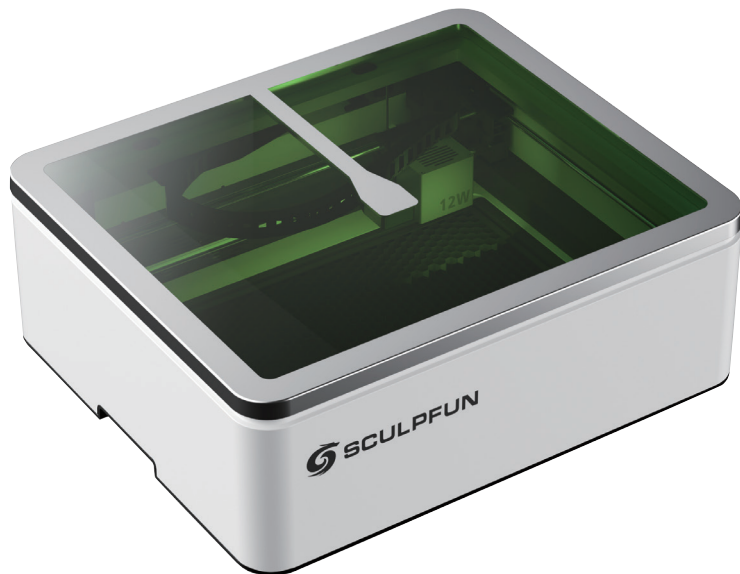




Sculpfun E1 Series

User Manual V1.0

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

CE

Frequency and power

2412-2472MHzMHz (14.11 dBm)

Manufacturer

Shenzhen Sculfun Technology Co., Ltd.

Room 401, Building 13, No. 140, Guanlan Avenue, Sihe Community, Fucheng Street, Longhua District, Shenzhen City, China

Operation Guide

Product Assembly

- 1 Follow the assembly instructions in this manual to assemble the product. You can also watch the step-by-step assembly video at: <https://wiki.sculpfun.com/>

Software Installation

- 2 Download and install the CH340 driver and engraving software (Sculfun Space / LightBurn). You can also scan the QR code to download them directly, or visit the Wiki to access the software.

Connect to Computer

- 3 Connect the engraving machine to your computer using the USB cable, then launch the engraving software.

Import Engraving Image

- 4 Import the image you want to engrave. A higher-quality image will produce better engraving results.

Set Parameters

- 5 Adjust the engraving parameters in the software. You can scan the QR code or visit the Wiki to access the recommended material parameter settings.

Place the Material

- 6 Place the material to be engraved within the machine's working area.

Laser Focusing

- 7 Lower the focusing lever on the laser head. Adjust the height of the laser head until the lever touches the surface of the material, then raise the focusing lever back into place.

Positioning

- 8 After completing the setup, use the Frame function in the software to preview and confirm the position of the design and material.

Close the Lid

- 9 Once the position is confirmed, close the lid. The machine will not start engraving unless the lid is closed.

Start Engraving

- 10 After closing the lid, click Start in the software to begin the engraving process.

APP



Download the
Sculpfun App
Google play
App store

WLAN

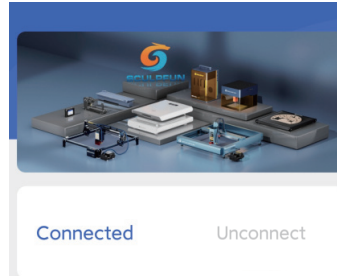
WLAN

WLAN assistant

Sculpfun ES145678 5351
No internet

Sculpfun A9 Ultra 52239

On your phone,
connect to the E1
network. Default
password: 12345678



Open the app and tap
'Connected'



Connect

WiFi Setting

Connect

192.168.4.1

The machine is connected in AP mode by
default.
Please connect to the machine's WiFi before
connect.

Enter the IP address 192.168.4.1
and tap Connect. You can now
control the engraving machine
from your phone.



Scan the QR code to access the E1
related software and information

Thank You Letter!

Dear User,

Thank you for choosing Sculpfun. We hope our product helps you bring your ideas to life and create projects you truly enjoy. You can follow Sculpfun on social media platforms such as Facebook, Instagram, and TikTok. There you can share your creations, discover new ideas, and find inspiration from other creators to explore even more possibilities.

The Sculpfun Team is always ready to provide you with reliable support. If you encounter any issues during use, please contact us via the email address provided in this manual.

For more instructions and tutorial videos, please visit our Wiki:

<https://wiki.sculpfun.com/>

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I. Safety Instructions

The laser engraver uses a high-density laser beam to irradiate materials during engraving or cutting, generating high temperatures on the material surface to vaporize it without burning. However, most materials are inherently flammable and may catch fire, producing an open flame that can damage the machine and its surrounding environment.

 Please follow the guidelines below when using the laser engraver:

1. Do not place this product near flammable or explosive materials, volatile solvents, or high heat sources. Always operate the machine in a well-ventilated, cool, and low-dust environment.
2. Do not replace the power cable with other cables. Use only the power cable provided with this product.
3. Caution—use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
4. Whether or not you use air assist, always connect the silicone hose to the laser module to prevent lens contamination.
5. The recommended operating temperature is 5°C–35°C. Avoid using the machine in humid conditions and never use it during thunderstorms.
6. If the machine will not be used for an extended period, turn it off and unplug the power cable.
7. Do not disassemble any parts of the machine while it is powered on. Avoid touching any electronic components with your hands or tools.
8. Do not touch moving mechanical parts or the laser module while the machine is in operation.
9. Always place a non-laser-penetrable surface (e.g., aluminum plate) beneath the material being processed.
10. Wear protective goggles during laser engraving to avoid eye injury from direct laser exposure.
11. Some smoke or fumes may be produced during engraving or cutting. Operate the machine in a well-ventilated area.
12. Children under 10 years old must not use this product without adult supervision to prevent personal injury.
13. Keep a fire extinguisher nearby and maintain and inspect it regularly.
14. Never leave the machine unattended while it is running.
15. Users shall comply with the laws and regulations of the country or region where the equipment is located (place of use), adhere to professional ethics, observe safety obligations, and are strictly prohibited from using our company's products or equipment for any illegal purposes. The company is not responsible for any illegal use.
16. Users under 18 years old must operate the laser engraver under adult supervision.

II. Packing List



Main Unit



Air Pump



Air Hose



Power Adapter



Power Cable



Camera Data Cable



USB Cable



12W Blue Laser Module
(E1 version only)



21W Blue Laser Module
(E1 Pro version only)



Blue Laser Module Lens



IR3 Infrared Laser Module
(included with Dual version only)



Phillips Screwdriver
Hex Wrench
(1.5mm, 2mm, 2.5mm)



Exhaust Hose



Flange



Hose Clamp



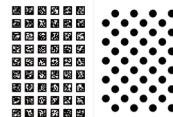
Honeycomb Panel



300 × 200
Basswood Sheet



100 × 100 Basswood Sheets ×4
(for camera calibration)



A5 Calibration Cards ×2
(different patterns)



Safety Goggles



Rotary Cable
(rotary sold separately)



USB Dongle



User Manual

Optional (sold separately)



Rotary Attachment



IR3 Infrared Laser Module
(available separately
for non-Dual versions)



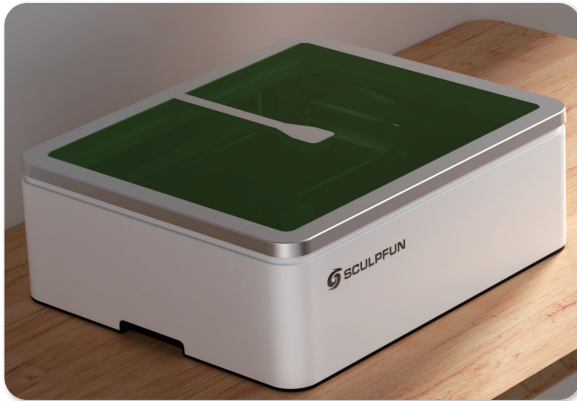
Air Purifier



Riser Base
(for use with the rotary attachment)

III. Assembly Steps

1. After unpacking, remove the main unit and place it on a stable table. Open the cover and take out all items inside.



2. Take the USB dongle and insert it into the corresponding port on the machine.

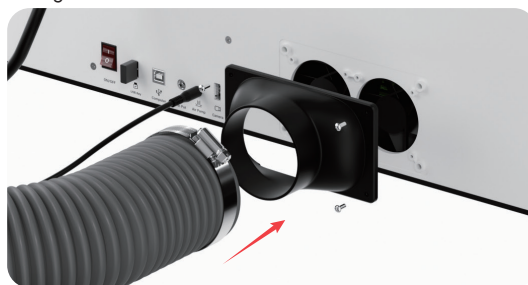


3. Take the air hose and air pump, and connect to the corresponding port on the machine.

Make sure to release the emergency stop switch.



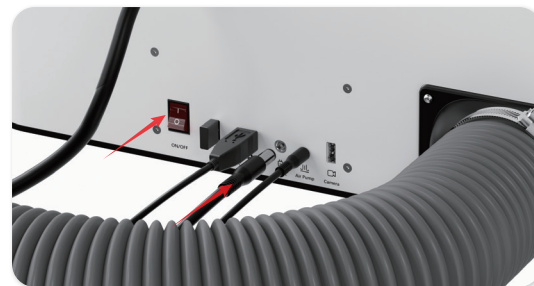
4. Attach the flange and tighten the four screws with a screwdriver. Then install the exhaust hose and the hose clamp, using the screwdriver to secure.



5. Insert one end of the USB cable into the machine and the other end into your computer.



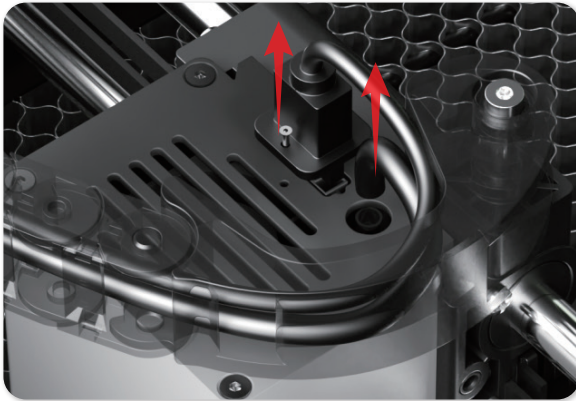
6. Plug the power cable into the machine and turn on the power switch.



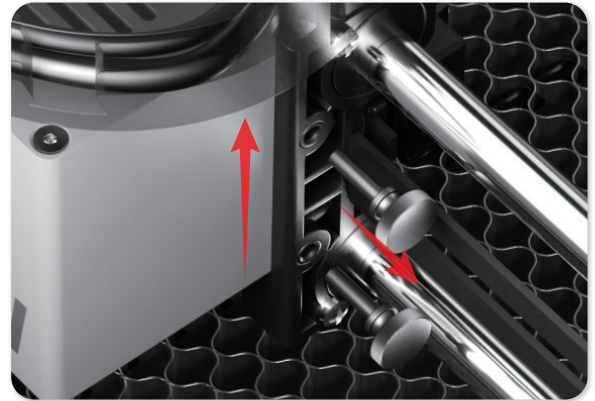
IV. Laser Module Removal & Installation & Focusing

Laser Module Removal

1. Unplug the laser module's cable and remove the air hose, be sure to remove the screws securing the cables.

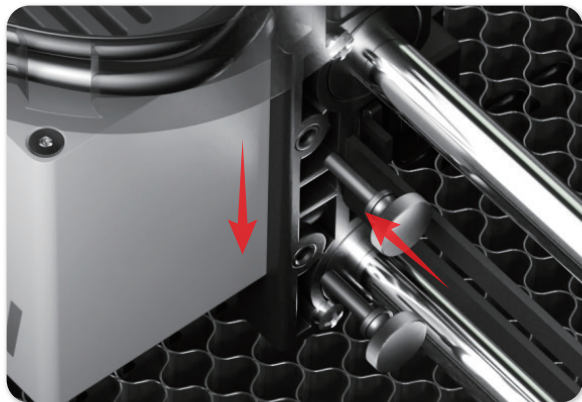


2. Unscrew the handle screw on the right side. Carefully lift the laser module upward to remove it from the machine.



Laser Module Installation

1. Insert the laser module into the mounting slot. Once it is in the correct position, tighten the two thumb screws to secure the module.

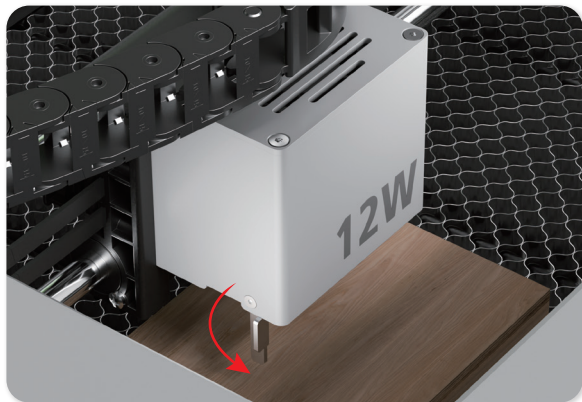


2. Connect the air hose and the laser module cable. Tighten the screw to secure the laser module cable.



Focusing the Laser

1. Place the material to be engraved in the machine's working area. Lower the focusing lever on the laser module.

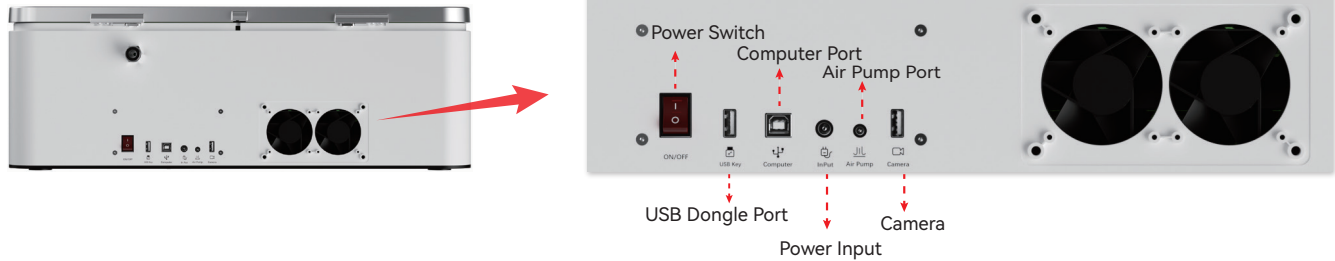


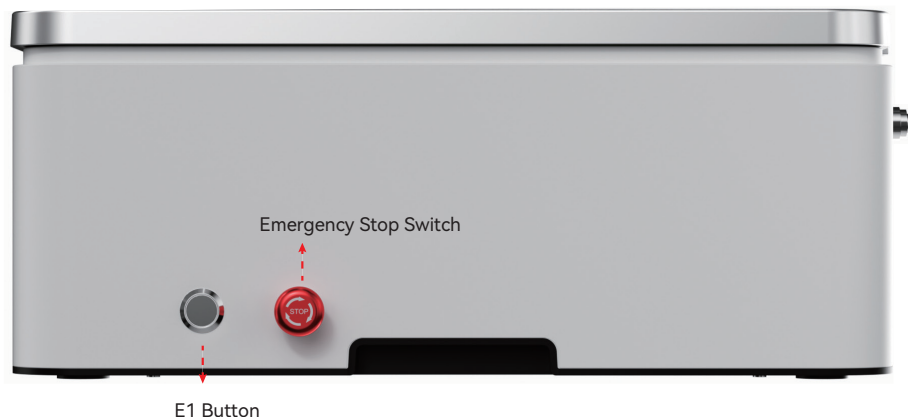
2. Loosen the two thumb screws on the laser module. Adjust the laser module height until the focusing lever touches material surface. Tighten the thumb screws to secure the laser, then fold the focusing lever back.



Tip: If the material is positioned low, it is normal that only the bottom thumb screw can secure the laser module.

V. Product Structure





E1 Button Functions

1. Double-click: Return to home.
2. Single-click (during homing): Interrupt homing.
3. Single-click (during operation): Pause.
4. Single-click (during pause): Resume.
5. Single-click (after safety door closed): Release safety lock.
6. Long press (5 s): Toggle safety door enable.
7. Hold button when open the lid to trigger the Safety Positioning Function*.

*Safety Positioning Function: When the safety door and safety positioning function are enabled, opening the door will trigger the safety positioning function. The laser module records its current position and moves to the top-left corner. After closing the safety door, the laser module will return to the recorded position.

E1 Status Indicator Lights

1. Green-Breathing: Standby / Engraving completed
2. Green-Solid: Engraving in progress
3. Blue-Breathing: Engraving paused
4. Blue-Solid: Safety door open
5. Red-Blinking: Error
6. Off: Machine powered off

VI. Product Specifications

Product Name	Sculpfun E1 Series Laser Engraver	Engraving Area	400*320mm
Laser Power	12W (E1) / 21W (E1 Pro)	Laser Wavelength	450±5nm
Product Dimensions	590*500*205mm	Safety Class	Class 1
Net Weight	11.95KG	Software	Sculpfun Space / LaserGRBL / LightBurn
Voltage	24V 6A	Operating System	Windows / MacOS (Lightburn)
Operating Temperature	5°C-35°C	Supported File Formats	JPEG, PNG, JPG, BMP, SVG, DXF, etc.
Certifications	CE / FCC / ROHS / IEC60825	Supported Materials	Cardboard, Wood, Rubber, Leather, Fabric, Plastic, Coated Metal, etc.
Camera Specs	5MP	Camera Accuracy	0.5-1.0mm (depending on calibration score)

3W Infrared Laser Module (for dual version or purchased separately)

Laser Source	Solid-State Laser	Laser Wavelength	1064±1nm
Laser Power	3W	Supported Materials	Various metals, plastics, stone, etc.



Note: Avoid processing highly reflective mirror-like materials, as this may damage the laser module.

VII. Operating Instructions

1. Refocus the laser using the focusing lever each time you change the material.
2. Basic parameter settings for the laser engraver can be found on the Wiki: wiki.sculpfun.com
3. For software installation and operation, you can connect the machine to a computer via a USB cable and use Sculpfun Space, LightBurn (paid), or LaserGRBL. You can also use the mobile app for simple engraving tasks. For detailed tutorials, please refer to the Wiki.



Note: You can find additional product resources on the Wiki, including the user manual, assembly videos, camera calibration and alignment guides, recommended parameter tables, software tutorials, and FAQs.

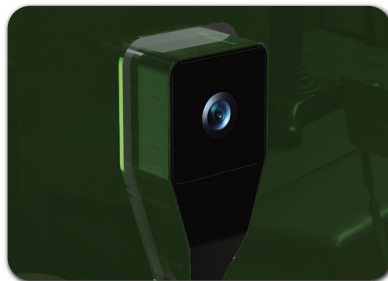
VIII. Maintenance

Dust may accumulate inside the machine during long-term use.

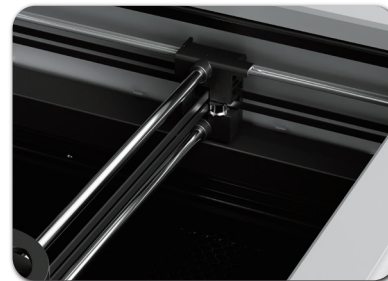
It is recommended to perform internal cleaning and maintenance once a month.



1. Fan air inlet.



2. Camera cleaning.



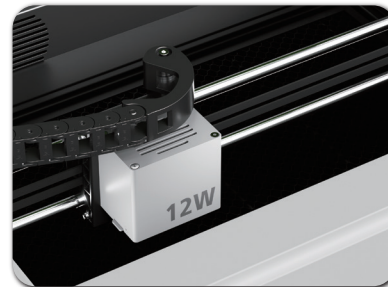
3. Motion frame optical shafts



4. Light cover



5. Clean the tray regularly and do not allow debris or scraps to accumulate.



6. Laser module cleaning and maintenance. Clean the laser module fan every 3-6 months. Clean the laser lens once a week to maintain stable laser power.

IX. Troubleshooting

Issue 1: Machine Not Working / No Response

Check whether the power cable is properly connected and the power switch is turned on.

Check whether the USB dongle is inserted.

Check whether the emergency stop button is released (rotate clockwise to release).

Check whether the safety door / enclosure is fully closed.

Issue 2: Inaccurate Camera Positioning

Check whether the camera is clean. Clean it regularly.

If the engraving height changes significantly, recalibrate the camera.

Issue 3: No Laser Output / Shallow Engraving

Check if the power setting in the software is too low.

Check if the laser lens is dirty; clean it gently with a dust-free cloth.

Check if the laser module cable is loose.

Check if the material is too thick or dense; increase power or reduce speed.

Issue 4: Misaligned Engraving / Skipped Steps

Check if the synchronous belt is loose.

Check if the work platform is stable and properly secured.

Check if the driver current is set correctly or if the speed is too high.

Check if the design file path is too complex. Simplify the design and try again.

Issue 5: Noise / Vibration During Operation

Check if the sliders and guide rails are not moving smoothly; apply lubricant if necessary.

Check if the pulleys and mounting screws are loose.

Reduce the operating speed and observe if the issue improves.

Issue 6: Computer Cannot Connect to Machine

Check if the USB / data cable is properly connected; try using a different cable if needed.

Check if the driver is installed correctly.

Check if the software port is selected correctly.

Restart both the computer and the machine and try reconnecting.

Issue 7: Machine Does Not Pause When Safety Door is Opened

Check if the safety door switch is damaged.

Check if the safety door switch cable is properly connected.

Restart the machine and test the safety function.

For further assistance, please refer to the Wiki or contact us by email:

wiki.sculpfun.com

support@sculpfun.com



Shenzhen Sculpfun Technology Co., Ltd.

E-mail: support@sculpfun.com

Website: sculpfun.com

Room 401, Building 13, No. 140, Guanlan Avenue, Sihe Community,
Fucheng Street, Longhua District, Shenzhen City, China

CE FC RoHS

