

Scotle JCZ 2.5D MOPA Fiber Laser Marking Machine Manual



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1. Safety Information



Laser marking machine is a Class 4 laser product with dangerous, **the NOHD distance is 20M**, invisible laser radiation. This product emits infrared laser radiation with a wavelength of 1064nm, which can cause damage to eyes and skin directly or indirectly exposed to such light intensity. This infrared radiation is invisible, and the laser beam can cause irreversible damage to the retina or cornea. Before operating the laser marking machine, be sure to wear appropriate and certified 1064nm near-infrared band laser protective glasses. **the glasses should conform to OD6+ standard;** Important:

- ⊙ Never look directly at the fiber output connector, and make sure to wear appropriate protective goggles when using the laser to avoid injury.
- ⊙ Do not open the laser, because there are no product parts or accessories for users to use inside the laser.
- ⊙ When using this product, please use a properly grounded power supply and normal voltage.
- ⊙ Before starting the laser product, please ensure that the ambient temperature and humidity are within the specified range.
- ⊙ Do not expose the product to an overly humid environment.
- ⊙ The laser is cooled by air. Please ensure that the ambient air is dry and clean.
- ⊙ Operations or adjustments beyond the scope specified in this manual may cause dangerous radiation damage.
- ⊙ Keep the output galvanometer clean. After each use, please cover the protective cover. Do not touch the field lens with your hands, and do not use any solvent to clean the field lens. When necessary to clean and maintain the lens, be sure to use lens paper.

Warning:

- ⊙ Operations or adjustments beyond the scope specified in this manual may cause radiation damage.

As shown in the table below, all safety warning signs (not limited to those affixed to the body of the laser) during the operation of the laser marking machine are included:

Safety signs	Description
	<p>AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION VISIBLE AND INVISIBLE LASER RADIATION</p>
	<p>LASER LAUNCH FROM HERE TEXT WITH THE LASER RADIATION WARNING SYMBOL INDICATES A POTENTIAL PERSONAL HAZARD.</p>

	<p>EMERGENCY STOP SWITCH FOR LASWER SOURCE</p>
	<p>DANGER! ELECTRIC WORDS MARKED WITH AN ELECTRICAL WARNING SYMBOL INDICATE A POTENTIAL PHYSICAL HAZARD.</p>
	<p>TEXT WITH THE LASER RADIATION WARNING SYMBOL INDICATES A POTENTIAL PERSONAL HAZARD.</p>
	<p>THE SYMBOL INDICATES THAT PERSONNEL MUST WEAR LASER SAFETY GLASSES (PERSONAL PROTECTIVE EQUIPMENT) TO PREVENT LASER RADIATION HAZARDS.</p>
	<p>ALTERNATIVE LABEL FOR LASER APERTURE</p>
	<p>EXPLANATORY LABEL</p>

Product name: Fiber laser machine
 Manufacturer: Shenzhen Scotle Technology Group Ltd.
 Address: Y1-214, Bantian Creative Park, Longgang District, Shenzhen City, Guangdong Province



Company: E-CrossStu GmbH
 Address: Felix-Dahn-Str 4, 70597 Stuttgart
 Mail: E-CrossStu@web.de
 Phone: +49 69332967674



WARNING:
 CHOKING HAZARD — Small parts not for children under 3 years or any individuals who have a tendency to place inedible objects in their mouths.



Huizhou Yunsheng CNC Equipment Co., Ltd.

Machine: Fiber Laser Machine

Brand: Ovusuqu Model NO. : FL-200W

Power: 200W Weight: 63KG

Origin: China Mfg. year: 2024.5

Address: 5th Floor, Building A, Tianhai Innovation Technology Park, Xihu Village Committee, Qiluchang Street, Huiyang District, Huizhou City, China

TEL: +86 13244753448 TEL: +86 15820760539

2. Reference standards

IEC 60825-1:2014

EN ISO 12100:2010; EN 60204-1:2018

EN ISO 11553-1:2020+A11:2020

EN ISO 12100:2010;

EN 60204-1:2018

EN ISO 11553-1:2020+A11:2020

FDA number: 2320736-000

2. Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

3. The laser safety classification of this product is based on EN 60825-1: 2014+A11: 2021.

4. The level of laser radiation emitted through the laser aperture exceeds Class 1.

Please note:

© According to EU and national standards and requirements, lasers must be classified according to their output power and laser wavelength. All high-power MFSC series laser products belong to Class 4 products (according to EN 60825-1, Chapter 8)










3. Machine introduction and connections

Product Details





4. Packing list

Packing List		
		
Fiber laser machine	Protective goggles	D80 Rotary axis (Optional)
		
Wrench&Position	Foot Switch	Power cable
		
U disk(with Software&manual)	Dongle(with serial code)	Date line(USB cable)


5. Power on


Turn on the following three switches: Emergency switch-->Power switch-->Laser switch
(When the machine is in working, keep the emergency switch in the open position)



6. Software installation

Note: Turn off the anti-virus software(if there are any) and firewall before downloading and then install the software .

Plug the silver USB disk  to your computer and copy the all of files to your desktop, so that you can unplug the USB disk.

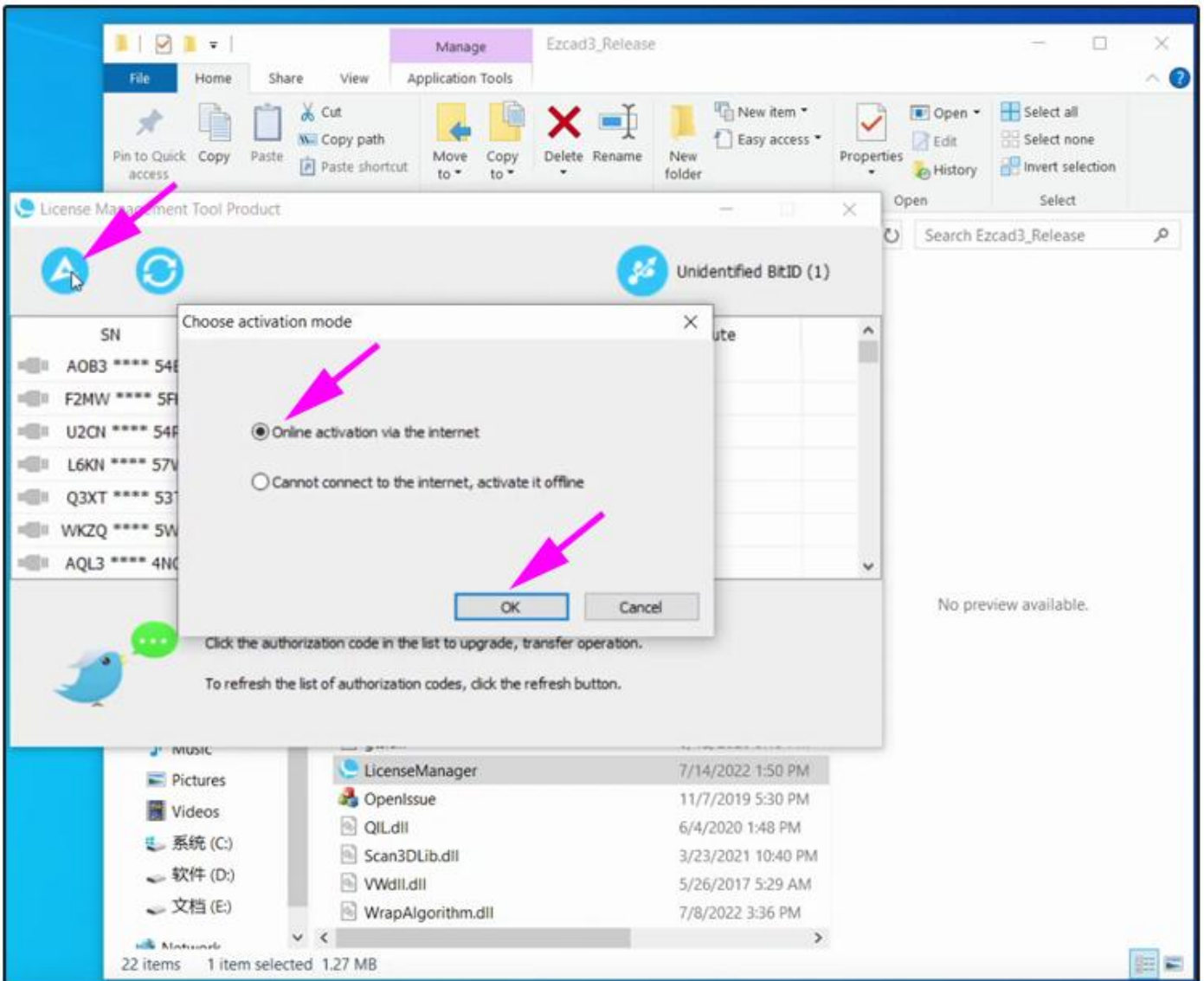
Plug the red dongle USB drive  into your computer (please note that the dongle should remain plugged in when you use EZCAD3.0 software)

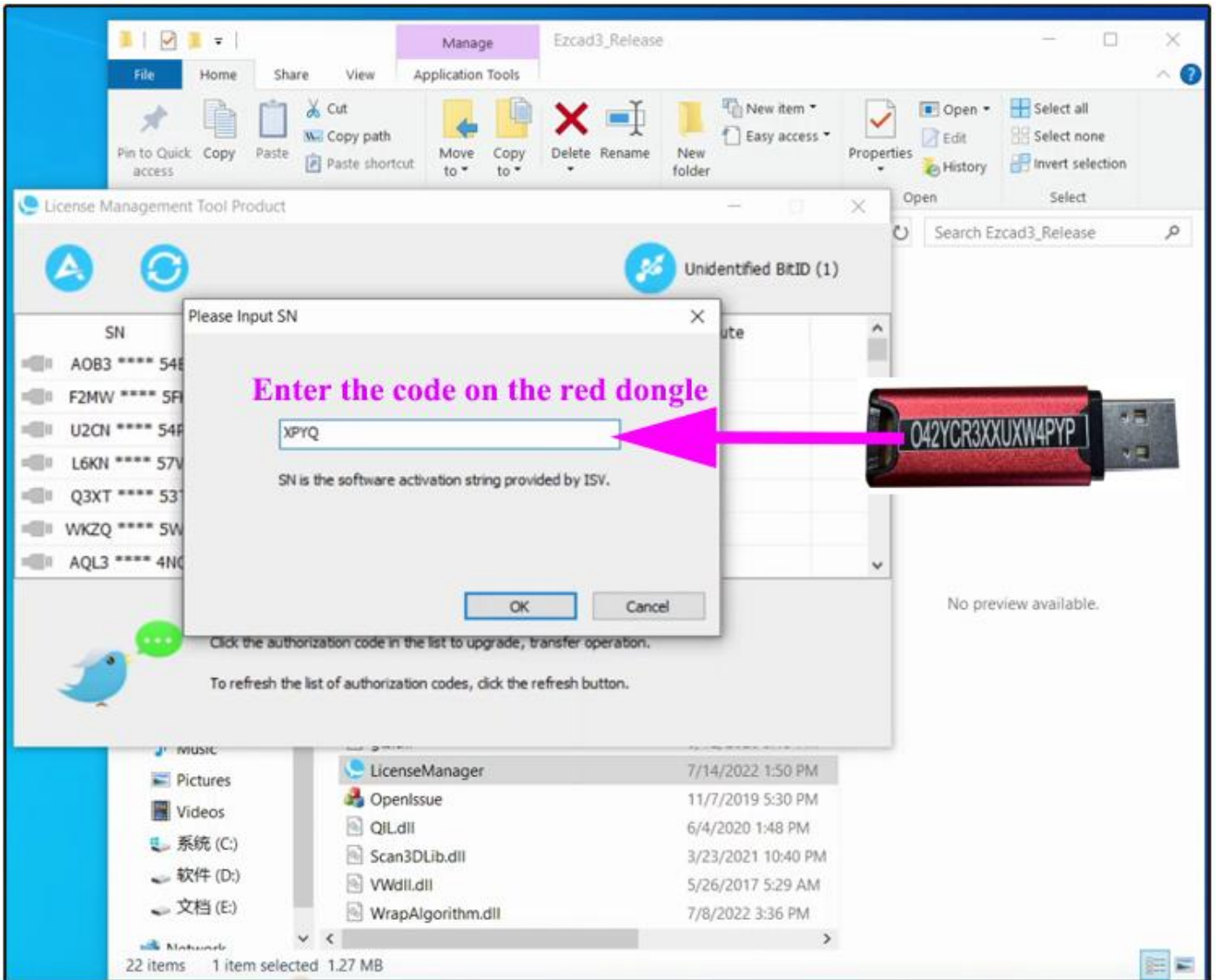
6.1 Software Activation

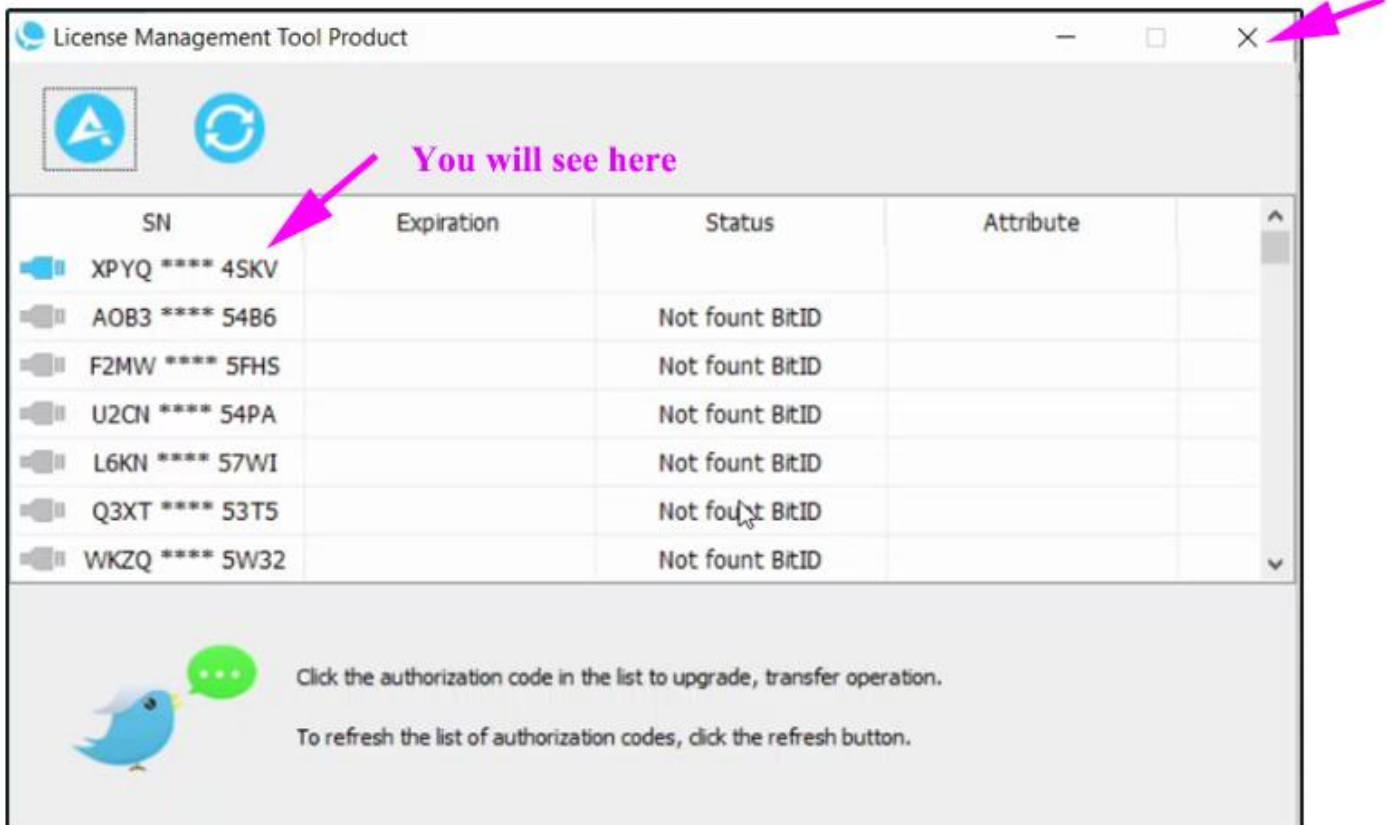
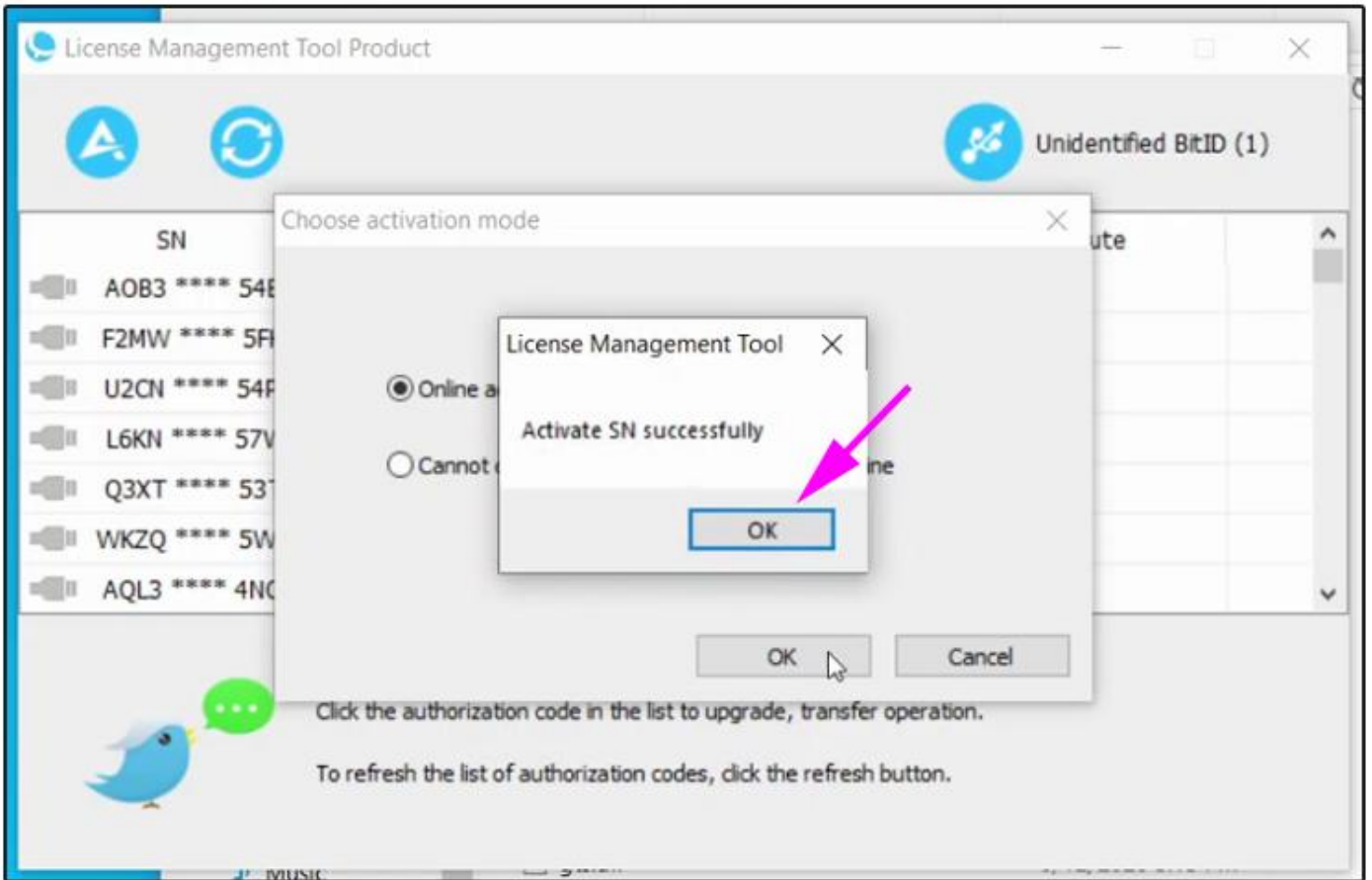
Double click"Ezcad3_Release"---"LicenseManager"

CalibrationWizardV1.15.6	2023/6/16 17:23	文件夹	
Correction documents	2025/1/6 12:07	文件夹	
DLC drive	2023/6/16 17:22	文件夹	
Ezcad3_Release	2023/6/16 17:22	文件夹	
Ezcad3 license offline activated-new.pdf	2023/7/31 17:19	WPS PDF 文档	415 KB
Focal length.txt	2025/1/6 11:54	文本文档	1 KB
G3 Pro-DLC User manual- two axis.pdf	2023/7/31 16:30	WPS PDF 文档	579 KB
MarkCfg0	2025/1/6 12:03	文件	8 KB

CORFILE	2023/3/22 9:27	文件夹	
FONT	2023/6/16 17:22	文件夹	
LANG	2023/6/16 17:22	文件夹	
PARAM	2024/12/5 10:24	文件夹	
PLUG	2023/3/22 9:27	文件夹	
RES	2023/6/16 17:23	文件夹	
CH365DLL64.dll	2015/6/15 17:29	应用程序扩展	25 KB
DfjzhControlerDll64.dll	2016/8/12 18:27	应用程序扩展	871 KB
dlc.dll	2022/11/11 15:02	应用程序扩展	520 KB
endpoint.dll	2019/10/21 10:52	应用程序扩展	498 KB
Ezcad3.exe	2022/11/11 15:02	应用程序	1,832 KB
Ezcad3_Multi.exe	2022/11/1 17:37	应用程序	1,800 KB
Ezcad3Kernel.dll	2022/11/11 15:00	应用程序扩展	6,788 KB
Ezcad3Motion.dll	2017/12/4 20:16	应用程序扩展	31 KB
gt_rn.dll	2020/6/16 11:13	应用程序扩展	738 KB
gts.dll	2020/6/12 15:13	应用程序扩展	1,738 KB
LicenseManager.exe	2022/7/14 13:50	应用程序	1,309 KB
OpenIssue.exe	2019/11/7 17:30	应用程序	99 KB
QIL.dll	2020/6/4 13:48	应用程序扩展	9,001 KB
Scan3DLib.dll	2021/3/23 22:40	应用程序扩展	27 KB
VWdll.dll	2017/5/26 5:29	应用程序扩展	379 KB
WrapAlgorithm.dll	2022/7/8 15:36	应用程序扩展	889 KB



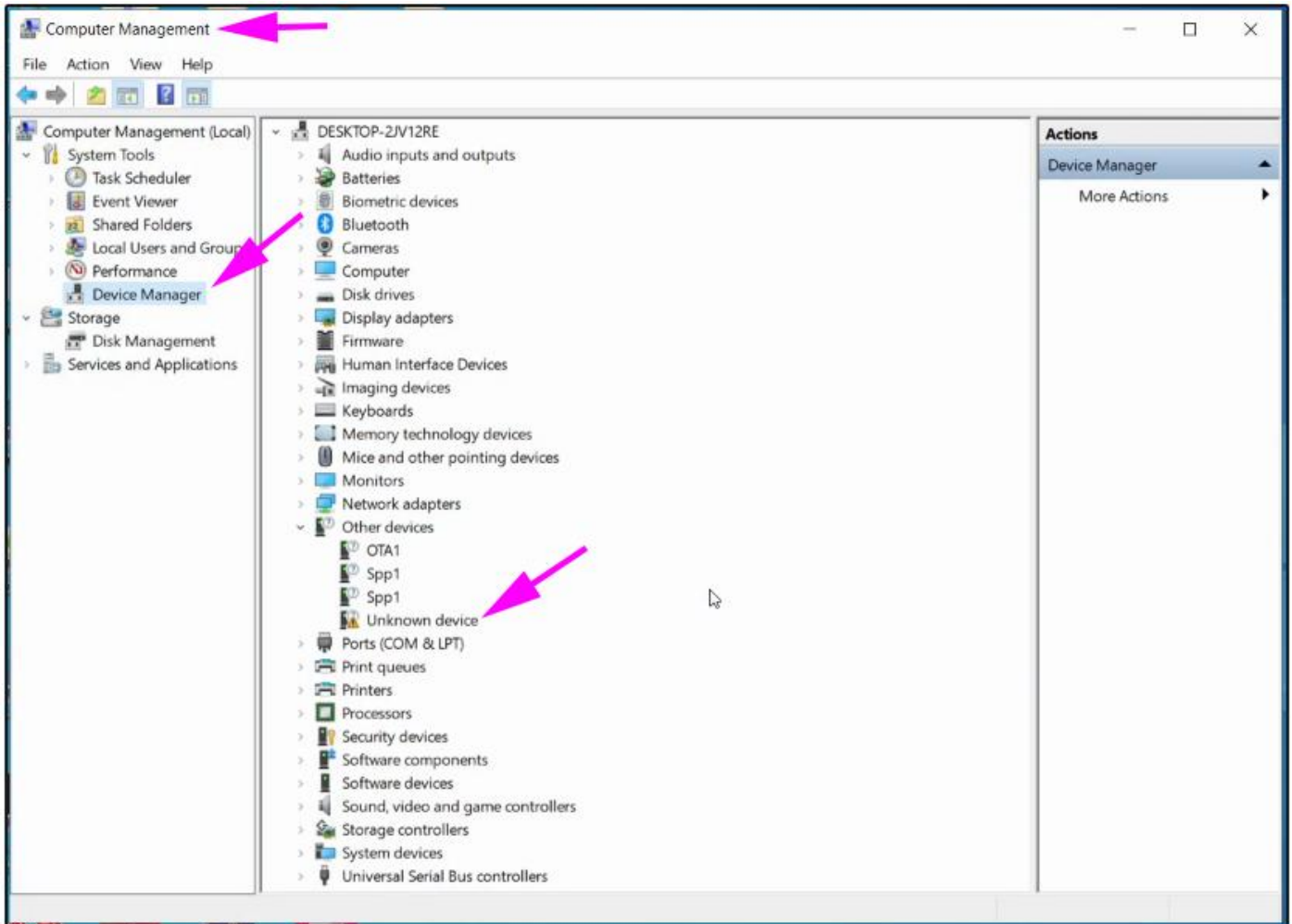


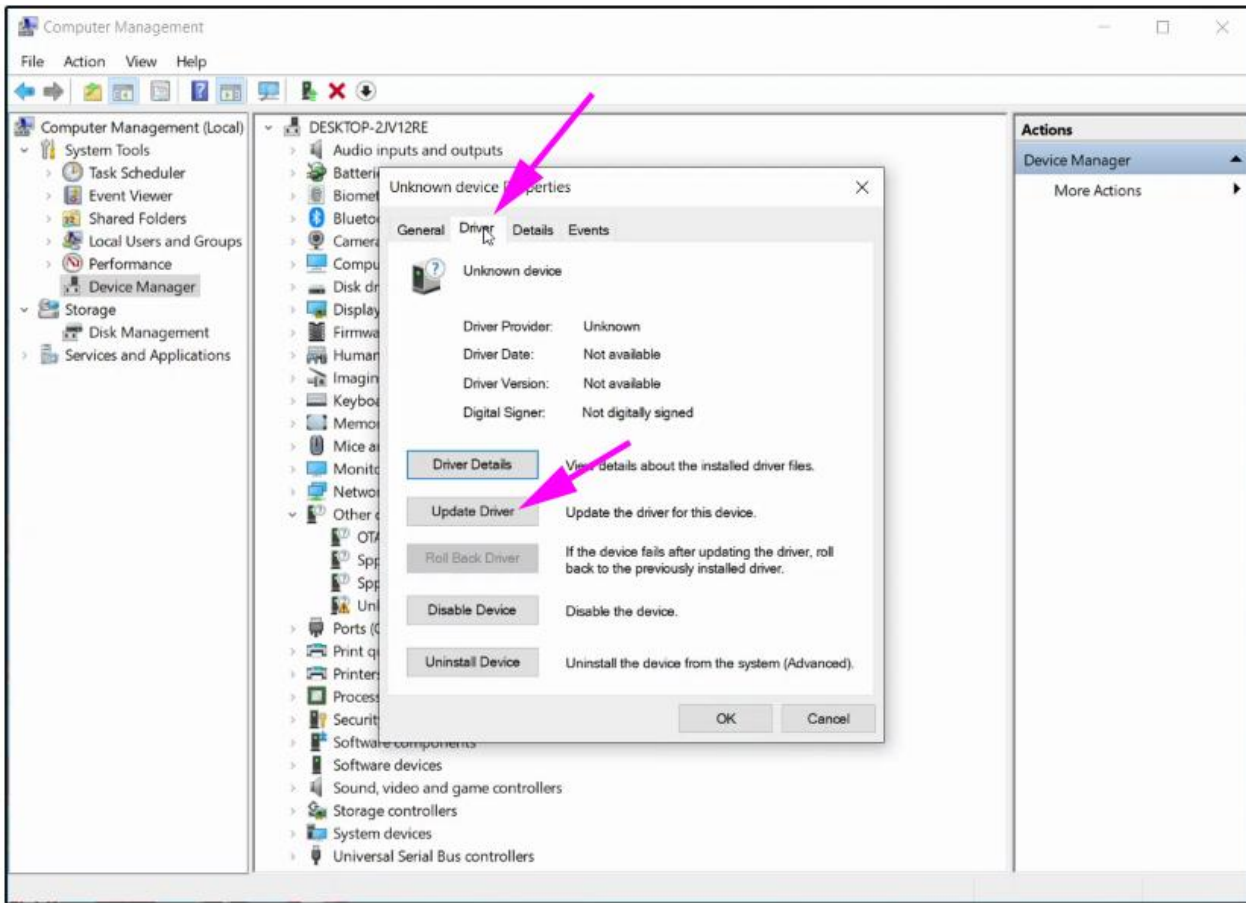


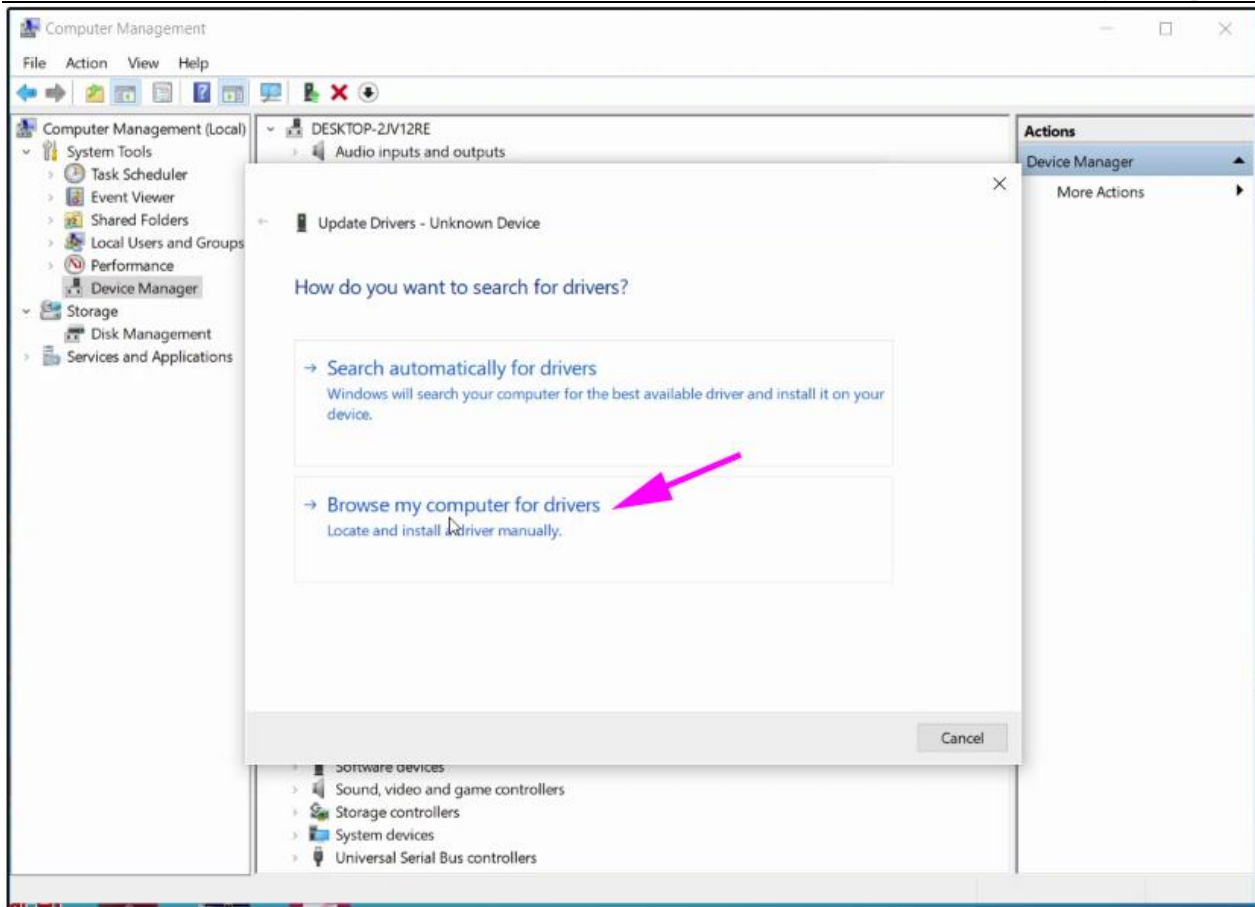
6.2 Install software driver

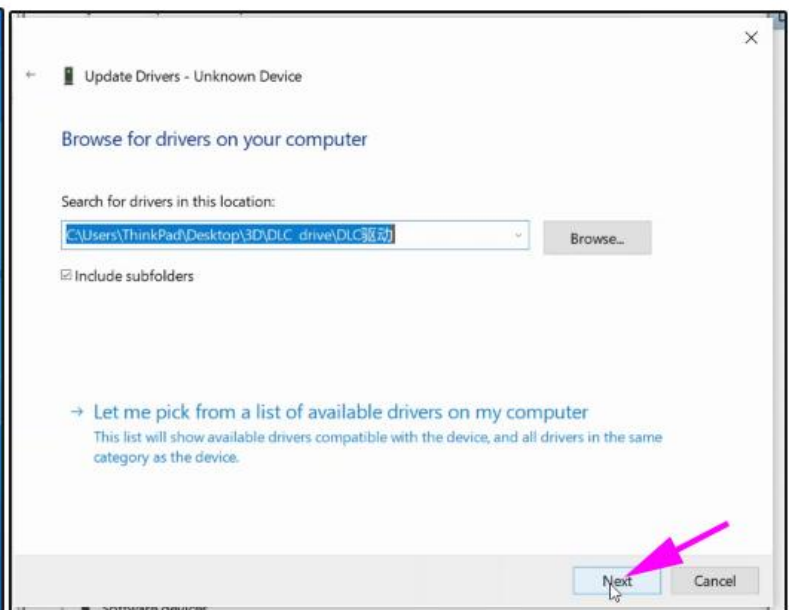
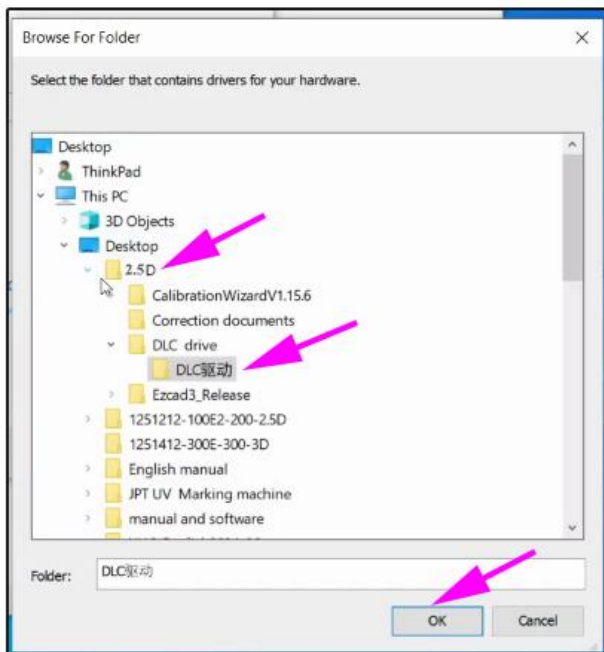
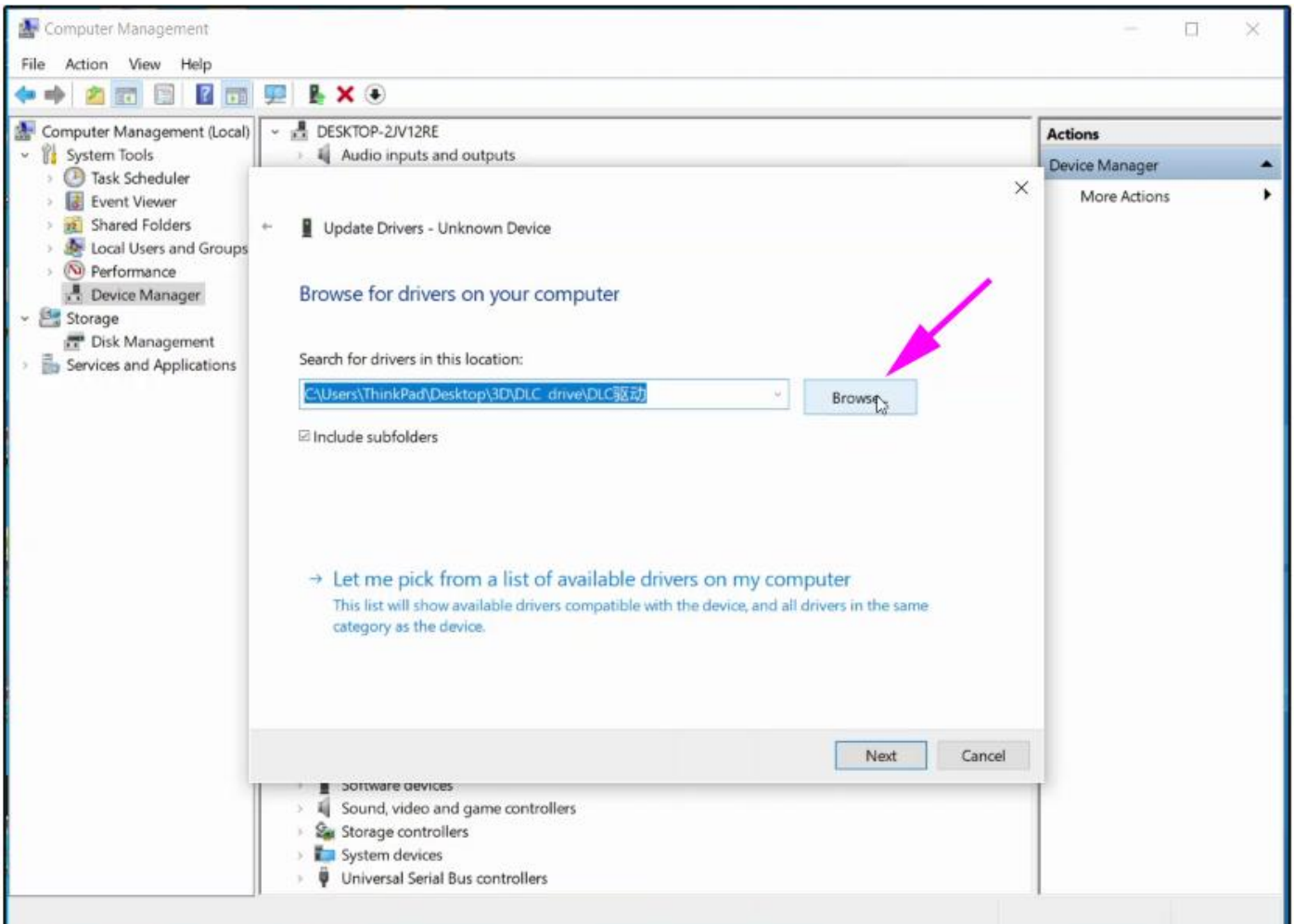


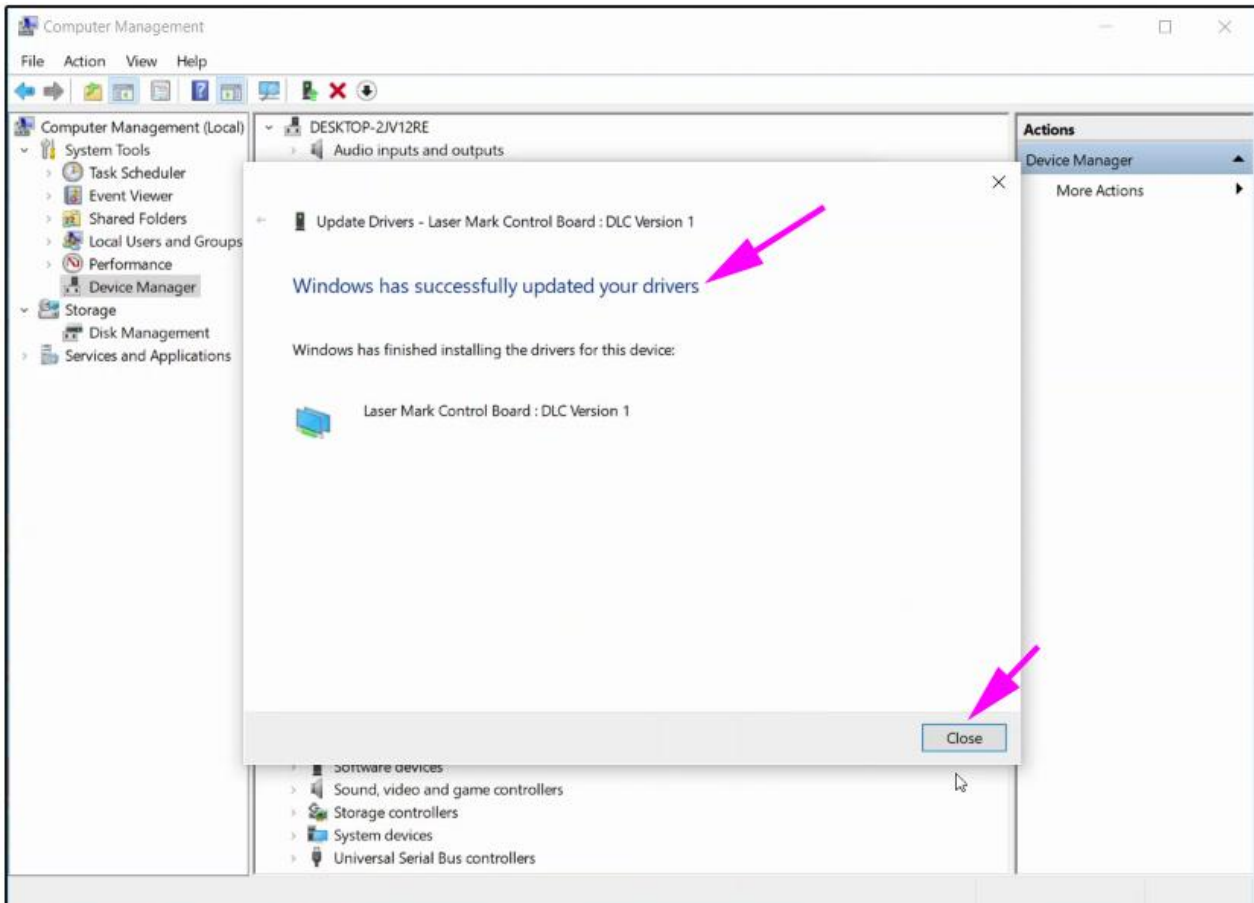
Right-click on "this PC", choose "Computer Management", click "Device Manager", click "Unknow device":

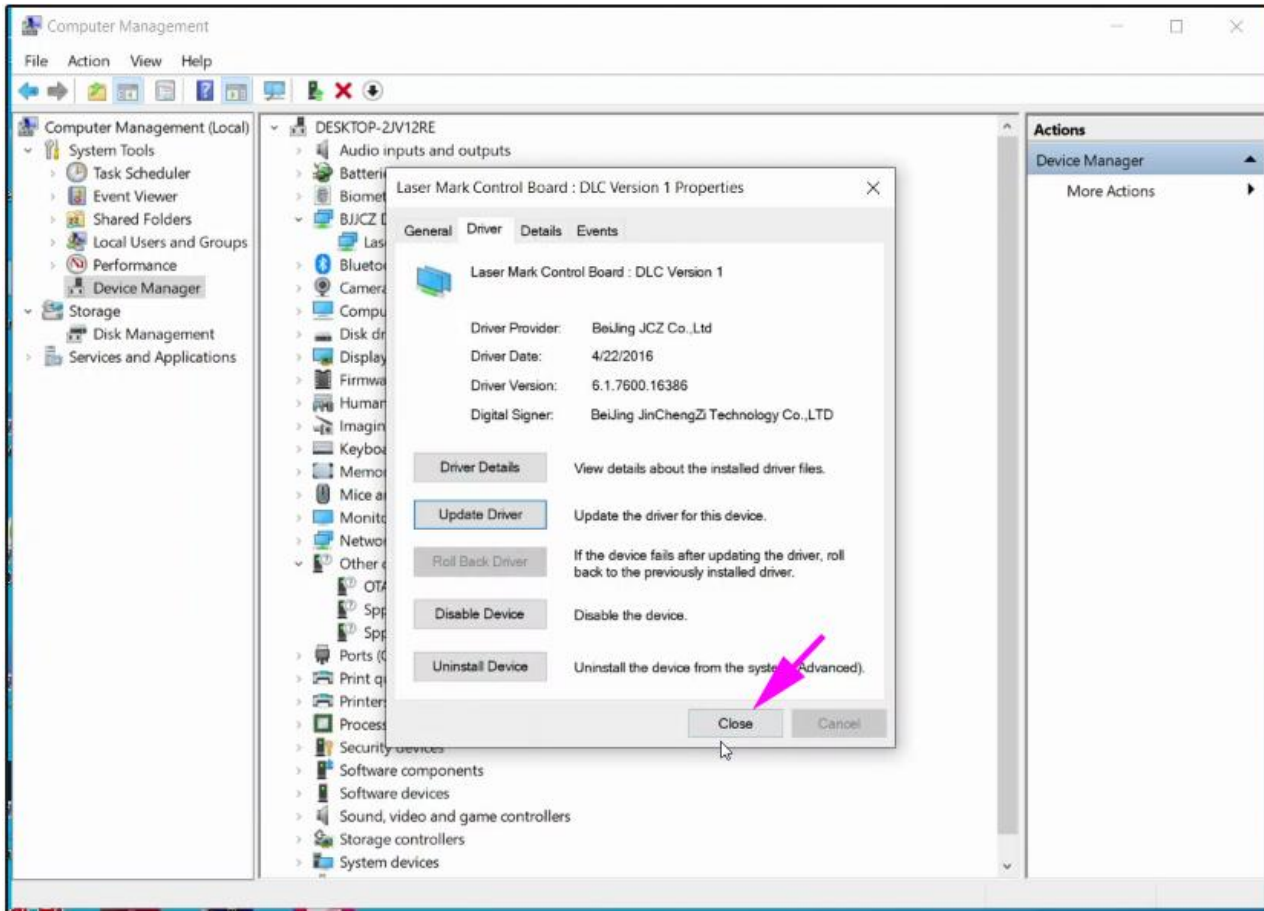


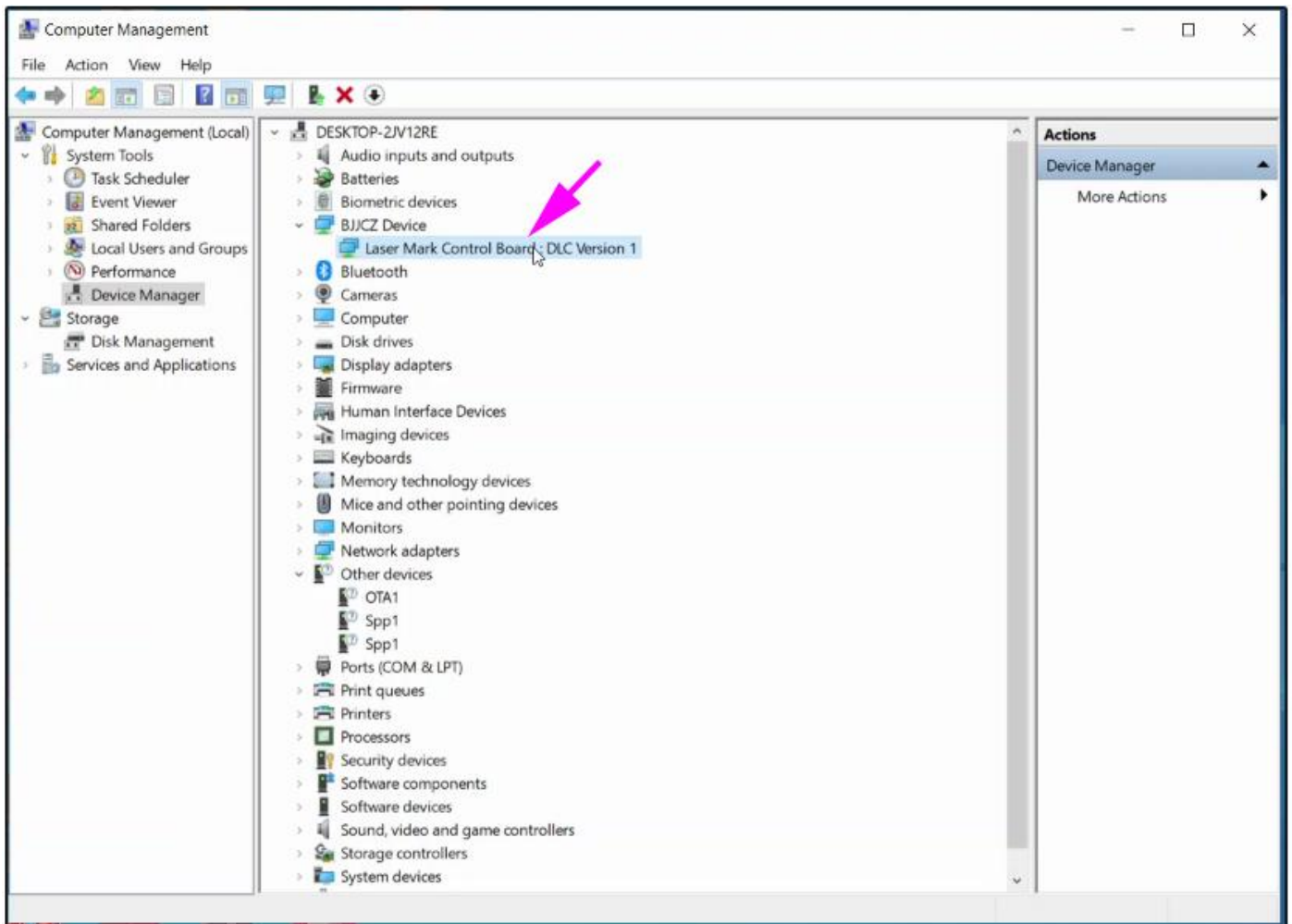












6.3 Loading the calibration file

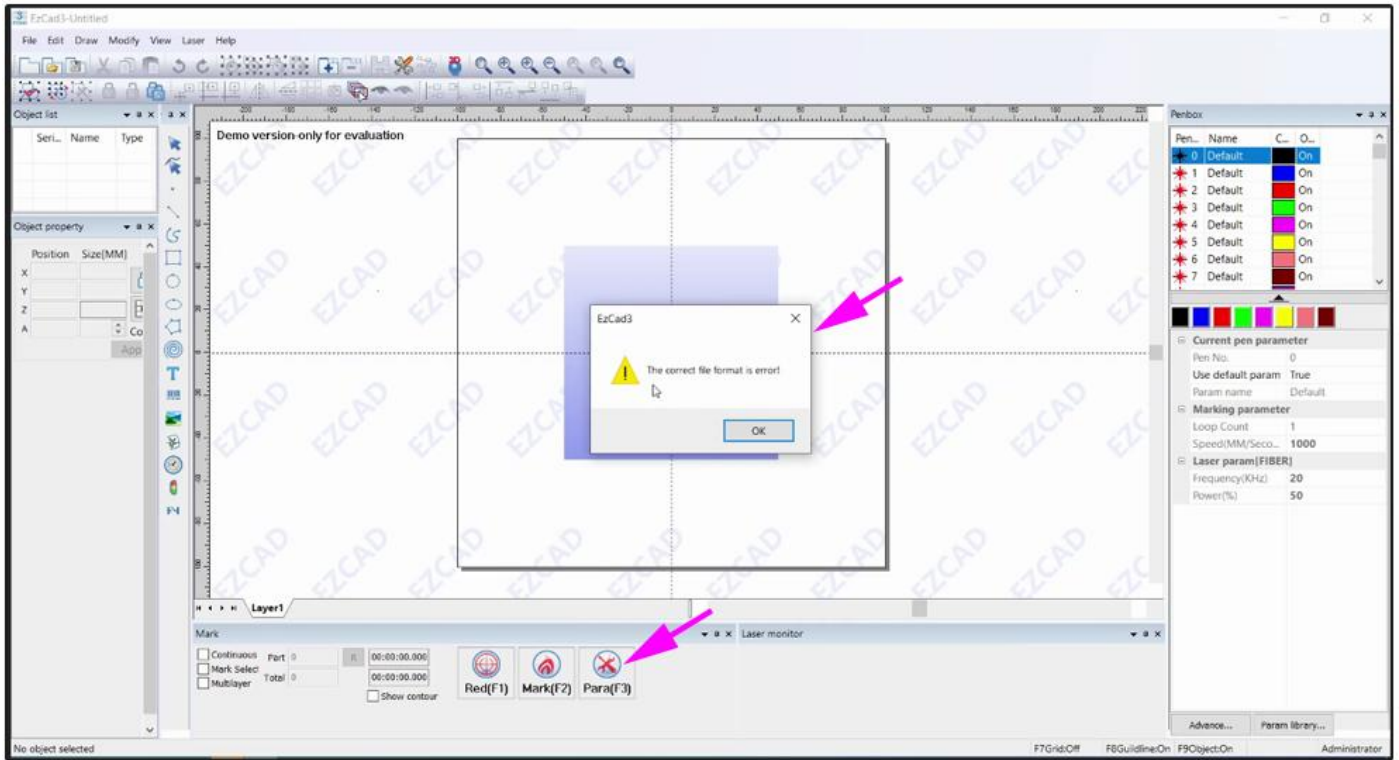
This is usually due to a problem with the calibration file. One is that the file save path is incorrect, and the other is that the file is damaged. We just need to reselect the calibration file here to ensure that the file path is correct. After confirming that there are no issues, click confirm and then reopen the software. Open the software like this, and the error will disappear.

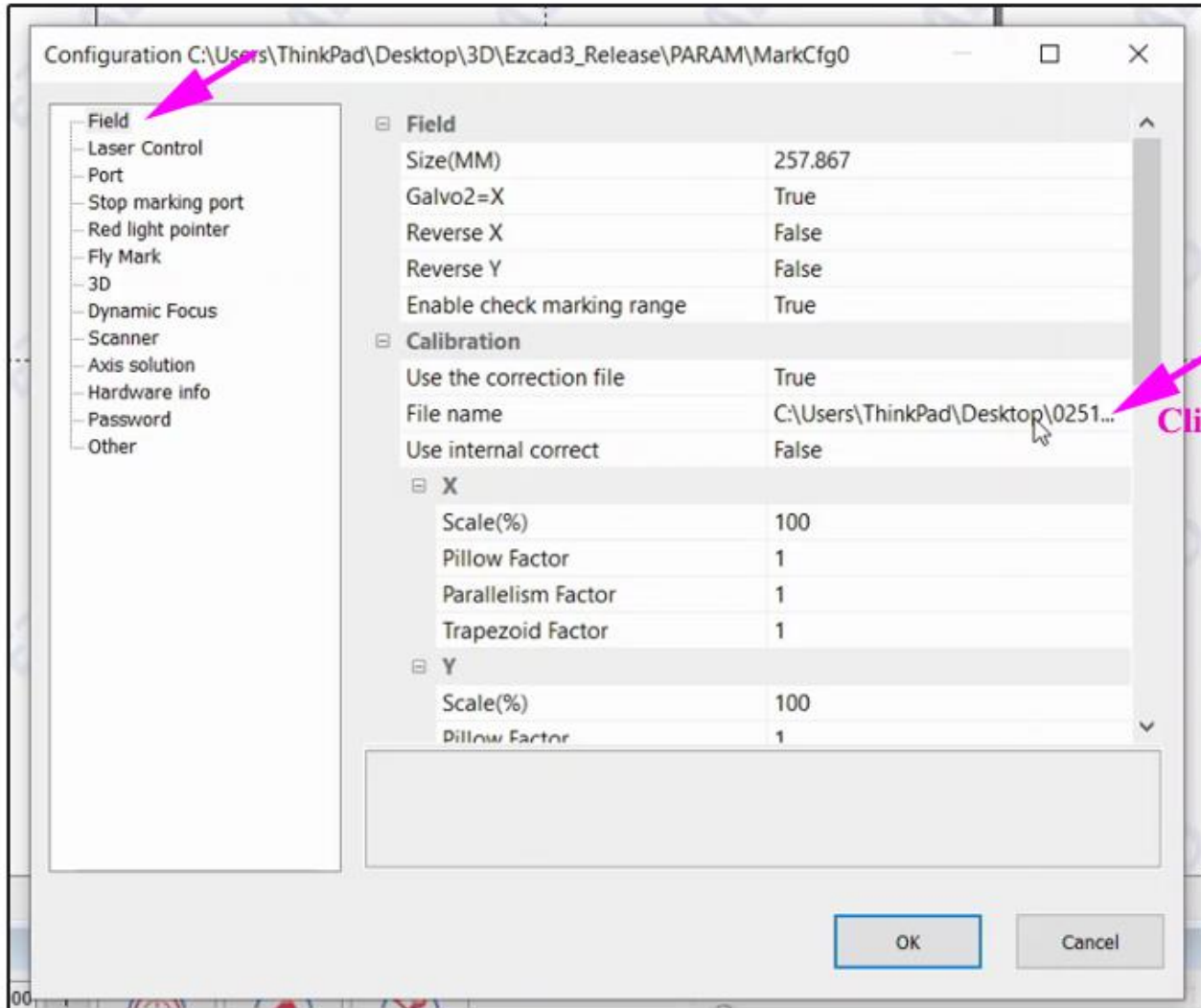
Open the “2.5D” folder from your PC desk:

CalibrationWizardV1.15.6	2023/6/16 17:23	文件夹	
Correction documents	2025/1/6 12:07	文件夹	
DLC drive	2023/6/16 17:22	文件夹	
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MarkCfg0	2025/1/6 12:03	文件	8 KB

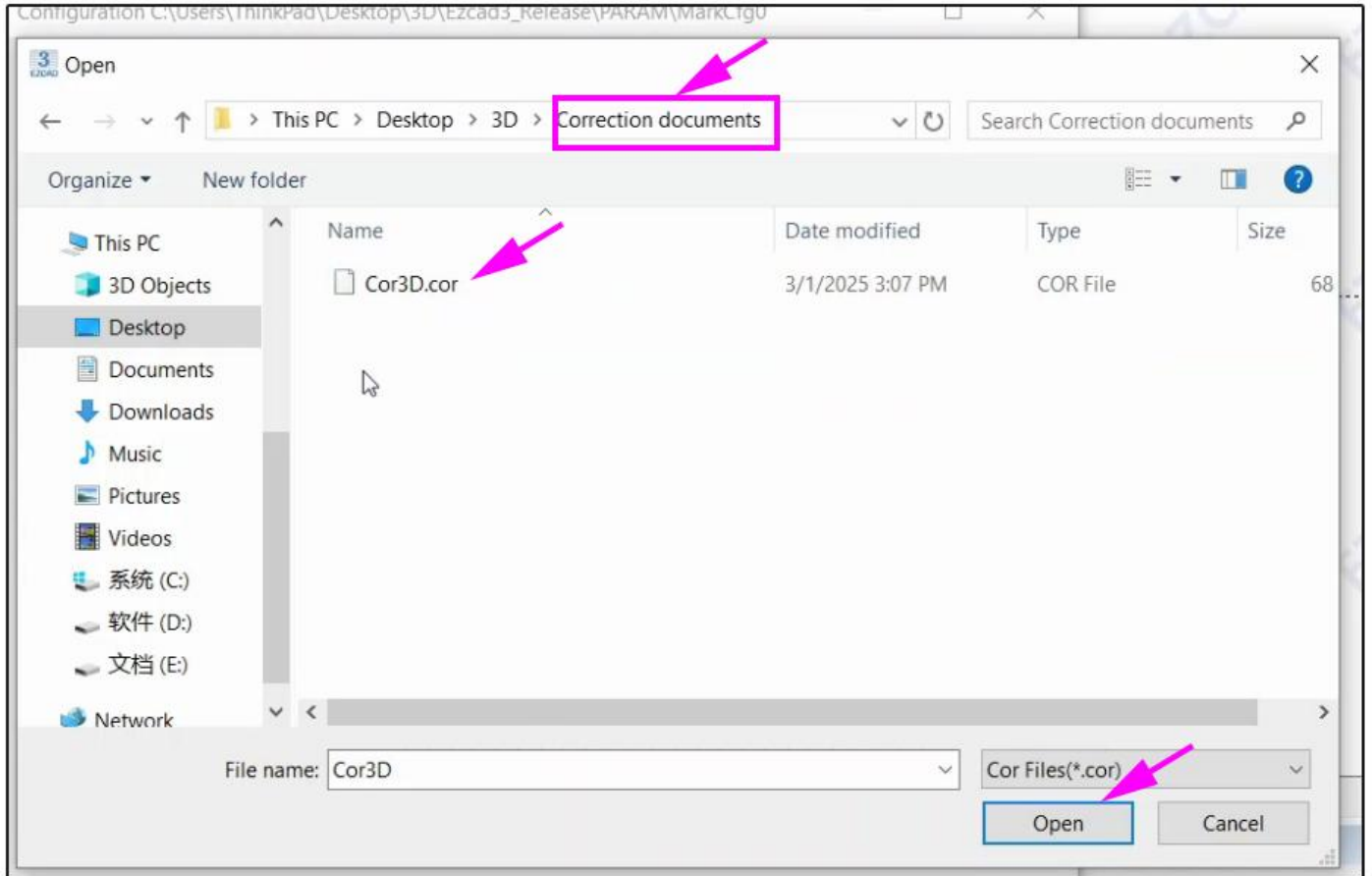
DfjzhControlerDll64.dll	2016/8/12 18:27	应用程序扩展	871 KB
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gt_rn.dll	2020/6/16 11:13	应用程序扩展	738 KB
gts.dll	2020/6/12 15:13	应用程序扩展	1,738 KB

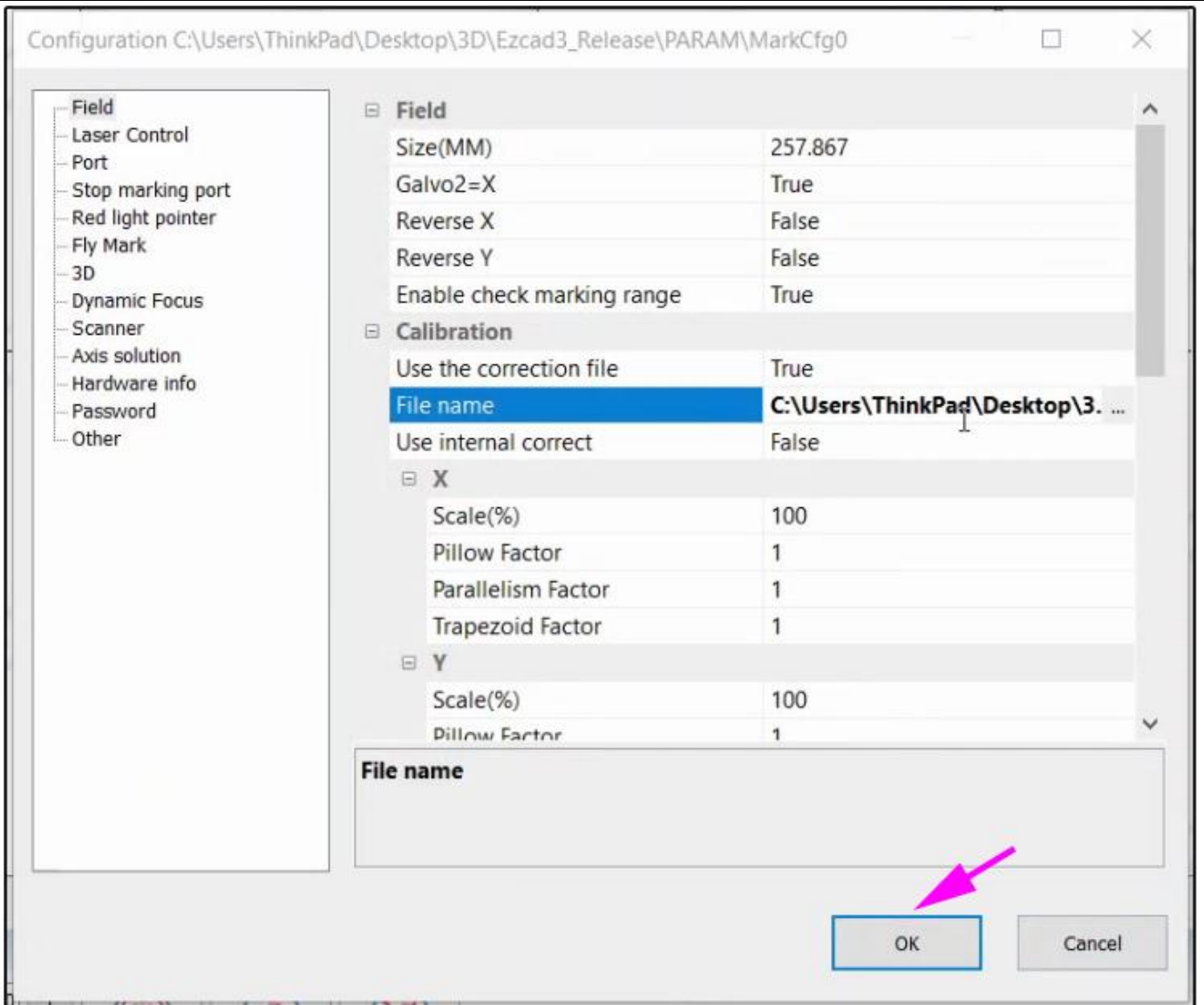
You may see “ The correct file format is error!”, close it, and click Para(F3).





Choose from your 2.5D folder---Correction documents, select "Cor3D.cor" files, click "Open"





For the introduction of the software page, please read the "software Manual"

Refer to these videos:

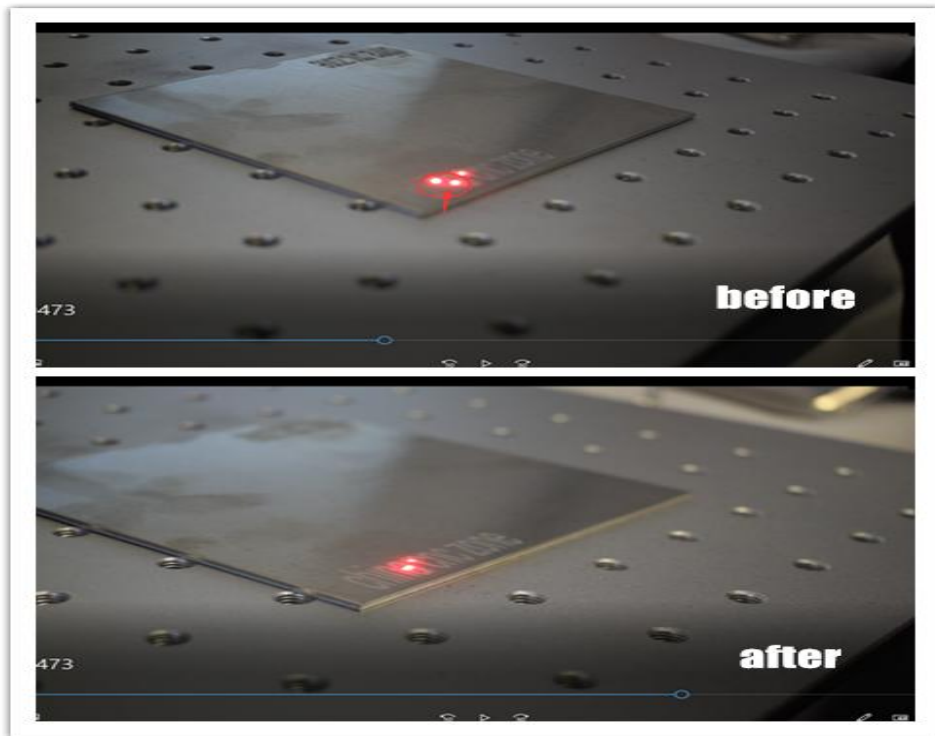
<https://youtu.be/-C9nzYb9MnE> (Software Activation video)



<https://youtu.be/x8RNYQVQ5qw> (Install software driver video)

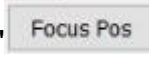
<https://youtu.be/Xxj9-3O341c> (Loading the calibration file video)

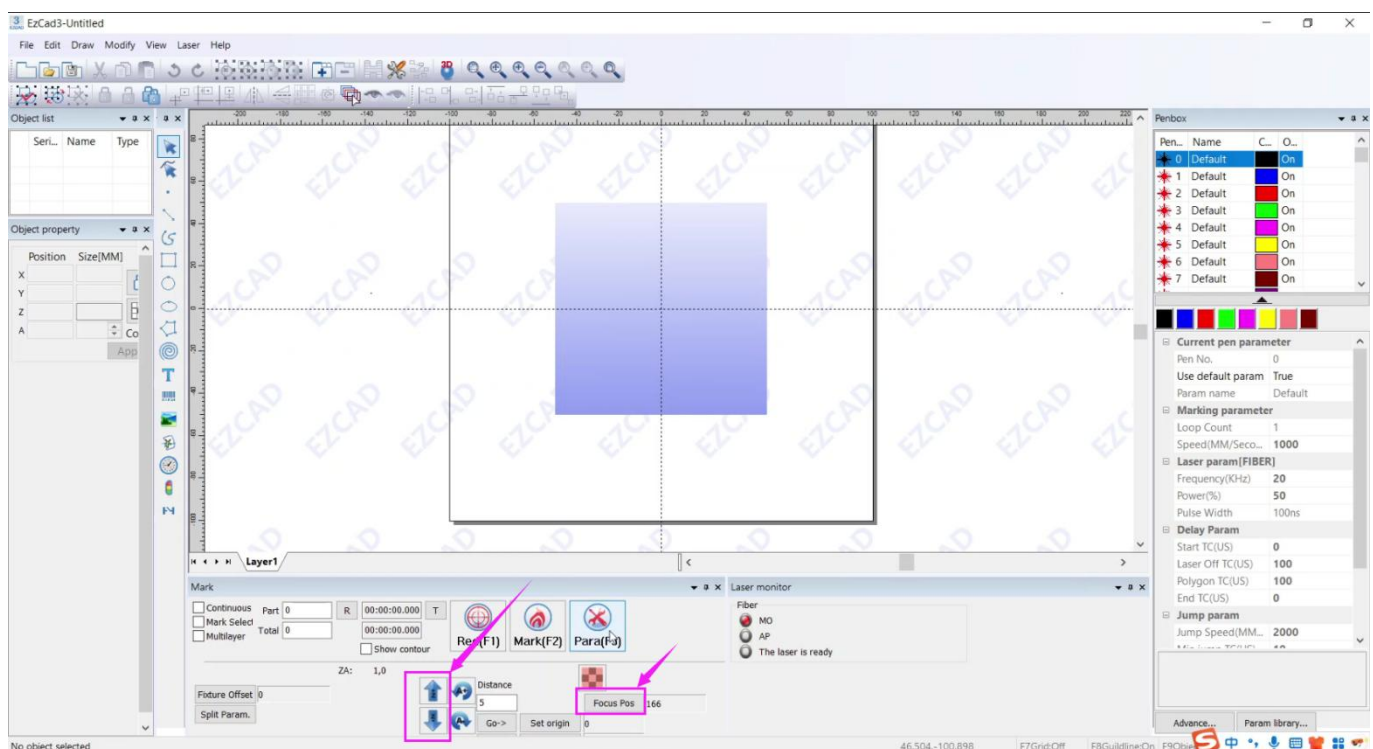
7. Focus setting

When you turn on the machine and complete the software installation, you will see two red light spots on your work table. When the two red lights overlap, it is the best focal length.



Click Up  or Down  on the EZCAD3.0 software page, fill in the distance you want to travel each time on the right, and then check the position of the two red lights each time until they overlap.

Finally, click "Focus Pos"  to confirm that this point is the best focal length, click "OK".



Refer to this video: https://youtu.be/j_suuyFahPo

8. How to find the focus length with new field lens?

For example: if your machine is 200*200mm type, the default factory setting of the machine is 200*200mm. when you want to change to a 110*100mm field lens for marking, there are two focusing methods for you :

1). By changing the original 200*200mm to 110*110mm, the coincidence of red lights can not be used as a standard for judging whether it is the best focal length or not. you should use the best focal length we provided for 110*110mm.

Scan field	Refer focus length
F100 (70x70MM)	110-120MM
F160 (110x110MM)	175-185MM
F254 (175x175MM)	280-290MM
F290 (200x200MM)	320-330MM
F420 (300x300MM)	460-470MM

2). Or find the best focus length by yourself: Marking a "TEXT" file by choosing continue , then spin the lifting wheel till get the brightest spark of laser (or the sharpest voice of laser), then this point is the best focus length.



Finally you adjust double red light overlap by the screw, this point is best focus length.

When the two red dots are coincident, tighten the screws to complete setting. So each time when you put different thickness of materials, just adjust Zaxis by software and make the two dots coincident will be ok.

3) Field lens replacement

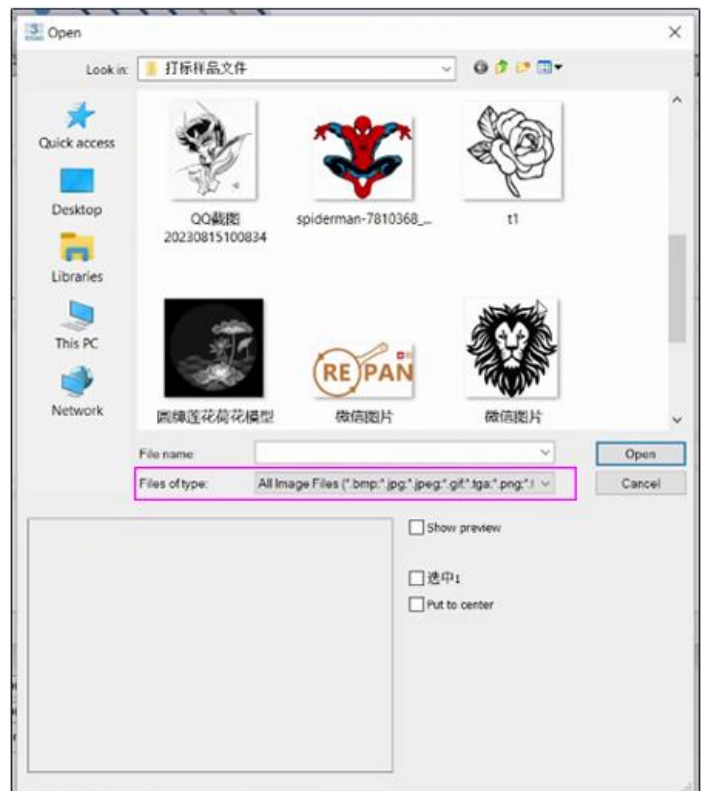
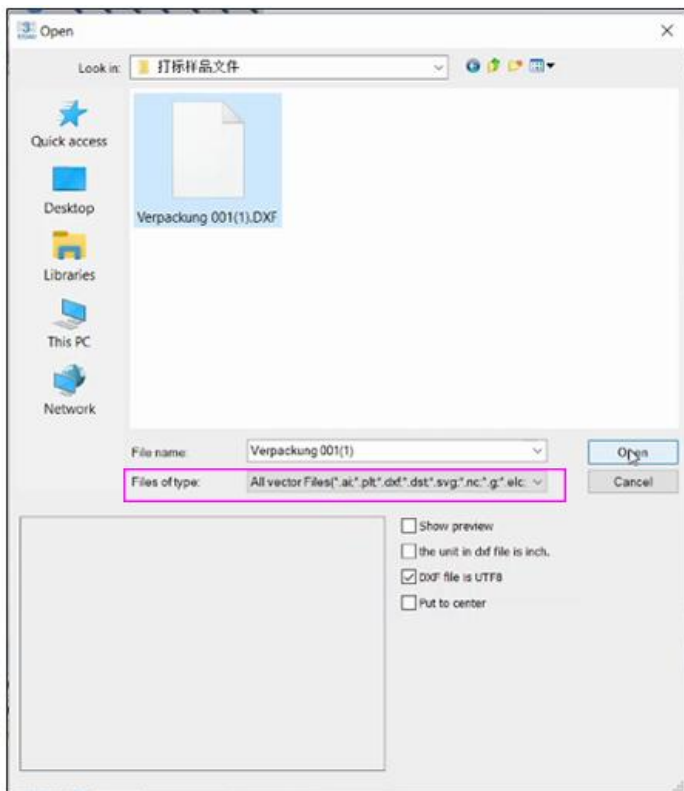
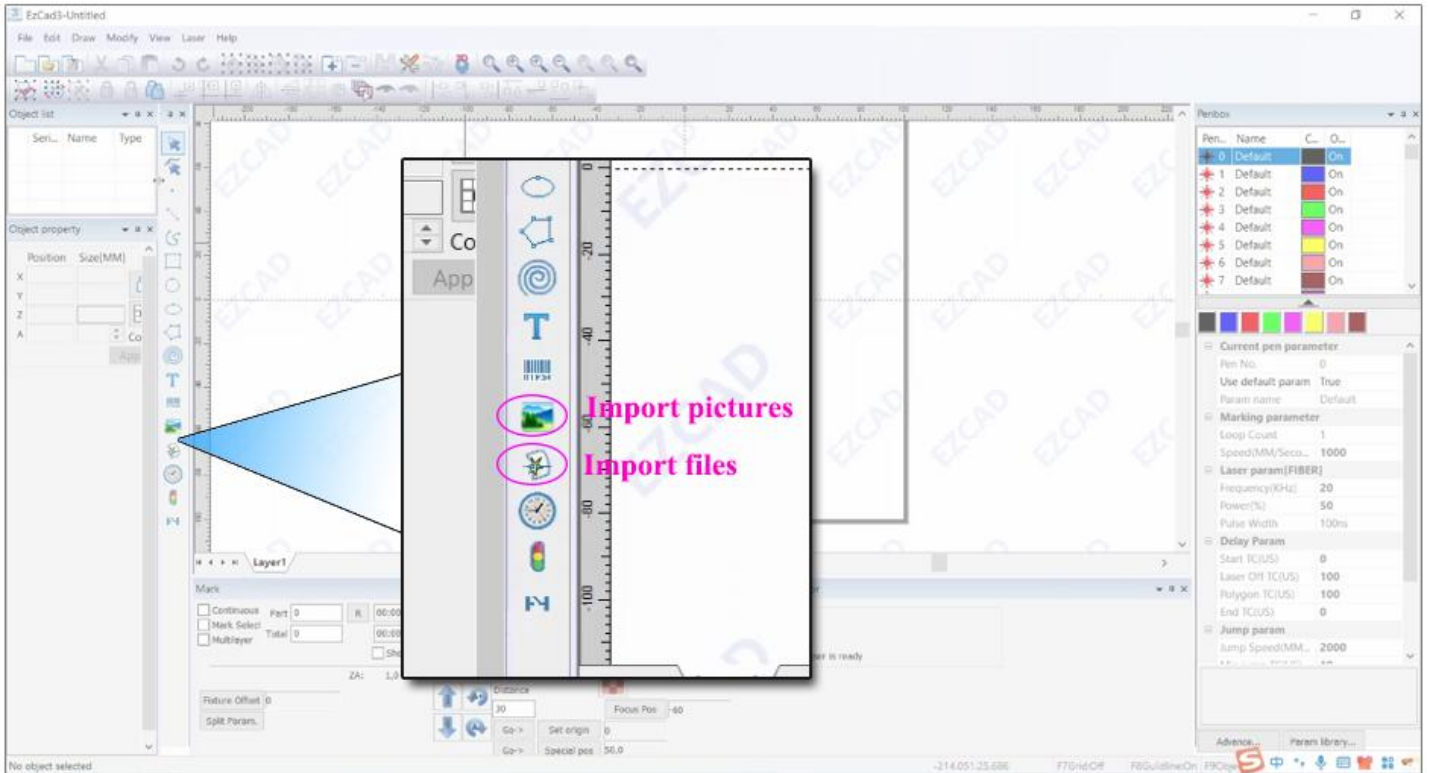
Step1: Hold the field lens and then turn the field lens clockwise

Step2: Software change the filed lens: Click “Files”--Parameter system parameter--change the filed size after replacement

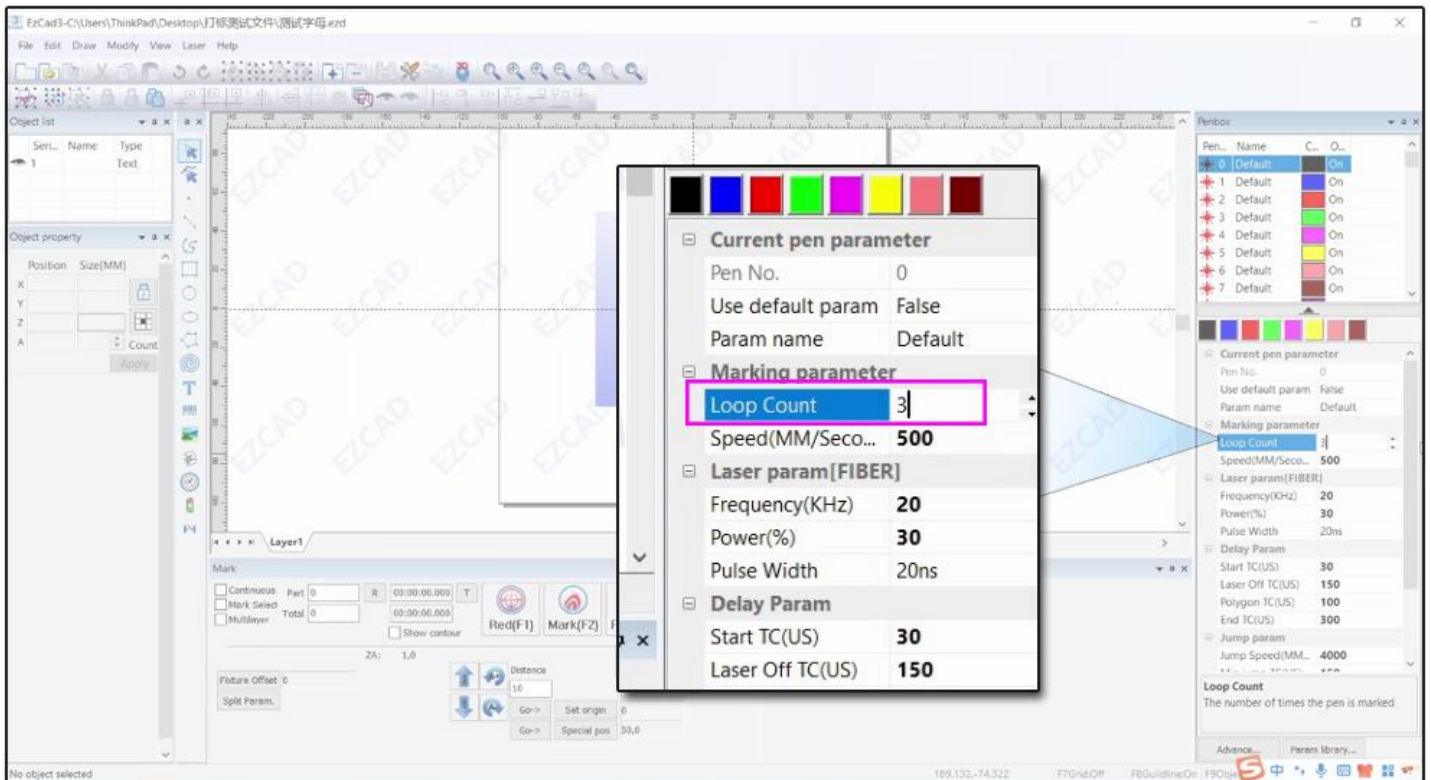
Step3: Readjust the focus(Refer to the focus setting way)



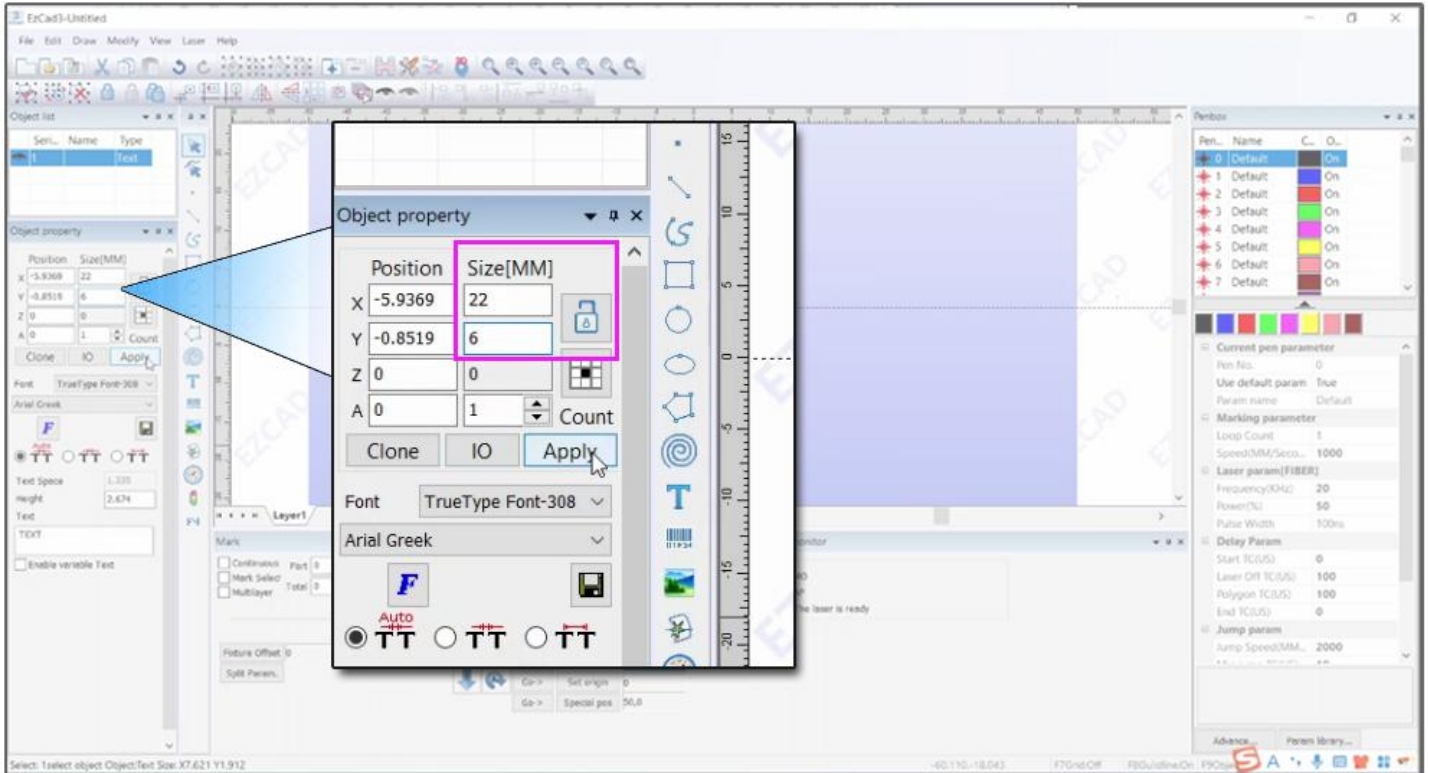
9. How to import Files and pictures



10. How to set up single marking and multiple times marking



11. How to set up marking range



For more information about EZCAD3.0 software, Refer to “EZCAD3 manual” in the folder.

- 📁 CalibrationWizardV1.15.6
- 📁 Correction documents
- 📁 DLC drive
- 📁 Ezcad3_Release
- 📄 Ezcad3 license offline activated-new.pdf
- 📄 Focal length.txt
- 📄 G3 Pro-DLC User manual- two axis.pdf
- 📄 MarkCfg0
- 📄 **EZCAD3 manual-20211208(1).pdf**

12. Marking parameter settings(for reference only)

Product Model	60W	100W	200W
Material	Aluminum,Stainless Steel, Copper		
Speed	2000	1500	800
Power	70	60	80
Frequency	35	70	240
Pulse	500	400	200
Laser on TC			
Other	Default		

Example:JPT MOPA 100W	Stainless steel	Aluminum	Blue Steel
Speed (mm/s)	1000	1200	1000
Interval (mm)	0.01	0.03	0.01
Power	80%	70%	80%
Pulse(ns)	400	500	400
Frequency(kHz)	20	20	20

Cutting parameter material: silver, gold, stainless steel, copper, aluminum			
Product model	100W	200W	300W
Power(W)	90	90	80
Frequency(kHz)	67	130	190
Pulse(ns)	500	500	500
Space line	0.1-0.2mm		
Other	Default		

Color marking parameter reference:



13. Rotary axis setting (if you bought a rotary axis)

Step1: Taking out the rotary axis and connect it to the machine as following picture.



Step2: Fixing the marking material

Place the rotary axis, hold the material by the tool until the material is fixed on the rotary axis.



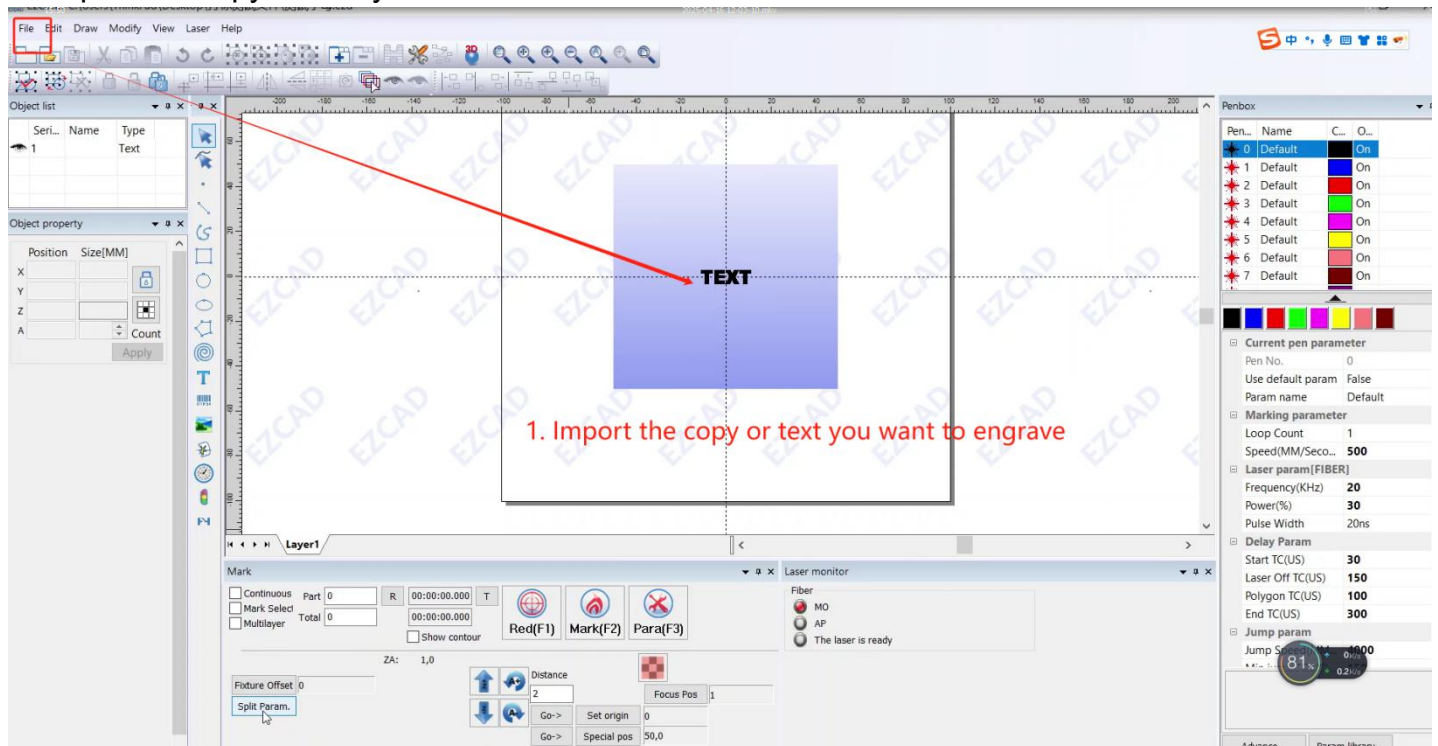
Step 3: Focusing. Adjust the distance between the material and the field lens until the two points coincide. (Note: EZCAD3.0 software adjust the distance by software ↑ ↓)



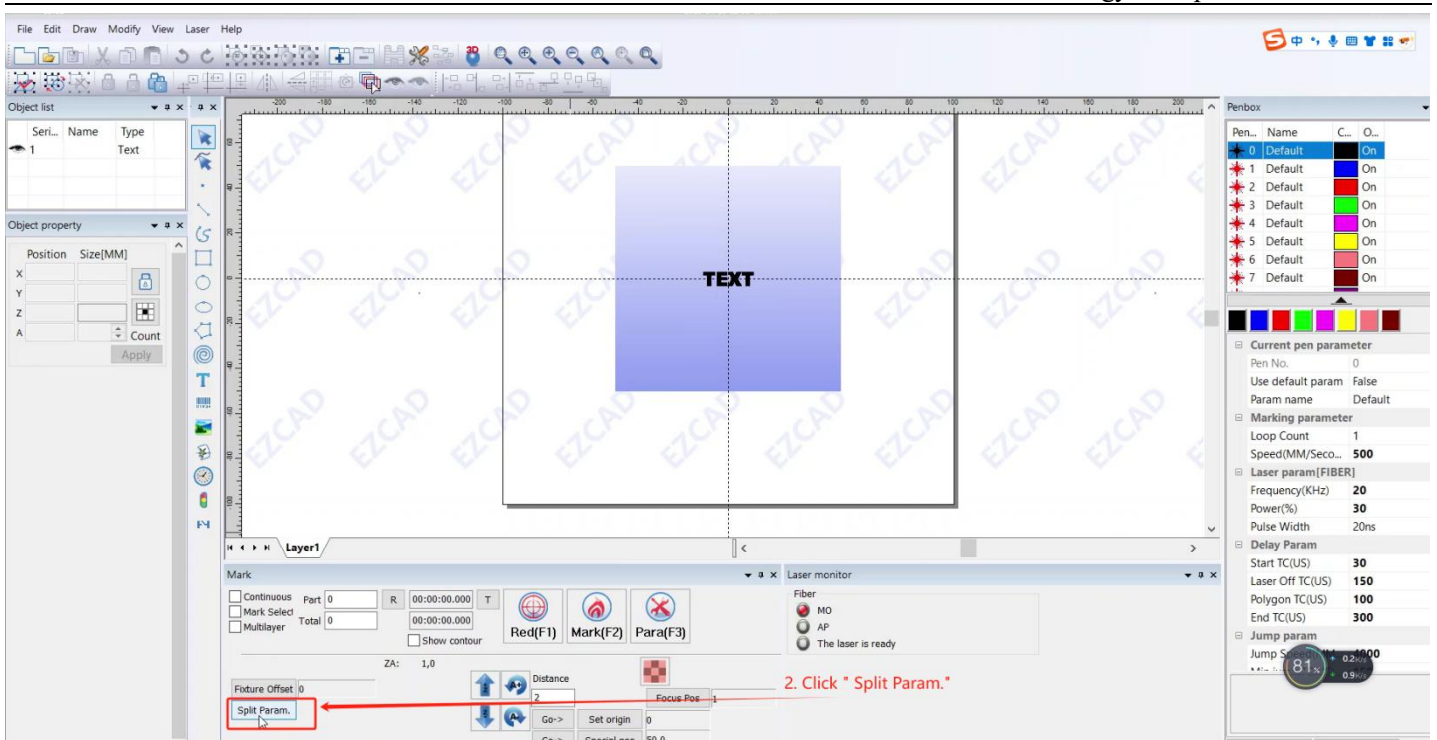
14. Doing marking on rotary axis

Please note: First, turn off the power, then plug in the rotating shaft, and finally turn on the power again.

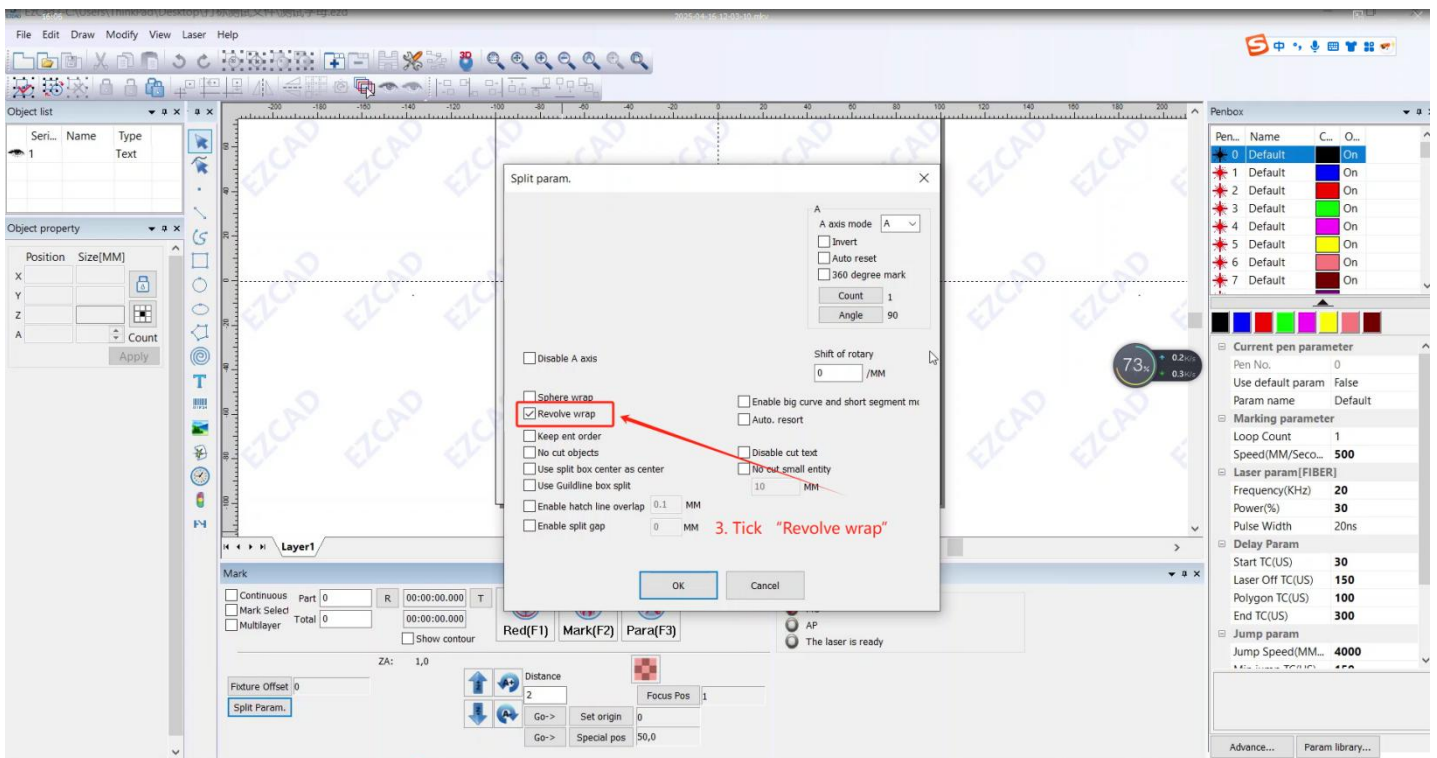
1. Import the copy or text you want to mark



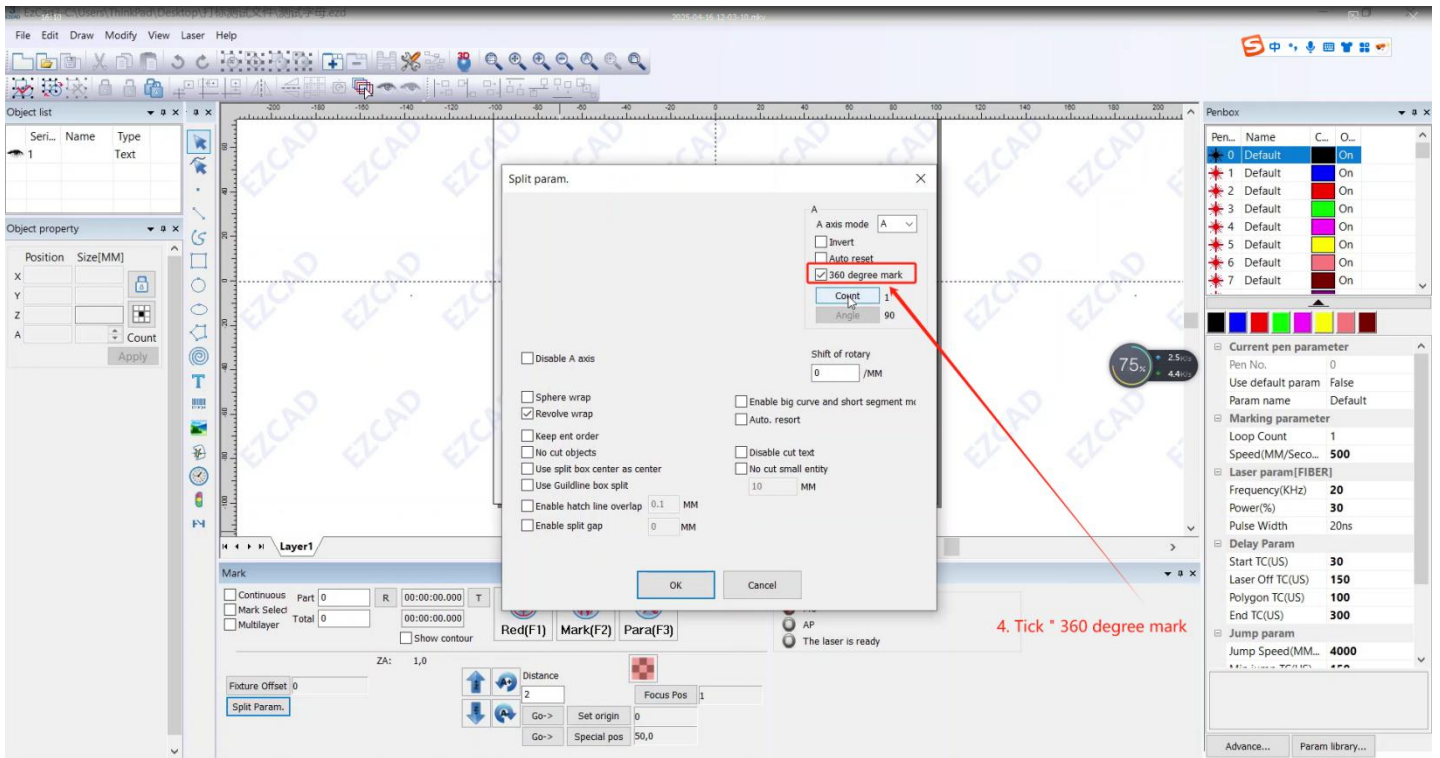
2. Click " Split Param. "



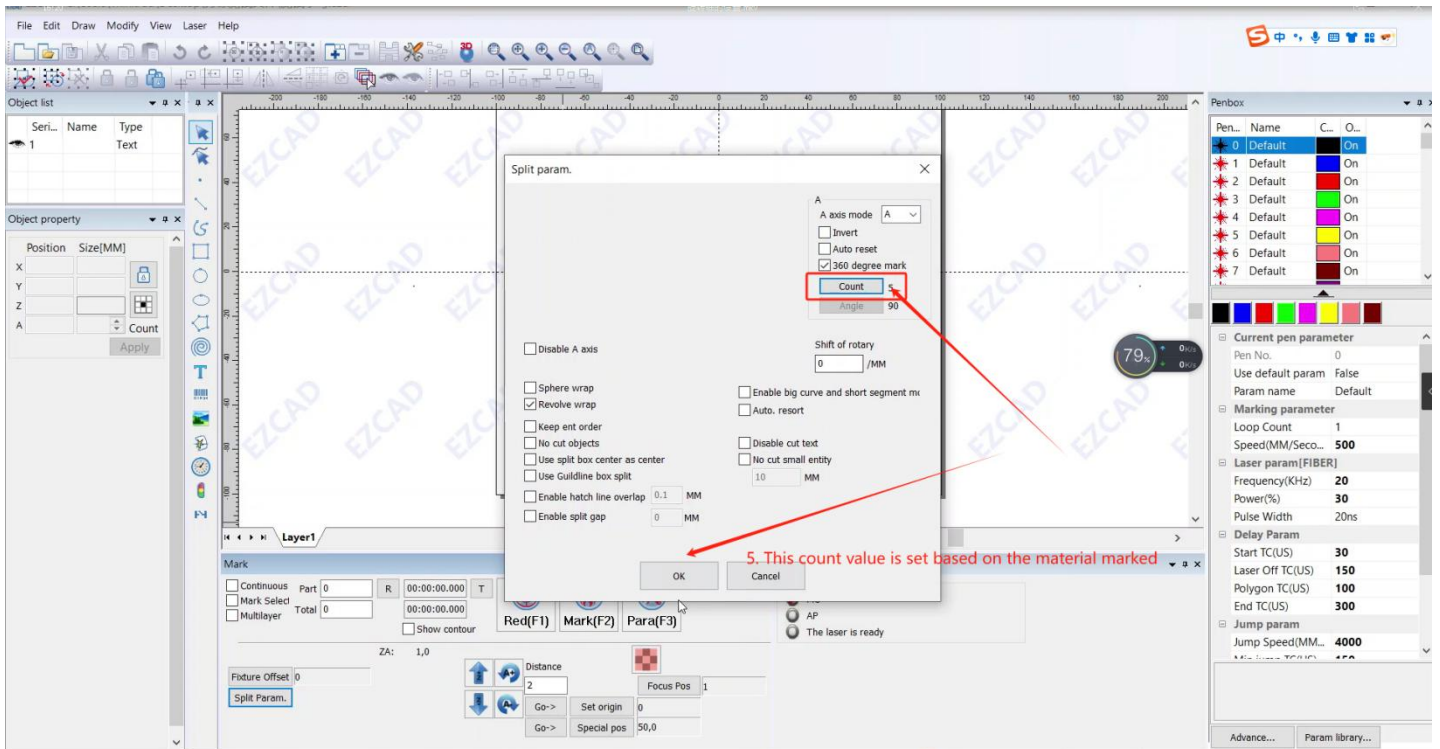
3. Tick "Revolve wrap"



4. Tick "360 degree mark"



5. This count value is set based on the material marked



15. Laser source parameter

(The specific laser parameters are determined by the model you purchased.)

Product Model		YDFLP-E2-60-M7-M-R	YDFLP-E2-200-M7-M-R	YDFLP-E2-100-M7-M-R
M ²		< 1.5	< 1.6	< 1.6
Armored Cable Length	m	3	5	3
Nominal Average Output Power	W	> 60	> 200	> 100
Maximum Pulse Energy	mJ	2	1.5	1.5
Pulse Repetition Rate Range	kHz	1 ~ 4000	1 ~ 4000	1 ~ 4000
Pulse Duration	ns	2 ~ 500	2 ~ 500	2 ~ 500
Galvo Scanner		SINO-GALVO SG7110	SINO-GALVO SG7110	SINO-GALVO SG7110
Marking Speed		5000mm/s	5000mm/s	5000mm/s
Positioning speed		8000mm/s	8000mm/s	8000mm/s
Output Power Stability	%	< 5	< 5	< 5
Cooling Method		Air Cooled	Air Cooled	Air Cooled
Supply DC Voltage (VDC)	V	24	48	24
Power Consumption	W	< 330	< 830	< 440
Environmental Supply Current	A	> 13	> 14.6	> 18
Central Emission Wavelength	nm	1064	1064	1064
Emission Bandwidth@3dB	nm	< 15	< 15	< 15
Polarization Orientation		Random	Random	Random
Anti-high Reflection		Yes	Yes	Yes
Output Beam Diameter	mm	7±0.5	7±1.0	7±0.5
Output Power Tuning Range	%	0 ~ 100	0 ~ 100	0 ~ 100
Operation Temperature	°C	0 ~ 40	0 ~ 40	0 ~ 40
Storage Temperature	°C	-10 ~ 60	-10 ~ 60	-10 ~ 60
N.W	kg	4.1	10.5	8.5
Size(L×W×H)	mm	205 × 253.3 × 75	340 × 265 × 100	336 × 255 × 90

16. precautionary note

This device has an output wavelength of 1064nm (invisible light) and an average output power of over 200W. It is classified as a Class IV laser, which not only poses great harm to the eyes but also burns the skin. Its reflected and scattered light may also cause harm to the human body. Therefore, please wear OD4+grade laser protective goggles throughout use.

The irradiance that may incident on the surface of the goggles is 0.01W/m². Do not directly observe the laser output head. It is recommended to wear laser protective goggles throughout the operation!

We prepare this protective goggles for the device, Optical density test results:

wavelength (nm)	optical density
1064	>6



When you don't need this device to work, be sure to keep the laser switch off and inform children to stay away from the device, avoid accidental contact with the danger laser.

17. When your machine no laser out?

When there is no laser out, please check your parameter settings first, especially the pulse width and frequency, which need to correspond one to one.

YDFLP-E2-100-M7-M-R		YDFLP-E2-200-M7-M-R		YDFLP-E-300-M7-M-R	
Width pulse(ns)	Frequency(kHz)	Width pulse(ns)	Frequency(kHz)	Width pulse(ns)	Frequency(kHz)
2	2960	2	4000(>35W)	2	20000
4	2160	4	4000(>55W)	4	16000
6	1400	6	4000(>90W)	6	10000
9	960	9	3000	9	4000
13	580	13	2100	13	3600
20	420	20	1600	20	3000



30	300	30	1100	30	1900
45	210	45	700	45	1700
60	190	60	550	60	1200
80	150	80	450	80	1050
100	130	100	350	100	800
150	85	150	300	150	450
200	75	200	240	200	350
250	67			250	290
350	67			350	220
500	67			500	190

18. Q&A

Q: What should I do if the U-Disk is not found in the package?

A: This is because the customs took out the U disk during customs clearance.

Please contact customer service in time and leave your email. We will send you the U-Disk Files.

Q: If the computer prompts that file has a virus when I install the JCZ software, what should I do?

A: You must close all anti-virus software on your computer before installing the software.

Q: When I install the Ezcad3.0 software, it shows "The correct file format is error!" What should I do?

A: Because you need to load the calibration file, check machine manual.

Q: What should I do if the effect of my marking is too shallow?

A: You can choose continuous marking. If you're using 300x300mm field lens, please change to 110x110mm field lens.

Q: I bought a machine with a 300x300mm field lens, can I change other size field lens?

A: Yes. You can buy another working area lens from us, contact us please.

Q: Can this 2.5D machine make relief engraving? deep engraving?

A: Yes, this machine can do relief effect well, if you want deep engraving, according to your power, marking times.

Q: Can the 3D machine be compatible with Lightburn?

A: No. Because the 3D machine is EZCAD 3 software, it does not support lightburn.