring it is securely fastened.
4. Connect all necessary cables (power, USB, motor cables) according to the diagrams.

4.2. Enclosure Setup

1. Place the assembled laser engraver inside the protective enclosure.
2. Attach the exhaust fan to the designated port on the enclosure.

3. Connect the flexible exhaust hose to the fan and route it to an outdoor vent or a suitable air filtration system. Ensure the hose is free of kinks.
4. Plug in the power adapter for the exhaust fan.



Image 4.1: This image displays the laser engraver enclosure with its 'Efficient Exhaust System'. The enclosure has dimensions of approximately 27.5 inches in width and depth, and 13 inches in height. A flexible exhaust hose, approximately 4 inches in diameter, is connected to the side of the enclosure, leading to an external fan, illustrating how smoke and odors are vented away from the workspace.

5. OPERATING INSTRUCTIONS

5.1. Software Installation and Connection

The LONGER RAY5 10W is compatible with popular laser control software such as LaserGRBL and LightBurn. It also supports offline control via the MKSLaser App.

- **PC Connection:** Download and install LaserGRBL or LightBurn from their official websites. Connect the engraver to your computer via USB.

- **Wi-Fi/App Control:** For app control, ensure the engraver and your mobile device are connected to the same Wi-Fi network. Download the MKSLaser App and follow the in-app instructions for connection.
- **TF Card:** You can also load G-code files directly onto a TF card and insert it into the engraver for offline operation.



Image 5.1: This image illustrates the wide compatibility of the LONGER RAY5 10W laser engraver. It shows icons for Wi-Fi, USB Cable, APP, and TF Card, indicating various connection methods. Below these, logos for LaserGRBL and LightBurn are displayed, highlighting software compatibility. On the right, a laptop, tablet, and smartphone screens show the MKSLaser App interface and design software, demonstrating how the device can be controlled and operated.

5.2. Preparing for Engraving/Cutting

1. **Material Placement:** Place your material securely on the working surface. Ensure it is flat and does not move during operation.
2. **Focus Adjustment:** Adjust the laser focus according to the material thickness. Refer to your software or the engraver's touch screen for guidance.
3. **Design Loading:** Load your design file (JPG, PNG, BMP, G-code, SVG, GIF, NC, GC) into the software or via TF card.
4. **Parameter Settings:** Set appropriate laser power, speed, and passes based on the material type and desired effect. Start with lower settings and adjust as needed.

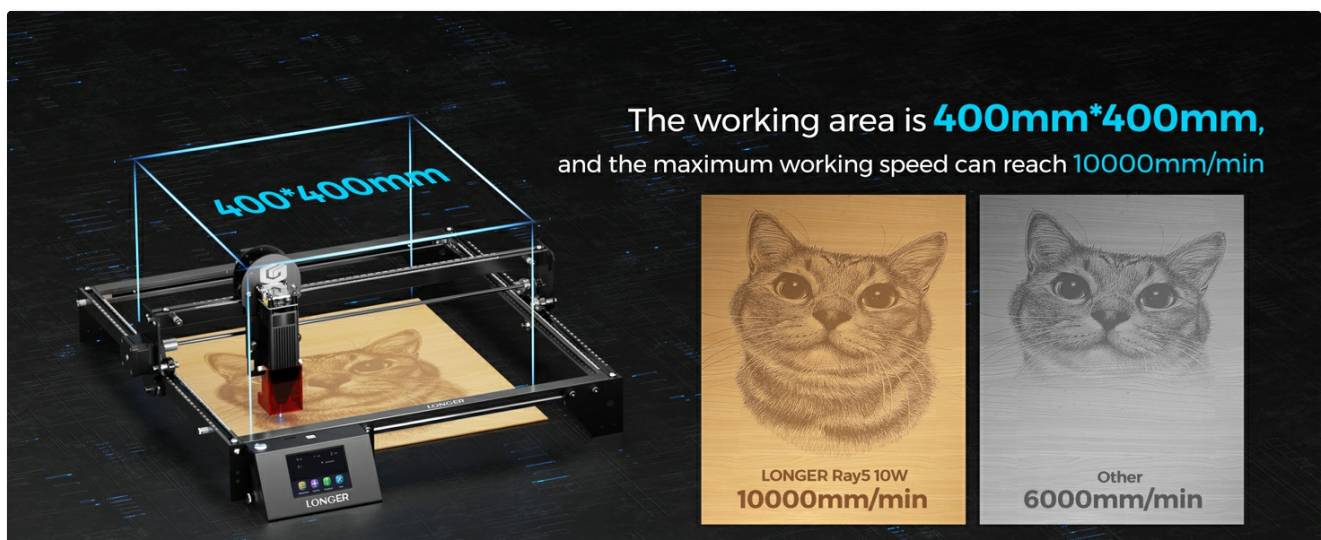


Image 5.2: This image highlights the 3.5-inch touch screen interface of the LONGER RAY5 10W laser engraver, designed for simple operation. Various screen displays are shown, including controls for laser power (1% to 100%), movement adjustments (X, Y, Z axes), and file selection, demonstrating the intuitive user interface.

5.3. Starting Operation

1. Ensure all safety precautions are observed, including wearing safety goggles and activating the exhaust system.
2. Initiate the engraving or cutting process through your chosen software or the engraver's control panel.
3. Monitor the process closely. If any issues arise, use the emergency stop or power switch immediately.

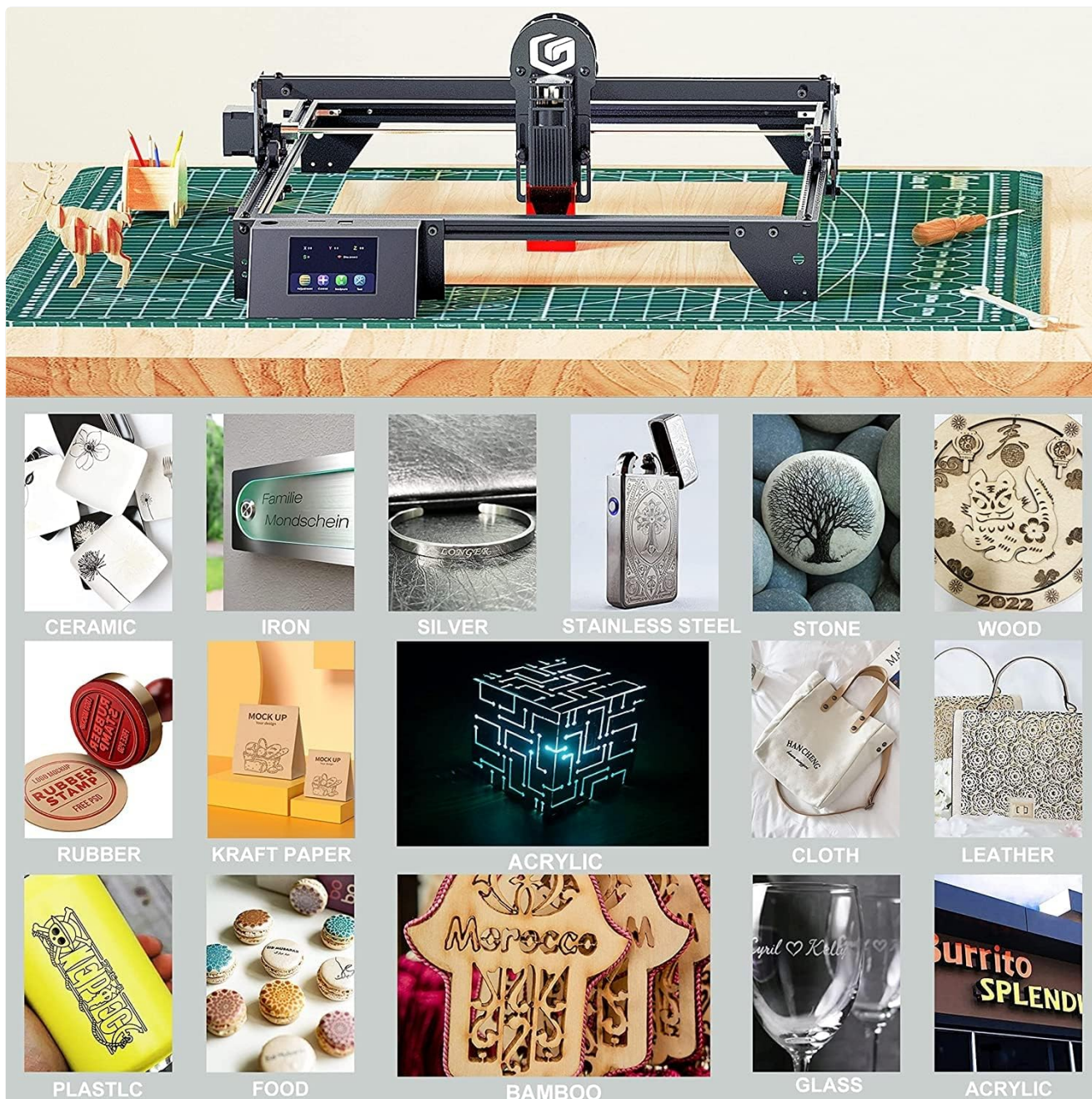


Image 5.3: This image displays a grid of various materials that can be processed by the LONGER RAY5 10W laser engraver. Examples include ceramic, iron, silver, stainless steel, stone, wood, rubber, kraft paper, acrylic, cloth, leather, plastic, food, bamboo, and glass, showcasing the wide range of applications for both engraving and cutting.

6. MAINTENANCE

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

- **Lens Cleaning:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution. A dirty lens can reduce laser power and accuracy.

- **Rail Cleaning:** Keep the guide rails and wheels free of dust and debris. Use a soft brush or cloth. Lubricate moving parts as recommended by the manufacturer.
- **Exhaust System:** Regularly check and clean the exhaust fan and hose to ensure efficient smoke and fume extraction.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates to improve performance or add new features.

7. TROUBLESHOOTING

This section addresses common issues you might encounter.

- **No Laser Output:**
 - Check if the laser module is properly connected and powered.
 - Ensure safety features (e.g., limit switches, movement sensor) are not triggered.
 - Verify laser power settings in your software.
- **Poor Engraving/Cutting Quality:**
 - Adjust laser focus.
 - Clean the laser lens.
 - Experiment with different power and speed settings for your material.
 - Ensure the material is flat and securely placed.
- **Machine Not Connecting to Software:**
 - Check USB cable connection.
 - Install necessary drivers for the engraver.
 - Ensure correct COM port is selected in the software.
 - For Wi-Fi, confirm both devices are on the same network.
- **Excessive Smoke/Odor:**
 - Verify the exhaust fan is operating correctly and the hose is properly vented.
 - Ensure the enclosure is sealed.
 - Check material compatibility; some materials produce more fumes.

For further assistance, refer to the official Longer support resources.

8. SPECIFICATIONS

Feature	Specification
Laser Output Power	10W
Engraving Area	400mm x 400mm (approx. 15.7" x 15.7")
Engraving Speed (Max)	10000mm/min
Engraving Accuracy	0.01mm
Laser Spot Size	0.06mm x 0.06mm (Compressed)

Feature	Specification
Motherboard	32-bit
Control Methods	USB, Wi-Fi (App), TF Card
Compatible Software	LaserGRBL, LightBurn, MKSLaser App
Supported File Formats	JPG, PNG, BMP, G-code, SVG, GIF, NC, GC
Enclosure Dimensions (Approx.)	27.5" L x 27.5" W x 13" H
Enclosure Exhaust Hose Diameter	4"

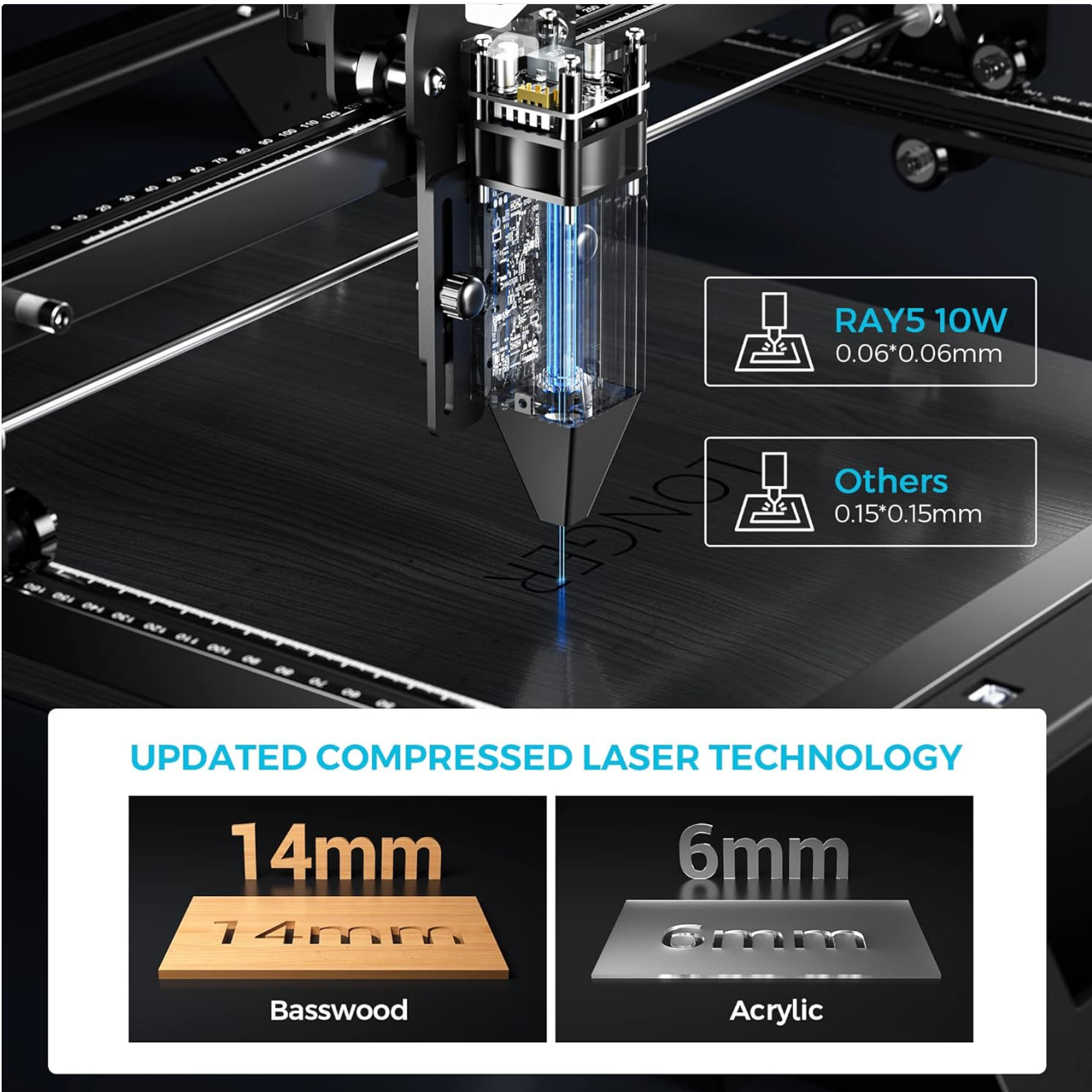


Image 8.1: This image illustrates the 'Updated Compressed Laser Technology' of the RAY5 10W, highlighting its small spot size of 0.06x0.06mm compared to others at 0.15x0.15mm. It also demonstrates cutting capabilities: 14mm Basswood and 6mm Acrylic, showcasing the precision and power of the laser.

10000mm/min Engraving Speed

Faster Speed, More Effective

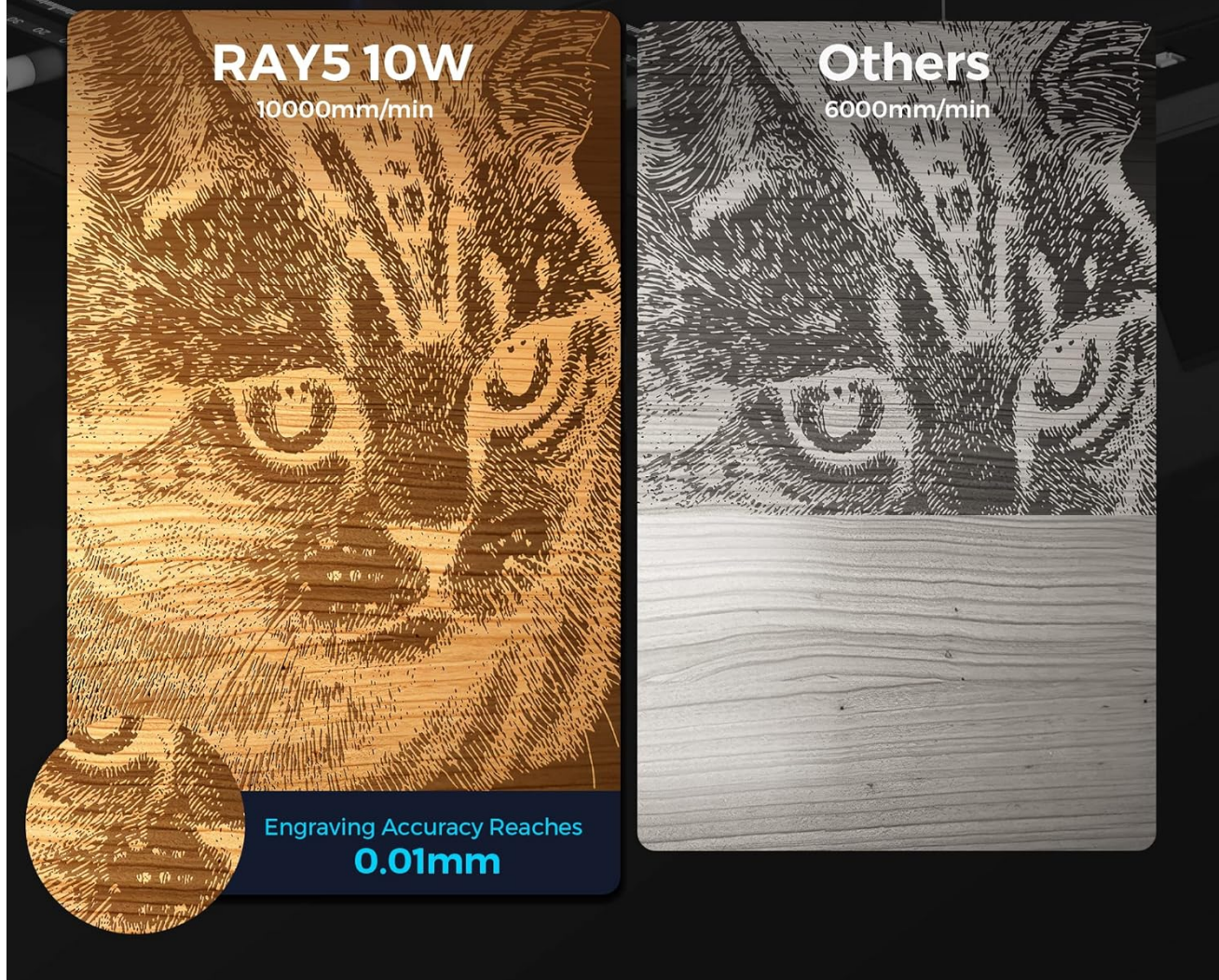


Image 8.2: This image compares the engraving speed and accuracy of the RAY5 10W (left) with other models (right). The RAY5 10W achieves 10000mm/min engraving speed with an accuracy of 0.01mm, producing a detailed cat portrait. The 'Others' section shows a less detailed engraving at 6000mm/min, emphasizing the superior performance of the RAY5 10W.

9. WARRANTY AND SUPPORT


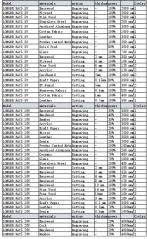
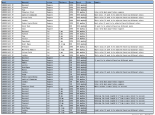

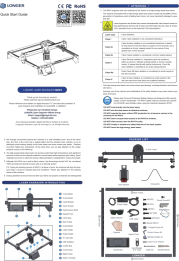
LONGER products are designed for reliability and performance. For warranty information, please refer to the warranty card included with your product or visit the official Longer website.

If you encounter any issues or require technical assistance, please contact Longer customer support through their official channels. When contacting support, please have your product model (RAY5 10W) and purchase information ready.

Online Resources:

- Official Longer Website: www.longer3d.com
- Support Email: Refer to your product documentation

Related Documents - RAY5 10W

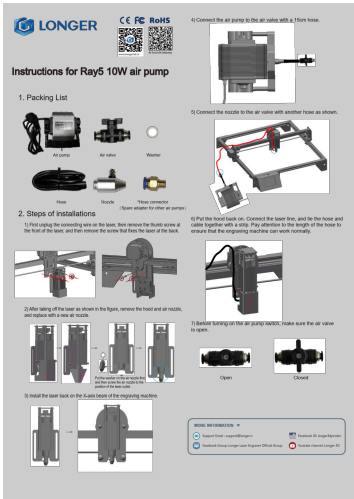
	<p>LONGER RAY5 Laser Engraver User Manual</p> <p>Comprehensive user manual for the LONGER RAY5 Laser Engraver, covering safety, operation, specifications, software setup (LaserGRBL, LightBurn), and troubleshooting for models RAY5 5W and RAY5 10W.</p>
	<p>LONGER RAY5 Laser Cutter & Engraver: Material Settings Guide</p> <p>Comprehensive material settings for LONGER RAY5 series laser cutters and engravers, including models 5W, 10W, and 20W. This guide provides recommended engraving and cutting parameters such as thickness, power, and cycles for a wide range of materials.</p>
	<p>LONGER RAY5 Laser Engraver Material Settings Guide</p> <p>A comprehensive guide to material settings for LONGER RAY5 5W and 10W laser engravers, detailing optimal power, speed, and cycle settings for engraving and cutting various materials.</p>
	<p>LONGER RAY5 Laser Engraver User Manual</p> <p>Comprehensive user manual for the LONGER RAY5 Laser Engraver, covering safety precautions, product specifications, operation, software usage (LaserGRBL, LightBurn), FAQ, and warranty information.</p>
	<p>LONGER RAY5 5W/10W Quick Install Limit Switch Instructions</p> <p>A concise guide for installing limit switches on the LONGER RAY5 5W/10W laser engraver, including a packing list, step-by-step installation, and firmware upgrade instructions.</p>
	<p>LONGER RAY5 Laser Engraver Quick Start Guide</p> <p>This guide provides essential information for setting up and safely operating the LONGER RAY5 laser engraver. It includes detailed installation steps, important safety warnings regarding laser radiation and fire hazards, a list of included components, and an introduction to the machine's parts.</p>

Material	Power (W)	Speed (mm/min)	Cycle (s)	Notes
Acrylic	5	1000	10	Use 5W power for acrylic.
Aluminum	10	1000	10	Use 10W power for aluminum.
Brass	10	1000	10	Use 10W power for brass.
Copper	10	1000	10	Use 10W power for copper.
Steel	10	1000	10	Use 10W power for steel.
Stainless Steel	10	1000	10	Use 10W power for stainless steel.
Carbon Fiber	10	1000	10	Use 10W power for carbon fiber.
Kevlar	10	1000	10	Use 10W power for kevlar.
Nylon	10	1000	10	Use 10W power for nylon.
PVC	5	1000	10	Use 5W power for PVC.
ABS	5	1000	10	Use 5W power for ABS.
Polycarbonate	10	1000	10	Use 10W power for polycarbonate.
PMMA	5	1000	10	Use 5W power for PMMA.
PEEK	10	1000	10	Use 10W power for PEEK.
PTFE	5	1000	10	Use 5W power for PTFE.
Delrin	10	1000	10	Use 10W power for Delrin.
UHMWPE	10	1000	10	Use 10W power for UHMWPE.
Aluminum Oxide	10	1000	10	Use 10W power for aluminum oxide.
Stainless Steel Oxide	10	1000	10	Use 10W power for stainless steel oxide.
Carbon Fiber Oxide	10	1000	10	Use 10W power for carbon fiber oxide.
Kevlar Oxide	10	1000	10	Use 10W power for kevlar oxide.
Nylon Oxide	10	1000	10	Use 10W power for nylon oxide.
PVC Oxide	5	1000	10	Use 5W power for PVC oxide.
ABS Oxide	5	1000	10	Use 5W power for ABS oxide.
Polycarbonate Oxide	10	1000	10	Use 10W power for polycarbonate oxide.
PMMA Oxide	5	1000	10	Use 5W power for PMMA oxide.
PEEK Oxide	10	1000	10	Use 10W power for PEEK oxide.
PTFE Oxide	5	1000	10	Use 5W power for PTFE oxide.
Delrin Oxide	10	1000	10	Use 10W power for Delrin oxide.
UHMWPE Oxide	10	1000	10	Use 10W power for UHMWPE oxide.
Aluminum Oxide (Anodized)	10	1000	10	Use 10W power for anodized aluminum oxide.
Stainless Steel Oxide (Passivated)	10	1000	10	Use 10W power for passivated stainless steel oxide.
Carbon Fiber Oxide (Carbonized)	10	1000	10	Use 10W power for carbonized carbon fiber oxide.
Kevlar Oxide (Carbonized)	10	1000	10	Use 10W power for carbonized kevlar oxide.
Nylon Oxide (Carbonized)	10	1000	10	Use 10W power for carbonized nylon oxide.
PVC Oxide (Carbonized)	5	1000	10	Use 5W power for carbonized PVC oxide.
ABS Oxide (Carbonized)	5	1000	10	Use 5W power for carbonized ABS oxide.
Polycarbonate Oxide (Carbonized)	10	1000	10	Use 10W power for carbonized polycarbonate oxide.
PMMA Oxide (Carbonized)	5	1000	10	Use 5W power for carbonized PMMA oxide.
PEEK Oxide (Carbonized)	10	1000	10	Use 10W power for carbonized PEEK oxide.
PTFE Oxide (Carbonized)	5	1000	10	Use 5W power for carbonized PTFE oxide.
Delrin Oxide (Carbonized)	10	1000	10	Use 10W power for carbonized Delrin oxide.
UHMWPE Oxide (Carbonized)	10	1000	10	Use 10W power for carbonized UHMWPE oxide.
Aluminum Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic aluminum oxide.
Stainless Steel Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic stainless steel oxide.
Carbon Fiber Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic carbon fiber oxide.
Kevlar Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic kevlar oxide.
Nylon Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic nylon oxide.
PVC Oxide (Electrolytic)	5	1000	10	Use 5W power for electrolytic PVC oxide.
ABS Oxide (Electrolytic)	5	1000	10	Use 5W power for electrolytic ABS oxide.
Polycarbonate Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic polycarbonate oxide.
PMMA Oxide (Electrolytic)	5	1000	10	Use 5W power for electrolytic PMMA oxide.
PEEK Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic PEEK oxide.
PTFE Oxide (Electrolytic)	5	1000	10	Use 5W power for electrolytic PTFE oxide.
Delrin Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic Delrin oxide.
UHMWPE Oxide (Electrolytic)	10	1000	10	Use 10W power for electrolytic UHMWPE oxide.

LONGER RAY5 Laser Engraver Material Settings Guide

A comprehensive guide to material settings for LONGER RAY5 5W and 10W laser engravers, detailing optimal power, speed, and cycle settings for engraving and cutting various materials.

lang:en score:42 filesize: 39.74 K page_count: 1 document date: 2022-06-11



LONGER Ray5 10W Air Pump Installation Instructions

Step-by-step guide for installing the LONGER Ray5 10W air pump accessory for laser engravers. Includes packing list and assembly instructions.

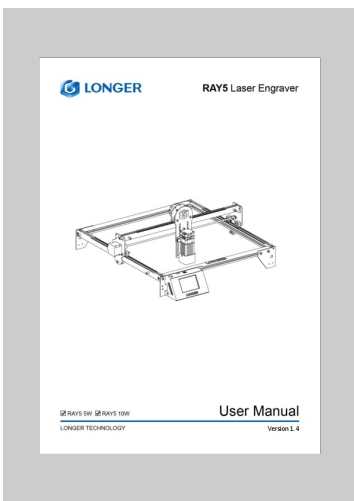
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LONGER RAY5 Rotary Roller User Manual V1.0

This user manual provides comprehensive instructions for the LONGER RAY5 Rotary Roller, an accessory for laser engravers. It covers essential safety statements, disclaimers, software installation for GRBL and LightBurn, detailed steps for connecting and configuring the roller, adjusting its spacing for different object diameters, and important precautions for safe and effective operation. Includes guidance on motor cable connections and troubleshooting.

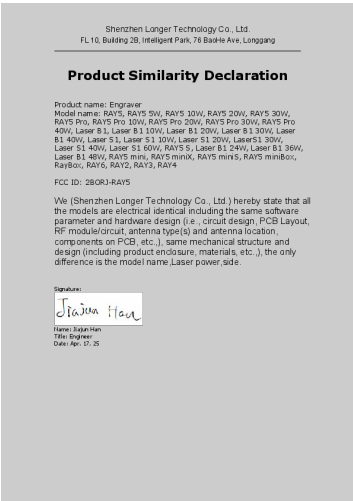
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LONGER RAY5 Laser Engraver User Manual

Comprehensive user manual for the LONGER RAY5 Laser Engraver, detailing safety precautions, product specifications, machine operation (including touch screen, Wi-Fi control, LaserGRBL, and LightBurn software), assembly, and firmware upgrades.

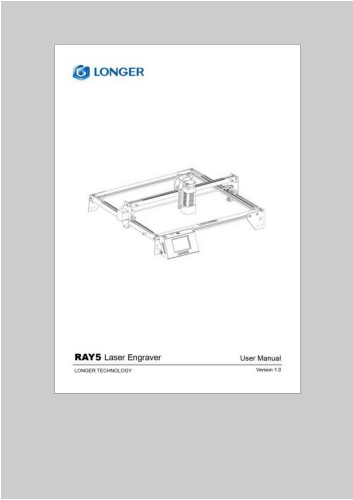
lang:en score:24 filesize: 2.41 M page_count: 31 document date: 2023-03-17



[Product Similarity Declaration - Shenzhen Longer Technology Engraver Models](#)

Declaration by Shenzhen Longer Technology Co., Ltd. confirming product similarity across various Engraver models (RAY5 series, Laser B1, Laser S1, etc.) based on identical hardware and software design.

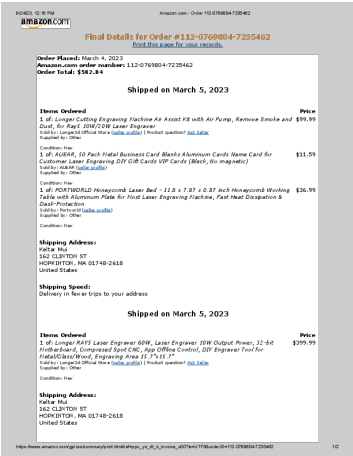
lang:en score:19 filesize: 80.85 K page_count: 1 document date: 2025-04-17



[LONGER RAY5 Laser Engraver User Manual: Setup, Operation, and Safety Guide](#)

This user manual provides comprehensive instructions for the LONGER RAY5 Laser Engraver, covering setup, operation, software installation (LightBurn, LaserGRBL), safety precautions, troubleshooting, and warranty information.

lang:en score:18 filesize: 3.37 M page_count: 47 document date: 2021-10-26

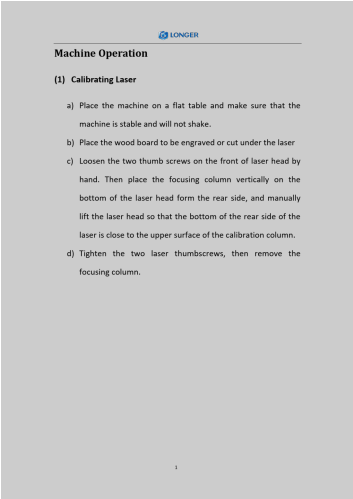


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9/24/23, 12:16 PM Amazon.com - Order 112-0769804-7235462 Final Details for Order #112-0769804-7235462 Print this page for your records. Order Placed: March 4, 2023 Amazon.com order number: 112-0769804-7235462 Order Total: 582.84 Shipped on March 5, 2023 Items Ordered Price 1 of: Longer Cutting...

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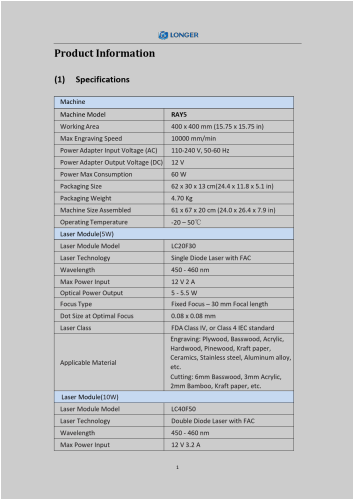


[\[pdf\]](#) Documentation

Product Documentation Longer RAY5 10W Laser Engraver 60W Higher Accuracy Engraving Machine
Compressed Spot 0 06x0 06mm Cutter for Wood and Metal Dark Acrylic Glass Leather Cutting Area 15 7
x15 B1K3 OyYCL m media amazon images I |||

Machine Operation 1 Calibrating Laser a Place the machine on a flat table and make sure that the machine is stable and will not shake. b Place the wood board to be engraved or cut under the laser c Loosen the two thumb screws on the front of laser head by hand. Then place the focusing column ve...

lang:en score:13 filesize: 2.11 M page_count: 25 document date: 2024-01-05



[\[pdf\]](#) Specifications

Specification Sheet Longer RAY5 10W Laser Engraver 60W Higher Accuracy Engraving Machine
Compressed Spot 0 06x0 06mm Cutter for Wood and Metal Dark Acrylic Glass Leather Cutting Area 15 7
x15 71ZVeQqC9OL m media amazon images I |||

Product Information 1 Specifications Machine Machine Model RAY5 Working Area 400 x 400 mm 15.75 x 15.75 in Max Engraving Speed 10000 mm/min Power Adapter Input Voltage AC 110-240 V, 50-60 Hz Power Adapter Output Voltage DC 12 V Power Max Consumption 60 W Packaging Size 62 x 30 ...

lang:en score:12 filesize: 180.97 K page_count: 2 document date: 2024-01-05