

Genmitsu 01

Genmitsu 10W Compressed Spot Laser Module Instruction Manual

Model: 01

1. PRODUCT OVERVIEW

The Genmitsu 10W Compressed Spot Laser Module is designed for precision engraving and cutting tasks. It features advanced laser technology and an integrated air assist system to enhance performance and material processing capabilities.

- **Improved 10W Power & Accuracy:** This laser module utilizes laser spot compression technology to achieve 10W continuous output power with a fine focal spot of 0.08mm x 0.05mm. This design significantly improves both power and accuracy, enabling efficient cutting of materials up to 3mm thick when used with the air assist system (air pump not included).
- **Integrated Air Assist Nozzle:** A lightweight aluminum air nozzle is included to improve engraving speed and quality. It also protects the laser optics from smoke and dust, contributing to better efficiency and extended lifespan.
- **Extended Lifespan:** The module features a fixed-focus laser diode and an upgraded heat dissipation design, which collectively contribute to a longer operational lifespan for the laser.
- **Laser Shield Protection:** The laser head is equipped with a laser shield to filter laser radiation, minimizing accidental laser exposure and promoting safer operation. **Note:** Despite this safety feature, protective goggles must always be worn when operating the machine.
- **Broad Compatibility:** This laser module is compatible with various Genmitsu CNC routers and laser engravers, including 3020-PRO Ultra, 3020-PRO MAX V2, 3030-PROVer MAX, PROVerXL 4030, PROVerXL 4030 V2, PROVerXL 6050 Plus, 4040-PRO, 4040-PRO MAX, 4040 Reno CNC Router, Jinsoku LE-1620, LC-50 PLUS, and LC-60A Laser Engraver & Cutter.

Dual Laser Coupling Technology

Combine two 5W laser beams into one 10W laser beams, achieve true 10W Optical Power for Stronger Force

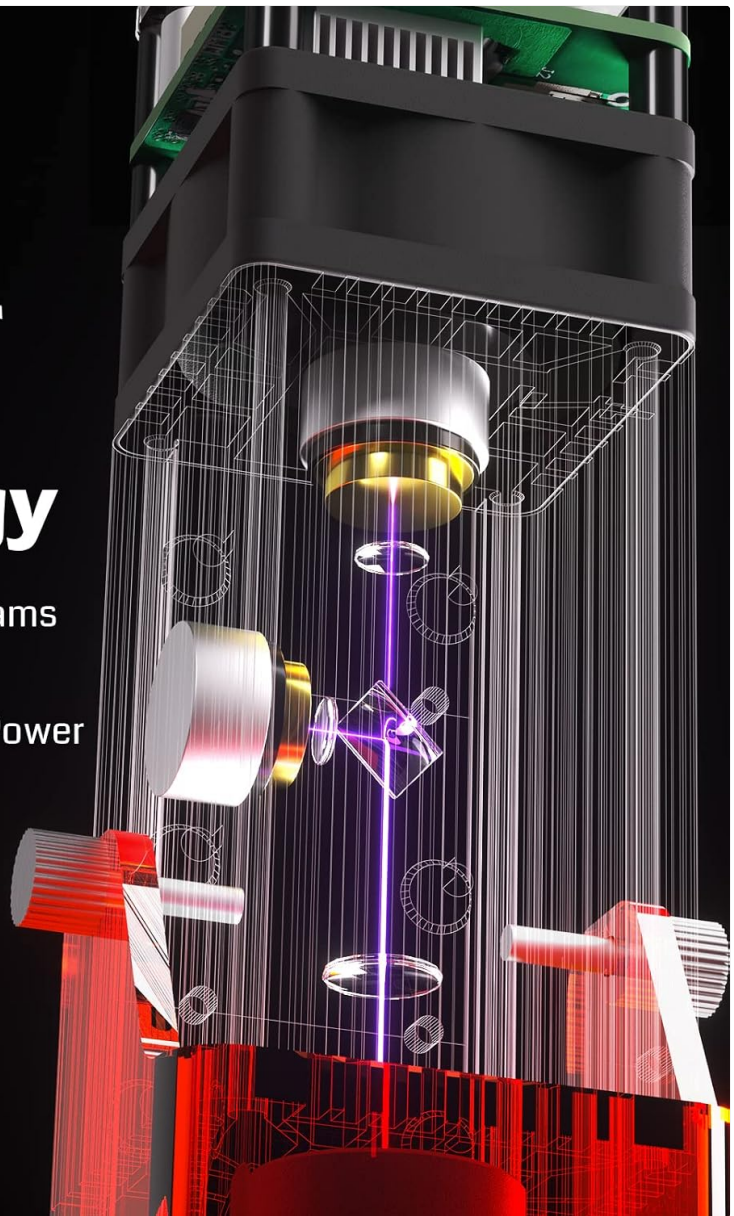


Figure 1: Dual Laser Coupling Technology combines two 5W laser beams into a single 10W beam for enhanced power.

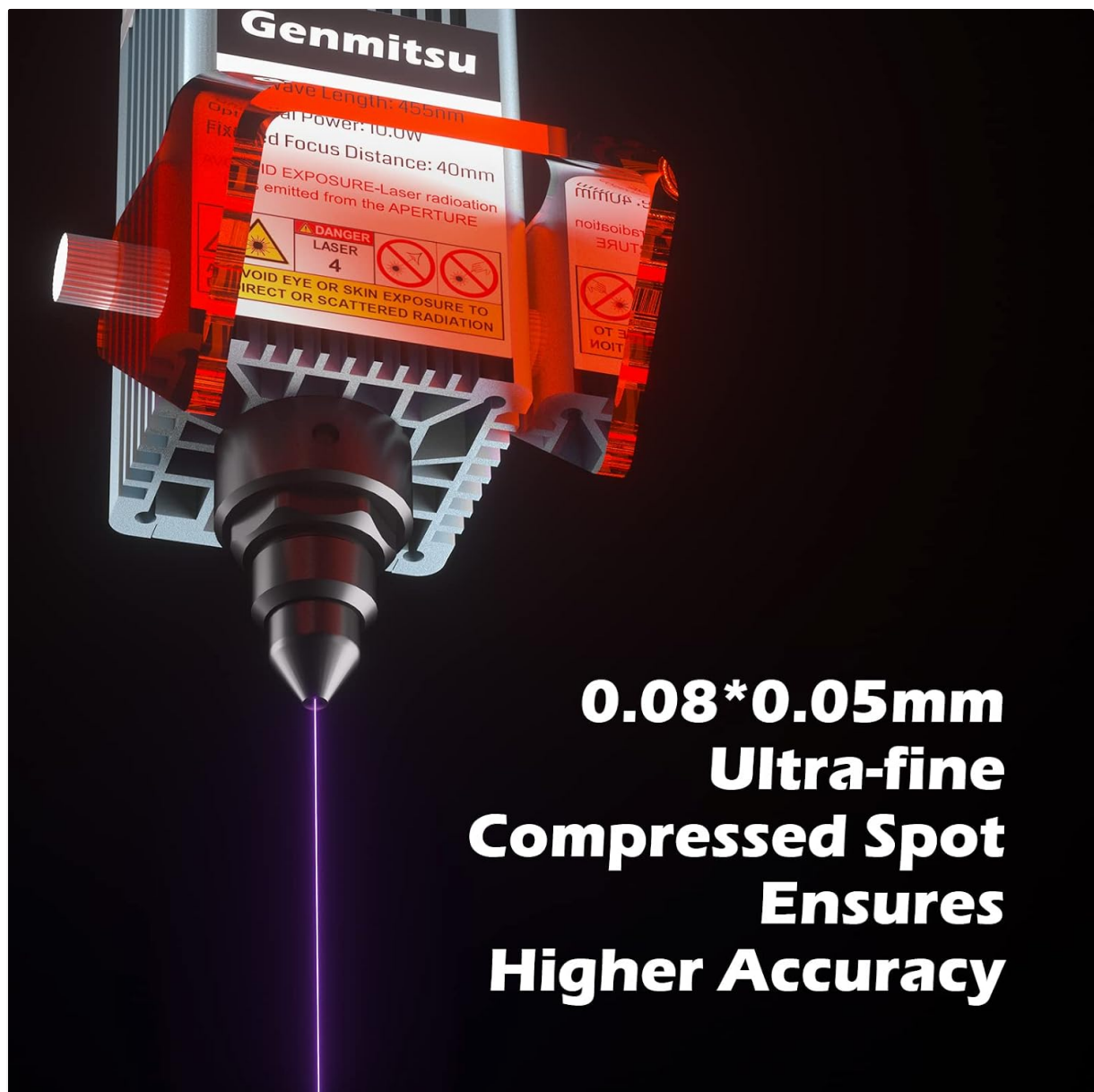


Figure 2: The 0.08mm x 0.05mm ultra-fine compressed spot ensures higher accuracy in engraving and cutting.



Figure 3: The air assist nozzle provides a finer effect during laser operations by clearing debris.



Figure 4: The UV laser shield offers protection against laser radiation during operation.

2. SETUP INSTRUCTIONS

Follow these steps to properly install the 10W Laser Module onto your compatible Genmitsu CNC machine.

1. **Mounting the Laser Module:** Securely attach the laser module to the designated mounting bracket on your CNC machine. Ensure all screws are tightened to prevent movement during operation.
2. **Wiring Connection:** Connect the laser module's wiring to the control board of your CNC machine. Pay close attention to the pinout for 12V, GND, and PWM signals. Incorrect wiring can prevent the module from functioning or cause damage. Refer to your CNC machine's manual for specific port locations.
3. **Air Assist Connection (Optional):** If using an external air pump (not included), connect the air hose to the air assist nozzle on the laser module.
4. **Software Configuration:** Configure your control software (e.g., LightBurn) with the correct laser settings. Ensure 'Laser Mode' is enabled, and parameters like \$30 (Max Spindle Speed) and \$32 (Laser Mode Enable) are set appropriately (e.g., \$30=1000, \$32=1). Verify PWM signal output if possible.

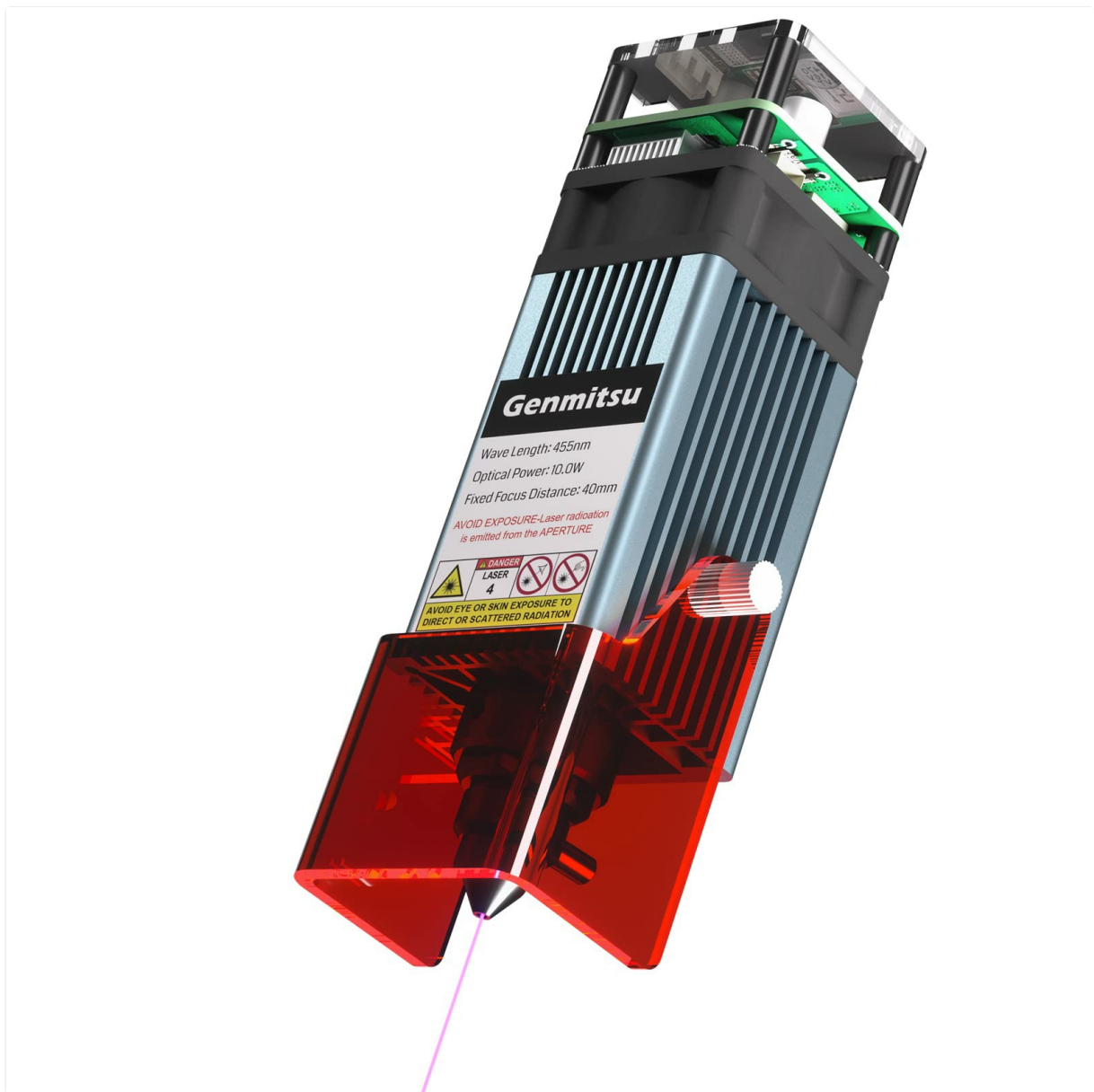


Figure 5: The Genmitsu 10W Compressed Spot Laser Module ready for installation.

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Video 1: This video demonstrates the installation process of the 10W Laser Module onto a Genmitsu 4040-PRO CNC machine, including mounting and wiring connections.

3. OPERATING INSTRUCTIONS

Operating the laser module requires adherence to safety protocols and proper material handling.

1. **Safety First:** Always wear appropriate laser safety goggles before initiating any laser operation. Ensure the work area is well-ventilated and free from flammable materials.
2. **Material Placement:** Place the material to be processed securely on the workbed. Ensure it is flat and properly aligned.
3. **Focus Adjustment:** The laser module is fixed-focus. Ensure the material surface is at the correct focal distance (typically 40mm from the laser module's bottom) for optimal performance.
4. **Software Control:** Use your chosen laser control software (e.g., LightBurn) to load your design, set power and speed parameters, and initiate the engraving or cutting process. Start with lower power settings for new materials and gradually increase as needed.
5. **Air Assist Usage:** For cutting and to achieve cleaner engravings, activate your external air pump to

utilize the air assist nozzle. This helps remove smoke and debris from the laser's path.

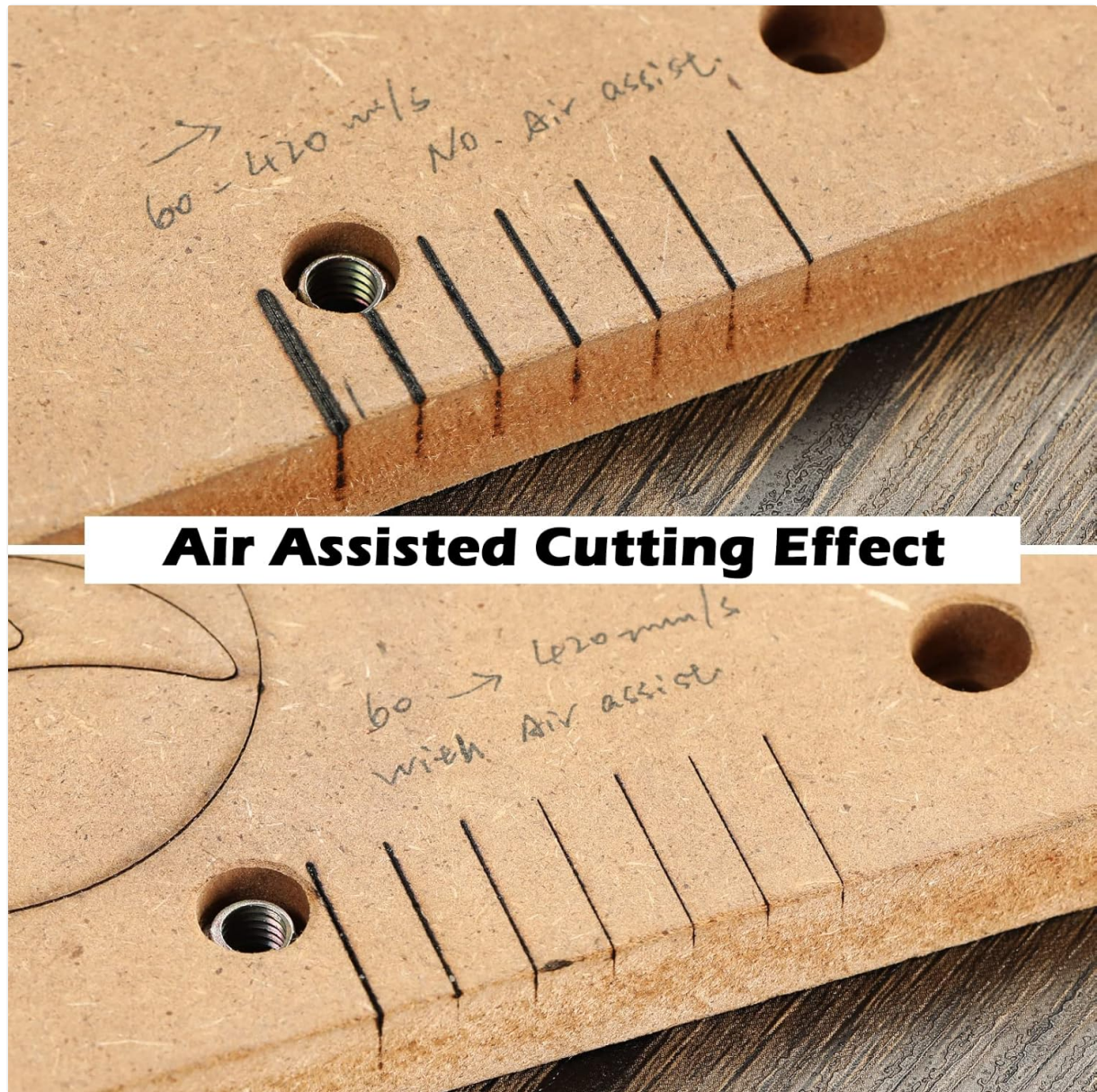


Figure 6: Demonstrates the improved cutting effect when using air assist compared to without.

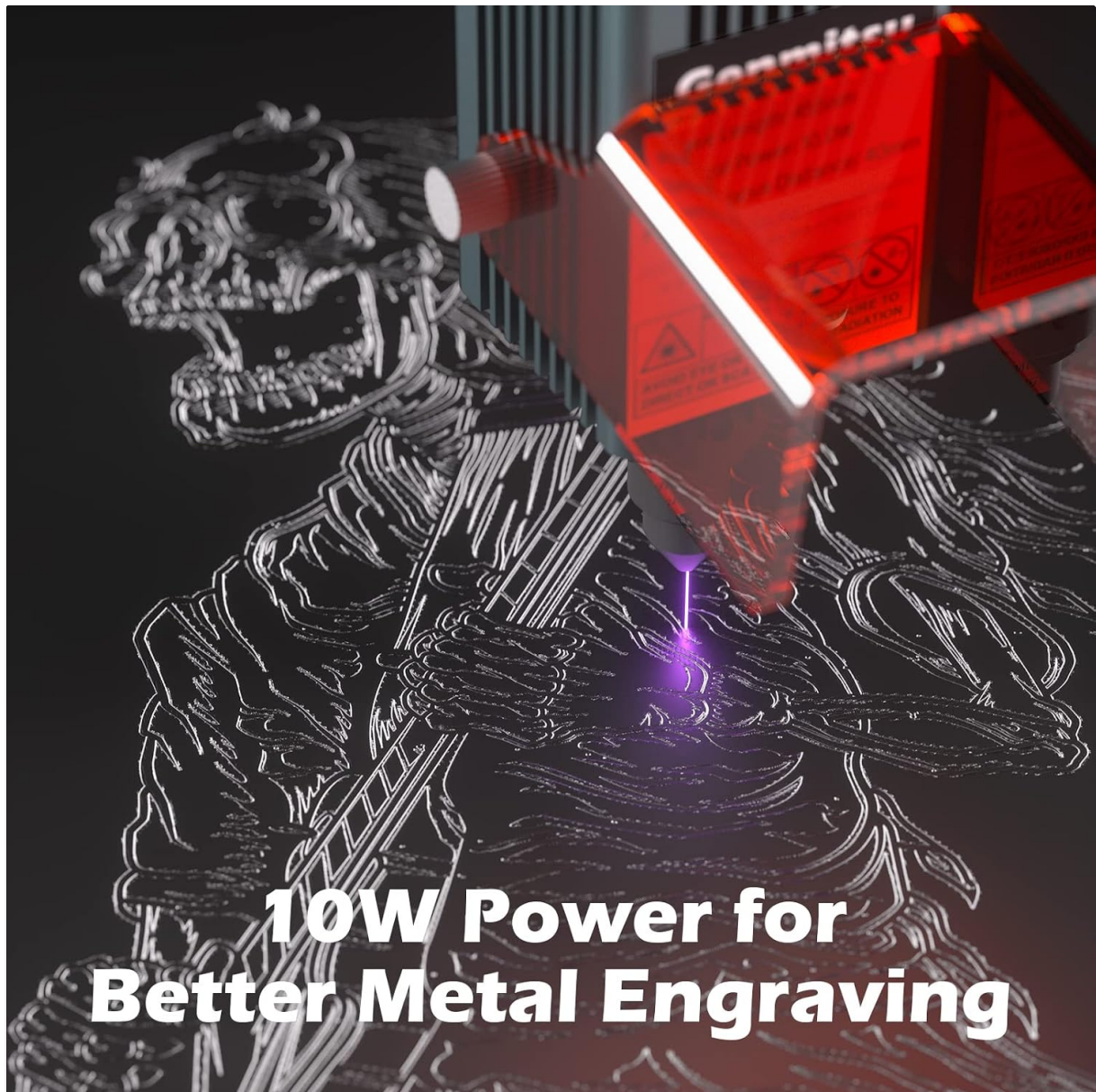


Figure 7: The 10W power output allows for effective metal engraving.

4. MAINTENANCE

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

- **Lens Cleaning:** Periodically inspect the laser lens for dust or debris. Clean gently with a lint-free cloth and lens cleaning solution specifically designed for optics. Avoid abrasive materials.
- **Air Assist Nozzle:** Ensure the air assist nozzle is clear of any blockages. Clean as needed to maintain consistent airflow.
- **Heat Dissipation:** Keep the cooling fins and fan on the laser module free from dust to ensure efficient heat dissipation. Use compressed air to clear any accumulated dust.
- **Cable Inspection:** Regularly check all connecting cables for signs of wear, damage, or loose connections.

5. TROUBLESHOOTING

If you encounter issues with your laser module, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Laser is weak or not firing	Incorrect wiring; Defective module; Incorrect software settings; Insufficient power supply.	Verify wiring (12V, GND, PWM). Check software settings (\$30=1000, \$32=1). Ensure power supply meets requirements (e.g., 12V 5A). If issues persist, contact support.
Poor cutting/engraving quality	Incorrect focus; Material not flat; Air assist not used or blocked; Incorrect power/speed settings.	Ensure material is at correct focal distance (40mm). Verify material flatness. Check air assist nozzle for blockages. Adjust power and speed settings in software.
Air assist nozzle interferes with material	Nozzle extends too low for multi-pass cuts or thicker materials.	Adjust the laser module's height or consider modifying the nozzle if comfortable with precision tools. Ensure sufficient clearance for all operations.
Module not recognized by software	Driver issues; Incorrect port selection; Software configuration error.	Ensure correct drivers are installed. Select the correct COM port in your software. Verify software settings for laser mode.

6. SPECIFICATIONS

Feature	Detail
Manufacturer	Genmitsu
Part Number	01
Item Weight	1.28 pounds
Product Dimensions	3.27 x 8.62 x 10.87 inches
Model Number	01
Color	Grey
Voltage	230 Volts
Item Package Quantity	1

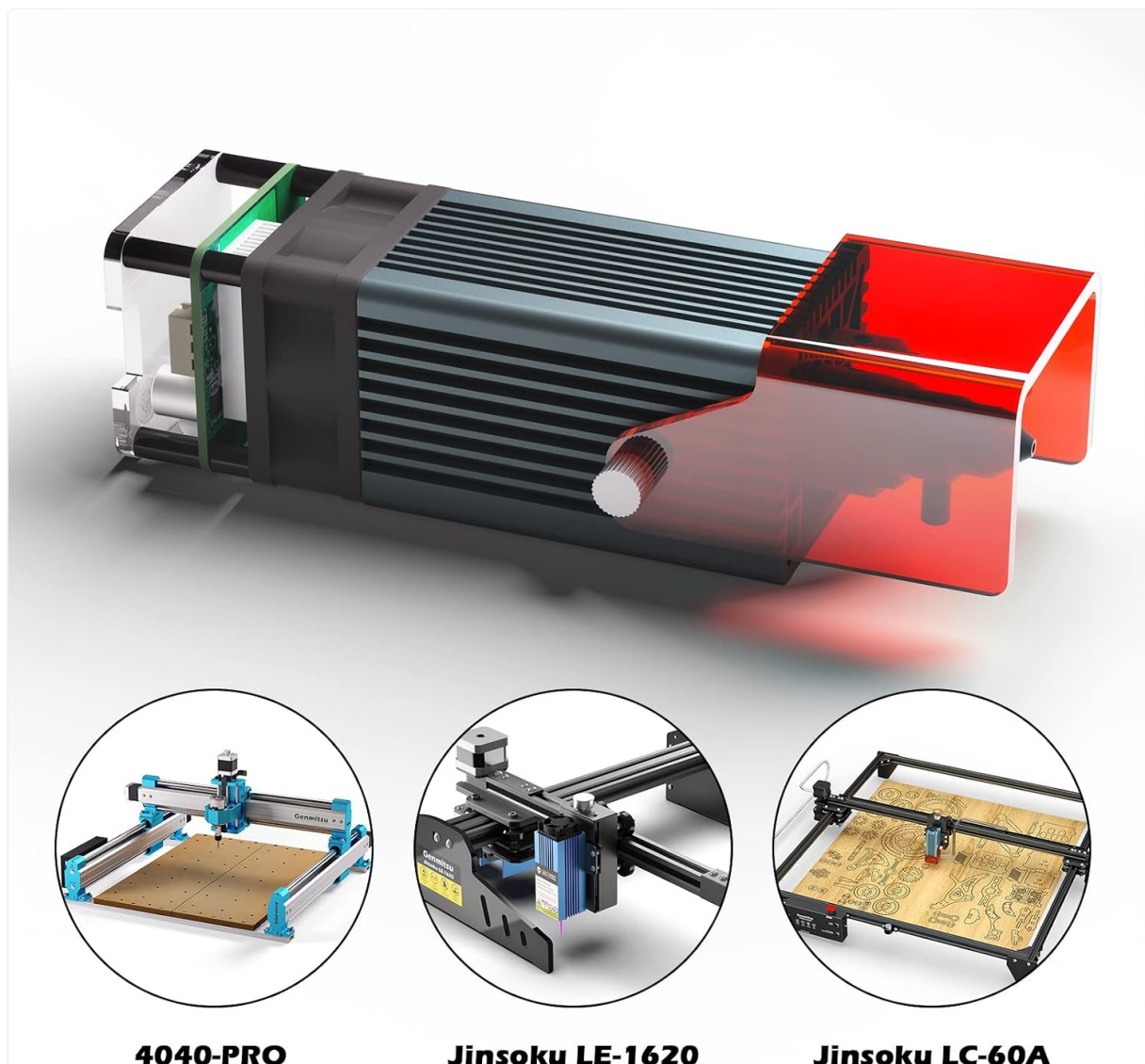


Figure 8: The laser module is compatible with Genmitsu 4040-PRO, Jinsoku LE-1620, and Jinsoku LC-60A.

7. WARRANTY INFORMATION

This Genmitsu 10W Compressed Spot Laser Module comes with a **1-Year Warranty** from the date of purchase. This warranty covers manufacturing defects and ensures the product is free from defects in materials and workmanship under normal use.

For warranty claims or further details, please contact Genmitsu customer support.

8. SUPPORT

For technical assistance, troubleshooting, or general inquiries regarding your Genmitsu 10W Compressed Spot Laser Module, please contact SainSmart Official support.

You can visit the official Genmitsu Store for additional resources and contact information. [Genmitsu Store on Amazon](#)

