

Uv Marking Machine - Basic Use

《紫外打标机-基本使用》

LUV-5W

introduction

前 言

This instruction is intended for the basic use and maintenance of the equipment (especially the order of the UV laser) and

A quick guide to the basic setting of parameters, the specific use of the software, please refer to the marking machine software manual.

此说明，只针对于此设备的基本使用及维护保养，（特别是紫外激光器的顺序）和

参数的基本设定的一个快速指南，软件的具体使用，请参考打标机软件说明书。

一、Complete machine parts 整机部件



1. Outline drawing of the whole machine -- cabinet type

1. 整机外形图--柜式



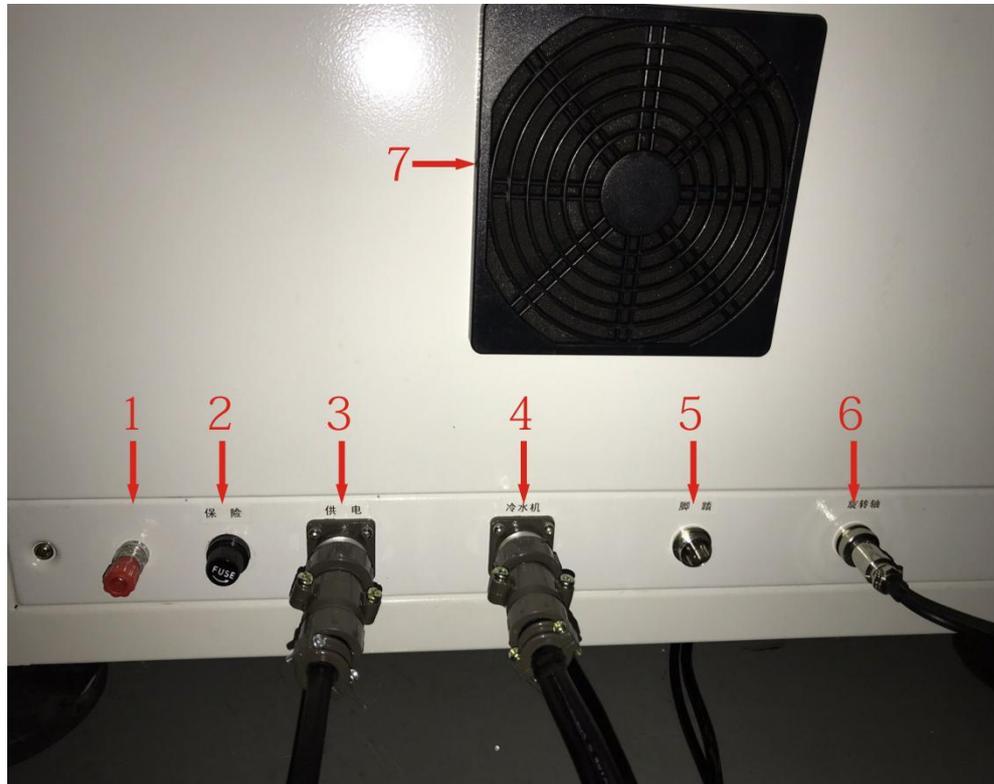
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1. Outline diagram of the whole machine -- flight model

1.整机外形图--飞行款



2. Rear part of the equipment

2.设备后部



1 pick is located in1 接地处

2 the fuse2 保险丝

3 Total power supply input of the machine (220V)

3 机器总供电输入（220V）

3. Power supply and output of water tank, water protection

4 水箱供电输出、水保护

5 Foot switch 5 脚踏开关

6 axis of rotation (optional)6 旋转轴(选配)

7 Cooling fan7 散热风扇

3.Field mirror (focusing mirror)

3.场镜（聚焦镜）

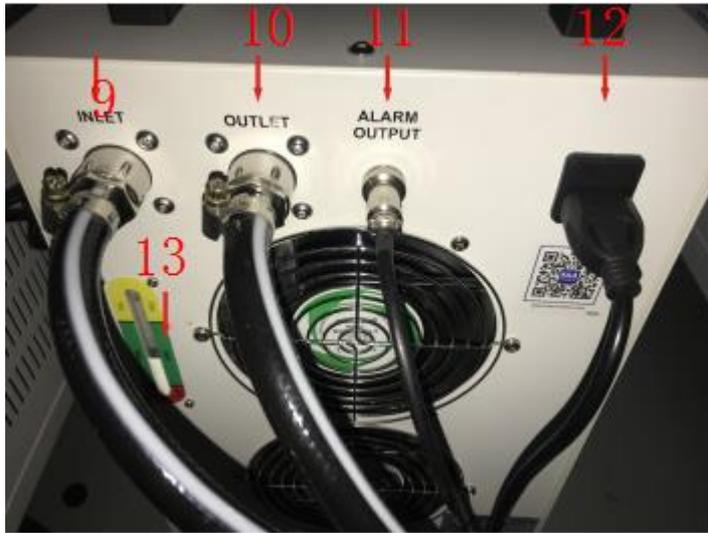


8. Field mirrors, which need to be regularly checked for contamination, should be cleaned regularly (clean them with a soft cloth dampened with alcohol, and then gently dry them with a dry cloth).

8.场镜，需要经常检查场镜是否污染，定期清理（用软的眼镜布沾着酒精清理，然后用干的眼镜布轻轻擦干）。

4. Equipment accessories: Water cooler (the water temperature is generally set at 25°C)

4.设备附件：水冷机（水温设定一般在 25°C）



9.Water cooler return outlet 9 .水冷机回水口

10.Water cooling machine outlet 10 水冷机出水口

11.Water protection interface of water cooler

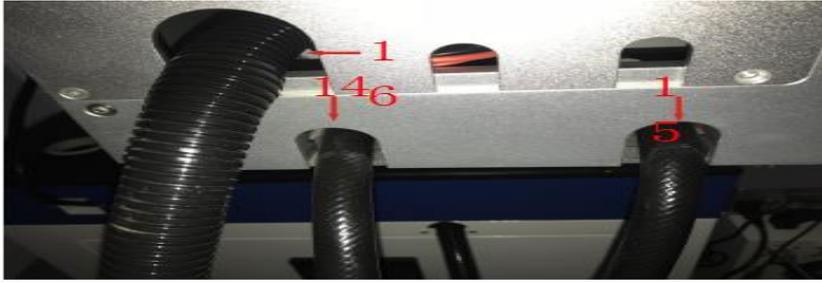
11 水冷机水保护接口

12.Water cooler power supply input

12 水冷机供电输入

13.Display water level of water cooler

13 水冷机水位显示



14 Laser water cooling (does not distinguish water in and out)

15 laser water cooling (does not distinguish between incoming and outgoing water)

16.Laser and galvanometer power supply line access

14 激光器水冷却（不区分进出水）

15 激光器水冷却（不区分进出水）

16 激光器及振镜电源 线号接入



17Water cooler screen

(Need to keep both sides of the screen clean and internal cleaning, regular cleaning.It is recommended to replace the coolant once a month.)

17 水冷机滤网

（需要保持两侧滤网清洁及内部清洁，定期清理。冷却液建议一个月更换一次）

4. Equipment accessories: water cooler

The basic ratio of the laser floor temperature to the water cooler temperature is set

4.设备附件：水冷机

激光器底板温度与水冷机温度设定基本比例值

The floor temperature shall be kept within the range of ± 0.1 degree of the temperature value recorded in the Test Report.

When the measured floor temperature of the laser is greater than the floor temperature recorded in the Test Report, the set temperature of the chiller shall be lowered accordingly. On the contrary, when the measured floor temperature of the laser is less than the floor temperature recorded in the Test Report, the set temperature of the chiller shall be raised accordingly.

Guidelines for temperature regulation process:

At the beginning, generally set the setting temperature of the chiller as 1.5 degrees lower than the bottom plate temperature recorded in the Test Report (this is an empirical value and should be set according to the actual situation of the customer);

Then, after the laser runs for a period of time, the set temperature of the chiller can be raised or lowered according to the observed baseplate temperature.

Finally, the baseplate temperature of the laser is stabilized within the range of ± 0.1 degree recorded in the Test Report.

底板温度应保持在《测试报告》所记载的温度值的 ± 0.1 度的范围内。

当激光器的实测底板温度大于《测试报告》所记载的底板温度值时，相应调低冷水机的设定温度，反之，当激光器的实测底板温度小于《测试报告》所记载的底板温度值时，相应调高冷水机的设定温度。

温度调节过程指引：

开始时，一般将冷水机的设定温度设定为：比《测试报告》所记载的底板温度低 1.5 度(此为经验值，应根据客户实际情况设定)；然后，激光器运行一段时间后，再根据实际观察到的底板温度，调高或调低冷水机的设定温度；

最终使激光器的底板温度稳定在《测试报告》所记载的底板温度值 ± 0.1 度的范围内。

5. Equipment accessories: goggles 5. 设备附件：护目镜



This is the drawing, subject to the actual object.

(If there is a difference in color between different types of batches, it is normal.)

此为配图，以实物为准。

(批次不同型号颜色有所差异为正常)

Caution: Avoid exposing eyes and skin to specular and diffuse radiation.

In the maintenance mode, the maintenance personnel must wear laser protective glasses. The laser protective glasses used should meet the requirements of European standard EN 207a1:2002.

注意：避免将眼睛和皮肤暴露于镜面反射及漫反射辐射下。

维护模式中维护人员必须佩戴激光防护眼镜，使用的激光防护眼镜应符合标准欧洲标准 EN207A1: 2002 要求。



The wavelength of this type of ULTRAVIOLET laser is 354.7nm,

The selection of goggles can be included in this band

本类紫外激光器的波长为 354.7nm,

护目镜选取包括在此波段即可



Even wearing laser protective glasses can not directly face the strong light and laser

Laser protective glasses are made of polymer material, and do not soak or scrub them with organic solvents

Laser protective glasses must be replaced when they expire 即使佩戴激光防护眼镜也不能直接正视强光和激光

激光防护眼镜由高分子材料构成，禁止用有机溶剂浸泡和擦洗

激光防护眼镜的超过使用有效期时必须更换

二.Starting sequence of equipment 二.设备开机顺序



According to the picture order :1-2-3-4, turn on the device switch
(the computer can be turned on in advance)

1. Master switch;
2. Emergency stop switch;
3. Switch of main board and galvanometer;
4. Water tank, laser switch;(After being turned on, wait for the water temperature to rise to the set temperature of 25°. The UV laser has an independent switch

Need to wait until the water temperature rises to the set temperature before turning on)

按照图片顺序:1-2-3-4,开启设备开关（电脑可以提前开启）

- 1.总开关;
- 2.急停开关;
- 3.主板、振镜开关;
- 4.水箱、激光开关;(开启后,等待水温升到设定温度 25°,紫外激光器还有独立开关

需要等到水温升到设定温度后在开启)

二、 Starting sequence of equipment 二.设备开机顺序



5. Laser power switch 5.激光器电源开关

6.LBO working status indicator 6.LBO 工作状态指示

7.LD current switch 7.LD 电流开关

8. Q-sw current switch 8.Q-SW 电流开关

5. After the water temperature rises to the set temperature of 25°, turn on (5: power switch) -- wait until (6:LBO indicator light) is off for 3-5 minutes

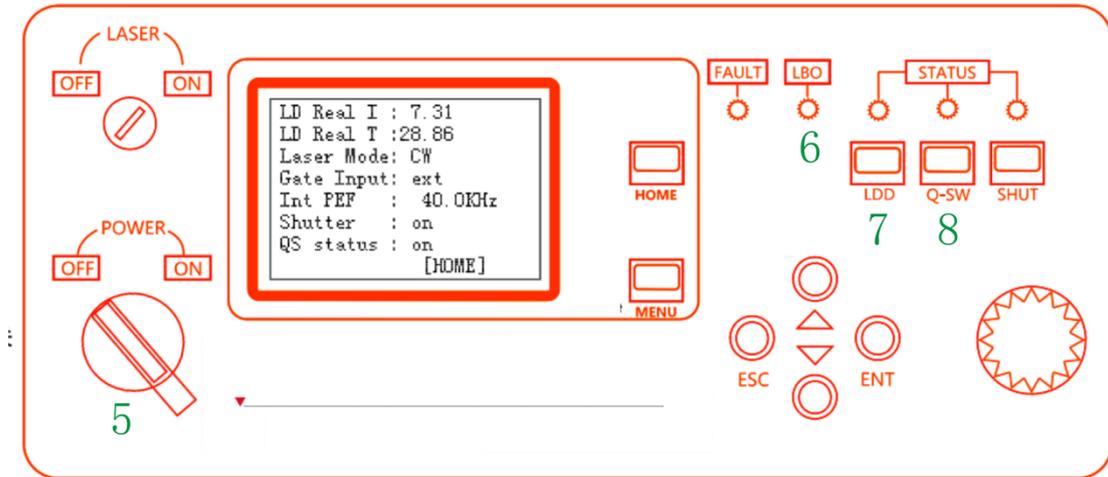
-- Press (7:LDD, 8:Q-SW switch), normally need to wait 10-30 minutes, after the power is stable, start marking.

5.水温升到设定温度 25°后，开启（5:电源开关）——等到（6:LBO 指示灯）3-5 分钟熄灭后

——按下（7:LDD、 8:Q-SW 开关），正常需要等待 10-30 分钟，功率稳定后，开始打标。

Equipment shutdown sequence: reverse to boot sequence

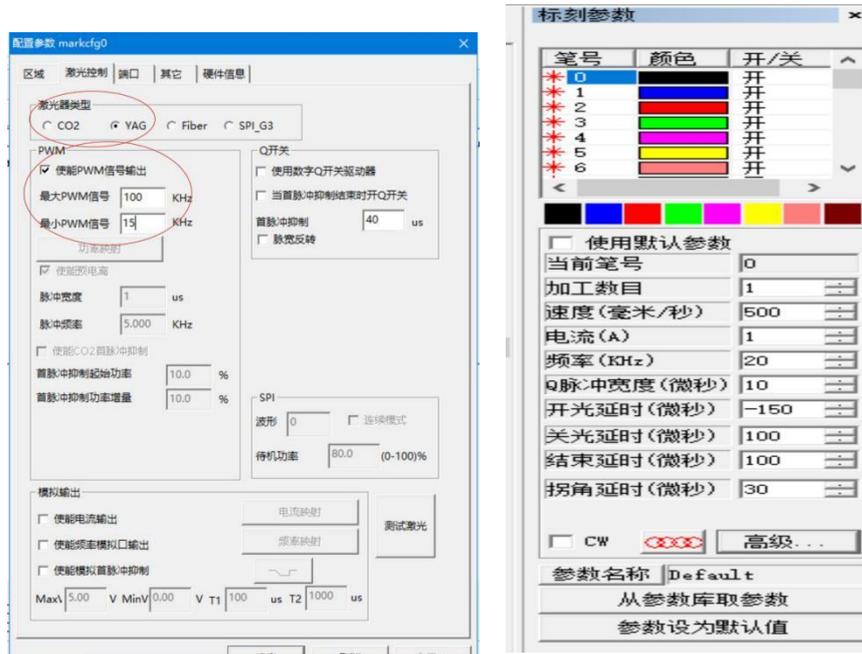
三.设备关机顺序：与开机顺序相反



Press "7 LDD" and "8 Q-SW" -- wait until the display "LD Real T" -- the current drops to 0, turn off the 5 power switch -- then turn off in sequence: 4--3--2-- the computer -- and finally turn off 1

按下“7 LDD”和“8 Q-SW”--等到显示屏的“LD Real T”（ 箭头所指位置）--电流下降到 0，关闭 5 电源开关--再按顺序关闭：4--3--2--电脑--最后关闭 1。

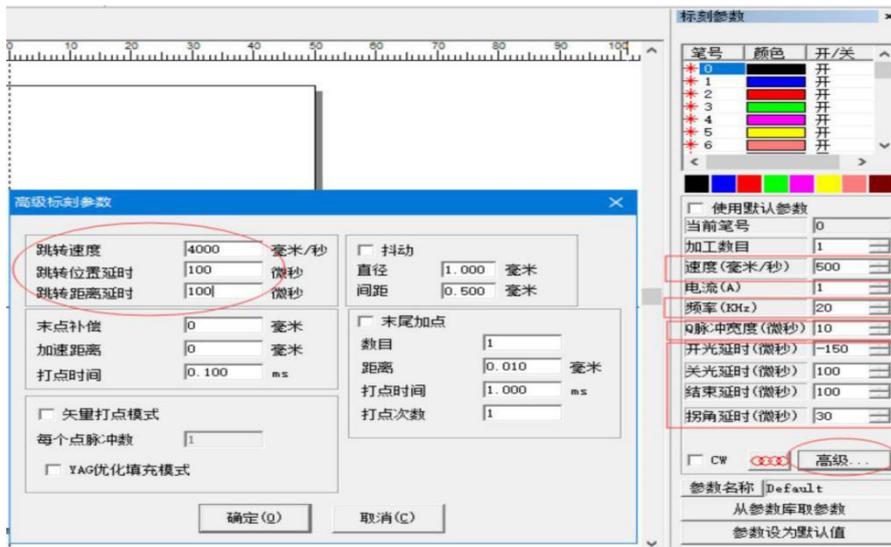
四、Basic setting of parameters 四.参数的基本设定



Ultraviolet laser, when using the golden orange marking card, the parameter F3,
 The laser type is set as YAG, with PWM Max: 200 and min: 15.
 Parameters can be controlled internally: laser direct control;
 External control: Frequency and pulse width are set by software (power setting item is invalid)
 We usually choose external control:
 Frequency (KHz) : 15-100
 Q pulse width (US) : 1-10
 (Automatically defined according to the product, frequency X pulse width =1000, namely: frequency is 20, pulse width is 50; Frequency 40, pulse width 25; Frequency: 20, pulse width: 1.
 The power is related to "frequency" and "Q pulse width"; The larger the pulse width is, the smaller the power will be.
 When <40KHz, 1us pulse width is the maximum power, and 25us pulse width is the minimum power >
 When <20KHz, 1us pulse width is the maximum power, and 50us pulse width is the minimum power >
 外激光器, 使用金橙子打标卡时, 参数 F3,
 激光器类型设置为 YAG, PWM 最大: 200, 最小: 15。
 参数可内控: 激光器直接控制;
 外控: 通过软件设置频率、脉宽 (功率设定项无效)
 我们一般都选择为外控:
 频率 (KHz) : 15-100
 Q 脉冲宽度 (us) : 1-10
 (根据乘积自动限定, 频率 X 脉宽=1000, 即: 频率为 20, 脉宽 50; 频率为 40, 脉宽 25; 频率为 20, 脉宽 1。)

功率跟“频率”“Q 脉冲宽度”有关; 频率不变的时候, 脉宽越大, 功率越小。
 <40KHz 时, 脉宽 1us 为最大功率, 脉宽 25us 为最小功率>
 <20KHz 时, 脉宽 1us 为最大功率, 脉宽 50us 为最小功率>

三、Basic setting of parameters



Reference for parameters of different materials (refer to 7.Matters needing attention)

Glass: 8x beam lens, small format lens,

Frequency: 20, pulse width: 1, speed: 100-300.

Plastic, metal: 6 times expansion beam lens, small format lens

Frequency: 20, pulse width: 35-45, speed: 500;

Metal whitening: frequency: 20, pulse width: 25, speed: 1000;

Metal blackening: frequency is 20, pulse width is 25, speed is 100, defocus;

Peeling off paint: 6x, small lens, dense padding,

The frequency is 30, the pulse width is 30, the speed is 500

If the speed is set fast, the frequency is increased and the pulse width is reduced.

不同材料的参数参考（可参照七.注意事项）

玻璃：8 倍扩束镜，小幅面镜头，

频率为 20，脉宽 1，速度 100-300；

塑料、金属：6 倍扩束镜，小幅面镜头

频率为 20，脉宽 35-45，速度 500；

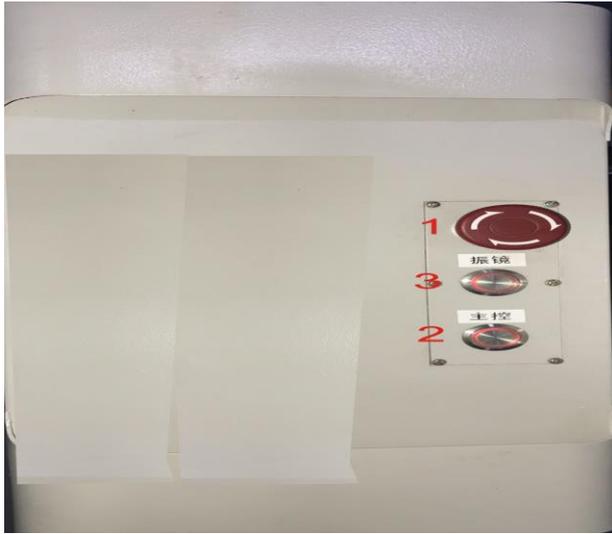
金属打白：频率为 20，脉宽 25，速度 1000；

金属打黑：频率为 20，脉宽 25，速度 100，离焦；

剥掉油漆：6 倍，小镜头，密集填充，

频率为 30，脉宽 30，速度 500

如果速度设置的快，则提高频率，降低脉宽。



Uv laser marking machine -3W flight equipment boot sequence

紫外激光打标机-3W 飞行款设备开机顺序

1. Emergency stop switch
2. Main control switch
3. Switch of galvanometer

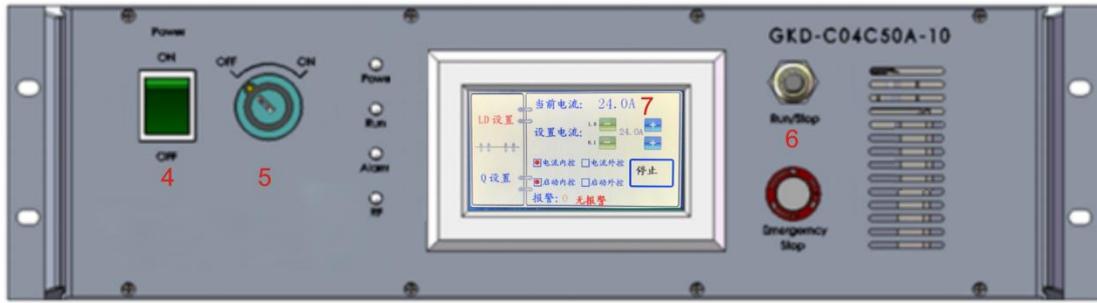
Turn on the device switch in order of picture 1, 2 and 3.

(After turning on the switches 1, 2 and 3, wait for the water temperature to rise to the set temperature of 25°. There is also an independent switch on the ULTRAVIOLET laser, which needs to be turned on after the water temperature rises to the set temperature.)

- 1、急停开关
- 2、总控开关
- 3、振镜开关

按照图片顺序 1、2、3 开启设备开关。

（开启 1、2、3 开关后，等待水温升到设定温度 25°，紫外激光器还有独立开关，需要等到水温升到设定温度后，再开启）



After the water temperature rises to the set temperature, turn on the laser (4 power switch) -- (5 key switch) -- (6 laser start/stop switch LDD) -- Wait until (7 normal use after the current is stable)

8 for emergency stop switch, generally do not need to move.

水温升到设定温度后，开启激光器（4 电源开关）——（5 钥匙开关）——

（6 激光启动/停止开关 LDD）——等到（7 当前电流稳定后正常使用）

《8 为急停开关，一般不需要动》。

Device shutdown sequence 设备关机顺序



Press (6 stop/start switch) -- wait until (7 current drops to 0) --
Off (5 key switch) -- Off (4 power switch) -- Off (3, 2, 1 switch)
8 for emergency stop switch. Generally no need to move.

按下（6 停止/启动开关）——等到（7 当前电流降为 0）——
——
关闭（5 钥匙开关）——关闭（4 电源开关）——关闭（3、
2、1 开关）
《8 为急停开关。一般不需要动》。



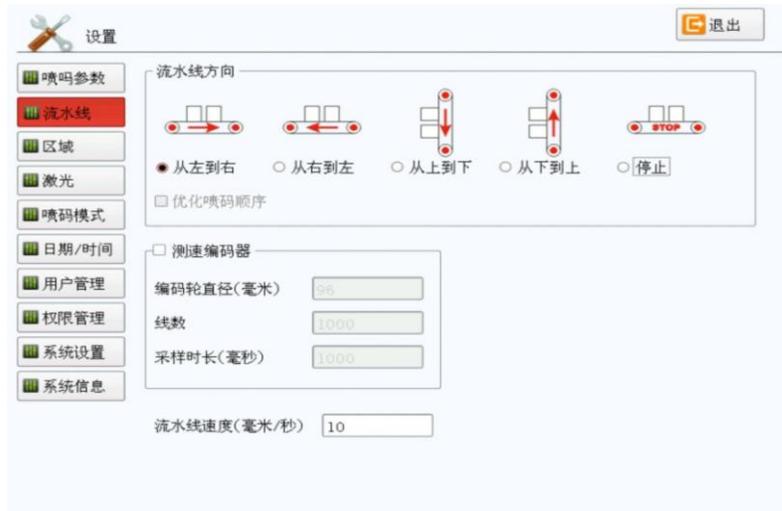
Encoder installation diagram

The specific installation location needs to be based on the site conditions

编码器安装示意图

具体安装位置需要根据现场情况来安装

Pipeline mode setting 流水线模式的设定



First click on the top right corner of the software Settings

先点击软件右上角设置

Set the software assembly line direction according to the actual assembly line direction.

"From left to right" or "from right to left"

There are very few top to bottom or bottom to top.

根据实际流水线方向，设定软件流水线方向。

一般多为“从左到右”或“从右到左”

很少有从上到下或从下到上。



Code spraying mode: pipeline mode

Trigger level: Low level trigger

喷码模式：管线模式

触发电平：低电平触发

Setting of marking parameters



Marking parameters need to be set according to the material and line speed.

Generally, items 1, 2, 3, 4 and 5 are the main parameters.

(5 laser types are different, and this will not be used in general).

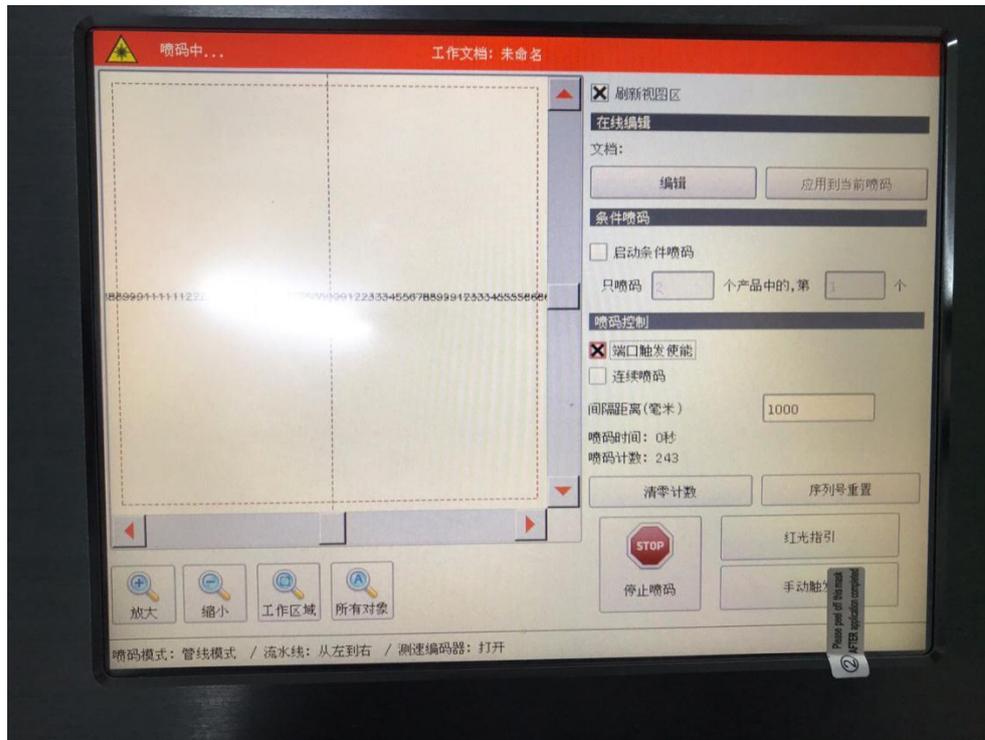
6, 7, 8, 9, 10 items generally do not set, (generally set to 50 will do).

标刻参数需要根据材料和线体速度进行设定。

一般 1、2、3、4、5 项为主要参数。

(5 项激光器类型不同，一般会不使用此项)。

6、7、8、9、10 项一般情况不做设定，(一般都设为 50 即可)。



Port trigger enablement: Selection required

端口触发使能：需要选择。

Spacing distance: It is used to set the spacing distance between each piece of text (set by the user according to the desired spacing).

间隔距离：用来设定每段文本之间的间隔距离（用户自己根据所需间隔来设定）。

V. Operating environment

L Humidity: 5%~95% (no condensate)

L Temperature: 20°C~30°C (25°C)

L Power supply: AC220V;50/60Hz

L earth: earth resistance should be less than 5 Ω

L The environment of the equipment should be dry, smokeless, dust-free, pollution-free, no vibration, no strong electricity, no strong magnetic field and other interference

L Air pressure: 86-106kPa

L Working table load bearing: 50Kg/m²

五.运行环境

I 湿度： 5%~95%（无凝水）

I 温度： 20°C-30°C（25°C）

I 供电： AC220V;50/60Hz

I 接地： 对地电阻应小于 5 Ω

I 设备所处环境应干燥，无烟、无灰尘、无污染、无震动、无强电、无强磁场等干扰

I 空气压力： 86-106kpa

I 工作台承重： 50Kg/m²

V. Operating environment

L Humidity: 5%~95% (no condensate)

L Temperature: 20°C~30°C

Suitable for material and application industries

Uv laser equipment is suitable for carving, marking and cutting of various materials, such as cloth, leather, glass, wood products, plastic, rubber, ceramic tile, crystal, jade, bamboo products, ceramics, acrylic, metal, paper, etc.

You can cut bamboo, wood, paper. The edges are not yellow or black. There is very little smoke.

Cut 5 mm plywood at a rate of 300 mm per minute.

Cutting 2.5 mm bamboo at a speed of 300 mm per minute.

For special materials of fine marking and precision cutting advantages obvious!

Can clearly carve Chinese characters 1 mm. It has depth and can be black.

Application industry

It is suitable for laser marking of advertising industry, signs and signs, crystal trophies, hardware tools, plastic products, PVC pipe fittings, bamboo, wood handicrafts, ceramic products, electronic components, electrical products, integrated circuits, auto parts, plastic products, glass, etc.

六.适合材料、应用行业

紫外激光设备适用于多种材料，比如：布料、皮革、玻璃、木制品、塑料、橡胶、瓷砖、水晶、玉石、竹制品、陶瓷、亚克力、金属、纸张等的雕刻、打标、切割。

可以切割竹子，木板，纸张。边缘不发黄不发黑。烟尘很少。

切割 5 毫米三合板，速度每分钟 300 毫米。

切割 2.5 毫米竹板，速度每分钟 300 毫米。

对于特殊材料的精细打标和精密切割优势明显！

可以清晰雕刻汉字 1 毫米。有深度，也可以发黑色。

应用行业

适用于 广告行业、标识标牌、水晶奖杯、五金工具、塑料制品、PVC 管件、竹质、木质工艺品、陶瓷制品、电子元器件、电工产品、集成电路、汽车配件、塑胶产品、玻璃的激光打标等。

Vii. Matters needing Attention

Ultraviolet laser "water temperature requirements" and "switch machine sequence" requirements are relatively strict, use operation should pay special attention to!

七.注意事项:

紫外激光器对“水温的要求”与“开关机的顺序”要求较为严格，使用操作时要特别注意！

Reference table of UV marking machine parameters	Software:EZCAD2	Laser source:RHF-5W									
materials	technology	time	speed	electricity	frequency	pulse width	fill	Open the light	Close the light	corner	ending
stainless steel	yellow	1	200	1	30	1	0.03	-50	50	50	
	yellowish	1	800	1	30	1	0.03				
	white	1	1000	1	80	1	0.03				
Aluminum business card	engrave	1	500	1	30-100	1	0.03				
	cut	25	100	1	30-40	1					
	stone-shadow carving	1	1000	1	30-100	1	DPI300				
							dot0.5				
Color board	engrave	1	300	1	30	1	0.03				
	cut	22	100	1	30-40	1					
Furniture plate	engrave dark color	2 3 4	200	1	30	1	0.03				
	engrave white	2	1000	1	30	1	0.05				
acrylic	engrave	1	600	1	30	10	0.03				
glass		1	600	1	30	10	0.03				
	engrave										
bamboo chip	engrave	23	200	1	30	1	0.03				
	cut	22-35	80	1	30-40	1					
paper	engrave	1	200-500	1	30	1	0.03-				
	cut	2	80-100	1	30	1					
plastic	engrave	1~5	200-	1	30	1	0.03-				

Ultraviolet laser marking machine has been widely used and is very stable. In view of material and the effect of the demand is different, therefore needs the user according to the above information, oneself understand, and adjust, thus obtains the better carving quality and the efficiency.

紫外激光打标机，应用已经非常广泛，且很稳定。鉴于材质与需求的效果不同，因此需要用户根据上述资料，自己领会，并且调整，从而获得较好的雕刻质量和效率。