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Twotrees TS2-20W

Twotrees TS2-20W Laser Engraver and Cutter User Manual

Model: **TS2-20W** | Brand: **Twotrees**

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of your Twotrees TS2-20W Laser Engraver and Cutter. This high-energy laser machine is designed for precision engraving and cutting on various materials such as wood, metal, and glass. Please read this manual thoroughly before initial use and keep it for future reference.

2. SAFETY INFORMATION

Operating a laser engraver involves inherent risks. Adhering to safety guidelines is paramount to prevent injury and damage.

- **Eye Protection:** Always wear appropriate laser safety goggles (OD6+) when the machine is in operation. The TS2-20W laser head is equipped with a protective cover and a filter blocking 97% of UV light, but additional eye protection is strongly recommended.
- **Ventilation:** Ensure adequate ventilation in your workspace to dissipate fumes and smoke generated during engraving and cutting.
- **Fire Hazard:** Laser processing can ignite flammable materials. Never leave the machine unattended during operation. Keep a fire extinguisher nearby.
- **Emergency Stop:** The machine features an instant stop system that activates in case of involuntary movement or tilt. Familiarize yourself with the location of the emergency stop button.
- **Material Compatibility:** Do not engrave or cut unknown materials. Some materials can produce toxic fumes or catch fire easily. Avoid materials containing PVC.
- **Children and Pets:** Keep children and pets away from the operating area.



Image 2.1: The laser module displays critical safety warnings. Always observe these precautions.

3. PRODUCT OVERVIEW AND FEATURES

The Twotrees TS2-20W is a high-performance laser engraver and cutter designed for precision and versatility.

Key Features:

- Exceptional Cutting Power:** Equipped with a 20W laser, capable of cutting wood up to 15mm thick and opaque acrylic up to 10mm thick.
- High Precision and Speed:** Features an ultra-fine focal spot of 0.08 x 0.08 mm and a maximum resolution of 1000 DPI for sharp engravings. Achieves movement precision of 0.01 mm and speeds up to 20,000 mm/min.
- Broad Software Compatibility:** Seamlessly integrates with professional engraving software such as LaserGRBL (Windows) and LightBurn (multi-platform). Supports various file formats including NC, BMP, JPG, PNG, DXF, and GCODE.
- Robust and Easy Assembly:** Constructed from modular aluminum alloy, allowing for assembly in approximately 40 minutes, resulting in a sturdy and durable structure.

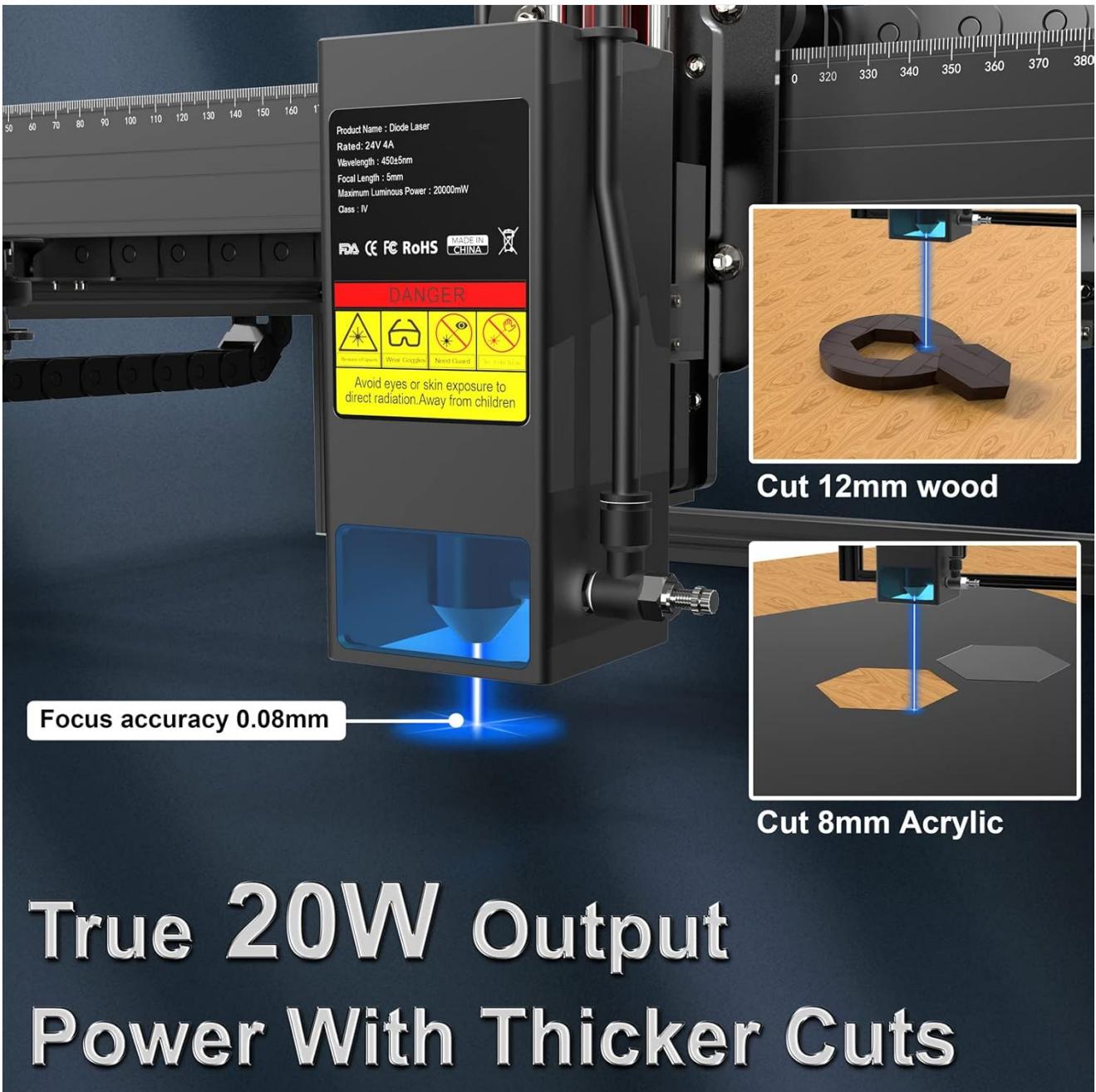


Image 3.1: The laser module's focus accuracy and cutting depth on wood and acrylic.

Top Industrial Design Ensures Higher Accuracy



Image 3.2: The industrial design of the TS2-20W, emphasizing its structural integrity.

More Materials, More Creations



Acrylic



Glass



Metal



Cylinder



Cardboard



Stainless Steel



Food



Leather



Wood



Paper



Fabric



Rubber

Image 3.3: Examples of materials that can be processed by the TS2-20W.

4. SETUP

The Twotrees TS2-20W is designed for straightforward assembly. Follow these general steps for initial setup:

- 1. Unpacking:** Carefully remove all components from the packaging. Verify that all parts listed in the packing list are present.
- 2. Assembly:** Assemble the modular aluminum alloy frame according to the detailed assembly guide provided separately (or refer to the manufacturer's official assembly videos). The process typically takes around 40 minutes. Ensure all connections are secure.
- 3. Placement:** Place the assembled machine on a stable, level, and heat-resistant surface in a well-ventilated area.
- 4. Power Connection:** Connect the power adapter to the machine and then to a suitable power outlet. Do not power on the machine yet.
- 5. Software Installation:** Install the recommended engraving software (LaserGRBL for Windows or LightBurn for multi-platform use) on your computer. Ensure your computer meets the software's system requirements.
- 6. Connect to Computer:** Connect the laser engraver to your computer using the provided USB cable.

5. OPERATING INSTRUCTIONS

Once the machine is set up and software is installed, you can begin your engraving or cutting projects.

1. **Power On:** Turn on the laser engraver.
2. **Software Launch:** Launch your chosen engraving software (LaserGRBL or LightBurn) on your computer.
3. **Material Placement:** Place the material to be engraved or cut onto the working area of the machine. Ensure it is flat and securely positioned.
4. **Focus Adjustment:** The TS2-20W features a fixed focus laser. Adjust the height of the laser module using the designated mechanism to achieve the optimal focal distance for your material. The independent belt tension adjustment and steel guide rail ensure precise movement.
5. **Design Loading:** Load your design file (NC, BMP, JPG, PNG, DXF, GCODE, etc.) into the software.
6. **Parameter Settings:** Adjust engraving/cutting parameters (power, speed, passes) based on the material type and desired outcome. Refer to software documentation or online resources for recommended settings.
7. **Preview and Start:** Use the software's preview function to verify the engraving area. Once satisfied, ensure all safety precautions are in place (eye protection, ventilation) and initiate the engraving/cutting process.
8. **Monitoring:** Monitor the machine during operation. Be prepared to use the emergency stop if any issues arise.

High Performance Fixed Focus



Image 5.1: Adjusting the fixed focus laser module for optimal performance.



Broad Compatibility

Engraving File Supports:

JPG / JPEG / BMP / GIF / PLT / PNG / HPGL / XJ

LaserGRBL Supports:

Windows XP / 7 / 8 / 10 / 11.

LIGHTBURN Supports :

Windows / Mac OS / iOS / Android.

Image 5.2: The laser engraver connected to a computer running compatible software.

6. MAINTENANCE

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

- **Cleaning the Laser Lens:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution to maintain laser power and precision.
- **Cleaning the Working Area:** Remove debris, dust, and material scraps from the working area after each use to prevent interference with machine movement.
- **Checking Belts and Rails:** Inspect the drive belts for tension and wear. Ensure the guide rails are clean and free of obstructions. Lubricate moving parts as recommended by the manufacturer.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates to ensure your machine operates with the latest features and improvements.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For more complex problems, refer to the support section.

- **Machine Not Powering On:** Check the power cable connection and the power outlet. Ensure the power switch is in the 'On' position.
- **Laser Not Firing/Weak Output:** Verify the laser module connection. Clean the laser lens. Check software power settings.
- **Poor Engraving/Cutting Quality:** Adjust focus height. Check material parameters (speed, power). Ensure the material is flat and secure. Clean the lens.
- **Machine Not Connecting to Computer:** Ensure the USB cable is securely connected. Reinstall software drivers if necessary. Try a different USB port or cable.
- **Unexpected Stops:** The machine has a safety stop feature for movement or tilt. Check for any physical obstructions or vibrations that might trigger this.

8. SPECIFICATIONS

Feature	Specification
Model	TS2-20W
Laser Power	20W (20000mW)
Laser Wavelength	445±5nm
Electrical Requirement	24V 4A DC
Motherboard	32-bit
Engraving Speed	Up to 20,000 mm/min
Engraving Area	410 x 410 mm
Focal Spot Size	0.08 x 0.08 mm
Max Resolution	1000 DPI
Wood Cutting Ability (1 Pass)	Up to 15 mm
Black Acrylic Cutting Ability (1 Pass)	Up to 10 mm
Package Dimensions	73.8 x 30.4 x 23 cm
Weight	9.66 kg
Included Parts	Laser Engraver



Image 8.1: Dimensional overview of the Twotrees TS2-20W laser engraver.

9. SUPPORT AND WARRANTY

For any questions, technical assistance, or support regarding your Twotrees TS2-20W laser engraver, please contact the seller directly through the platform where you made your purchase. The manufacturer commits to responding to inquiries within 24 hours.

Warranty Information: Specific warranty terms and conditions may vary. Please refer to your purchase documentation or contact the seller for detailed warranty information.

Online Resources: Visit the official Twotrees website for the latest drivers, firmware updates, and additional support resources.