

激光切布装置使用说明书

laser cutting device Operation manual

1.1 概述

本装置为全自动工业缝纫机的辅助装置。主要功能是按照需求使用激光装置切割布料。具有切割速度快, 运行稳定和噪声低等优点。整机采用模块化结构, 能够快速的在工业缝纫机上进行升级改造。

This device is an auxiliary device of automatic industrial sewing machine. The main function is to use the laser device to cut cloth according to the demand. It has the advantages of fast cutting speed, stable operation and low noise. The whole machine adopts modular structure, which can be quickly upgraded on the industrial sewing machine.

1.2 功能和指标参数

本装置主要组成及功能参数表详见表 1.

The main components and functional parameters of the device are shown in Table 1

表 1: 组要组成及功能参数表

序号 No.	名称 parts	参数 Parameter
1	激 光 管 laser tube	直径 50mm,长度 1050mm, 功率 75-90W Diameter 50mm, length 1050mm, capacity 75-90w
2	激光电源 Laser power	功率 100W Capacity 100w
3	冷水机 Cold water setting	CW-3000AG
4	聚焦镜 focusing lenses	20-1
5	反 射 镜 reflector	25*4

1.3 安全使用注意事项 Notic for safe use

- 安装 fix

- 请遵照说明正确装好 Please follow the instructions to install it correctly

- 附件

- 如要安装其它附件时, 请先关掉电源并拔掉电源插头。

If you want to install other accessories, please turn off the power and unplug the power plug

电源线 power cord

- 请不要用重力去压住电源线或过度的扭曲电源线。
- Please do not use gravity to hold the power cord or excessively twist the power cord.
- 请不要将电源线靠近移动的部位，最少要离开 100mm 以上。
- Please do not put the power cord close to the moving part, at least more than 100 mm away.
- 激光切布装置接入电源前，请必确认各部件件的线路按要求接入；接入的电源电压是否与说明书要求的电压相同并确定位置后，才可打开电源。
- Before the laser cutting device is connected to the power supply, please make sure that the lines of all parts are connected as required; Whether the connected power supply voltage is the same as the voltage required in the manual and the position is determined before the power supply can be turned on.
- **接地**
 - ◆ 为防止噪声干扰及漏电而发生电击事件，电源线上的接地线定要确实做好接地。
 - ◆ In order to prevent electric shock caused by noise interference and electric leakage, the grounding wire on the power line must be grounded.
- **附属装置**
 - ◆ 如要接用电气方面的附属装置的话，请遵照指示的位置接好。
 - ◆ If you want to connect the electrical accessories, please follow the instructions.
- **拆卸**
 - ◆ 要卸下激光装置，必须要先关掉电源并拔掉电源插头。
 - ◆ To remove the laser device, you must first turn off the power and unplug the power plug.
 - ◆ 在拔离电源插头时不可只拉电源线，必须用手拿住电源插头安全部位拔出。
 - ◆ When unplugging the power plug, do not just pull the power cord, you must hold the safe part of the power plug by hand and pull it out.
 - ◆ 激光管内有危险的高压电，所以要打开激光上盖板，必须先关掉电源后等候 5 分钟以上才可打开控制箱盖。
 - ◆ There is dangerous high-voltage electricity in the laser tube, so to open the upper cover of the laser, you must turn off the power and wait for more than 5 minutes before opening the cover of the control box.
- **保养、检查和修理 Maintenance, inspection and repair**
 - 修理和保养的作业，要请经过训练的技术人员执行。
 - The operation of repair and maintenance should be carried out by trained technicians
 - 更换激光零部件时，请务必必要关电。
 - Please turn off the power when replacing the laser parts.

- 请使用正厂的零件。
- Please use genuine parts.

● 其它的安全对策


- 激光装置工作时，请不要接近激光头，以免发生危险。
- When the laser device is working, please keep away from the laser head to avoid danger.
- 激光装置接通电源后，请不要让用手或身体任何部位处于激光头之下，以免发生意外。
- After the laser device is powered on, please do not put your hand or any part of your body under the laser head to avoid accidents.
- 请不要在拆掉各护盖的情形下运作。
- Please do not operate with covers removed.
- 如本控制装置有损伤或无法正常运作时，必要请有经验的技术人员调整，或检查修理，在故障还没排除前请不要再去运转它。
- If the control device is damaged or cannot operate normally, it is necessary to ask experienced technicians to adjust or check and repair it. Please do not operate it until the fault is eliminated.
- 敬请各客户们不要自行改造或变更本控制装置。
- Please do not modify or change the control device.
- 调节激光功率大小时，请不要用手或其他部位接触激光装置其他部位。
- When adjusting the laser power, do not touch other parts of the laser device with hands or other parts.

● 废弃处理





- Co2 激光器气体成分主要是二氧化碳和氦气，且内部压力很小，低于 6000 帕，二氧化碳对大气没有污染，氦气属于惰性气体，也是没有伤害的，所以敲碎后对空气没有污染，玻璃敲碎后集中由专业部门统一回收。
- CO2 laser gas composition is mainly carbon dioxide and helium, and the internal pressure is very small, less than 6000 PA, carbon dioxide does not pollute the atmosphere, helium is an inert gas, also does not harm, so there is no pollution to the air after breaking, glass broken centralized by the professional department unified recovery

● 警告示意和危险示意

- 错误的行为可能发生危险，其程度如后所述的标示区别说明。

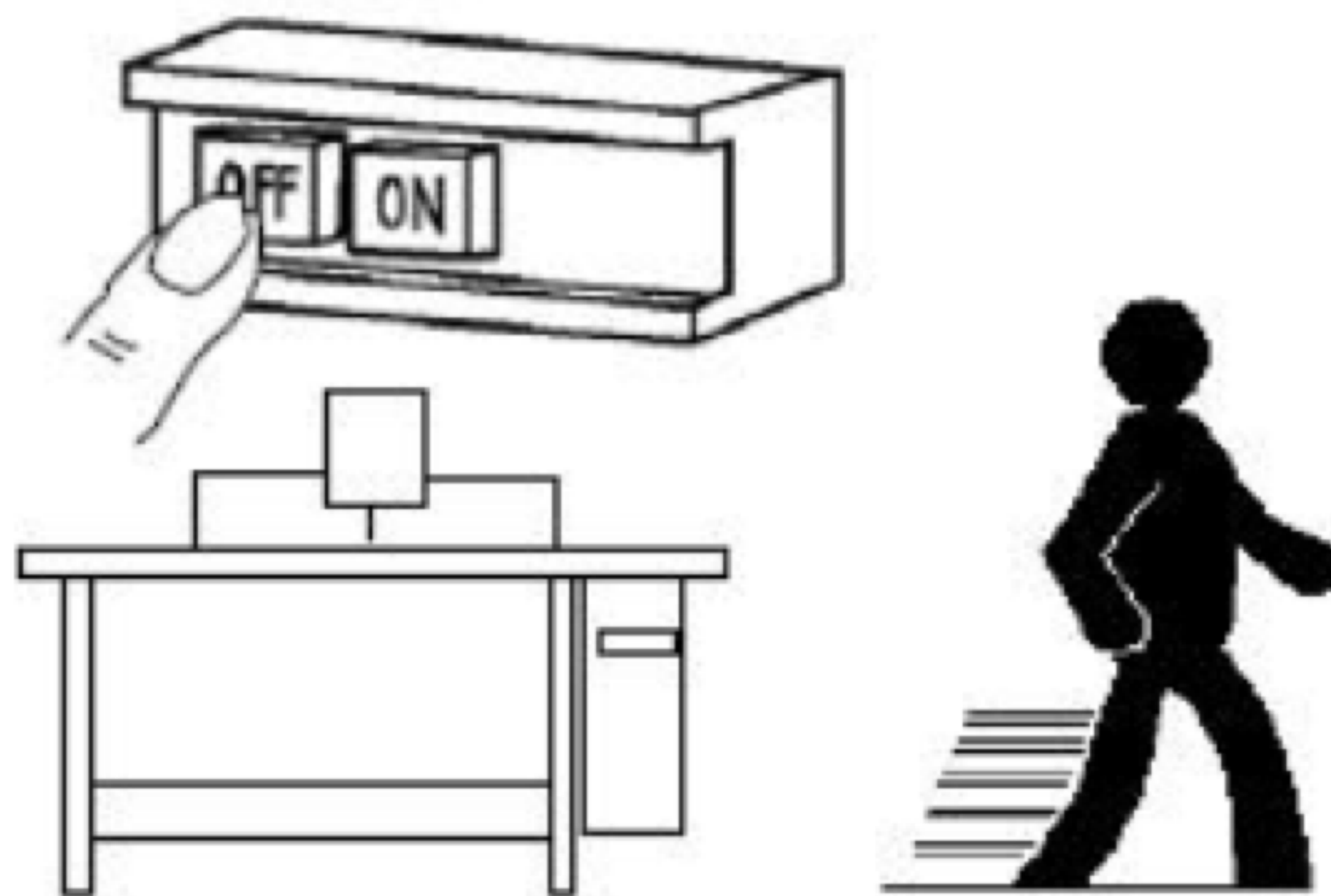
 警告	错误的行动可能会发生重伤或死亡。	 注意	错误的行动可能会发生伤害或房屋或财产的损害。
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- 标示符号的表示如下说明。

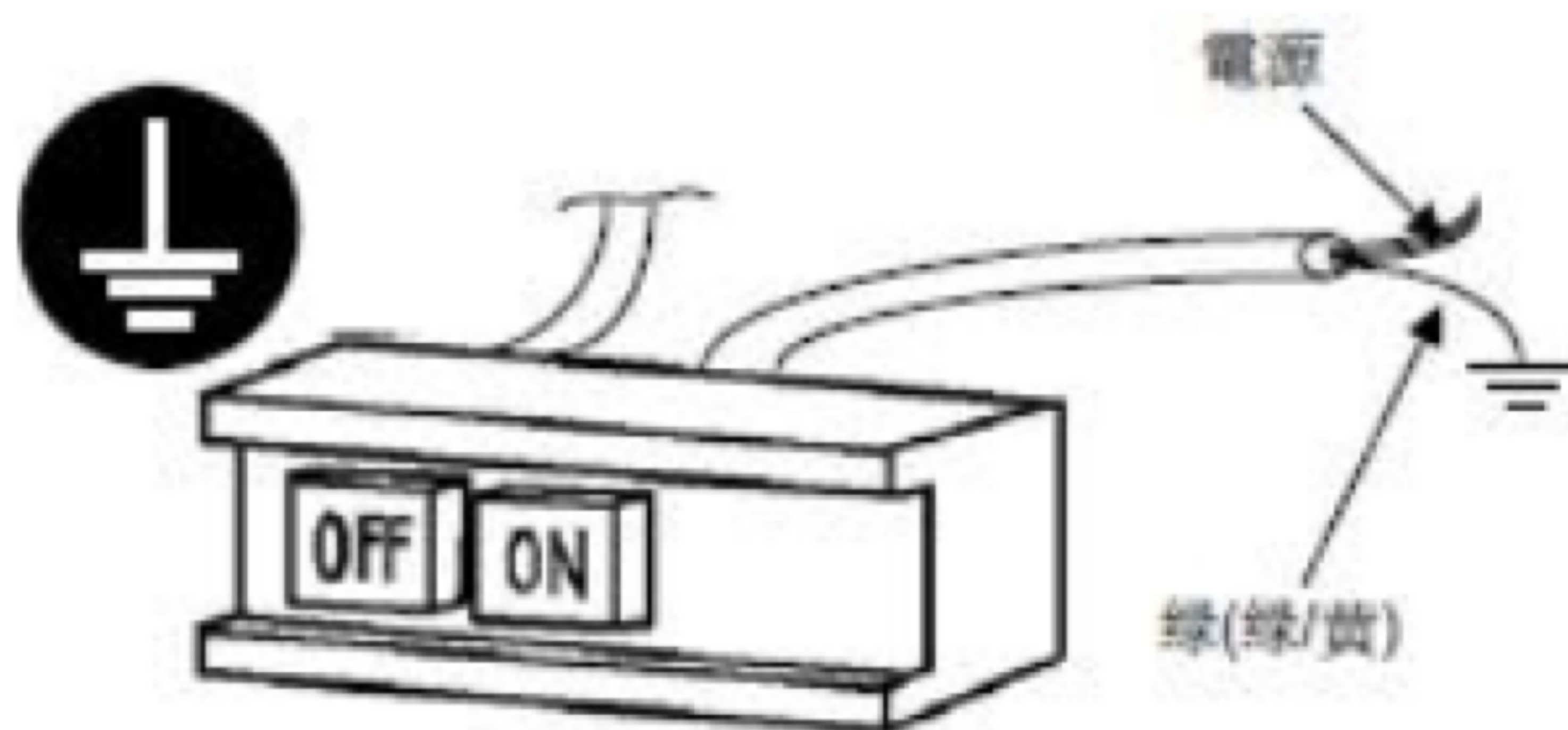
	请遵照指示内容作业。		注意高压电（电击）的危险。
	注意高温。		务必接上接地线。

1.4 使用规范

- 离开工作岗位时，请务必关闭电源。Make sure to power off when you leave.



- 接地线要做好接地
- Make sure the ground cord is grounded.



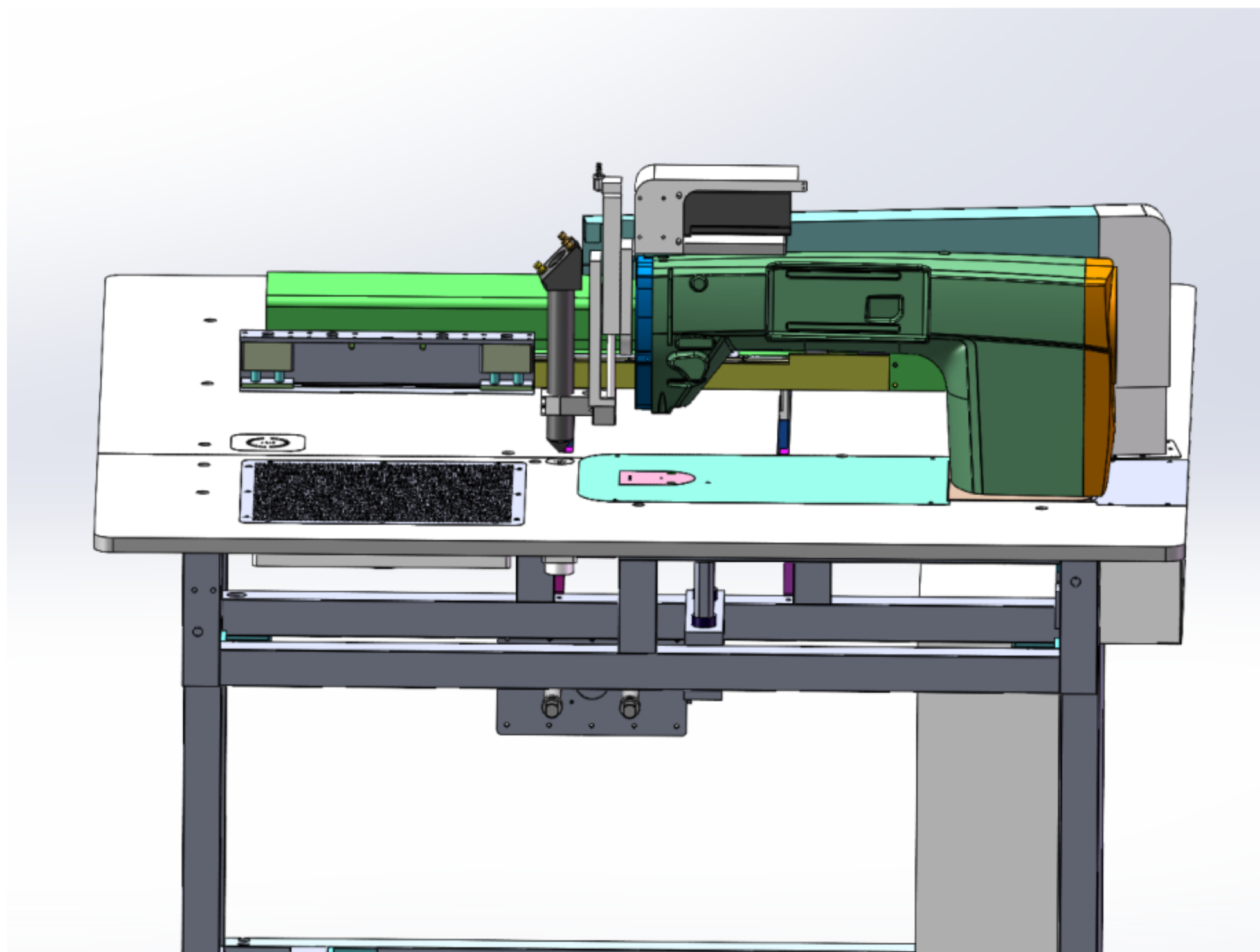
- 确保冷却系统可靠稳定运行，其温度、压力、流量满足激光器的要求，从而保证激光器的可靠稳定运行。
- To ensure the reliable and stable operation of the cooling system, its temperature, pressure and flow should meet the requirements of the laser, so as to ensure the reliable and stable operation of the laser.
- 确保空压机工作正常，气压满足激光切割要求。
- Ensure that the air compressor works normally and the air pressure meets the requirements of laser cutting.
- 禁止开盖运行激光器，以策安全。
- It is forbidden to open the cover to operate the laser.
- 开盖检修激光器时，确保高压电源断开，并且锁定。在接触带电器件前，要确保高压对地放电完毕。
- When opening the cover to repair the laser, make sure that the high voltage power supply is disconnected and locked. Before contacting live parts, ensure that the high voltage to ground

discharge is completed.

- 激光切布装置的内部存有高压电，所以在关掉电源后需等候 5 分钟才可以打开激光上罩。
There is high voltage inside the laser cutting device, so it takes 5 minutes to open the laser cover after turning off the power.

1.5 激光切布装置操作规范 Operation specification of laser cutting device

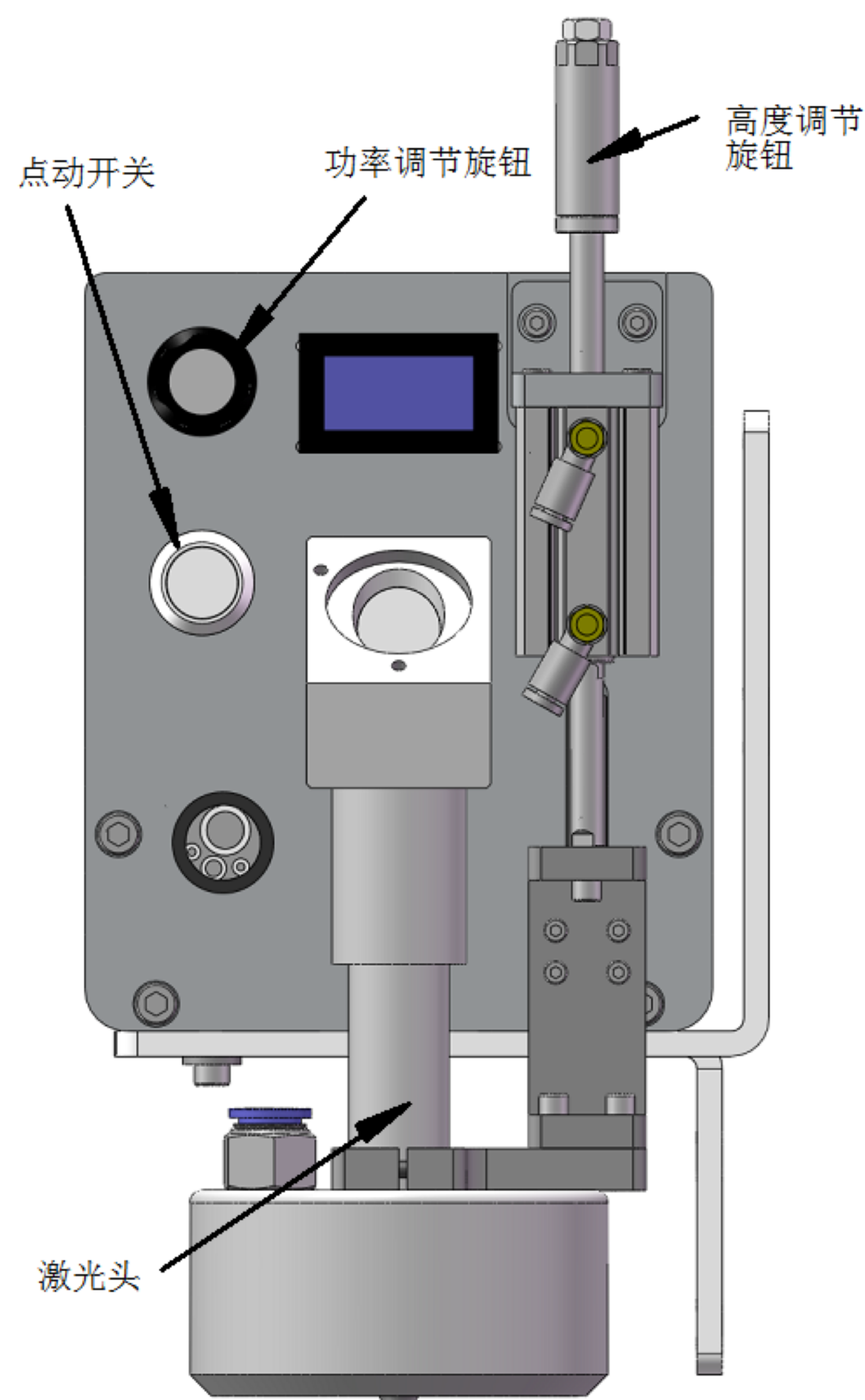
- 使用前 before use
 - 请确认各部分按说明书正确连接。Please make sure that all parts are connected correctly according to the instructions.
 - 出厂时，本公司已正确连接部分激光线路，请勿自行拆装。When leaving the factory, our company has correctly connected part of the laser line, please do not disassemble by yourself.
 - 为运输方便，如下图所示并未安装，请按图示结构由专业人士进行激光切布装置的连接，请勿自行连接。
 - For the convenience of transportation, it is not installed as shown in the figure below. Please connect the laser cloth cutting device according to the structure shown in the figure. Do not connect it by yourself.



- - 在确定缝料的特点及种类后，可按需调节激光的功率大小。
 - After determining the characteristics and types of sewing materials, the laser power can be adjusted as needed.
 - 电箱内数值显示屏是控制激光功率大小，数值大激光功率大，数值小激光功率小。
 - The numerical display in the electric box is to control the laser power size, the numerical large laser power is large, and the numerical small laser power is small
 - 测试激光功率能否按需切开布料时，将需要缝制的布料（按实际缝制的成熟叠加布料）

放置在激光口正下方，按动点动开关（如图*5所示），点动开关开启 0.2s 后，激光切开布料，则认为该激光功率适合本布料。开机实验后，确认激光功率适合本布料的缝制。

- When testing whether the laser power can cut the cloth on demand, place the cloth to be sewn (according to the mature cloth actually sewn) directly below the laser port, press the inching switch (as shown in Figure * 5), and after the inching switch is turned on for 0.2S, the cloth will be cut by laser, then the laser power is considered to be suitable for the cloth. After the start-up test, confirm that the laser power is suitable for the fabric sewing.
- 在使用过程中，需要调节激光头升降高度时，可以调节气缸一端的螺母，使激光头能够位于布料上方合适的高度（3~5mm），从上往下方向，顺时针方向将调高激光头高度；反之，则降低激光头高度。
- When it is necessary to adjust the lifting height of the laser head in use, the nut at one end of the cylinder can be adjusted so that the laser head can be located at a suitable height (3 ~ 5mm) above the cloth, and the height of the laser head can be adjusted clockwise from top to bottom; Otherwise, the height of laser head will be reduced.



- 使用中 in use
 - 在激光装置使用过程中，切勿将手或身体其他部位接近激光头部位，以免发生意外。
 - In the process of using the laser device, do not put your hands or other parts of your body close to the laser head to avoid accidents.

- 激光管启动后，请打开吸风装置。
- After the laser tube is started, please turn on the suction device.
- 机床工作期间，严禁人员和物品进入工作台，确保人机安全；操作人员要专注，遇到危险情况要尽快按下“急停”按钮。
- During the working period of the machine tool, it is strictly forbidden for people and objects to enter the workbench to ensure the safety of human and machine; Operators should pay attention and press the "emergency stop" button as soon as possible in case of danger.
- 使用后 After use
 - 激光装置在使用过程中会产生高温，会造成激光头温度较高，请不要在使用结束后 10min 内触摸激光头。
 - The laser device will produce high temperature during use, which will cause high temperature of the laser head. Please do not touch the laser head within 10 minutes after use.
 - 激光装置内部有高压电路，如果需要打开激光上罩，请在断开电源后 10 分钟后再打开。
 - There is a high voltage circuit inside the laser device. If you need to open the upper cover of the laser, please turn it on 10 minutes after the power is disconnected.
 - 及时清理机器内部及表面灰尘。
 - Clean the dust inside and on the surface of the machine in time.
 - 每二天擦洗机器镜片一次。
 - Scrub the machine lens every two days.
 - 根据水质和 PH 值变化情况，每 1 - 3 周更换冷却水。
 - Change the cooling water every 1-3 weeks according to the change of water quality and pH value.