

CO2 private laser

Model: DZ-3



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Chapter 1

Instrument Introduction

With the continuous change of people's aesthetic concept, in addition to the plastic surgery of the face and body appearance, private part plastic surgery has gradually become a new fashion, which is sought after by the majority of women and is popular all over the world. In the past, vaginal laxity could only be solved by surgery. However, surgery is high risk and side effects, so many women give up treatment, which affects their health and quality of life. With the advent of the innovative treatment plan for microvascular reconstruction of CO2 laser, the volume of vaginal tightening treatment has grown rapidly, becoming a new growth point in the cosmetic surgery industry.

Private Youth Laser provides a revolutionary and precise painless solution for common female problems such as vaginal relaxation, vaginal environment disturbance, poor sensitivity, or accompanied by urinary incontinence: no anesthesia, no pain throughout the process, no pain. During the vacation period, the treatment can be completed in 15 minutes, 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 microvascular reconstruction effect of CO2 laser, the private youth laser will increase the oxygen content of the vaginal tissue, the release of ATP from mitochondria will increase, and the cell function will become more active, thereby enhancing the secretion of the vaginal mucosa, lightening the color and enhancing the lubrication effect. At the same time, By restoring the vaginal mucosa, normalizing pH and microflora, it reduces infection recurrence and restores female reproductive tissue to a more youthful level. In addition, the private laser completely subverts the traditional way of repairing the birth canal: it is painless and non-invasive to solve the problems of urinary leakage, relaxation, decreased sensitivity and lubrication, and repeated inflammation of the postpartum reproductive tract.

Chapter 2

Operational Safety Regulations

2.1 Optical security

1. Burn

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

2. Hazards of reflection and direct rays to human eyes

The instrument outputs visible red semiconductor laser and invisible CO₂ laser, both of which are harmful to 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 still cause a certain degree of damage.



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

Since the surface of an object, especially smooth metal or glass, can form a mirror surface and reflect light, pay attention to the path of the laser to remove such objects or surfaces that may produce reflections. In other words, do not irradiate the laser light on objects with the property of reflecting light to prevent the reflected or scattered laser light from causing harm to the human body.

2.2 Flammability and explosiveness

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

2.3 Safe operation steps

1. Before surgery

1. Keep the instrument surface clean.
2. Get the instrument key.
3. Ask the surgeon how to position the instruments and the patient.
4. Put a laser warning sign in a prominent location.

5. For general anesthesia, prepare a damp towel for the patient.
6. Prepare all necessary equipment and tools.
7. Check that the instrument is working properly.
8. After inserting the switch key into the key of the instrument, power on the instrument. The instrument should perform self-check first, select the working mode and then enter the standby working state.
9. If necessary, press the SET button to reset the working parameters.
10. Check the same optical path. 11. Press the setting key to return to the standby working state or turn off the instrument until the operation is performed.

2.After the operation

1. Shut down and remove the instrument.
2. Pull out the switch key and keep it properly.
3. Place the light guide arm in its normal position.
4. If necessary, remove optical accessories and other tools for cleaning or disinfection.

Chapter 3

Technical parameters

Laser type	CO 2 laser
Power	30W
Wavelength	10600nm
Scan graphics	Circle、 Triangle、 Square、 Rectangle、 Hexagon、 Straight line
Output mode	Continuous、 Single、 Pulse、 Super Pulse
Scan scope	0.1mm-20mm
Distance	0.1-2.6mm
Optical transmission	6-joint light guide arm
Cooling system	Closed Internal Circulating Water Cooling
Packaging dimensions	77*34*61cm
Gross weight	27kg

Chapter 4

Instrument Installation

4.1 Unpacking inspection

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



Note: If any damage or other quality problems are found after unpacking, you should contact our company or the agent immediately. The company is responsible for solving all quality problems until you are satisfied.

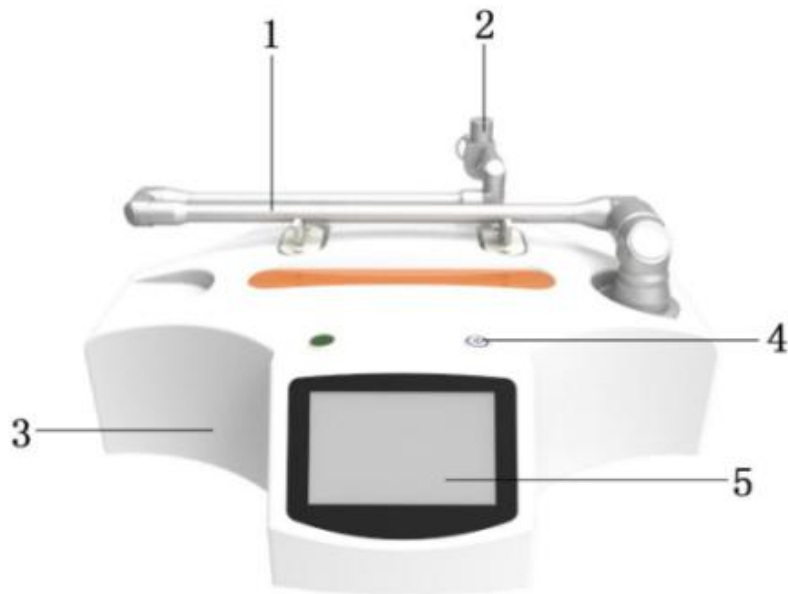
Equipment list

The dot matrix skin beauty instrument includes the following components:

			
Scan the main body of the machine	Light guide arm and treatment head	power cable	pedal
			
funnel	Privacy casing	private operating head	Vulvar Mode Operating Head
			
Vulvar Mode Operating Head	Dot matrix operation head	Pulse mode operating head	Refrigeration operation head

4.2 Construction of the instrument

This instrument consists of the following parts :



1.Light guide arm

The laser beam transmission is done by the light guide arm. The function of the light guide arm is to transmit the laser light to the part of the patient to be operated on (the target surface).

2.Scanner

Equipped with a graphic scanner, it can scan and output rectangles, circles, hexagons, triangles and other graphics, and the maximum scanning area is about 20×20mm²;

3.The main body of the machine

Including high voltage power supply, low voltage power supply, control

system, cooling system, laser system and air blowing system.

4.Instrument switch

for opening the display

5.Touch the display panel

for parameter setting



6. Foot connection hole 7.Overflow hole 8.Water injection hole

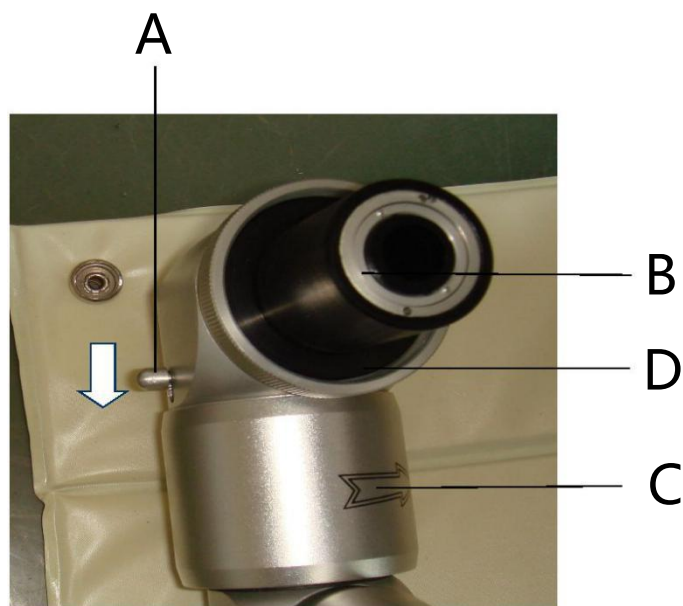
9. Drain hole 10.Power jack 11.Cooling fan

12.Refrigeration operation head socket

Refrigeration operation head: It has a sedative and soothing effect and can relieve skin swelling and pain.

4.3 Installation

1. Install the light guide arm



Rotate end B toward the direction indicated by end C in the picture by 180 degrees, and the circlip of end A in the picture will automatically lock in the direction indicated by the picture (if it returns to the original position, turn the circlip of end A to the direction indicated in the picture) , and then insert the B end into the main body base. Finally, lock the lock nut D of the light guide arm.

2. Water injection

Remove 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 the overflow hole overflows.

3. Connect the wires and the foot switch.

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

4. Change the water

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

Chapter 5

Operation Steps

5.1 Main interface



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



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



For the private mode button, click to enter the private mode interface

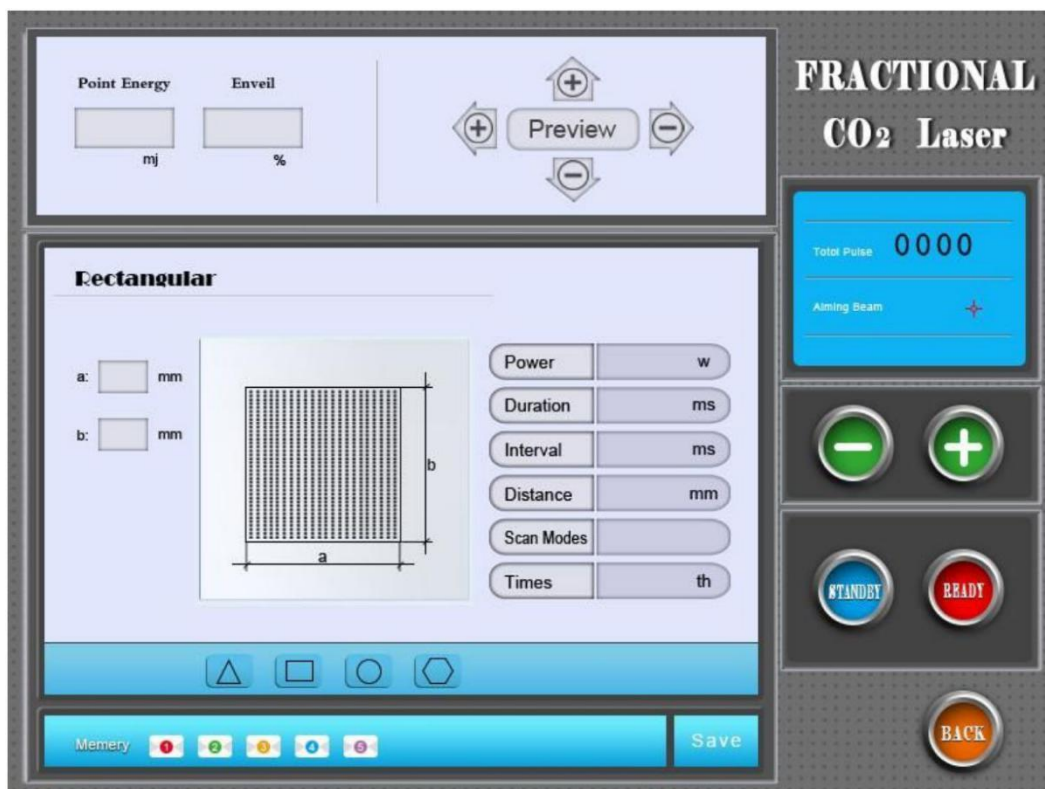


For the vulva mode button, click to enter the vulva mode interface



For the setting button, click to enter the setting interface

5.2 Dot matrix mode interface



Power

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

Duration

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

Interval

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

Distance

Dot spacing :use the parameter button to adjust, and control the distance between the dots of the dot matrix to 0.1-2.6mm, which has achieved the purpose of controlling the dot matrix density.

Scan Modes

Sequential mode :

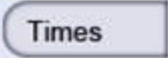
scan points are performed sequentially from side to side


Out-of-order mode :


scan points are not in order, random

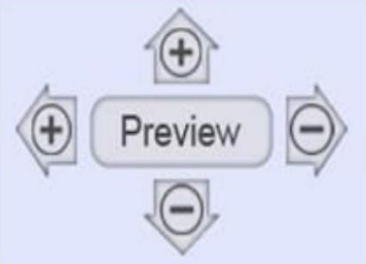
Mid-point mode :

The scanning point and the next scanning point in the same line are kept at half the distance of the dot matrix.

 Scan times : use the parameter button to adjust, control the scan 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 modified space, and you can press the number button to call at any time when using.

 Use the up and down buttons to adjust the maximum length of the bitmap in the vertical direction to 0-20mm, and use the left and right buttons to adjust the maximum length of the bitmap in the left and right directions to 0-20mm. When the Preview button is pressed, the scanner will send out Indicator light previews selected graphic



Used to select scanned graphics



After the parameters are adjusted, press the ready button, the scanner is aligned with the position, press the foot pedal to launch laser scanning



Click to return to the main world

5.3 Pulse Mode Interface

5.3.1 Pulse mode selection interface



A rectangular button with rounded corners, a light gray background, and a thin gray border. The word "Continuous" is written in a light blue, sans-serif font.

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

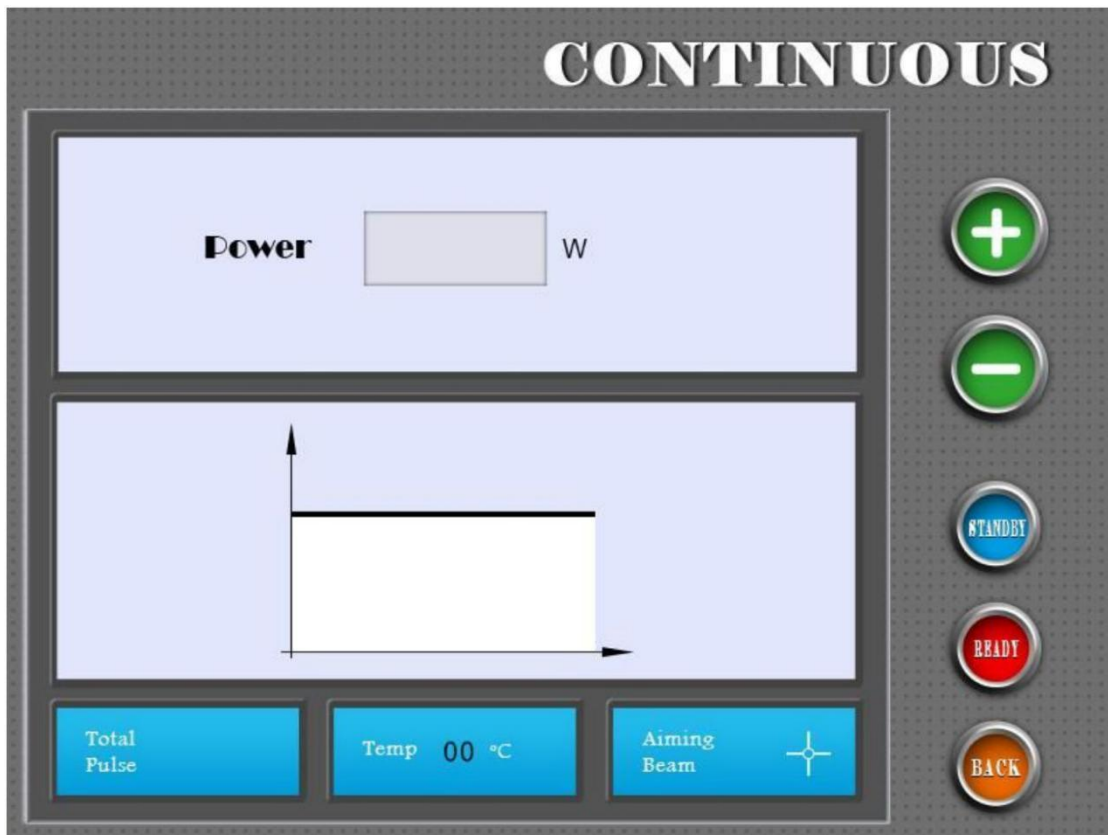
A rectangular button with rounded corners, a light gray background, and a thin gray border. The words "Repeat Pulse" are written in a light blue, sans-serif font.

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

A rectangular button with rounded corners, a light gray background, and a thin gray border. The words "Magic Pulse" are written in a light blue, sans-serif font.

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

5.3.2 Pulse continuous mode interface



button for power increase and decrease

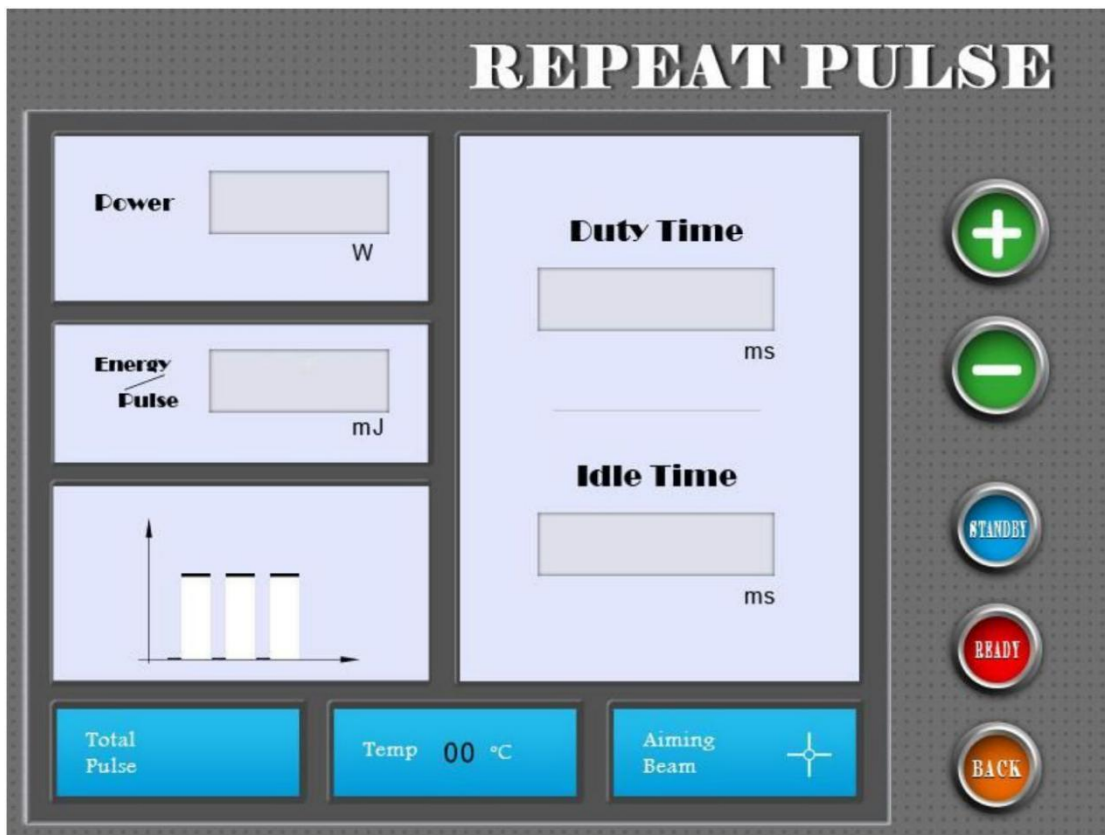


After the parameters are adjusted, press the ready button, the scanner will be aligned with the position, and the laser will be emitted by stepping on the foot pedal.



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 be 0-30W

Duty Time

Point on time, pulse output duration

Idle Time

Point off time, which is the pulse off duration

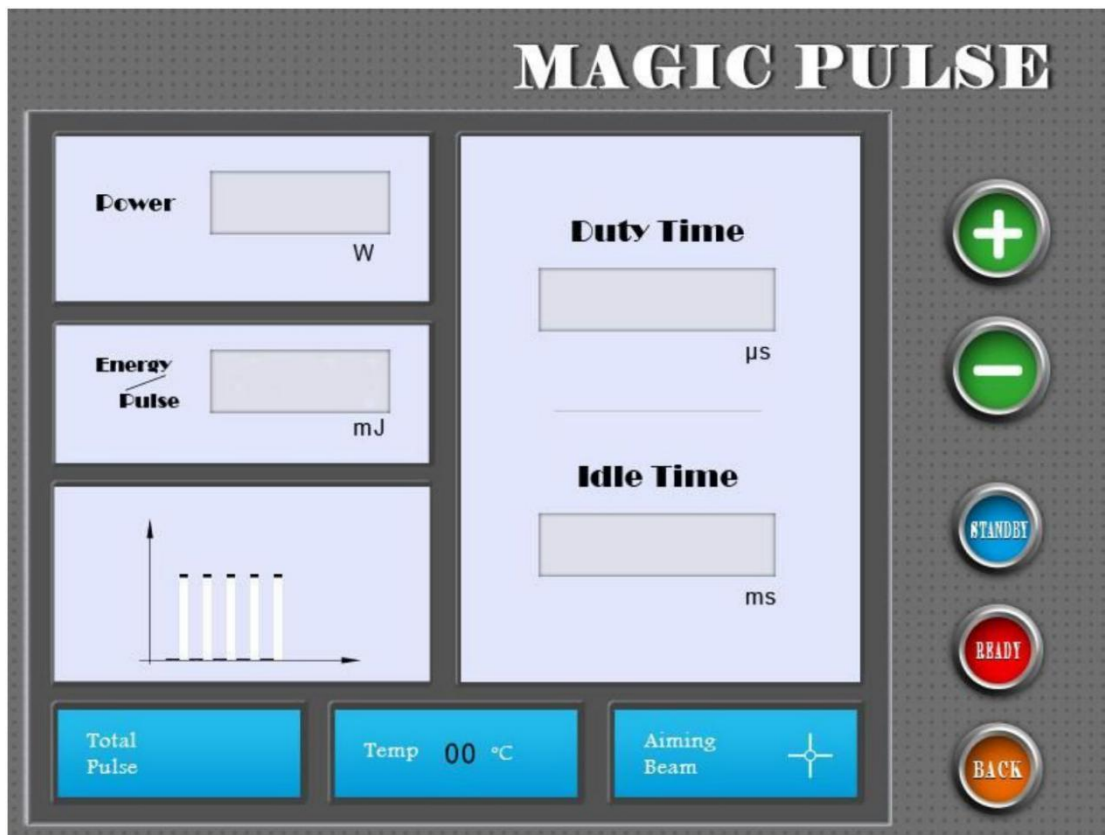


After the parameters are adjusted, press the ready button, the scanner will be aligned with the position, and the laser will be emitted by stepping on the foot pedal.



Click to return to the main interface

5.3.4 Single Pulse Mode Interface



Power

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

Duty Time

Point on time, pulse output duration

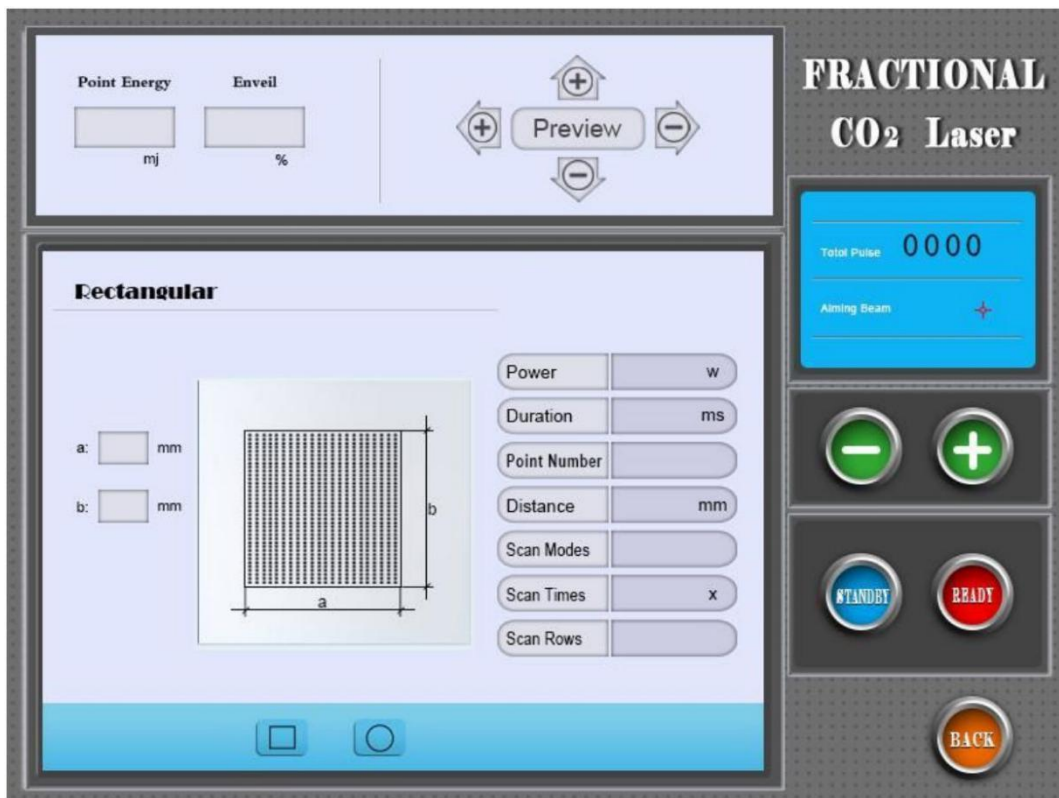


After the parameters are adjusted, press the ready button, the scanner will be aligned with the position, and the laser will be emitted by stepping on the foot pedal.



Click to return to the main interface

5.4 Private Mode Interface



Power

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

Duration

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

Point Number

The number of scan points, use the parameter button to adjust, the number of scan points per row/column is 1-20

Distance

Point spacing, use the parameter button to adjust, control the distance between the dots of the dot matrix to 0.1-2.6mm, which has achieved the purpose of controlling the dot matrix density.

Scan Modes

Scanning mode :

use the parameter button to adjust, the scanning mode of the control dot matrix is divided into three types:

Sequential mode :

Scan points are performed sequentially from side to side

Out-of-order mode :

scan points are not in order, random

Mid-point mode :

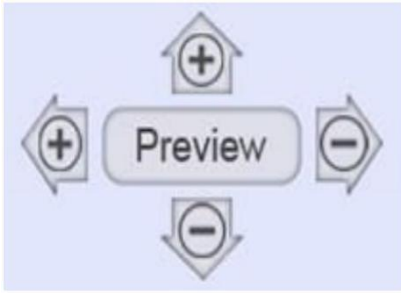
The scanning point and the next scanning point in the same line are kept at half the distance of the dot matrix.

Times

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

Scan Rows

The number of lines to scan, the number of lines to be scanned is 1-20



Use the up and down buttons to adjust the offset length in the up and down direction of the graphic to 0-20mm, and use the left and right buttons to adjust the offset

length in the left and right directions of the graphic to 0-20mm

When pressing the Preview button, the scanner will send out

Indicator light previews selected graphic



Used to select scanned graphics



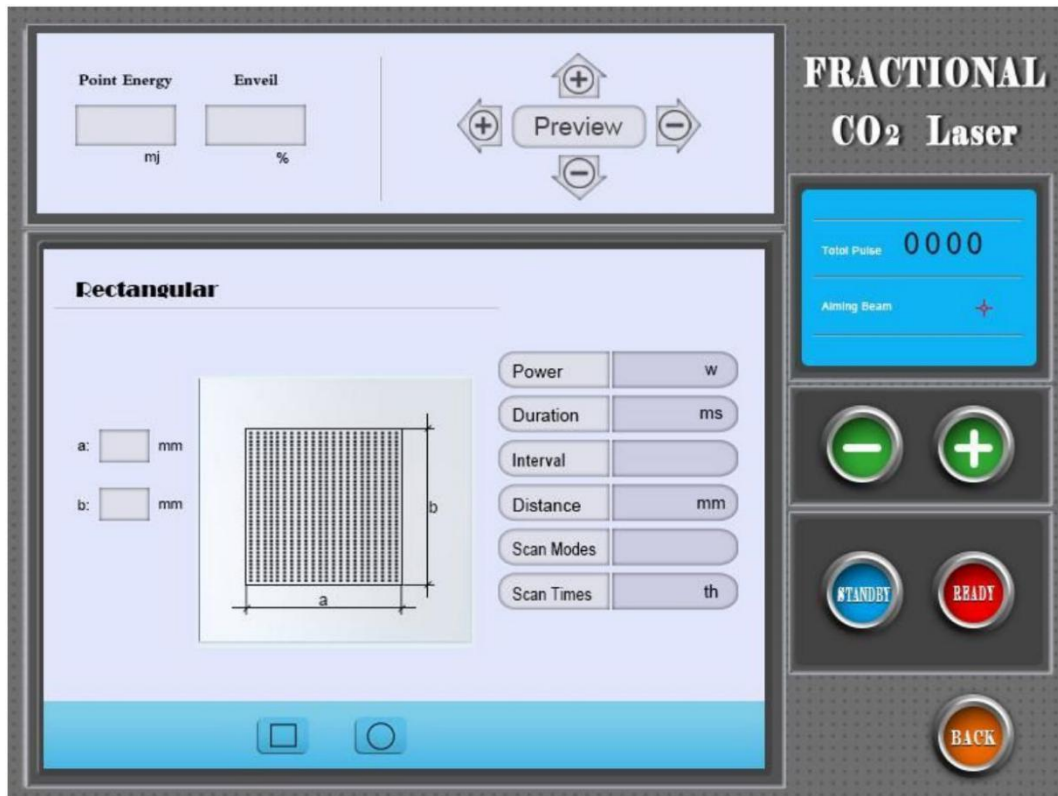
After the parameters are adjusted, press the ready button, the scanner is aligned with the position, press the foot

pedal to launch laser scanning



Click to return to the main interface

5.5 Vulva Mode Interface



Power

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

Duration

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

Interval

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

Distance

Point spacing, use the parameter button to adjust, control the distance between the dots of the dot matrix to 0.1-2.6mm, which has achieved the purpose of controlling the dot matrix density.

Scan Modes

Scanning mode :

use the parameter button to adjust, control the scanning mode of the dot matrix is divided into three types

Sequential mode:

Scan points are performed sequentially from side to side

Out-of-order mode:

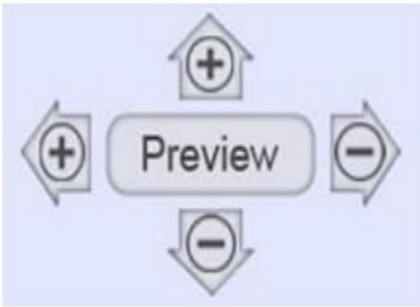
scan points are not in order, random

Mid-point mode:

The scanning point and the next scanning point in the same line are kept at half the distance of the dot matrix.

Times

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



Use the up and down buttons to adjust the maximum length of the bitmap in the vertical direction to 0-20mm, and use the left and right buttons to adjust the maximum length of the bitmap in the left and right directions to 0-20mm. When the Preview button is pressed, the scanner will send out Indicator light previews selected graphic



Used to select scanned graphics

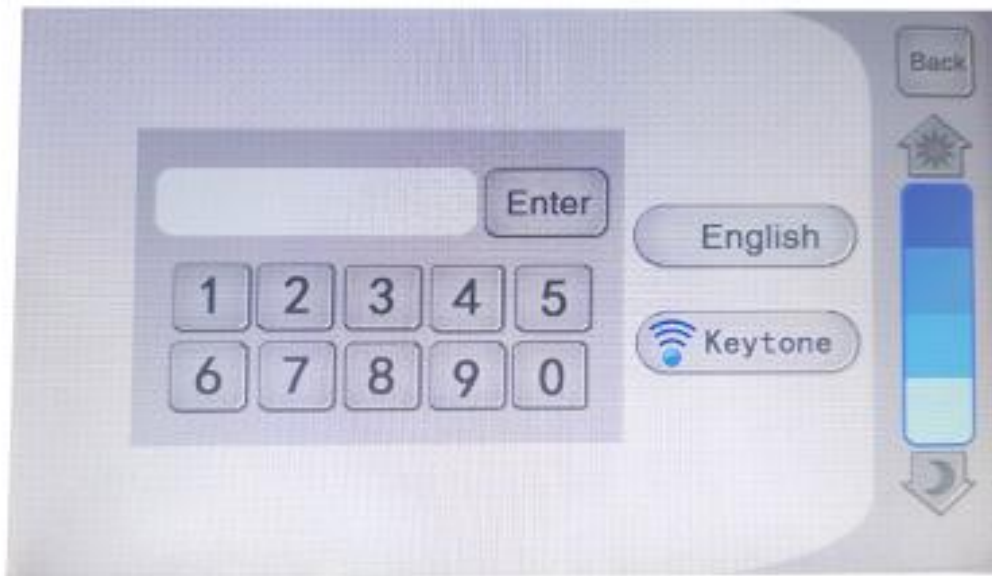


After the parameters are adjusted, press the ready button, the scanner is aligned with the position, press the foot pedal to launch laser scanning



Click to return to the main interface

5.6 Setting interface



English

Click to change the language type, Chinese or English

Keystone

Click to turn sound on or off



Adjust the indicator light intensity

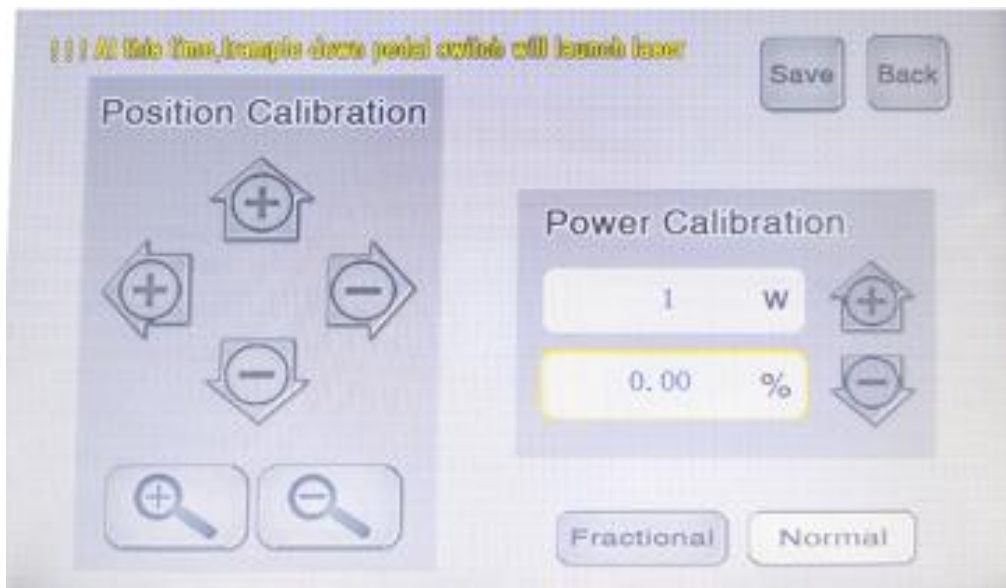
Enter

After entering the password 123456, enter the calibration interface

Back

Click to return to the main interface

5.7 Calibration interface




Power Calibration: Checked W, select the power value to be calibrated, and then select %, adjust the value and use the laser power meter to measure the actual power of the laser at this time, so that "display value of power to be calibrated" = "maximum power of laser" × "percentage of actual power to be calibrated", please save it before exiting.

Notice: In the power calibration interface, step on the foot pedal to launch the laser directly. After calibration adjustment, press the save button to save, and then press the back button to return to the main interface.



Notice:

In the interface  The button is the factory debugging button, the parameters have been set at the factory, and no need to be set.

5.8 Switching off the instrument

1. After using the instrument, it is recommended to return to the standby state before turning off the instrument, and then turn the key switch to the "off" position to turn off the instrument.
2. The light guide arm is replayed to a natural position without force to maintain a good optical path.
3. Remove the cutter head and other tools for cleaning and disinfection.
4. When the instrument is not in use, remove the key switch and keep it properly to prevent unauthorized personnel from using or operating the instrument.

Chapter 6

Troubleshooting Guide

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

Warn:When the instrument is working normally, it may generate high voltage and CO2 laser radiation. A little carelessness will cause harm to the human body. Therefore, be careful when maintaining the instrument.

Table 6-1 is the fault information that can be displayed on the control panel and is relatively easy to solve.

Table 6-2 shows the situations in which the fault information cannot be displayed on the control panel. The table lists more detailed fault causes and troubleshooting methods.

Table 6-1 Service guides that can display fault information

accident details	Trouble causes and troubleshooting methods
There is no display when the instrument is powered on	<p>A. The instrument is not connected to the AC power supply</p> <p>B. Check whether the power cord is plugged into the power socket, whether the main power control switch, the emergency stop switch is turned on, and whether the connection sockets are well connected</p> <p>C. The low-voltage switching power supply is faulty</p> <p>D. Check the low-voltage switching power supply Whether the input, output sockets, input and output voltages are normal</p> <p>E. The control board is faulty</p> <p>F. The LCD display is faulty</p> <p>G. Contact the after-sales service department of our company</p>
Foot switch failure	<p>A. The foot switch is not connected well</p> <p>B. The foot switch is damaged and needs to be replaced</p>
High voltage power failure	<p>A. The high-voltage power supply is not powered or the main SSR is faulty</p> <p>B. The high-voltage power supply is faulty, and the high-voltage power supply needs to be replaced</p>

Table 6-2 Service Guide for No Fault Information Displayed

fault phenomenon	Fault reason and repair method
<p>When the switch key is turned to the "ON" position, the instrument has no action</p>	<p>A. The AC power supply is not connected B. The emergency stop switch is not turned on C. The main control switch on the rear panel is not turned on D. The low-voltage power supply is damaged or the main control board fails to work</p>
<p>Aiming indicator light is too weak</p>	<p>A. Rotate the position of the adjustment knob of the aiming light B. The lens of the light guide system has too much dust, and the dust needs to be removed or the light guide arm needs to be replaced C. The semiconductor laser is damaged, and the semiconductor laser needs to be replaced</p>
<p>CO2 does not fall on the aiming beam spot</p>	<p>same optical path offset</p>
<p>No air blow when the instrument is ready</p>	<p>A. The air pump is not connected to 220V AC power B. The air pipe is not connected C. The air pump is damaged and needs to be replaced D. Other electrical faults</p>
<p>No CO2 laser emission when the foot switch is pressed</p>	<p>A. The connection of the foot switch is not in good contact B. The instrument is not in the ready state C. The laser tube is damaged D. The high voltage power supply is faulty E. Other electrical faults</p>