OMNI 1
USER MANUAL

ComMarker OMNI 1 UV Laser Engraver

Machine Assembly Guide

Operation Tutorial

ComMarker

Contents

Safety Warning ⚠️

Before using the laser engraving machine, please read this safety guide carefully.

■ **Do not leave the device unattended while in operation.** Ensure it is functioning properly at all times.

■ Check the machine for damage every time before you use it. Do not operate it in any way when any damage or defect is found.

■ Inspect the machine for damage before each use. Do not operate if any damage or defects are detected. Ensure the workspace is clean and level.

■ Do not disassemble or alter the machine's structure without authorization. Do not modify or do compile its operating system.

■ Keep the interior of the machine clean. Accumulated residues and debris from cutting and engraving can be hazardous and may cause a fire. Regularly clean the work area to remove chippings and residues.

1 Laser Safety

•The machine uses Class IV lasers, which are extremely powerful and can cause eye injuries or burn the skin. It is recommended to wear laser safety goggles when operating the laser engraver.

•Avoid direct exposure of your skin to Class IV laser beams, especially at close range.

•Teenagers must be supervised by a parent or guardian while using the machine.

•Do not touch the laser engraving beam while it is active.

2 Material Safety

•Do not engrave materials with unknown properties.

•Recommended materials for engraving include:
- Metals: stainless steel, aluminium, bronze, brass, alloys, etc.
- Plastics: PP, PE, ABS, etc.
- Non-metals: wood, leather, paperboard, etc.

3 Use Safety

•Do not point the laser at people, animals, or any combustible objects, whether the device is active or not.

•Operate this laser engraving device in compliance with all applicable local and national laws and regulations.

•Use the device strictly in accordance with this instruction manual and the engraving software manual.

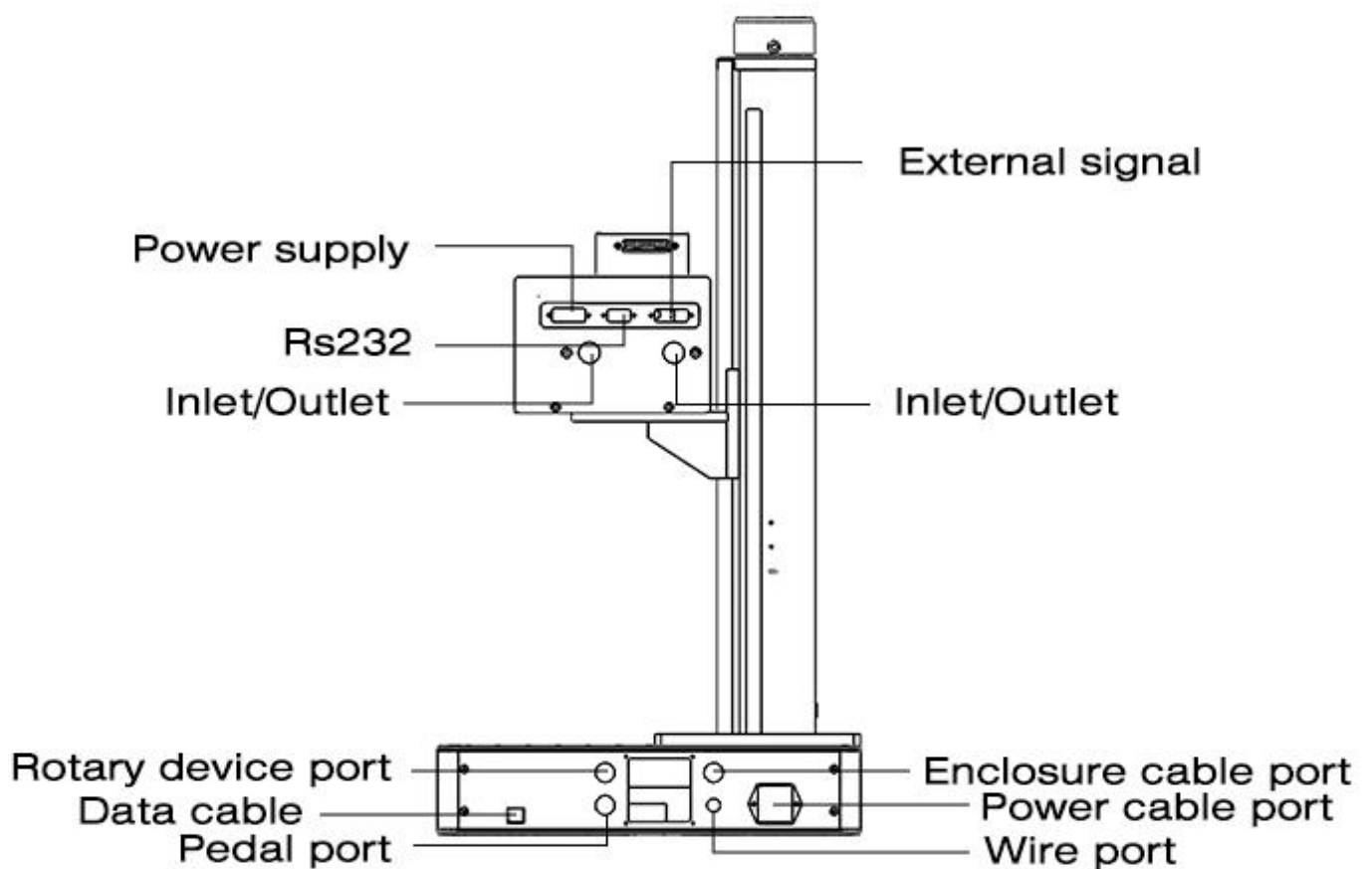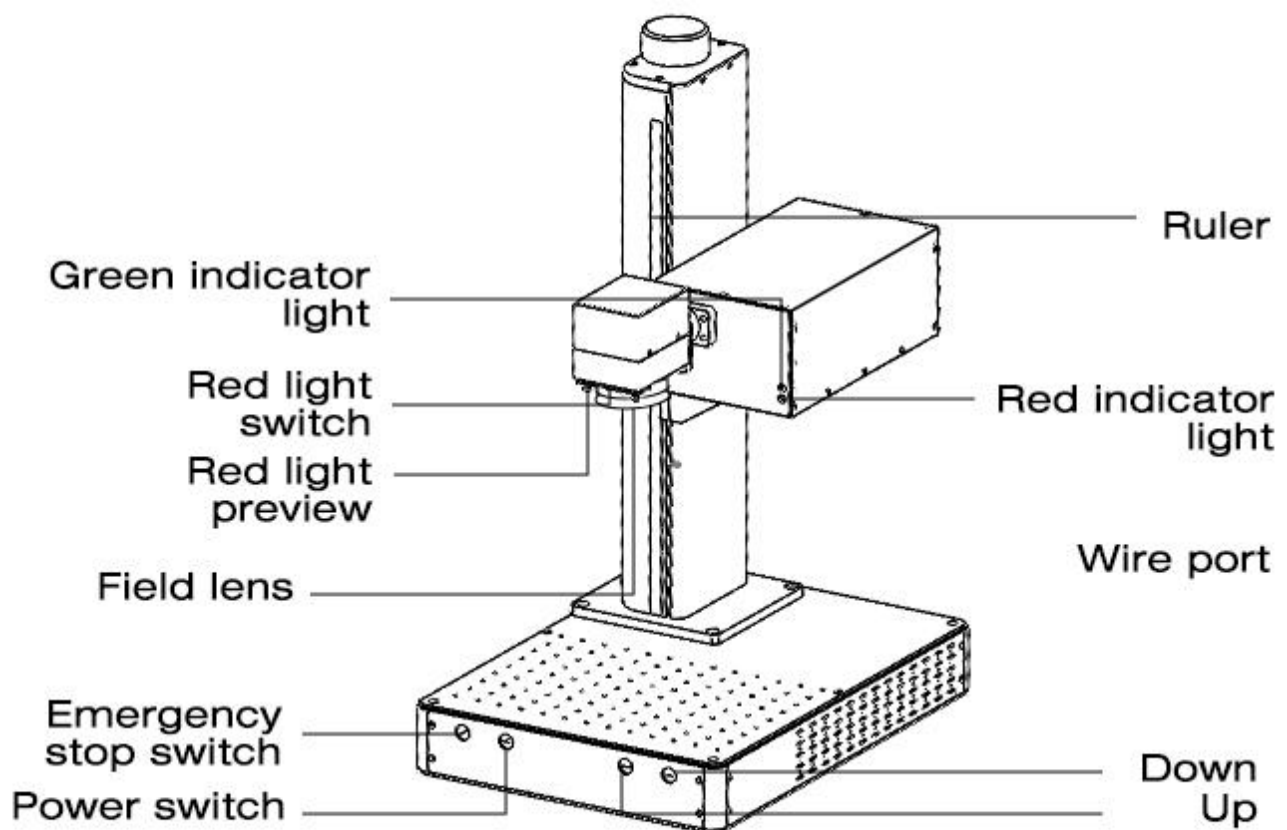•Ensure that any untrained personnel near the device are informed of its dangers before operation.

4 Electric Safety

•Use this device only with a compatible and stable power supply, ensuring voltage fluctuations are less than 5%.

•Ensure the device is properly grounded before turning on the power.

•Keep the area around the laser engraver dry, well-ventilated, and maintain an ambient temperature between 10°~ 28°. The ambient humidity should not exceed 70%

Notes：

The machine operates best at 18-30 ℃, temperatures outside this range may cause the laser to stop working.
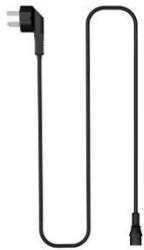
Product Structure

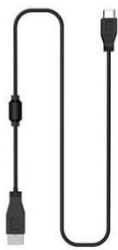Green indicator light

Red light switch

Red light preview

Field lens

Emergency stop switch

Power switch

Ruler

Red indicator light

Wire port

Down

Up

Power supply

Rs232

Inlet/Outlet

External signal

Inlet/Outlet

Rotary device port

Data cable

Pedal port

Enclosure cable port

Power cable port

Wire port

List of items

Omni 1 Laser Engraver

Packing Box

Power Adaptor

Data Cable

Wire Cable

Foot Switch

Ruler

Field lens

OTG Adapter

USB Drive

Placing Helper

Allen Wrench

Goggles

Preview Helper

Lifting Platform

Screw M5

Parameters

Product Name		Omni 1
Voltage		110~130V or 200~240V
Field Lens Specification		70*70mm /150*150mm
Marking Accuracy		0.001mm
Max. Marking Speed		0-10000 mm/s
Laser	**Rated Power**	10W/15W
	Wavelength	355nm
	Expected Service Life	10,000 hr.
	Laser Type	UV
Cooling Type		Water Cooling
Dimension(L*W*H)		320 x 520 x 720mm
Weight (KG)		23kgs
Required Operating Environment	**Max. Humidity**	<70%RH(Operating outside the recommended humidity range may reduce the laser's lifespan, degrade performance, or even cause damage)
	Temp. Range	64.4–86°F(18 -30°C)
Provided Operating Software		EZCad2
Applicable Computer System	**EZCad2**	Windows 7/8/10/11
	Lightburn (not Included)	Windows 7/8/10/11, MacOS
Applicable Image Formats		BMP,GIF,JPG,JPEG,PNG,DXF,AI,SVG,etc.

Assembly of Machine
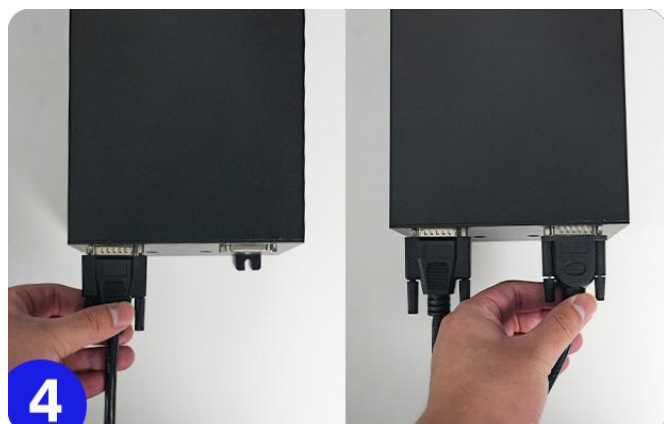
1. Place the parts on the table.

2. Fasten the supporting pole with four screws.

3. Fix the laser head on the shelf.

4. Connect the external signal and power cables.

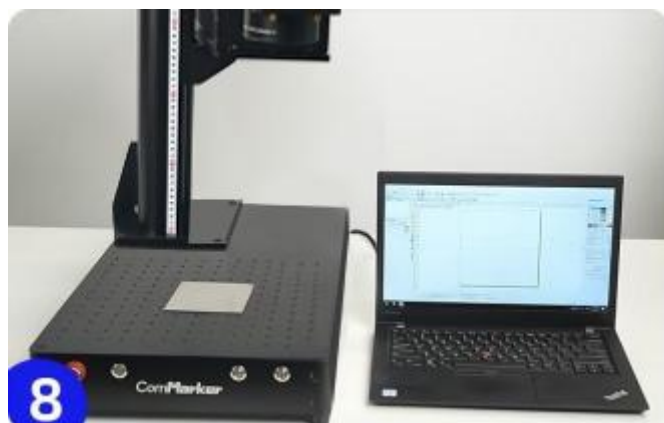5. Connect the cable of galvanometer.

6. Connect the wire cable on the case.

7. Connect the wire on the supporting pole.

8. Connect the data cable with the computer.

Connect with water chiller

1. Gently press the black plastic part and connect the tubes to the rear of the laser. ensuring no leaks. (*Note: No need to distinguish between inlet and outlet.*)

2. Connect the tubes to the rear of the water chiller. Note that the filter valve must be installed on the inlet side, as shown in the below picture.

3. Fill the water chiller with purified or distilled water. (*Note: Water containing impurities may damage the chiller.*)

4. The water level should be between the MAX and MIN marks.

5.Turn on the water chiller.

6.Wait until the water temperature rises above 20℃.

7.Turn on the laser machine.

8.The green indicator on the laser machine will flash for 1-2 minutes, when it turns into solid green, it indicates that the laser is ready and can start working.
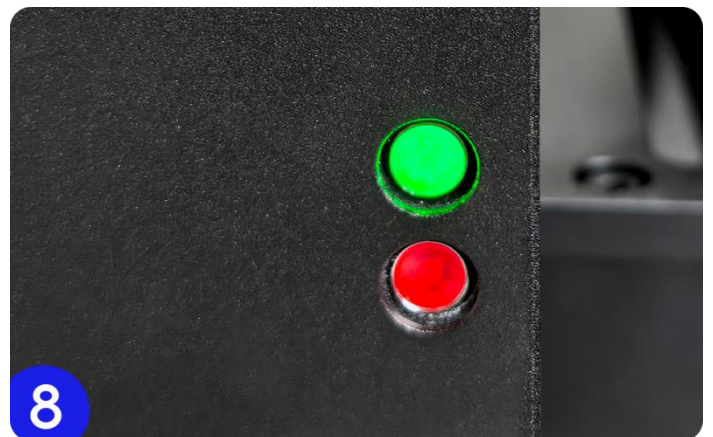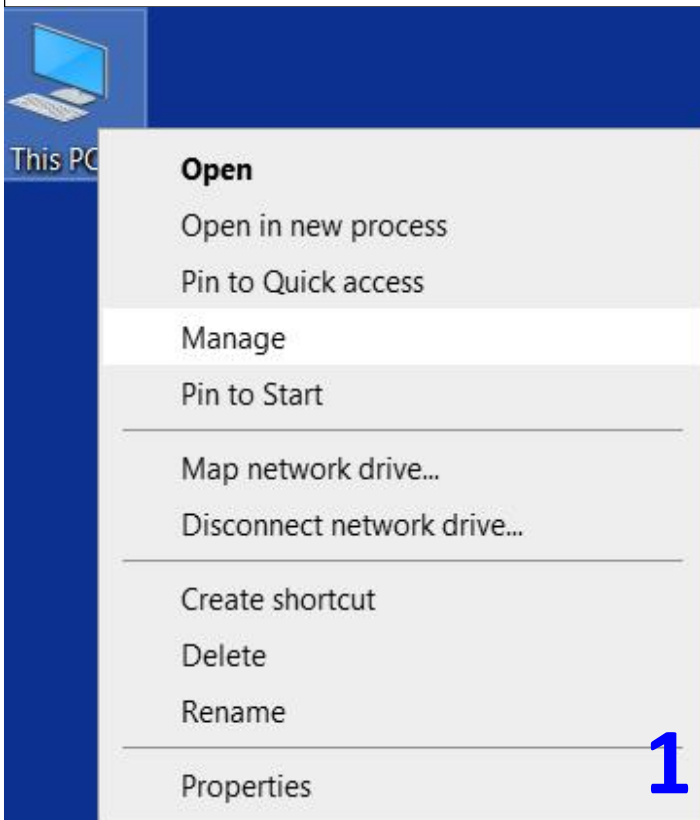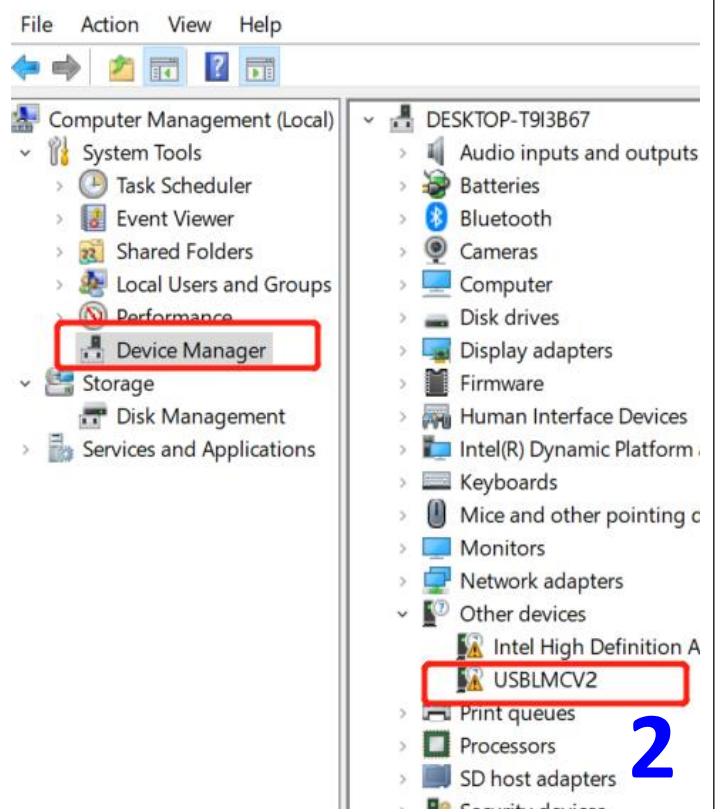
Operation Instructions

1. Install the driver

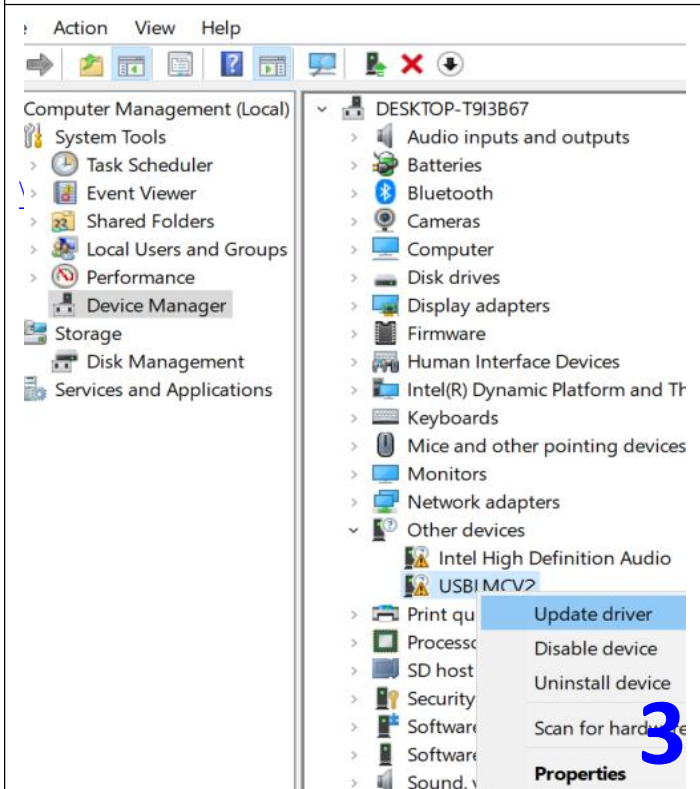*Notes：*It is recommended to copy and paste the files of the U disk to the computer desktop or other computer disks.*
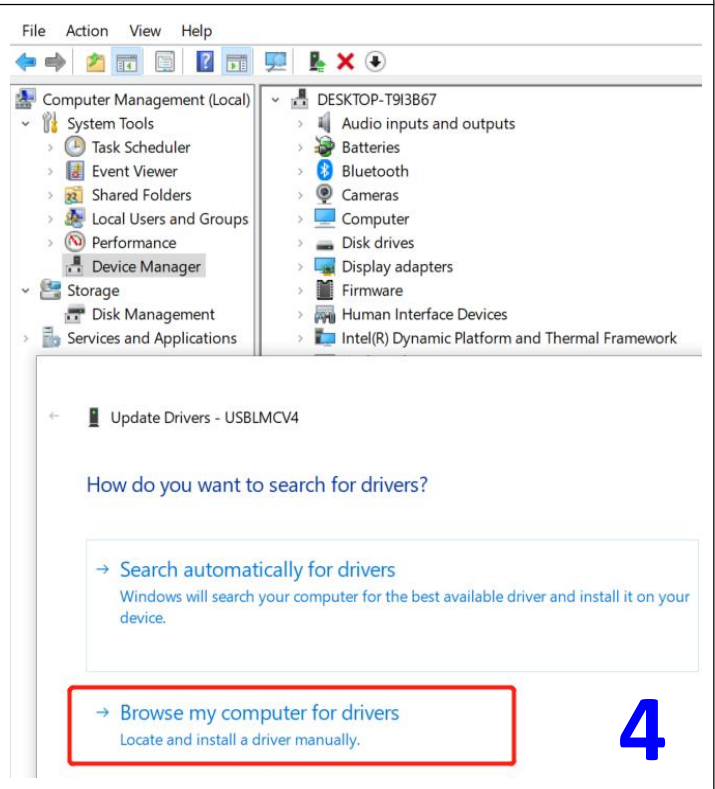
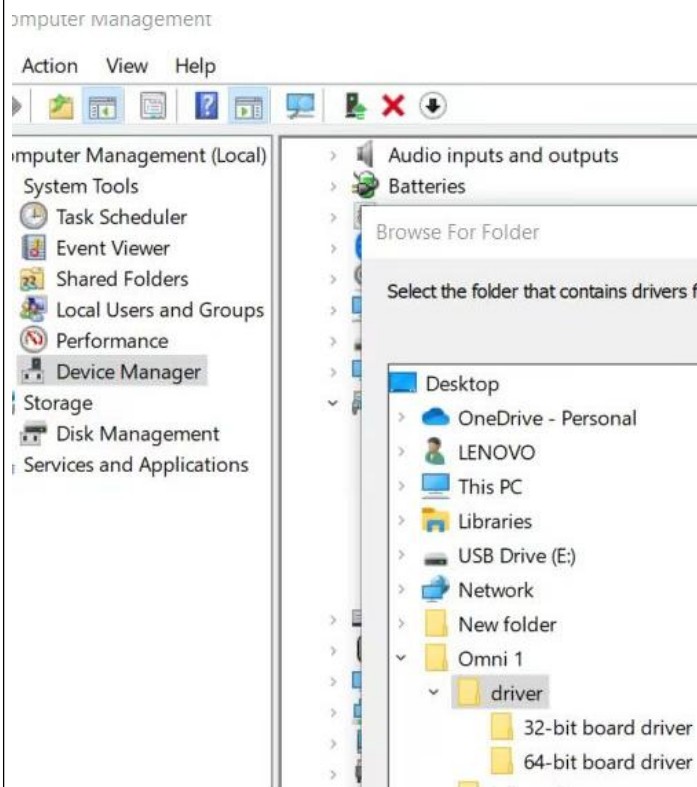| 1.Right-click "this PC", click "Manage"	2.Click "Device Manager", find "USBLMCV2" in Other devices
3.Right-click"USBLMCV4" and "Update driver"	4.Select "Browse My Computer for Drivers"

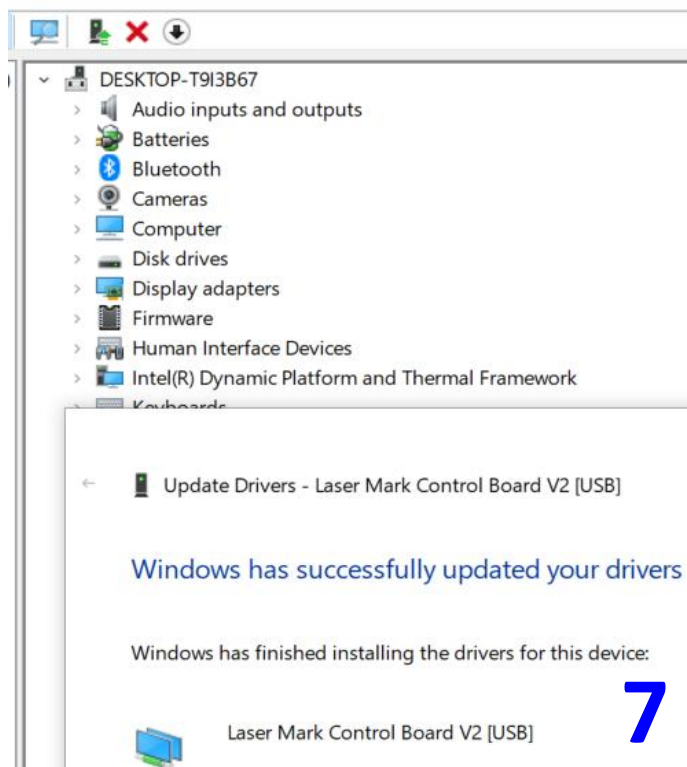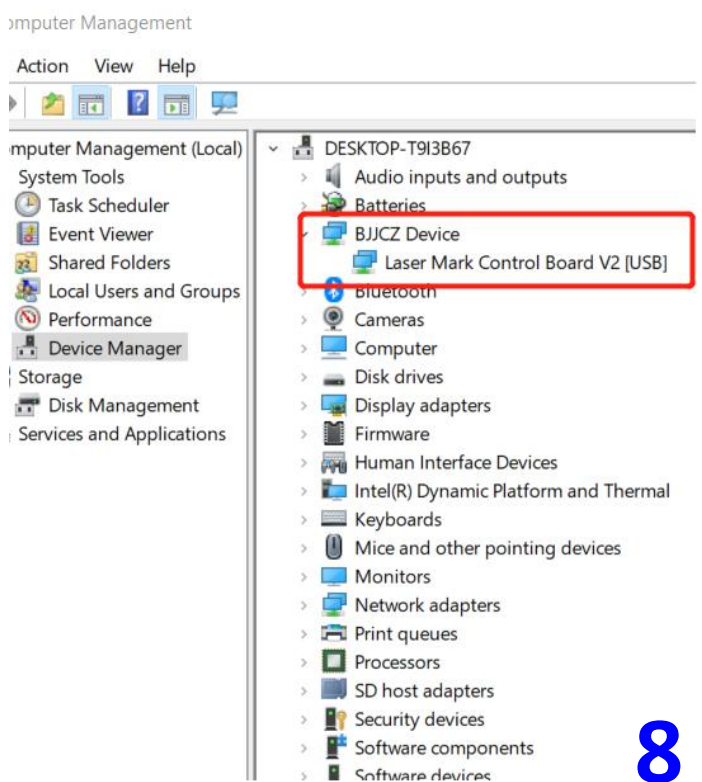| 5. Find the corresponding file in the USB drive, click " OK "	6.Click "Install"
5	**6**
7. Click "finish" if it is successful	8.it will display "BJJCZ Device" in Device Manager
7	**8**
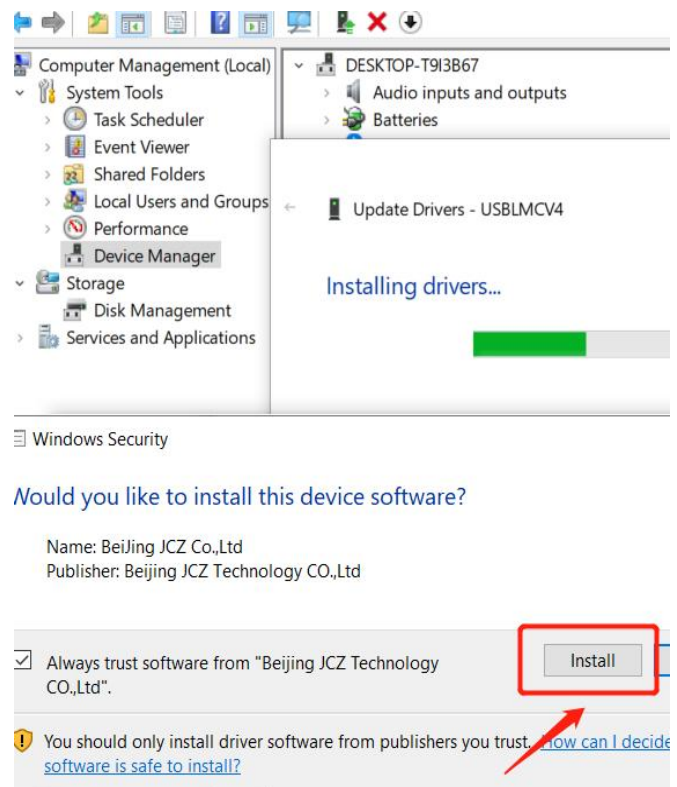
Noted: If the driver installation is unsuccessful, please refer to FAQ 1.

2. Open the software

Open the USB folder omni 1; open the "software150" folder. Open the software "EZCAD2". You can enter "text", "picture" or "vector diagram" as shown in the figure below. It is recommended to select the text to test first.
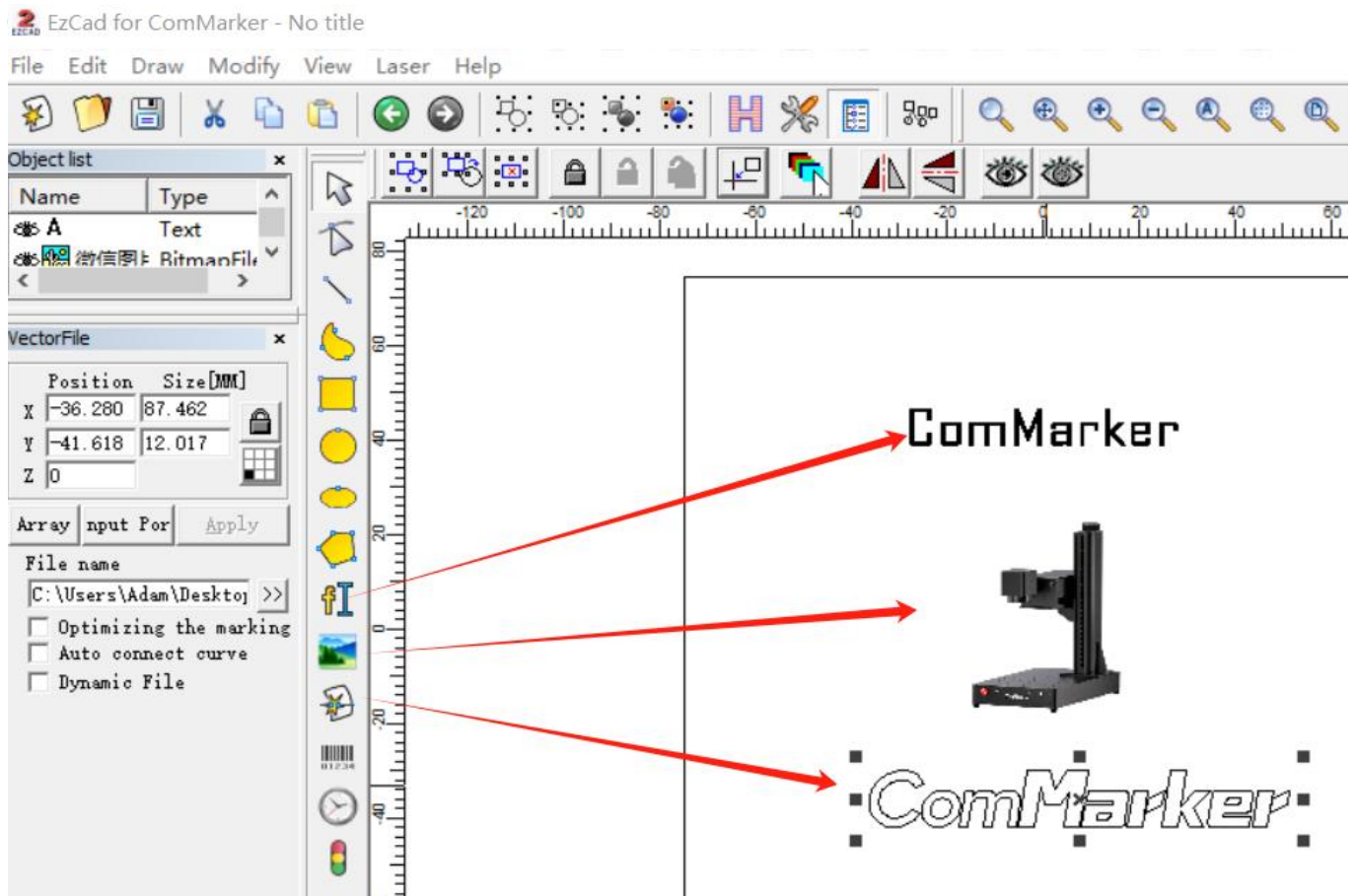
Select "Parameter (F3)", tick "Use Correct File", click , select the file ending in .cor in the USB flash drive (or have been copied to the computer disk), and click "OK".
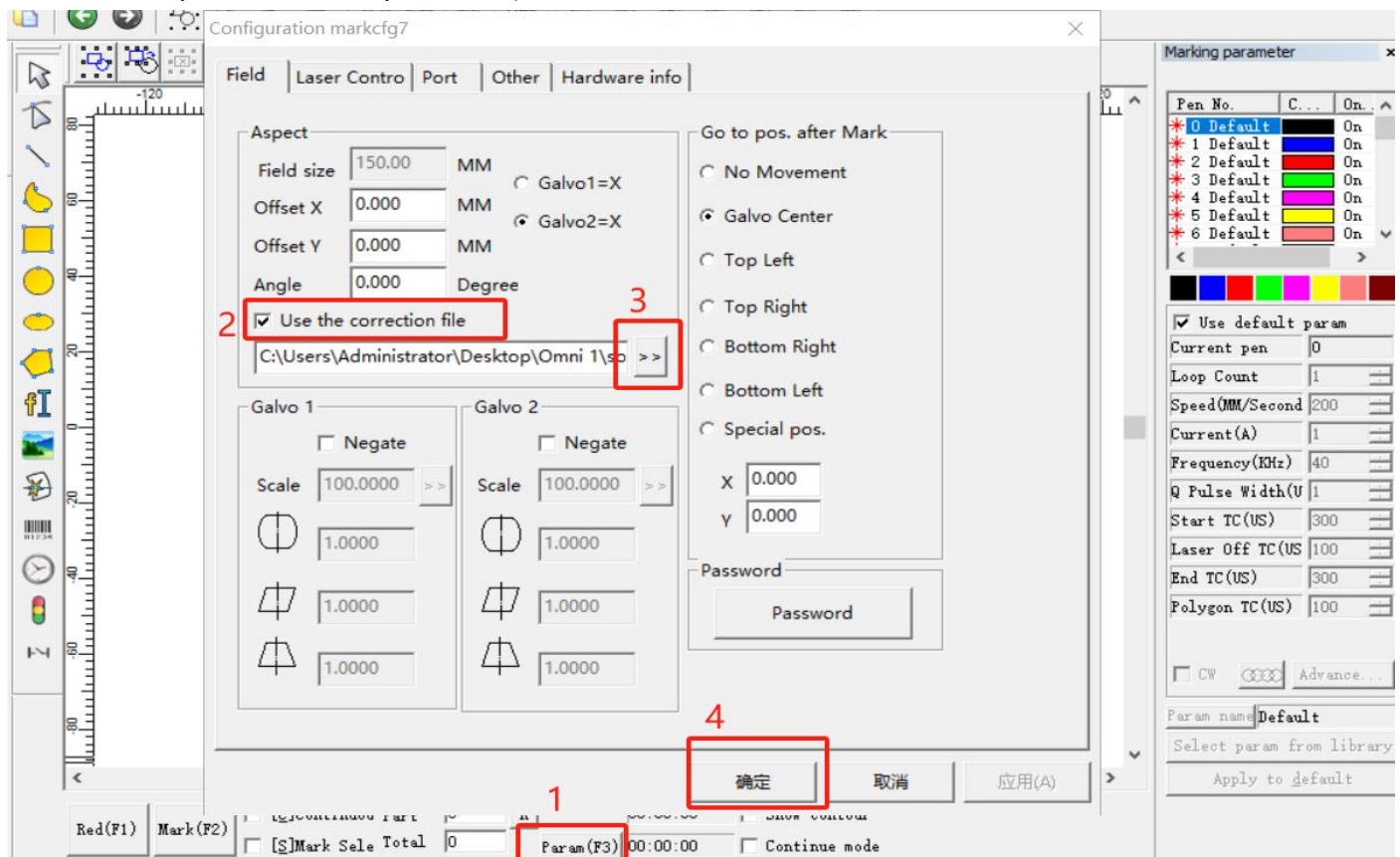
4. Adjust the focus

Press up or down button to lift or lower the laser head until the 2 red light point overlap, which is the best focal point.

The measuring focal length of this machine is _____ mm (70x70) and _____ mm (150x150), and the measuring distance is the length from the middle line of the Galvo to the surface of the engraving material. This parameter is measured manually, and each device has different focal lengths due to changes in laser sources and field lenses.
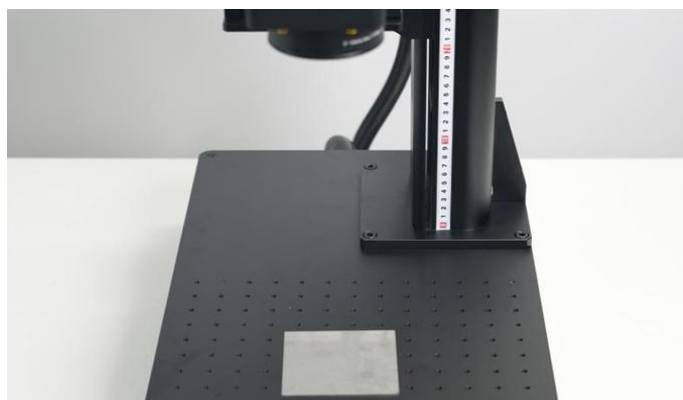

Note:

**The overlapping point should be on the marking material other than the surface of the machine.*

*Red light correction before shipping. At the position where the 2 red light spots are focused, the laser emits the strongest light. However, due to transportation reasons, the focus point of the red lights you received may shift, and the focus point would not be the best focal length.

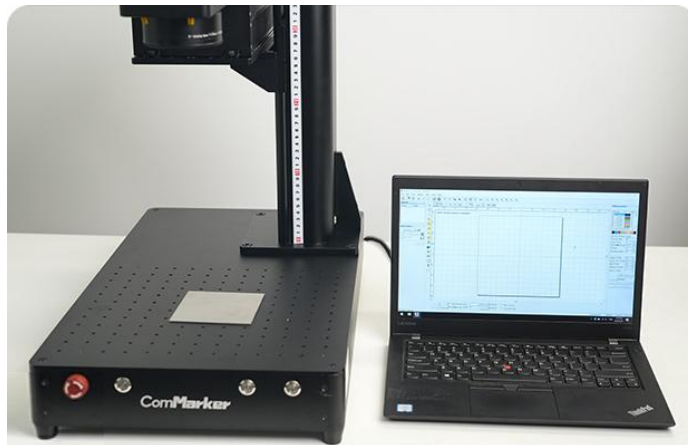*Please follow the steps for debugging.*

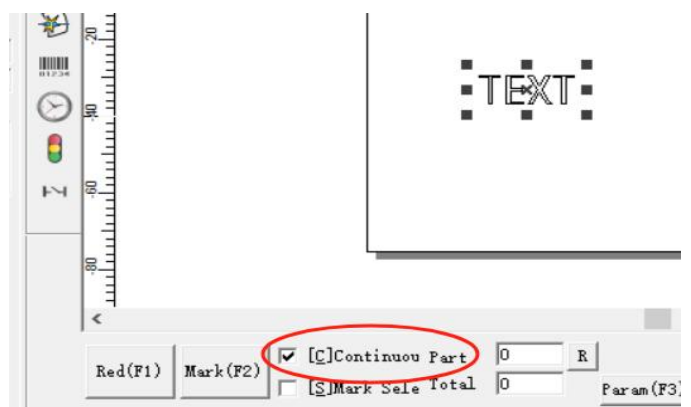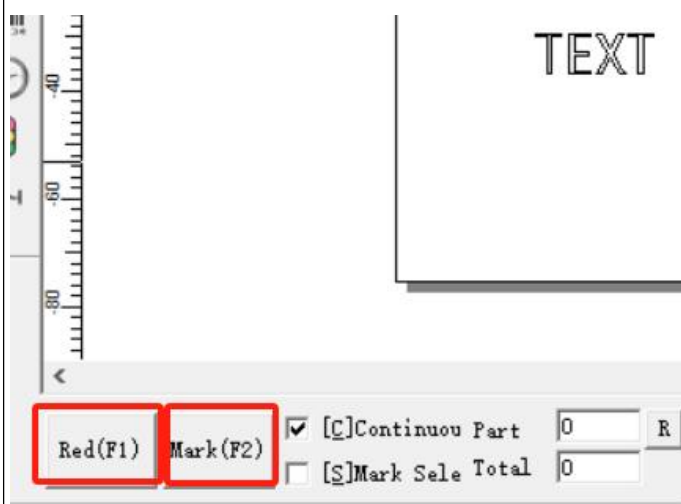| 1.Place the stainless steel test plate on the machine table	2.lift up or down the laser head to the best focus point according to the number in handwriting above
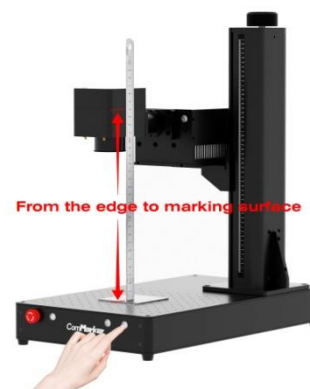
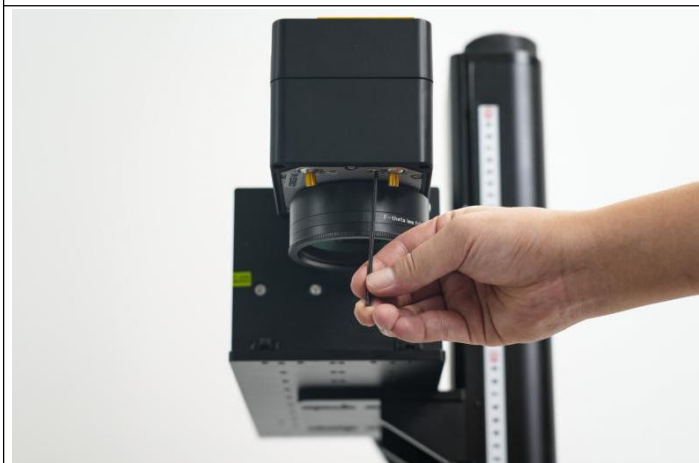|	
3.Turn on the machine, connect the computer with the machine	4.Import the "TEXT" for testing , select the default parameters, and tick the "continuous part" button.
5.Press "red light" to ensure it'll mark on the test material. Click "mark", and the laser would be continuously marking	6. Meanwhile, lift or lower the laser head and observe the obvious change of intensity of the laser beam. Stop when the it works with the strongest laser
7.At this time, loosen the screws for the two beams of the auxiliary red light	8.Manually adjust the relative position of the red light dots to make them overlap.And tighten the screws
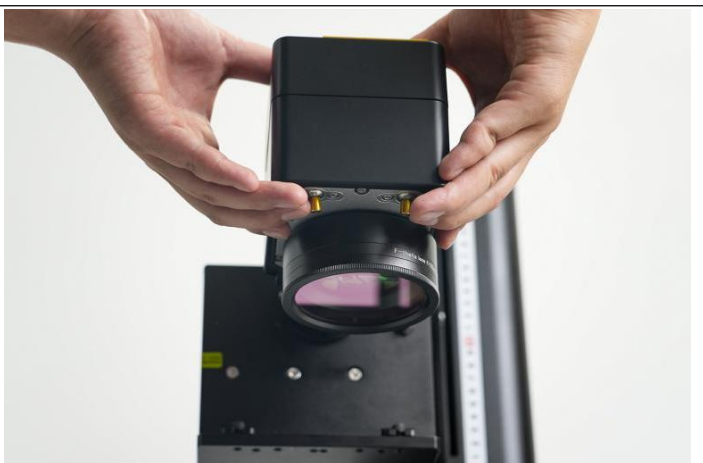
5. Marking test

Place the test engraving material on the machine. Click "Red Light (F1)", the area shown by the red light is the marking area. Choose the parameters according to the following picture. Click "Mark (F2)" to start marking.

Note: "Speed", "Frequency" and "Q Pulse Width" are key parameters for marking result.

LightBurn Operation Tutorial (For MacOS)

Download and install Lightburn software from the website
Note: It is not compatible with our machine if your Lightburn version is lower than V1.3.01, please download a new version and reinstall.
And Lightburn is a paid software with 1 month free trial, you need to buy the licence key for Galvo version.
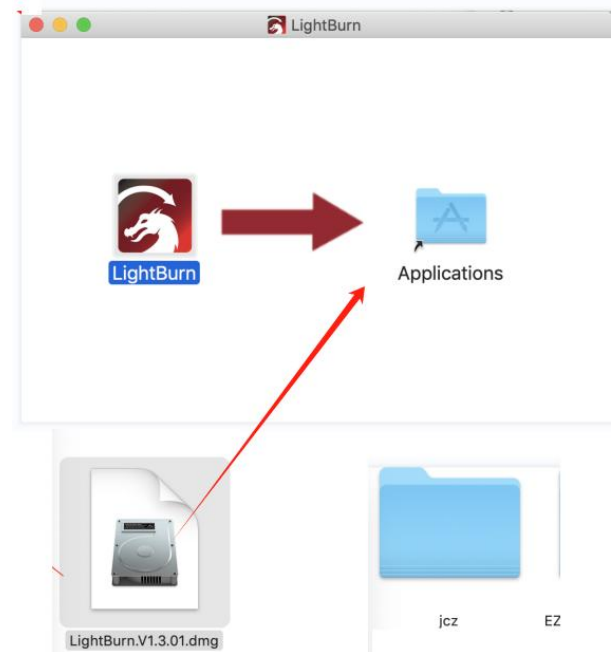
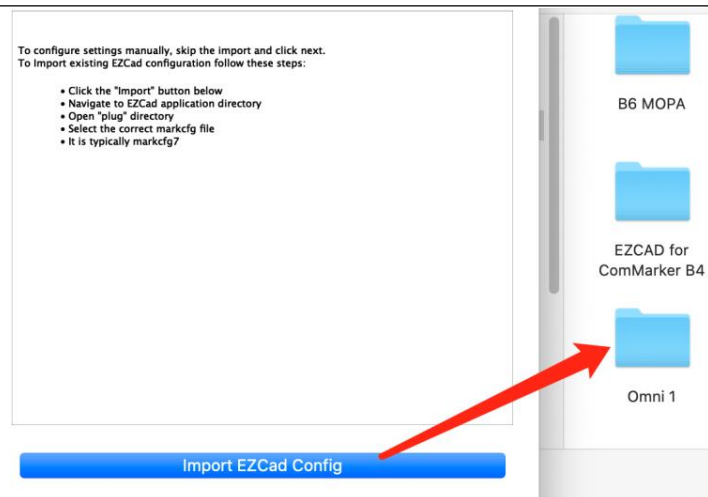|	
1. Down load the software from the website: https://lightburnsoftware.com/pages/download-trial	2.Find downloaded file Lightburn V1.7.01, and drag Lightburn icon to the Applications folder
3.Copy the folder "Omni 1" from the USB to the desktop	4. A device window will pop out if the software is open the first time, click "Create Manually", Select "JCZFiber" **Note: Make sure the machine is on and connected**
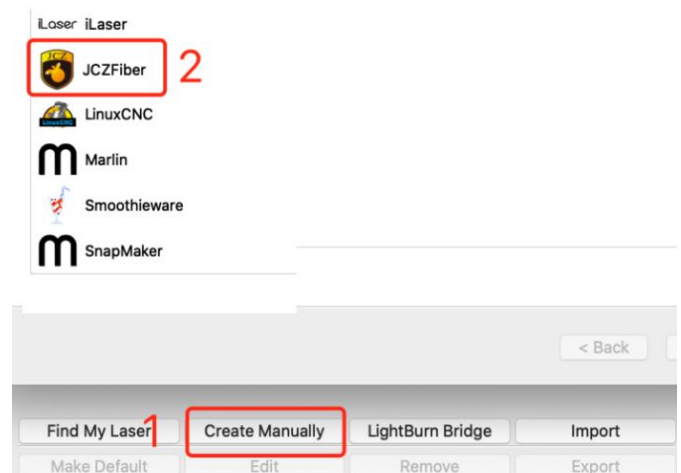
5.Import EZCAD Config and select the folder	6.Select folder "EZCAD for Omni 1"---->" Plug", and choose "markcfg7" and click "next"
7.You can see the following window, UV/YAG and click "next"	8. Change the name if necessary, and input the right X and Y Axis Length according to the lens. Click "next"
9.Click "finish" and it will in the device list	10. The status will change into "Ready" when the machine is on and connected via USB
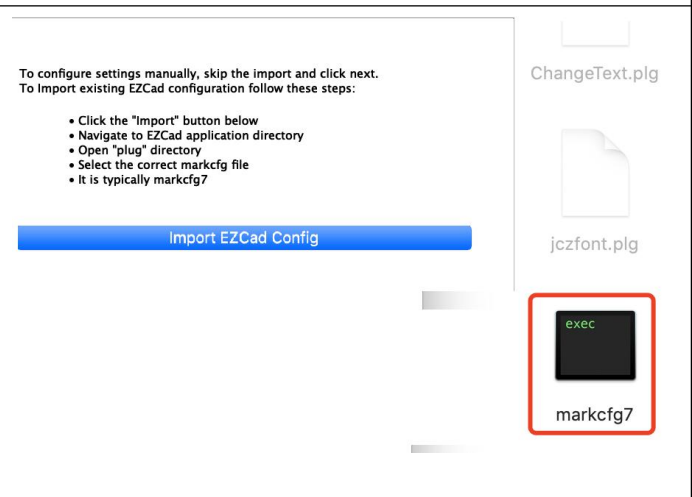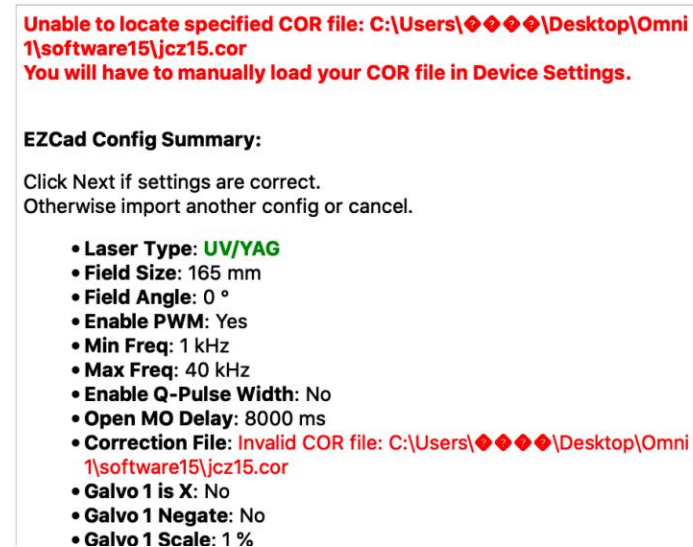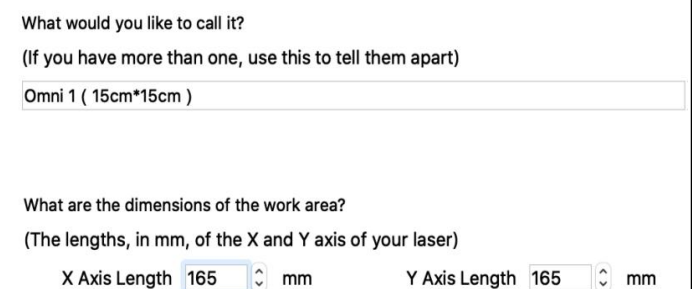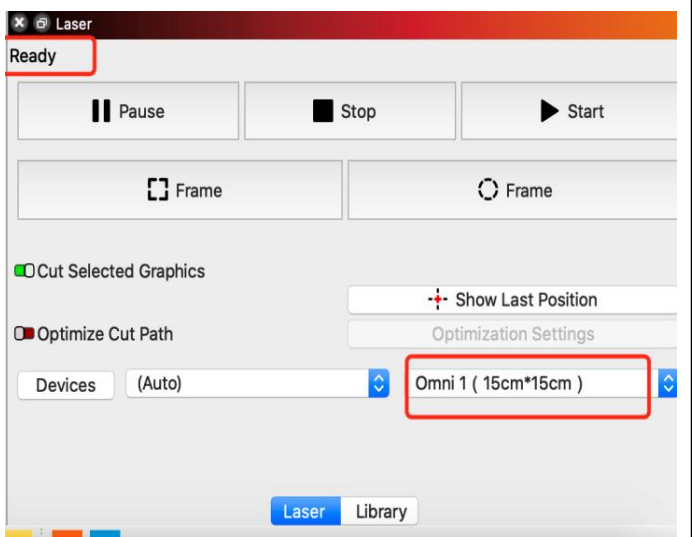
11. Go to "Basic Settings" from "Device setting" button, click "Load COR file", Select "omni 1", Choose file "JCZ15.cor", Click "OK"	12. Change the setting of Freq "Min 1", "Max 40". Switch on "Galvo 2". Set the Laser Type UV, and it is ready to control the machine with Lightburn.

FAQ

Q1: The driver installation was unsuccessful?

*Please make sure to use the copyrighted window system, if not, please replace it with another computer

*Please try to replace a data cable, it is recommended to use a magnetic proof cable

*It may be a computer port problem or a computer board connection problem, please try with another computer

Q2: The USB flash drive is damaged and cannot be opened

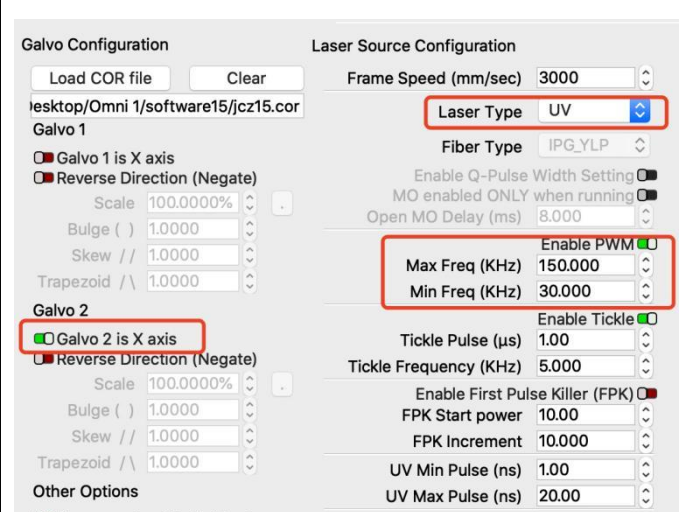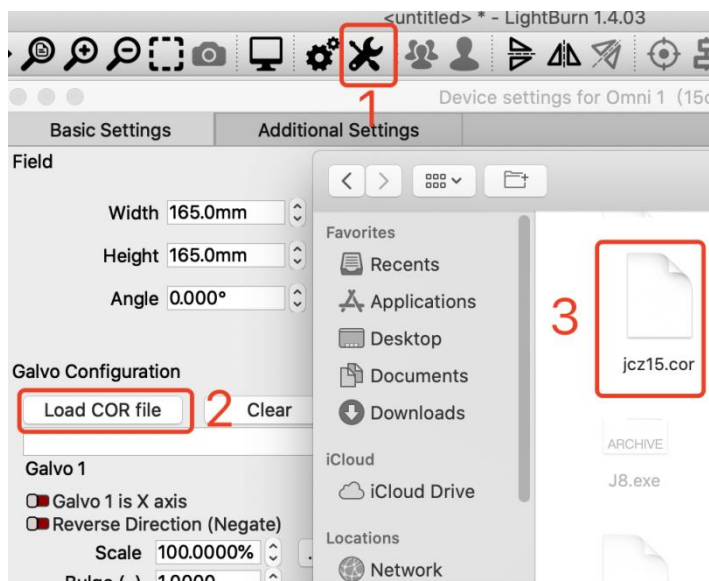*Please visit Commarker's official website to download the EZCAD driver and software.

*Contact after-sales staff or email us

**Q3: The red light preview functions, but there is no mark or the marks are very light**

*Please adjust the focal length; please debug the focal length following : "Operation Instruction"→"Step 4 "

*Contact after sales staff or email us

Q4: Can not find dongle, software will work at demo state

*The machine is not powered on, or the machine is not connected to the computer. Please turn it on and make sure the data cable is connected to the computer

Q5. The size of preview and the mark is inconsistent with the software display, or preview and the mark are not horizontal or vertical but with angles.

*Import the calibration file, please refer to step 3 of the operating instructions

*If the problem not solved, select "Parameter (F3)", select "Field". Input numbers in"Offset X","Offset Y" or "Angle"according to the actual deviation number based onthe measurement with a ruler.

*If it still doesn't work, please contact after-sales staff or email us
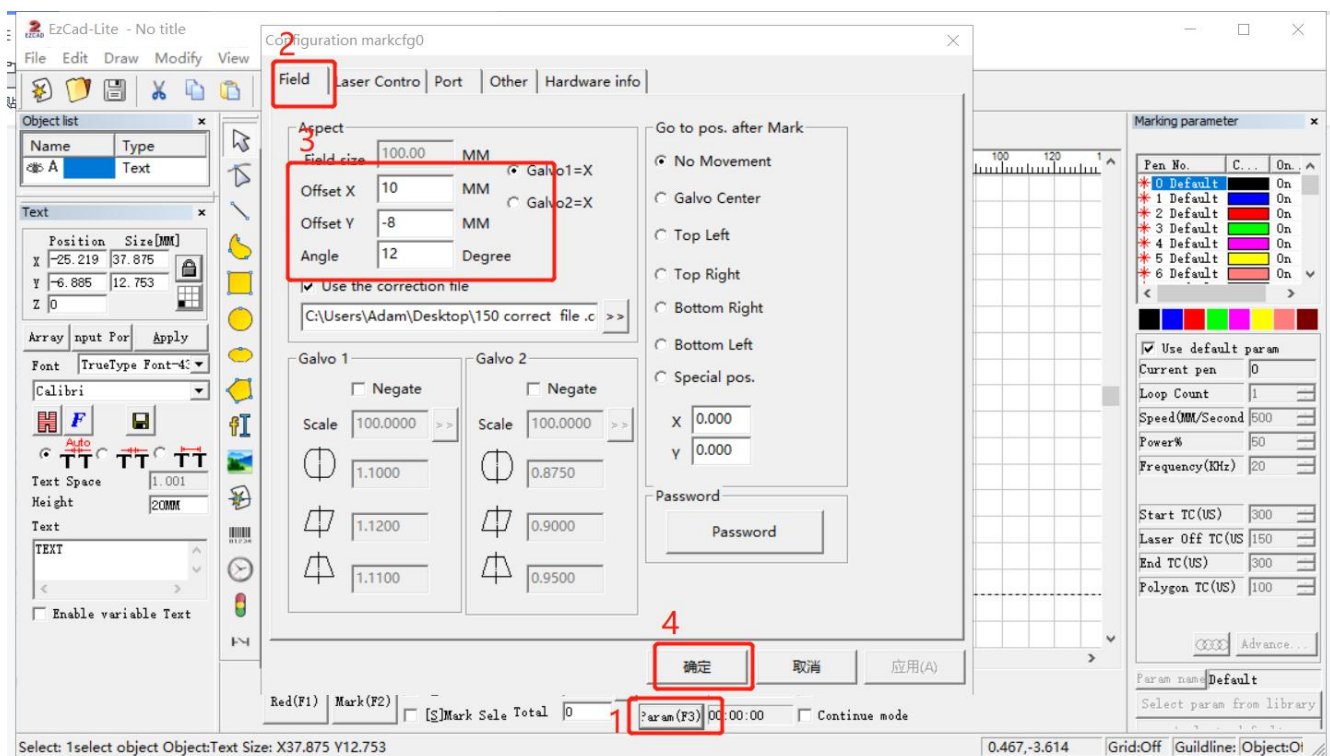
Q6: The red light preview is inconsistent with the actual engraving position

*Import the calibration file, please refer to step 3 of the operating instructions

*If the problem not solved, select "Parameter (F3)", select "Other"and "Red light pointer". Input numbers in"Offset X" and "Offset Y"according to the actual deviation number based onthe measurement with a ruler.The number can be positive or negative, the red light will change in different directions at the positive and negative values.
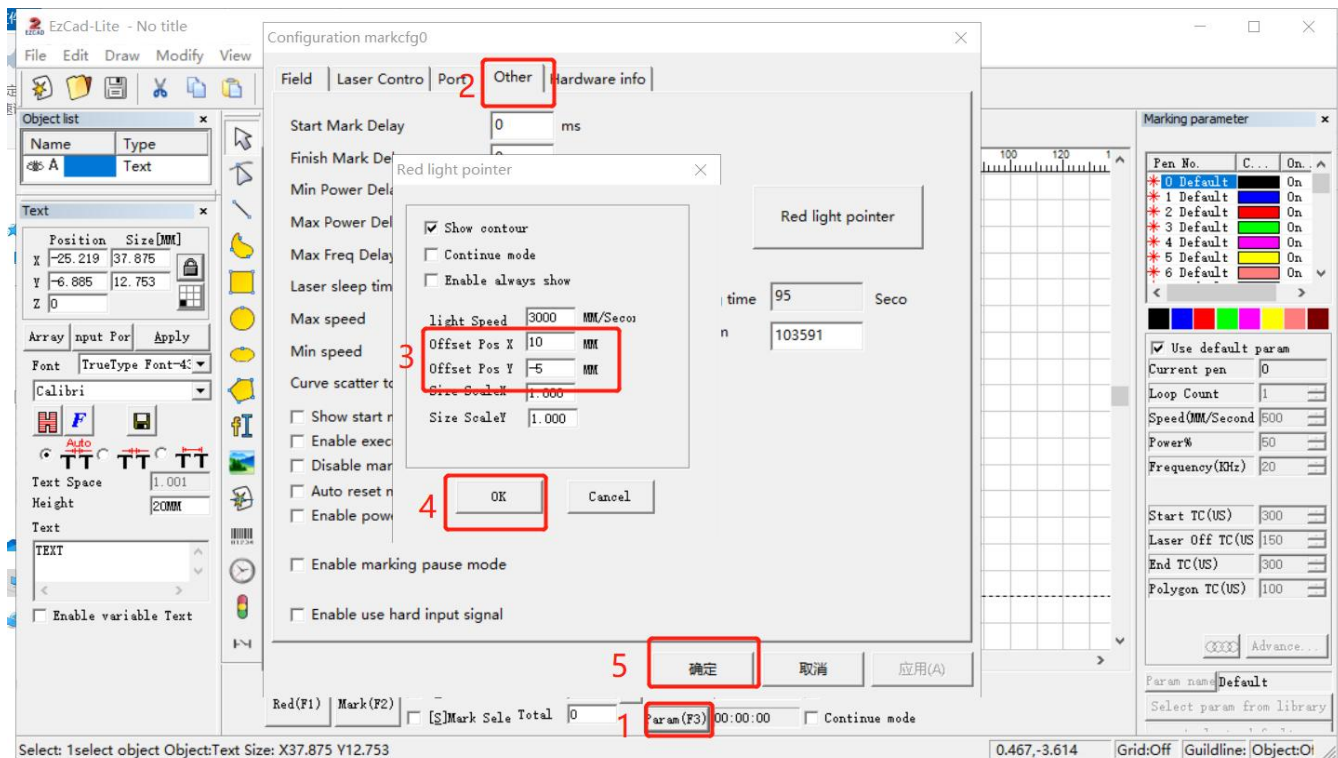
Q7: The preview and the shape of the mark is deformed

*Import the calibration file, please refer to step 3 of the operating instructions

*If it still doesn't work, please contact after-sales staff or email us

Q8: Nothing displays on canvas board when importing text or picture

*Please click the practical center button, the picture and text are in the center of the canvas
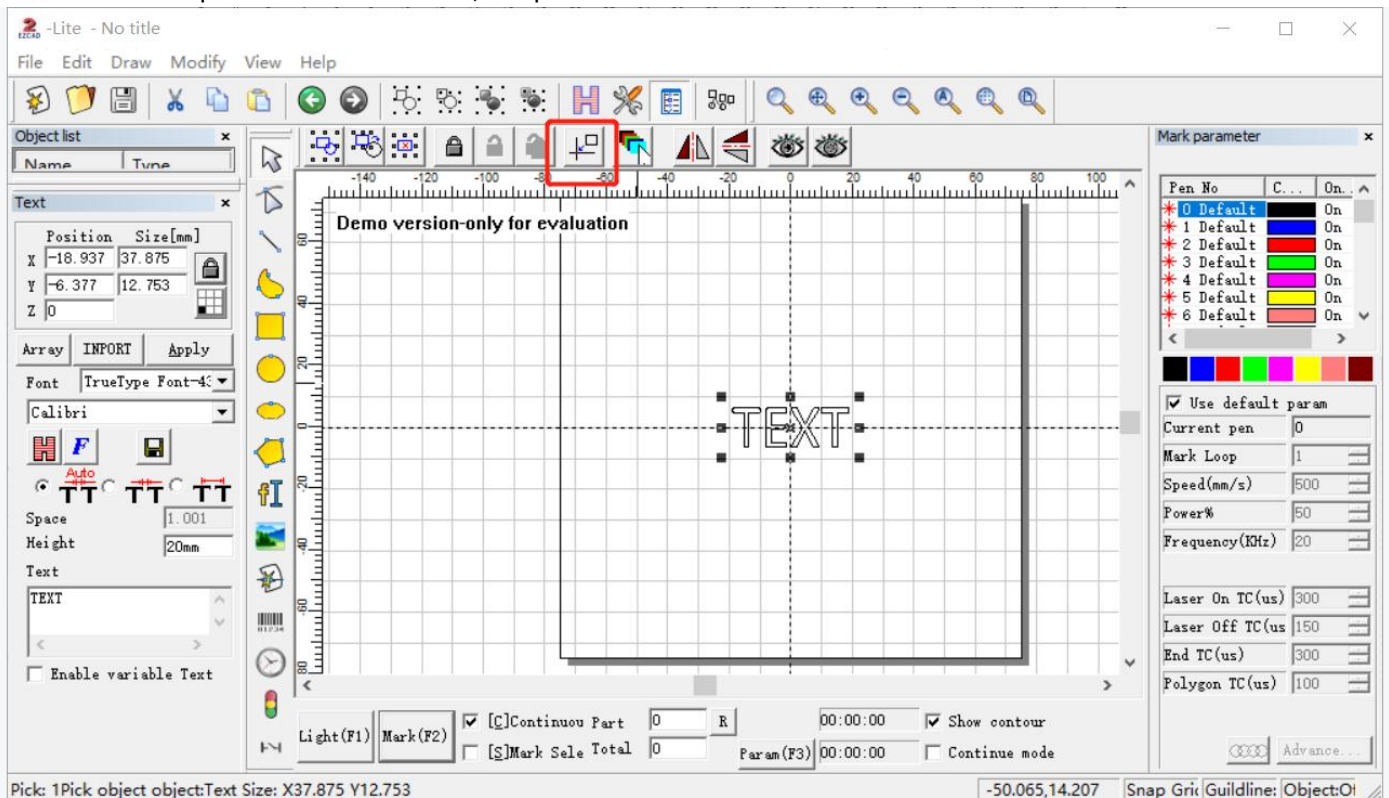
Note: This manual will be continuously updated. Please download the latest e-version manual on our website.

Maintenance

1. Maintenance Overview

Unless otherwise specified, perform adjustment and maintenance of this device only when the power is turned off and the power supply has been disconnected. Only trained and skilled professionals should modify or disassemble this device.

2. Regular Maintenance Procedures

- Keep the workroom clean and dust-free at all times.
- Ensure the device is fully powered off when not in use.
- Cover the galvanometric lens when it is not in use.
- Clean the worktable after use with a cloth wetted with more than 75% rubbing alcohol.
- **Never** clean this device with abrasive or caustic cleansers, aerosol sprays, or enough water to enter any electrical component. Always allow surfaces to fully dry before further use.
- When removing dust from the device's vents using a vacuum, **ONLY** use the lowest power setting to avoid damage to internal components.

No other servicing should be done by the operator. Do not attempt to service or replace other parts yourself.

Troubleshooting Guidance

NO.	Indicator Light Status	Possible Solutions
1	Green light on, red light off, Laser beam on but no power	1. Check if the laser signal cable is connected correctly. 2. Check if the marking software parameters are set correctly. 3. If the problem persists after confirming the above points, please contact our after-sales department.
2	Green light off, red light on	1. Check if the water chiller's temperature is normal (laser operating temperature is 18-35℃, recommended setting is 25℃). 2. Restart the laser after the water chiller temperature reaches the operating range to see if the same issue occurs. If the problem persists, please contact our after-sales department.
3	Green and red lights alternately flashing, fast flashing	1. Check if the laser is connected to the water chiller. 2. Check if the water chiller's temperature is normal (laser operating temperature is 18-35℃, recommended setting is 25℃). 3. Feel the laser temperature by hand to check if it is normal. 4. Restart the laser after the water chiller temperature reaches the operating range to see if the same issue occurs. If the problem persists, please contact our after-sales department.
4	Green light off, red light fast flashing	1. Check if the water chiller's temperature is normal (laser operating temperature is 18-35℃, recommended setting is 25℃). 2. Restart the laser after the water chiller temperature reaches the operating range to see if the same issue occurs. If the problem persists, please contact our after-sales department.

Disposal Instructions

Electrical products should not be disposed of with household waste. In the EU and UK, according to Directive 2012/19/EU, used electrical products must be collected separately and disposed of at designated collection points.

Canada and the US may have similar regulations. Contact your local authorities or dealer for disposal and recycling advice.

ComMarker

Customer Service:

➢ For more video and supportive materials,please visit our official website at:
www.commarker.com
➢ For Laser Engraver technical support and service please email:
support@commarker.com

Manufacturer: ComMarker Industrial Co., Limited