

Co2 fractional manual



Chapter 1 Introduction to the Instrument

With the continuous change of people's aesthetic concepts, in addition to the plastic surgery items of facial and body appearance, private plastic surgery has gradually become a new fashion, sought after by the majority of women, and is popular all over the world. In the past, vaginal slack could only be solved by surgery. However, the risk of surgery is high and the side effects are large. Therefore, many women give up treatment, which affects their health and quality of life. With the emergence of innovative treatments for CO2 laser microvascular reconstruction, the amount of vaginal tightening treatment has increased rapidly, and it has become a new growth point in the cosmetic surgery industry. The Private Youth Laser provides a revolutionary, precise and painless solution for common female problems such as vaginal relaxation, internal vaginal environment disorder, poor sensitivity, or urinary incontinence: no need for anesthesia, no pain and no pain throughout the process. The treatment can be completed in 15 minutes during the vacation, and the firming effect can be maintained for a long time. It is the most popular new body shaping project for women today.

Through the CO2 laser's microvascular reconstruction effect, the private youth laser will increase the oxygen content of the vaginal tissue, increase the release of ATP from the mitochondria, and make the cell function more active, which will increase the secretion of the vaginal mucosa, lighten the color, and enhance the lubrication. At the same time, By restoring the vaginal mucosa, the PH value and flora are normalized, the recurrence rate of infection is reduced, and the female reproductive tissue is restored to a younger level. In addition, the private laser completely subverts the traditional birth canal repair method: painless and non-invasive to solve the problems of postpartum genital tract leakage, relaxation, decreased sensitivity and lubricity, and repeated inflammation.

Chapter II Operational Safety Regulations

2.1 Optical security

1. Burn

The CO₂ scanning laser has a wavelength of 10.6 microns, which is a spectral line in the far infrared range, which is invisible to the human eye. The maximum laser power output by this instrument can reach 30 watts, which can cause 3 degree burns even without focusing. Therefore, sufficient attention should be paid.

2. The hazard of reflection and direct exposure to human eyes

The instrument outputs visible red semiconductor laser and invisible CO₂ laser, both of which are harmful to the human body.

Do not look directly at the red semiconductor laser at any time, even if it will not cause burns to the human eyes, it will also cause a certain degree of injury.



The hazard distance of CO₂ laser is very large, direct exposure to human eyes will cause blindness, and it is irrecoverable, operators should be extra careful.

Since the surface of the object, especially the surface of smooth metal or glass, can form a mirror surface and reflect light, it is necessary to remove such objects or surfaces that may cause reflection on the path of the laser. In other words, do not irradiate laser light on objects that reflect light to prevent the reflected or scattered laser light from causing harm to the human body.

2.2 Flammable and explosive

Do not use this laser instrument on the site with flammable and explosive materials. Do not place or store flammable and explosive materials around the instrument. Flammable and explosive materials include: gasoline, alcohol, some narcotics, some solvents, desiccants, ointments, synthetic resins, etc.

2.3 Safe operation steps

1. Before the operation

1. Keep the surface of the instrument clean.
2. Get the instrument key.
3. Ask the surgeon how to arrange the position of the instrument and the patient.
4. Stick a laser warning sign on a prominent place.
5. If you need to use general anesthetics, prepare a wet towel for the patient.
6. Prepare all necessary equipment and tools.
7. Check whether the instrument is working properly.
8. Insert the switch key into the instrument's key, and then power on the instrument. The instrument should perform self-check first, and then enter the standby working state after selecting the working mode.
9. If necessary, press the setting key to reset the working parameters.
10. Check the same optical path.
11. Press the set button to return to the standby working state or turn off the instrument until the operation is on again.

2. After the operation is completed

1. Turn off and remove the instrument.
2. Pull out the switch key and keep it in a safe place.
3. Place the light guide joint arm in the normal position.
4. If necessary, remove the optical accessories and other tools for cleaning or disinfection.

Chapter 3 Instrument Installation

3.1 Unpacking inspection









This instrument has passed performance debugging and quality inspection before transportation. We guarantee the eligibility of the product quality, so after unpacking, it should be directly installed and used.

Notice:

If any damage or other quality problems are found after unpacking, you should contact our company or agents immediately. Our company is responsible for solving all quality problems until you are satisfied.

3.2 Equipment list

The dot matrix beautifying device includes the following components:

		
Scan the main body of the machine	Light guide arm and treatment head	key
		
funnel	Foot switch	power cable

3.3 The structure of the instrument



This instrument consists of the following parts:

1. Light guide arm

The laser beam transmission is completed by the light guide arm. The role of the light guide arm is to transmit the laser to the patient's site (target surface) to be operated on.

2. Scanner

Equipped with a graphics scanner, which can scan and output rectangles, circles, hexagons, triangles and other graphics, and the maximum scanning area is about $20 \times 20 \text{mm}^2$;

3. The main body of the machine

It includes high-voltage power supply, low-voltage power supply, control system, cooling system, laser system and blowing system.

4. Touch the display panel

Mainly used for parameter setting

5. Emergency stop switch

It is an emergency button switch. When the instrument has an abnormal condition, you can press the emergency stop switch to cut off the power supply system of the instrument.

6. Key switch

After inserting the key switch, when it is turned to the "on" position, the instrument is powered on, and when it is turned to the "off" position, the power is cut off and the instrument is turned off.

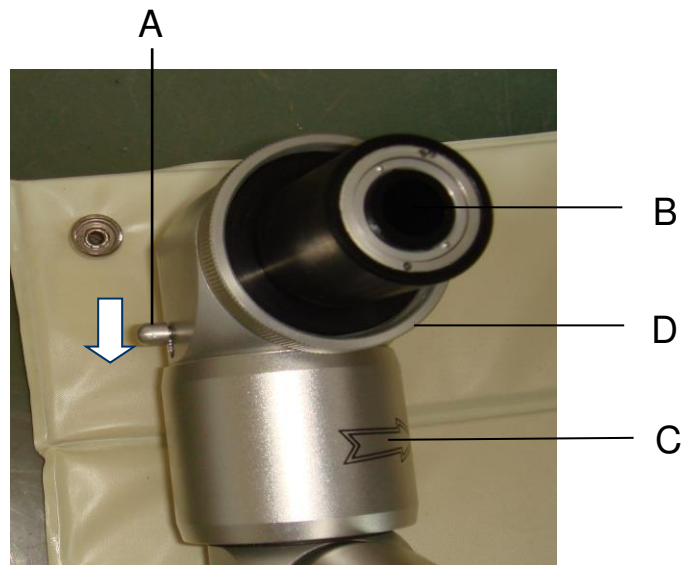


7. Cooling area

8. Water injection hole/outlet hole, 9. Overflow hole, 10. Foot switch socket
11. Power input socket, 12. Ice hammer handle, 13. Ice hammer switch

3.4 Installation

1. Install the light guide arm



Rotate end B to the direction indicated by end C in the figure as shown in the figure, and the circlip of end A in the figure will automatically lock in the direction indicated in the figure (if it is restored to the original position, move the circlip of end A to the direction indicated in the figure) , And then insert the B end into the main body base. Finally, lock the light guide arm lock nut D.

1. Water

Pull out the plugs of the water injection hole and the overflow hole at the same time, connect the funnel to the water injection hole, and pour distilled water into the water tank until water overflows from the overflow hole.

3.Connect the wires and foot switch.

Connect to a 220V, 10A single-phase AC power supply, and connect the foot switch to the foot switch jack of the instrument. If the company is responsible for on-site installation, commissioning and delivery. The installation and commissioning personnel will explain or explain the knowledge about technology and safe use to you on the spot.

4. Change the water

Change the water once a month, add purified water or distilled water each time

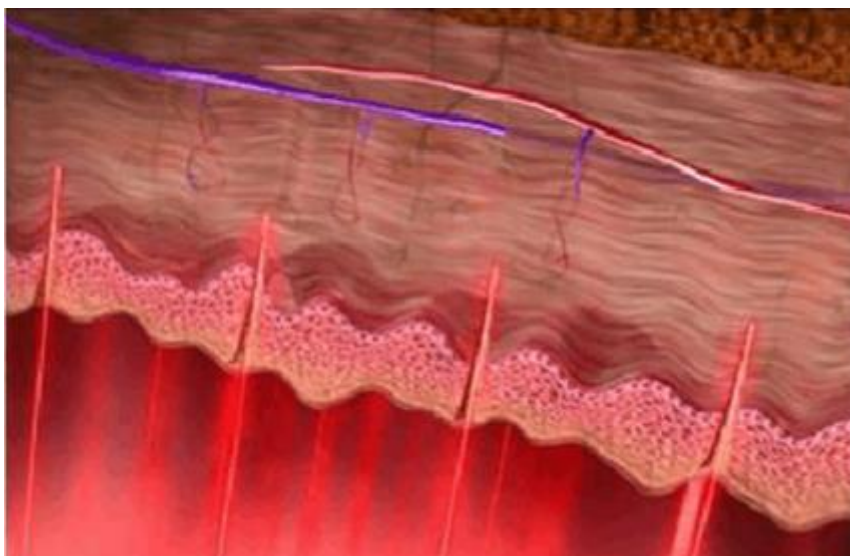
Chapter 4 Instrument Performance Index

Working mode	Scan	CO ₂
Laser type	Sealed-off DC CO ₂ laser	
Output energy	1—60W	1W—60W (advance at 1W)
Output mode	Maximum diameter of scanning circle: 20mm Minimum diameter: 0.1mm	Pulse super pulse Single pulse continuous
	Maximum area of scanning rectangle: 20X20 0.1X0.1 Minimum area: 0.1X0.1	
Aiming light	Red semiconductor indicator light (650nm)	
Control system	Microcomputer control large screen color touch screen display menu	
Light path transmission	Seven-joint light guide arm	
Cooling system	closed internal circulating water cooling	
Weight	about 62kg	
Power supply	AC220V, 50/60HZ 10A	

1. Instrument principle

The private laser for vaginal relaxation is a gold standard laser that uses 10600nm water to absorb water. It uses the perfect combination of three-dimensional lattice technology and 360-degree circular emission technology to generate a high temperature of 50-70 degrees Celsius within a controllable depth of the vaginal mucosa, stimulating the lamina propria. The fibroblasts in the muscular layer are regenerated, and the damaged collagen fibers and elastic fibers are reorganized, so that the vaginal wall is thickened and tightened, so that the vagina's firmness and sensitivity are enhanced, and the vagina is firm as before. The private laser will not cause epidermal burns due to excessively high temperature. It can act on Mucosa tissues with a thickness of several hundred nanometers with the same heat energy each time.

With the perfect ratio of wavelength to heat action of CO₂ laser, the powerful heat action can make the collagen fibers, elastic fibers, reticular fibers and organic matrix in the vaginal mucosa proliferate and remodel a large amount; the microvascular action principle of CO₂ can rebuild the vaginal blood vessels, The blood flow increases, the cell function is active, and the vagina is tightened, the secretion is enhanced, the sensitivity is improved, and the vagina is restored to a young and healthy state.



(1) Vaginal tightening-the principle of matrix and collagen production

CO₂ laser can induce heat shock response (HSR) and produce heat shock protein (HSP). Heat shock protein 70 can be transformed into growth factor β under laser irradiation. TGF- β plays a key role in inflammation and fibrosis. , Can induce cells to produce collagen and extracellular matrix. The private youth laser acts on the vaginal mucosa and muscular layer to stimulate the collagen fibers in the lamina propria and the muscular layer, elastic fibers, reticular fibers and organic matrix, etc., to regenerate and reshape the vagina, tightening the vagina.

Collagen remodeling and the role of incentive mechanism

1: Acute heat injury stage (48-72 hours)

Edema-chemical mediator released (healing mechanism)-collagen contraction

2: Proliferation period (30 days)

Fibroblast proliferation-new matrix molecules increase-new collagen fiber formation

3: Reconstruction period

Disappearance of inflammatory infiltration-mature collagen fiber proliferation and collagen fiber remodeling-new elastic fiber increase

(一) Improve firmness and lubricity-CO₂ laser vascular

reconstruction principle

The stimulating effect of CO₂ laser on the microvessels dilates blood vessels and increases blood flow, which in turn increases cell oxidation and nutrients, and cell functions are active.

1. Increased sensitivity

The complete and dynamic response of vaginal blood vessels to sexual stimulation plays a key role in the excitement phase of the genital response. Such as reducing

vasodilation can cause sexual problems, especially genital arousal disorder, and decreased sensitivity. Accompanied by insufficient vaginal lubrication or even dryness.

2. Increased lubricity

Increase the release of ATP from mitochondria, active cell function, enhance vaginal mucosal secretion, lighten color, and enhance lubrication.

二、 Project Benefits.

1. Powerful tightening, long-lasting effect

CO2 laser has a perfect ratio of exfoliation and thermal effect, which stimulates the proliferation and remodeling of collagen fibers and elastic fibers, and has a good tightening effect. Due to the principle of CO2 laser stimulation of vascular regeneration, it can increase vaginal blood flow and activate cell function, thereby increasing vaginal sensitivity and lubrication. According to research, it can change the vaginal pH value and normalize the vaginal flora.

2. Painless, safe, and short treatment time

The private youth laser uses 15*15 and 9*9 image beam modes, which preserve normal mucosal tissue between the image beam points, so that the heat spread is more uniform, and thermal damage is avoided. The treatment is simple and fast, and the whole process can be completed in only 10-15 minutes. Because the private youth laser has the exact effect, the treatment is safer, and the patient acceptance is high, and it can change the vaginal problem in an all-round way and restore it to a "young" state.

3. The operation is simple, the treatment is efficient and safe, there is no need to rest after the operation, and it does not affect work.

4. It can treat all parts of the body, with good effect, a wide range of disease sources, and generous benefits.

5. The latest international technology, a light-based cosmetic method with a large amount of accumulated clinical experience.
6. The highest output energy of this machine can reach 80mj, which is the highest among similar products.
7. This machine is composed of a host and a handle. The company keeps the original performance of the erbium glass laser but is miniaturized and integrated into the handle. This not only saves the loss of optical fiber transmission, but also is very convenient for maintenance.
8. The main components are imported from abroad, a lot of innovations have been made in the structure, and the technical performance has reached the international advanced level. When changing the lamp, you only need to send the handle back to the manufacturer, no need to change the host.
9. Non-exfoliative treatment, no pain, short time, no adverse reactions, especially suitable for young and middle-aged people.
10. This machine has three kinds of microbeam array output with different dot density. They can be easily replaced on the handle. For each point density, a variety of point energy levels are set to provide users with tailor-made treatment for different lesions, so as to achieve the most satisfactory treatment effect.

三. The scope and effect of treatment.

Private function:

- 1 Yin shrinkage: fast tightening, long-lasting tightness and firmness increased by 60%
- 2 Meiyin: Lighten the pigment, beautify the labia and increase the pinkness of the labia by 70%.
- 3 Moisturizing Yin: Improve secretion, eliminate dryness and increase lubricity by 80%.
- 4 Nourishing Yin: Deep anti-aging, preventing aging and increasing youthfulness by 80%.
5. Improve sensitivity.
6. Privacy and health, balance PH, and improve internal environment.

Adapt to the crowd:

1. Women who have had childbirth experience.
2. Women with more than 3 years of SEX experience.
3. Women who have frequent SEX.
4. Women with abortion.
5. Women with gynecological problems.
6. Women with low SEX orgasms.

二) dot matrix and pulse function:

1. Various scars (surgical scars, burn scars, scald scars)
2. Get rid of pigmented lesions (freckles, sun spots, age spots, sunburns, chloasma, etc.)
3. Get rid of stretch marks.
4. Complete skin rejuvenation (rejuvenation, firming, shrinking pores, nodular acne)
5. Vascular disease (capillary hyperplasia, rosacea)
6. Remove false and true wrinkles
7. Remove acne scars

四) core technology

Smooth technology

1. The ideal laser wavelength can be absorbed by micron-level tissues on the mucosa to avoid thermal damage to deep tissues or organs.
2. The laser energy is output in the form of optimized intermittent intervals and short pulses, which can avoid the formation of high temperature on the skin surface and cause thermal damage, while the surface layer of several hundred microns thick in the mucosal tissue forms a uniform thermal effect.
3. Use the Smooth mode to treat vaginal mucosal tissues with a soft feather-like non-invasive mode, without bleeding, because this mode can accurately control the temperature to avoid tissue damage.

Golden 360 ring launch technology

The laser passes through the gold-plated 360° reflective hand tool and acts on the vaginal wall in a circular luminous pattern. In a treatment method that does not touch the vaginal wall, the laser energy is applied to the entire vagina evenly and comprehensively. This technology makes the operation of vaginal laser tightening

technology easier, shorter treatment time, and higher safety.

Chapter 5 Operation Steps

5.1 Main interface



Is the dot matrix mode button, click to enter the dot matrix mode interface



Is the pulse mode button, click to enter the pulse mode interface



Is the private mode button, click to enter the private mode world

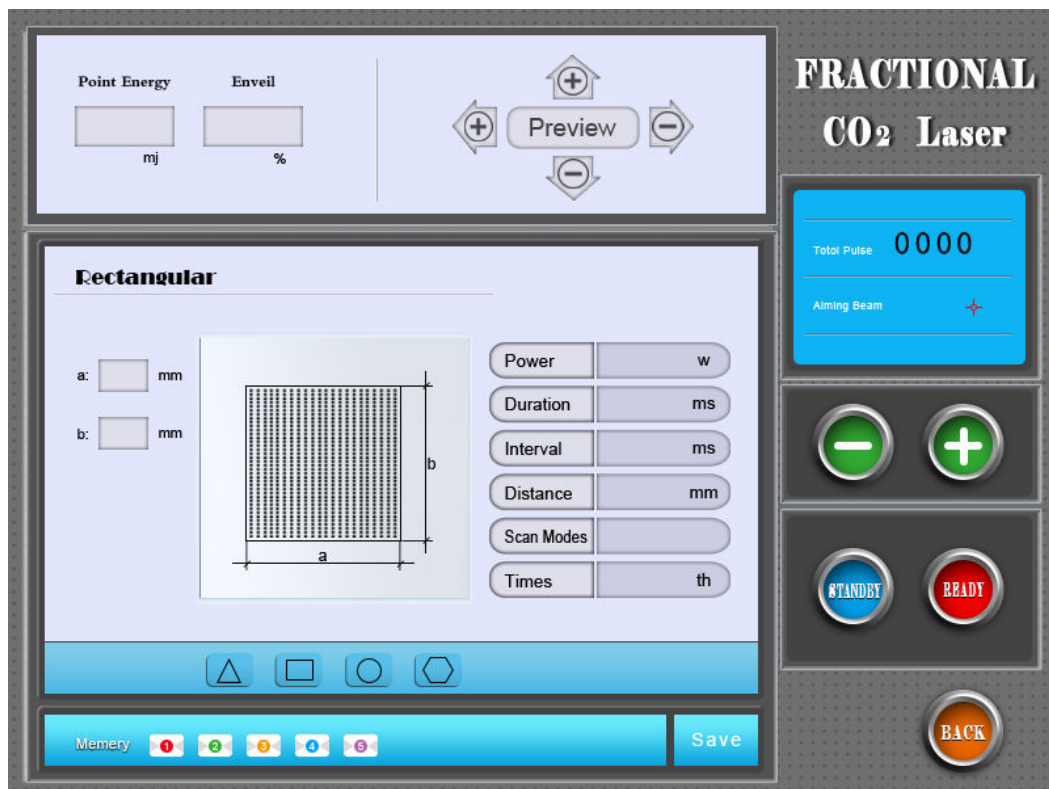


Is the vulva mode button, click to enter the pulse mode interface



To set the button, click to enter the setting interface

5.2 Dot matrix mode interface



Power, use the parameter button to adjust, control the laser output power 1-30W



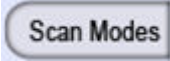
Point stay, use the parameter button to adjust, control the laser action time of each point in the scanning process 0.1ms-10ms



Point interval, use the parameter button to adjust, control the scanning gap time between the point and the next point in the scanning process 1-5000ms



Dot spacing, use the parameter button to adjust, control the distance between the dots of the dot matrix 0.1-2.6mm, has achieved the purpose of controlling the dot density scanning mode, use the parameter button to adjust, control the dot matrix scanning method is divided into three:



Sequential mode: scanning points are carried out sequentially from side to side
 Out-of-order mode: the scan points are in no order and are performed randomly
 Center division mode: the scanning point and the next scanning point of the same line keep one-half the distance of the dot matrix



Scan times, use the parameter button to adjust, control the scanning times of the dot matrix 1-20th



Press the number 1-5 to select the storage space,



Press save to save all the parameters of the current page to the change space, and you can press the number button to call it at any time during use.



Use the up and down plus and minus buttons to adjust the maximum length of the dot pattern in the up and down direction to 0-20mm,
 Use the left and right plus and minus buttons to adjust the maximum length of the dot pattern in the left and right direction to 0-20mm
 When you press the Preview button, the scanner will give out an indicator light to preview the selected graphics



Used to select scan pattern



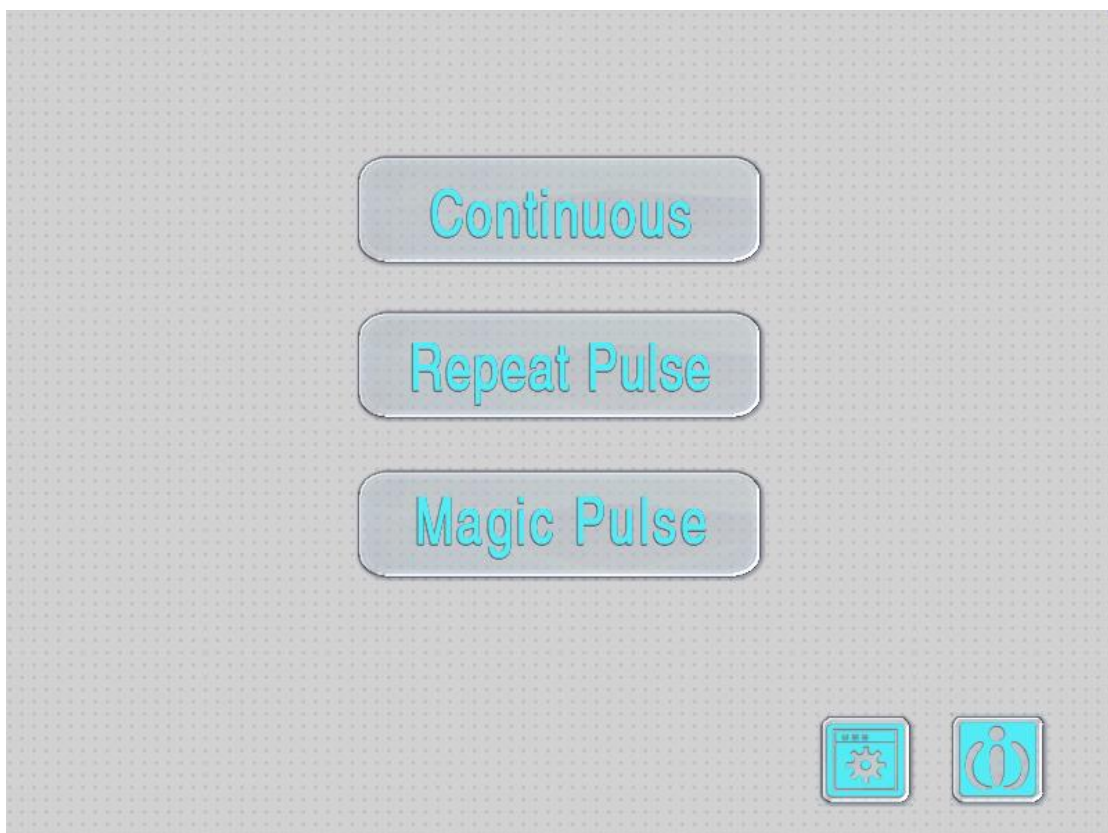
After the parameters are adjusted, press the ready button, the scanner will be aligned to the position, and the pedal will be launched to scan the laser



Click to return to the main world

5.3 Pulse mode interface

5.3.1 Pulse mode selection interface



Continuous

It is the pulse continuous mode button, click to enter the pulse continuous mode interface

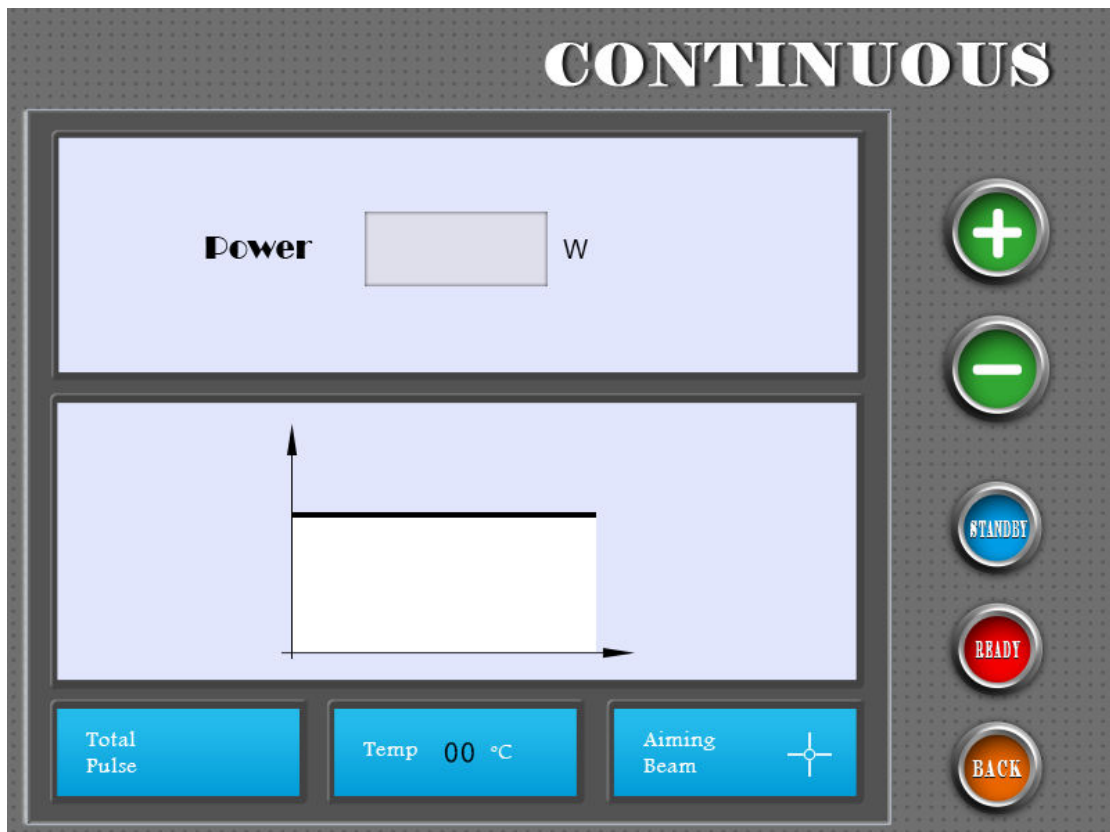
Repeat Pulse

Is the pulse repetition mode button, click to enter the pulse repetition mode interface

Magic Pulse

Single pulse mode button, click to enter the single pulse mode interface

5. 3. 2Pulse continuous mode interface



Power increase and decrease buttons

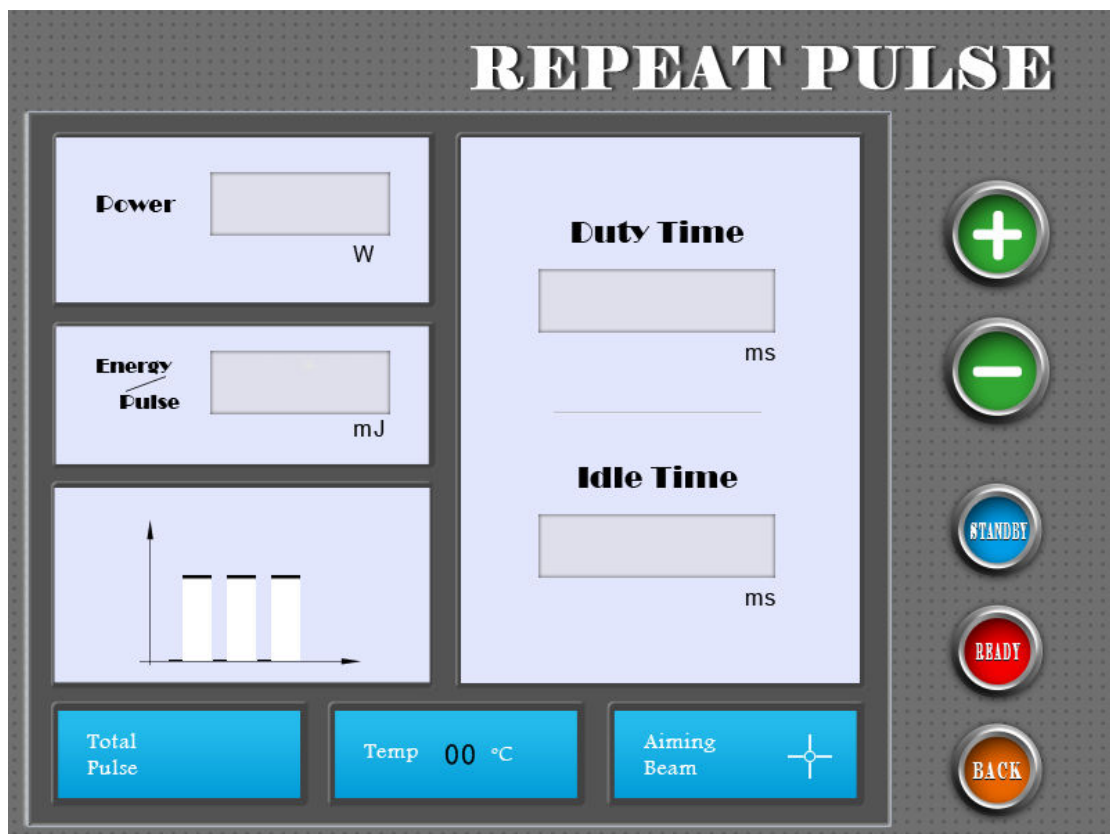


After the parameters are adjusted, press the ready button, the scanner is aligned to the position, and the pedal is stepped on to launch the laser.



Click to return to the main interface.

5. 3. 3 Pulse repetition mode interface



Power

Use the parameter button to adjust, control the laser output power to 0-30W

Duty Time

Point on time is the duration of pulse output

Idle Time

Point off time, is the pulse off duration

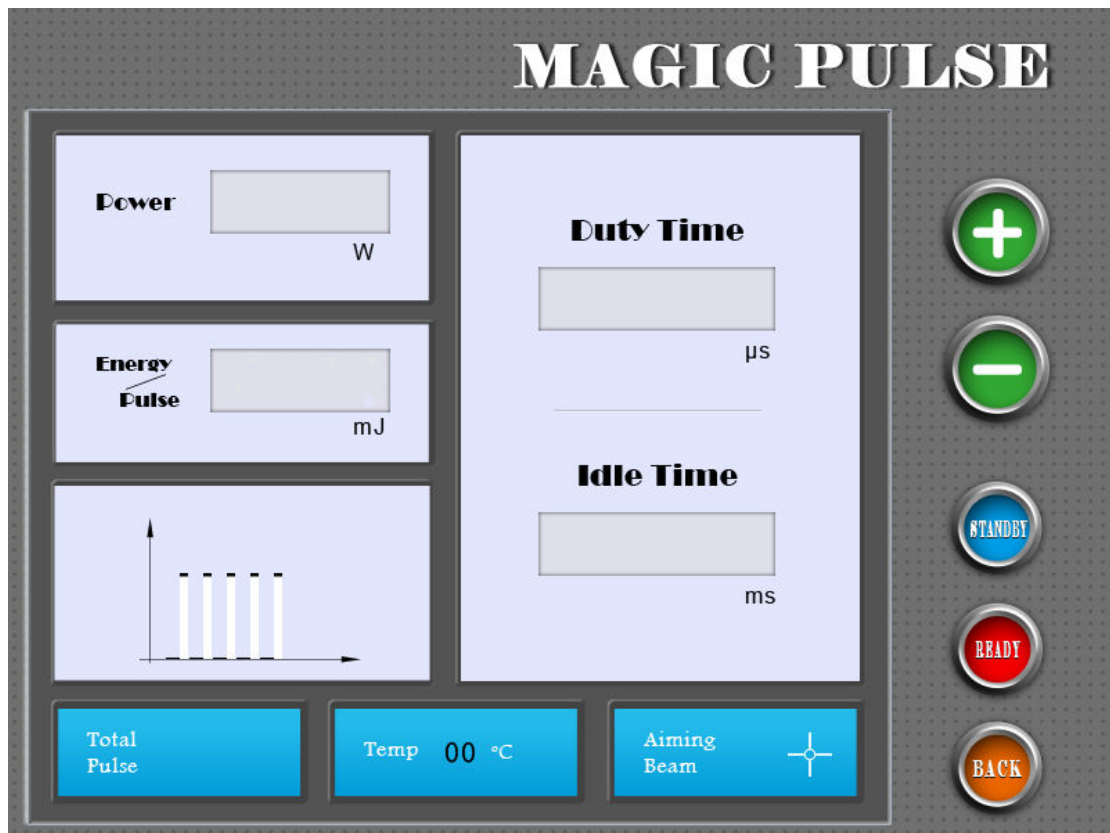


After the parameters are adjusted, press the ready button, the scanner is aligned to the position, and the pedal is stepped on to launch the laser.



Click to return to the main interface

5. 3. 4Single pulse mode interface



Power

Use the parameter button to adjust, control the laser output power to 0-30W

Duty Time

Point on time is the duration of pulse output

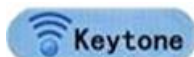
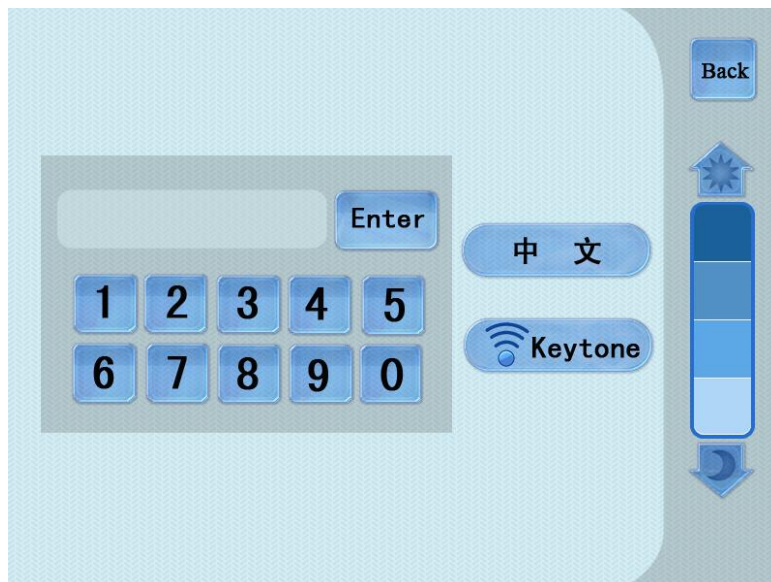


After the parameters are adjusted, press the ready button, the scanner is aligned to the position, and the pedal is stepped on to launch the laser.



Click to return to the main interface

5.4 Set interface



Click to change the language, Chinese or English



Adjust the indicator light intensity



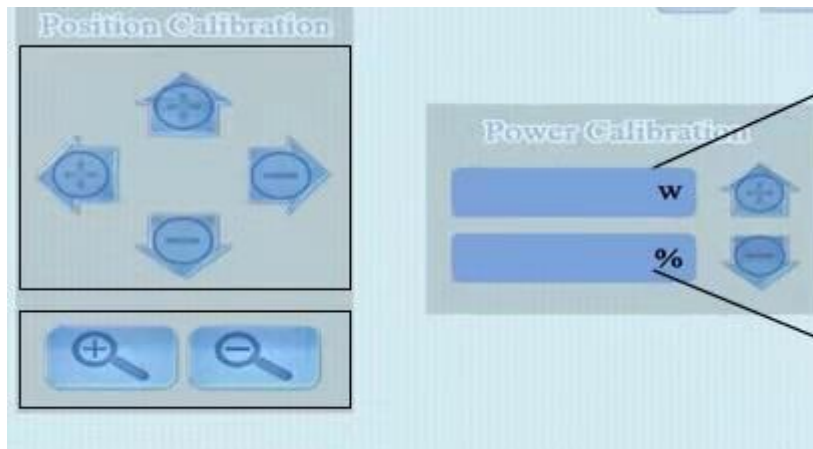
After entering the password 123456, enter

the calibration interface



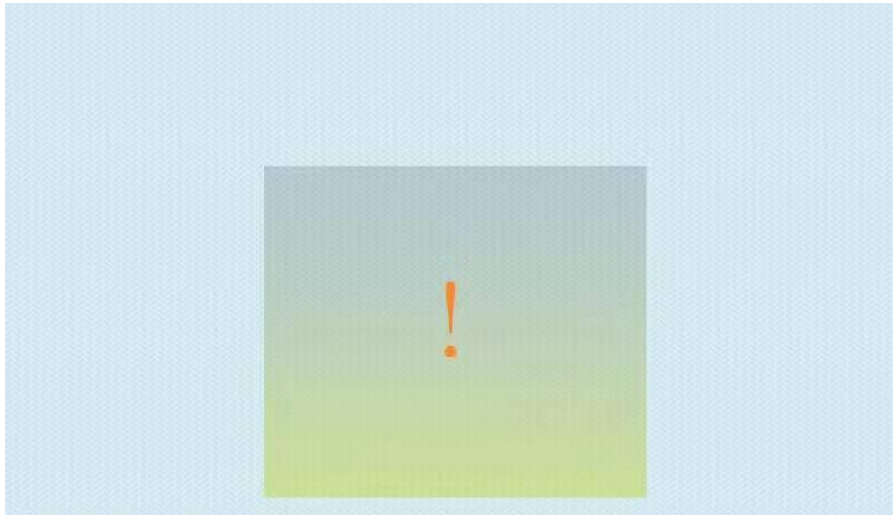
Click to return to the main interface

5.5 Calibration interface



Power calibration: selected , Select the power value to be calibrated, and then select

Note: In the power calibration interface, step on the pedal to directly emit the laser.

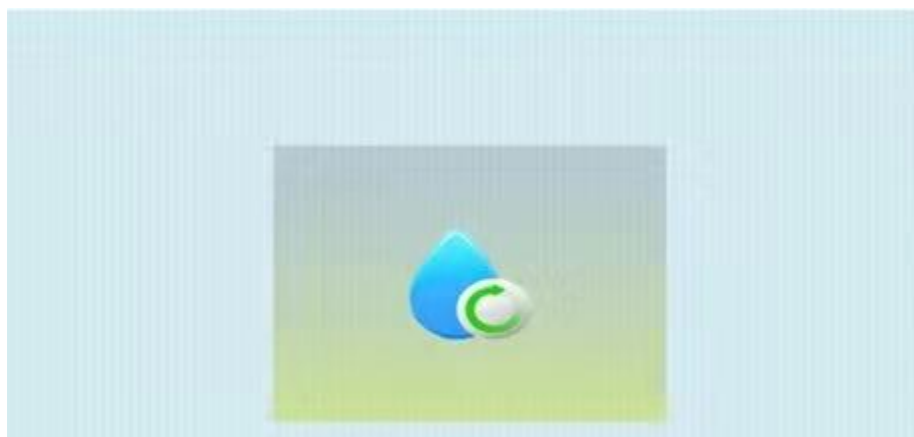


After the calibration adjustment is completed, press the save button to save, and then press the return button to return to the main interface.

5.6 Protection interface

When the galvanometer fails, it will display the galvanometer failure protection interface:

When the water pump does not work or the cooling water does not flow due to other reasons, the water cut warning interface will be displayed.




When the operating room door is not closed or the instrument compartment door is opened, the interlock protection warning interface will appear:



Note:



The button  in the interface is the factory debugging button (as shown in Figure 4-2). The parameters have been set before leaving the factory, so there is no need to set them.

4. Turn off the instrument

1. After using the instrument, it is recommended to return to the standby state before shutting down, and then turn the key switch to the "off" position to turn off the instrument.
2. The light guide arm is played back to a natural position without force to maintain a

good optical path.

3. Remove the cutter head and other tools, take it for cleaning and disinfection.
4. When the instrument is not in use, remove the key switch for safekeeping to prevent unauthorized personnel from using or operating the instrument.

Chapter 7 Troubleshooting Guide



If the instrument fails, refer to the following table to find the possible cause of the failure according to the failure phenomenon, and take appropriate measures to eliminate the failure. If you cannot solve the problem by yourself, please contact our company's after-sales service department.

warn:

High voltage and CO2 laser radiation may be generated during the normal operation of the instrument. A slight carelessness will cause harm to the human body. Therefore, you must be careful when maintaining the instrument.

Troubleshooting guide

Table 8-1 is the fault information that can be displayed on the control panel and is relatively easy to solve.

Table 8-2 shows the situations in which the fault information cannot be displayed on the control panel. The table lists the more detailed fault causes and troubleshooting methods.

Table 8-1 Maintenance guide that can display fault information

accident details	Causes of failures and troubleshooting methods
<p>Nothing is displayed when the instrument is powered on</p>	<p>The instrument is not connected to AC power</p> <p>Check whether the power cord is plugged into the power socket, whether the main power control switch and emergency stop switch are turned on, and whether the connecting sockets are well connected</p> <p>Low-voltage switching power supply failure</p> <p>Check whether the input, output socket, input and output voltage of the low-voltage switching power supply are normal</p> <p>The control board is faulty</p> <p>The LCD display is malfunctioning</p> <p>Contact our after-sales service department</p>
<p>Foot switch failure</p>	<p>The foot switch is not connected properly</p> <p>The foot switch is damaged, the foot switch needs to be replaced</p>
<p>High-voltage power supply failure</p>	<p>The high-voltage power supply is not energized or the main SSR is faulty</p> <p>High-voltage power supply failure, high-voltage power supply needs to be replaced</p>

Table 8-2 Maintenance guide without fault information

Failure phenomenon	Causes of failure and repair methods
<p>When the switch key is turned to the "ON" position, the instrument has no action</p>	<p>Not connected to AC power</p> <p>The emergency stop switch is not turned on</p> <p>The main control switch on the rear panel is not turned on</p> <p>The low-voltage power supply is damaged or the main control board fails</p>
<p>Aiming indicator light is too weak</p>	<p>Rotate the aiming light adjustment knob position</p> <p>Too much dust has fallen on the lens of the light guide system, the dust needs to be removed or the light guide arm needs to be replaced</p> <p>The semiconductor laser is damaged and the semiconductor laser needs to be replaced</p>
<p>CO2 does not fall on the aiming light spot</p>	<p>Same optical path offset</p>
<p>When the instrument is in the ready state, there is no blowing</p>	<p>The air pump is not connected to 220V AC</p> <p>The trachea is not connected</p> <p>The air pump is damaged, the air pump needs to be replaced</p> <p>Other electrical faults</p>
<p>When the foot switch is pressed, there is no CO2 laser emission</p>	<p>The connection of the foot switch is not well connected</p> <p>The instrument is not in a ready state</p> <p>Laser tube is damaged</p> <p>High-voltage power supply failure</p> <p>Other electrical faults</p>