

Sovol SV-5W Laser Module

Sovol SV-5W Laser Module: 40W Engraving Laser Head Kit Instruction Manual

Model: SV-5W Laser Module

[Overview](#) [Safety Precautions](#) [Package Contents](#) [Setup & Installation](#) [Operation](#) [Compatible](#)
[Materials](#) [Software](#) [Maintenance](#) [Troubleshooting](#) [Specifications](#) [Support](#)

1. PRODUCT OVERVIEW

The Sovol SV-5W Laser Module is a high-performance engraving laser head kit designed for integration with various 3D printers and CNC engraving machines. It features a 40W input power with a 5W optical output, enabling precise and efficient engraving and cutting tasks.

Key Features:

- **Wide Compatibility:** Designed for use with Sovol SV01, SV02, SV03, Creality Ender-3, Ender-3 Pro, Ender-3 V2, Ender-5, Ender-5 Pro, and other compatible CNC engraving machines. *Note: Not compatible with 3D printers using SKR boards.*
- **Ultra-fine Laser Head:** Features a 0.4-0.5mm spot size and a 20mm fixed focal distance for high accuracy and faster engraving speeds. Capable of cutting 2mm thick wood, bread, acrylic, and glass in a single pass, and directly engraving coated or brushed stainless steel and ceramics.
- **Eye Protection Design:** Includes a laser protective cover that filters 97% of UV light, allowing observation of the engraving process without the need for additional goggles.
- **Easy to Use:** Simple installation process with no manual focus adjustment required.

Wide Applications

Fits for Sovol SV01/SV02/SV03/SO-2/Ender 3/Ender 3 pro/Ender 3 V2/
Ender5/ Ender5 pro, CNC Engraving
Machine and other Laser Engraving Machine



Figure 1: Sovol SV-5W Laser Module demonstrating wide application compatibility with various 3D printers and CNC machines.

Sovol Upgraded Laser Head Kit

The engraving is more smooth and delicate, with higher engraving accuracy and no more need to adjust focus

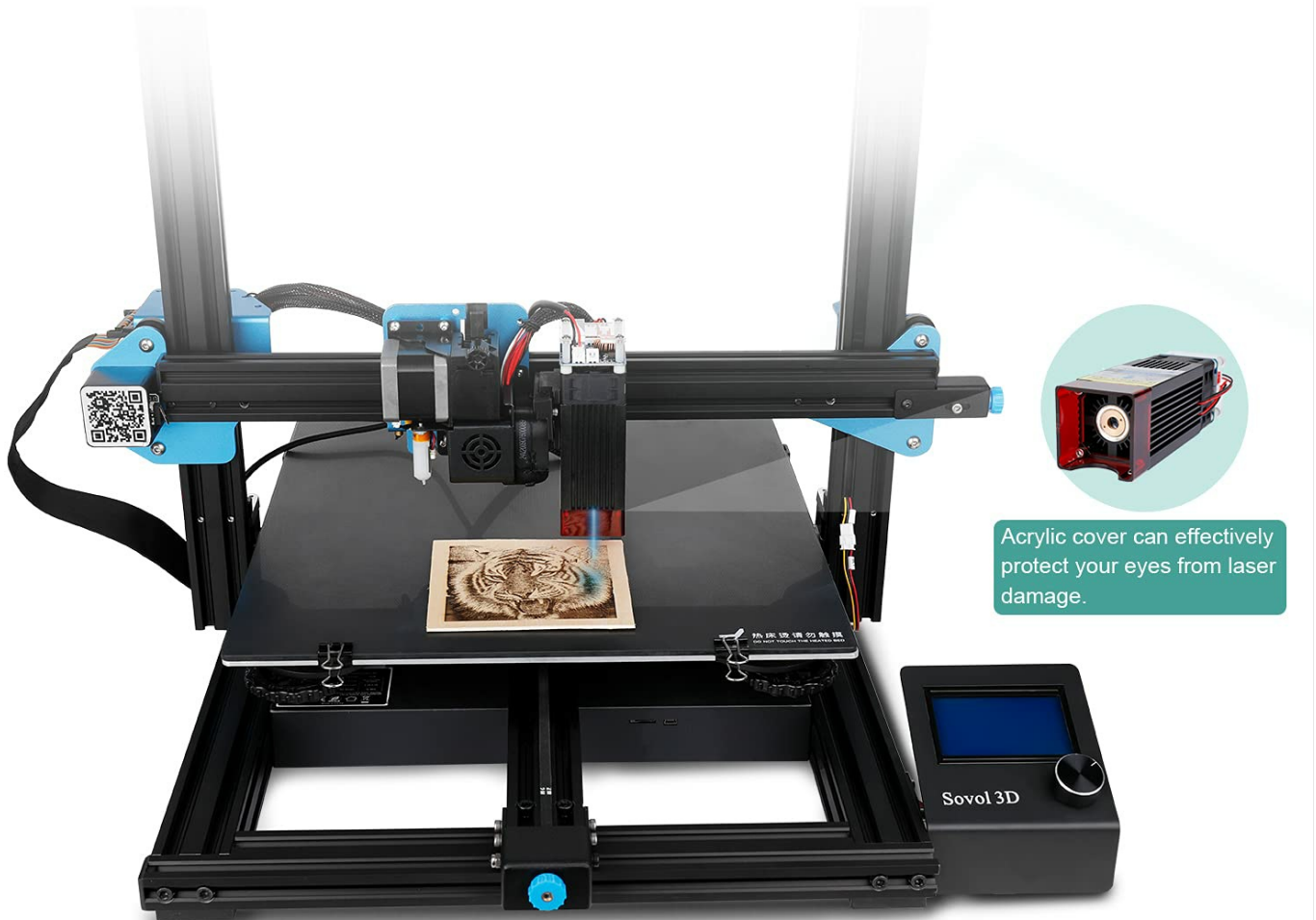


Figure 2: The Sovol Upgraded Laser Head Kit, highlighting the integrated eye protection cover for safety during operation.

2. SAFETY PRECAUTIONS

- Always ensure the laser protective cover is in place during operation.
- Even with the protective cover, avoid direct eye exposure to the laser beam.
- Operate the laser module in a well-ventilated area to dissipate fumes from engraving/cutting.
- Keep flammable materials away from the working area.
- Do not leave the laser module unattended during operation.
- Ensure the power is disconnected before performing any maintenance or adjustments.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

Package list









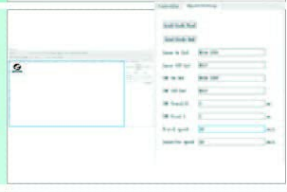
Laser Head
Goggles
Wooden Board
Clamping Module
Fixed Deck
Wire
Guide Book

Specifications

Optical Power Output	5W
Electric Power	40W
Input Voltage	24V
Focal Length	20mm
Wave Length	445±5nm

Software

1. Download and install **【CrealityWorkshop】** from SOVOL Official website


2. Open the App and import image and set up the parameter.


3. Save the file to the SD card.


Advanced App

<https://inkscape.org/>
Inkscape is a free vector design software. It is also a great tool for laser engraving with laser extensions. Please visit our website or YouTube channel for more instructions.



INKSCAPE
Draw Freely

Figure 3: Contents of the Sovol SV-5W Laser Module package, including the laser head, goggles, wooden board, clamping module, fixed deck, wire, and guide book.

- Laser Head
- Goggles (for additional protection, though integrated cover is present)
- Wooden Board (sample material)
- Clamping Module
- Fixed Deck
- Wire (connection cable)
- Guide Book (this manual)

4. SETUP & INSTALLATION

This guide provides general installation steps. Specifics may vary slightly depending on your 3D printer or CNC machine model. This guide is an example for using the laser kit on a 3D printer.

4.1 Choosing the Correct Bracket

Two different brackets are provided for compatibility with various 3D printer models:

- **Bracket 1:** Suitable for Sovol SV02, Ender 3, Ender 3 Pro, Ender 3 V2, Ender 5, Ender 5 Pro.
- **Bracket 2:** Suitable for Sovol SV01, SV03.

2 Different Brackets for More Models of 3D Printer



Suitable for Sovol SV02/Ender 3/
Ender 3 pro/Ender 3 V2/Ender 5/
Ender 5 pro;



Suitable for Sovol SV01/SV03

Installation Steps

1. Install the clamping module on the back of the laser module and install it on the fan cover of the printer.



2. Connect the male end of the adapter cable to the controllable fan port on the adapter board and the female end to the laser power cable and blower fan.
Tip: Machines without adapter boards can be directly connected to the controllable fan port on the motherboard.



3. Connect the other end of the laser head power cord to the port marked "VCC, GND" on the laser head.



4. In the shutdown state, adjust the height of the Z axis to ensure that the distance between the laser head lens and the engraving object is 20mm.



5. Turn on the machine and start carving.



6. Wait for the engraving to be completed.

P.S. This guide is only an example for using the laser kit on a 3D printer

Figure 4: Different mounting brackets provided for compatibility with various 3D printer models.

4.2 Installation Steps

1. Install the clamping module on the back of the laser module. Then, install the entire assembly onto the fan cover of your 3D printer.
2. Connect the male end of the adapter cable to the controllable fan port on the adapter board. Connect the female end to the laser power cable and blower fan. *Tip: Machines without adapter boards can be directly connected to the controllable fan port on the motherboard.*
3. Connect the other end of the laser head power cord to the port marked "VCC, GND" on the laser head.
4. In the shutdown state, adjust the height of the Z-axis to ensure that the distance between the laser head lens and the engraving object is 20mm. This is the fixed focal distance.
5. Turn on the machine and start carving.
6. Wait for the engraving to be completed.

Firmware Update: Depending on your 3D printer model, you may need to flash the firmware accordingly to enable laser functionality. Refer to your 3D printer's documentation or Sovol support for specific firmware instructions.

5. OPERATION

Once the laser module is installed and the software is prepared, you can begin engraving or cutting. Ensure the material is properly secured and the focal distance is set to 20mm.

5.1 Engraving Examples

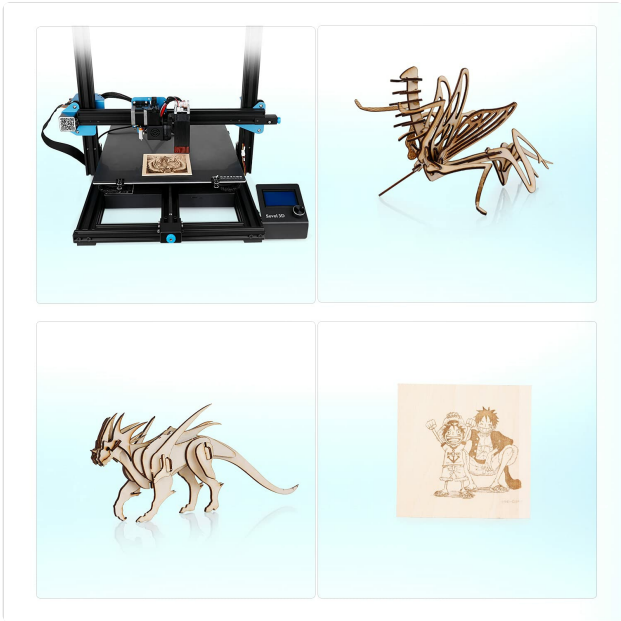


Figure 5: Example of a detailed wooden insect model created with the laser module.

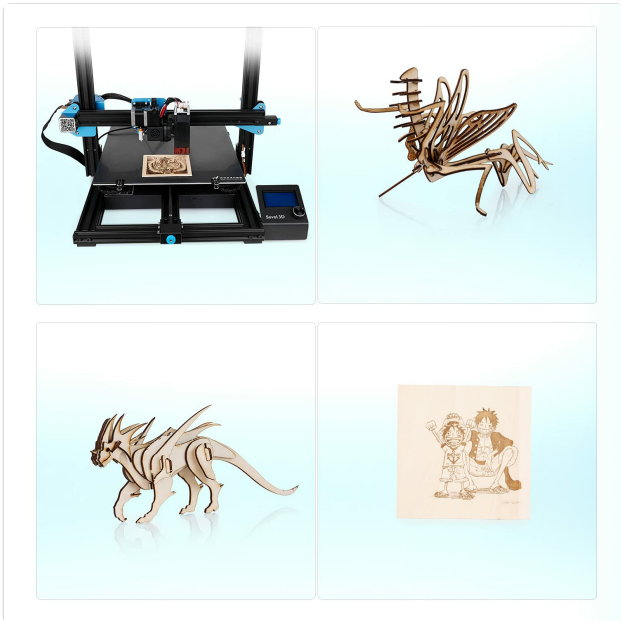


Figure 6: Example of a wooden dragon model engraved using the laser module.

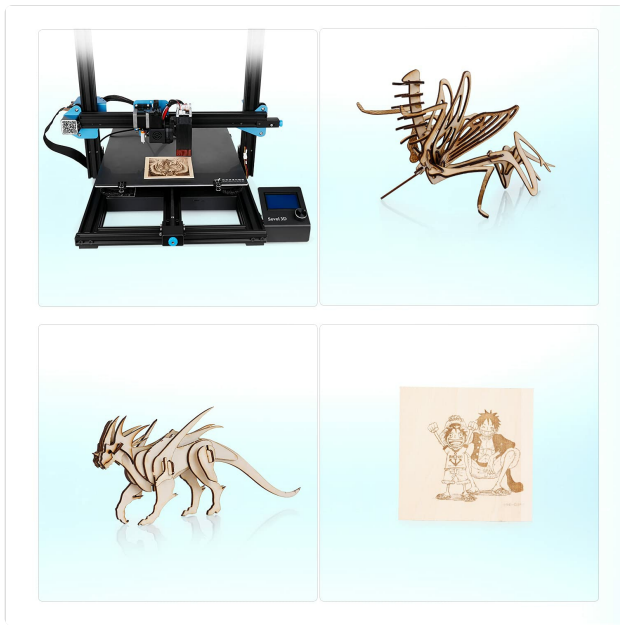
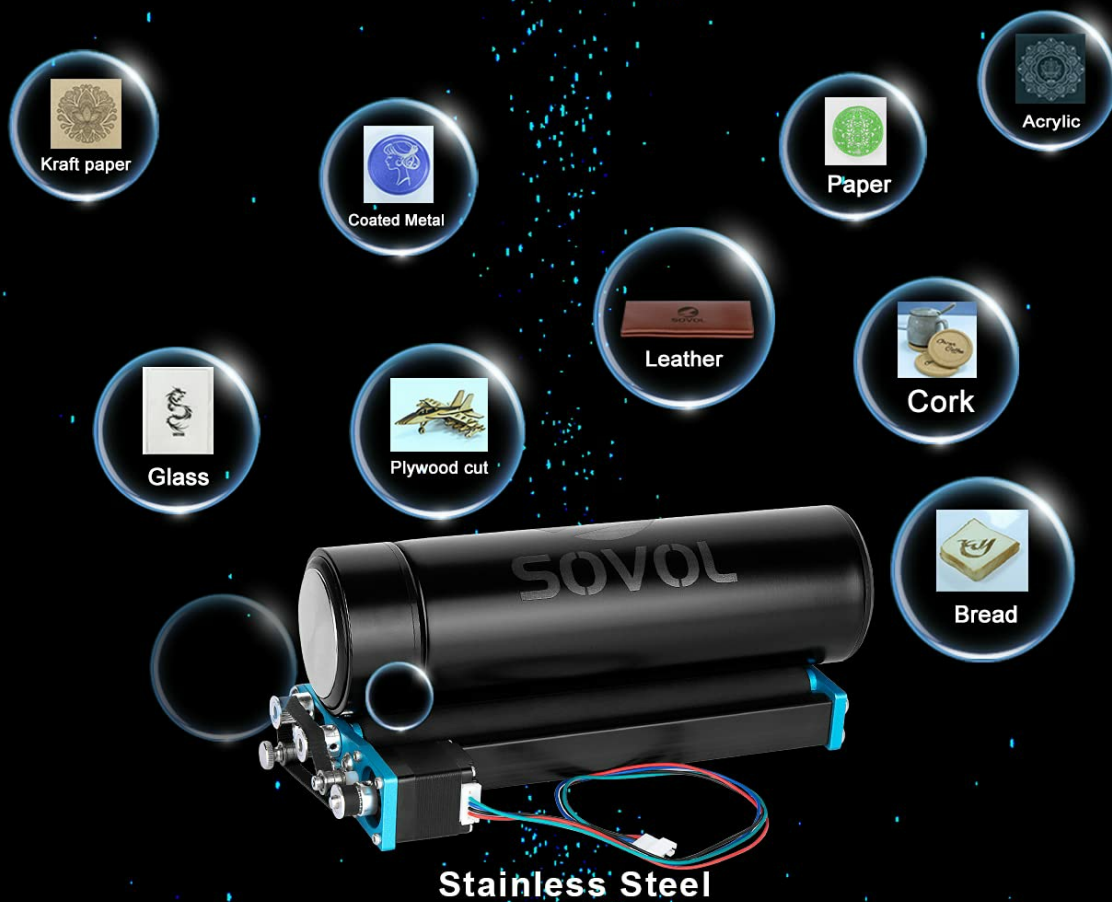


Figure 7: Example of an image engraved onto a wooden surface.

6. COMPATIBLE MATERIALS

The Sovol SV-5W Laser Module can engrave and cut a variety of materials:

Engraving Material



P.S. This product can engrave on most of stainless steel material, except mirror stainless steel.

Figure 8: Visual representation of materials compatible with the laser module for engraving and cutting.

- Kraft paper
- Coated Metal
- Paper
- Acrylic
- Glass
- Plywood (for cutting)
- Leather
- Cork
- Bread
- Stainless Steel (most types, except mirror stainless steel)
- Wood
- Ceramics

7. SOFTWARE

To prepare your designs for engraving, you will need appropriate software.

7.1 Recommended Software: CrealityWorkshop

1. Download and install **CrealityWorkshop** from the SOVOL Official website.
2. Open the application, import your image, and set up the engraving parameters.
3. Save the generated file to an SD card for transfer to your machine.

7.2 Advanced Application: Inkscape

Inkscape is a free vector design software that can be used for laser engraving extensions. Visit the [Inkscape website](#) or YouTube channel for more instructions on its use with laser engraving.

8. MAINTENANCE

To ensure optimal performance and longevity of your laser module:

- **Lens Cleaning:** It is recommended to clean the laser lens occasionally to maintain laser efficiency. Always cut off the power to the device before cleaning.
- **General Cleaning:** Keep the module free from dust and debris. Use a soft, dry cloth for cleaning.

9. TROUBLESHOOTING

If you encounter issues with your Sovol SV-5W Laser Module, consider the following:

- **Laser Not Firing:**
 - Check all cable connections to ensure they are secure.
 - Verify that the laser module is correctly wired to the motherboard's fan port (VCC, GND).
 - Confirm that the correct firmware is installed on your 3D printer/CNC machine.
 - Ensure the software parameters are correctly set for laser operation.
- **Poor Engraving/Cutting Quality:**
 - Check the focal distance (20mm) between the laser lens and the material.
 - Clean the laser lens as described in the Maintenance section.
 - Adjust power and speed settings in your engraving software for the specific material.
 - Ensure the material is flat and securely held.
- **Module Not Recognized:**
 - Confirm compatibility with your 3D printer/CNC machine (e.g., not compatible with SKR boards).
 - Recheck all electrical connections.
 - Ensure necessary drivers or firmware updates are applied.

10. SPECIFICATIONS

Feature	Detail
Optical Power Output	5W
Electric Power Input	40W
Input Voltage	24V
Focal Length	20mm (Fixed)
Wave Length	445±5nm
Spot Size	0.4-0.5mm
Compatible Devices	Sovol SV01/SV02/SV03, Creality Ender-3/Ender-3 Pro/Ender-3 V2/Ender-5/Ender-5 Pro, CNC Engraving Machines
Material	Stainless Steel, Wood, Acrylic, Glass, Stone
Item Weight	508 g
Package Dimensions	20.6 x 13.79 x 9.19 cm

11. CUSTOMER SUPPORT

For any questions, suggestions, or technical assistance regarding your Sovol SV-5W Laser Module, please feel free to contact our customer support team. Our professional engineer team is available to assist you. Please refer to the official Sovol website for contact information and further resources.

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question