CO 2 fractional privacy laser operating instructions

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, the plastic surgery of the private part 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 relaxation can 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 treatment solutions for microvascular reconstruction by CO2 laser, the volume of vaginal tightening treatment has increased rapidly, becoming a new growth point in the cosmetic plastic industry. Private youth laser provides a set of revolutionary, precise and painless solutions for women's common problems such as vaginal relaxation, vaginal environment disturbance, poor sensitivity, or urinary incontinence: no anesthesia, no pain throughout the process, no During vacation, 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 the CO2 laser, 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, thereby enhancing the secretion of the vaginal mucosa, lightening the color, and enhancing 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: it is painless and non-invasive to solve the problems of postpartum genital tract leakage, relaxation, decreased sensitivity and lubrication, and repeated inflammation.

Chapter II Operational Safety Regulations

2.1 Optical security

1 . Burning **the CO 2 scanning laser is 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, even if it is not focused, it can cause 3rd degree burns. Therefore, it should be given enough attention.**

2 . Hazards of reflection and direct radiation 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 does not cause burns to the human eyes, it can also cause damage to a certain extent.

CO 2 laser is very large, directly irradiating the human eye will cause blindness, and it is irreversible , the operator should be extra careful.

Since the surface of an object, especially smooth metal or glass, can form a mirror and reflect light, it should be noted that such objects or surfaces that may cause reflection should be removed from the laser path . In other words, do not irradiate the

laser light on objects with light-reflecting properties, so as to prevent the reflected or scattered laser light from causing harm to the human body.

2. 2 Flammable and explosive properties

Do not use this laser instrument at the scene where there are flammable and explosive items, and do not place or store flammable and explosive items around the instrument. Inflammable and explosive items include: gasoline, alcohol, some narcotics, some solvents, desiccants, ointments, synthetic resins, etc.

2.3 Safe operation steps

1. Before the operation

1. Keep instrument surfaces clean.
2. Get the instrument key.
3. Ask the surgeon how to arrange the instruments and position the patient.
4. Affix a laser warning sign in a conspicuous place .
5. If general anesthetic is required, prepare a wet towel for the patient.
6. Have all the necessary equipment and tools ready.
7. Check that the instrument is working properly.
8. After inserting the switch key into the key of the instrument, turn on the power and start the machine. The instrument should be self-inspection first, and enter the standby working state after selecting the working mode .
9. If necessary, press the SET button to reset the working parameters .
10. Check the same light path.
11. Press the SET key to return to the standby working state or turn off the instrument until the operation and then turn it on again.

Second, after the operation

1. Shut down and remove the instrument.
2. Pull out the switch key and keep it in a safe place.
3. Place the light guide arm in its normal position.
4. Remove optics and other tools for cleaning or sanitizing, if necessary.

Chapter 3 Instrument Installation

3.1 Unpacking inspection

The instrument has passed the performance debugging and quality inspection before transportation , and we guarantee the product quality, so after unpacking, it should be able to be installed and used directly.

ers note:

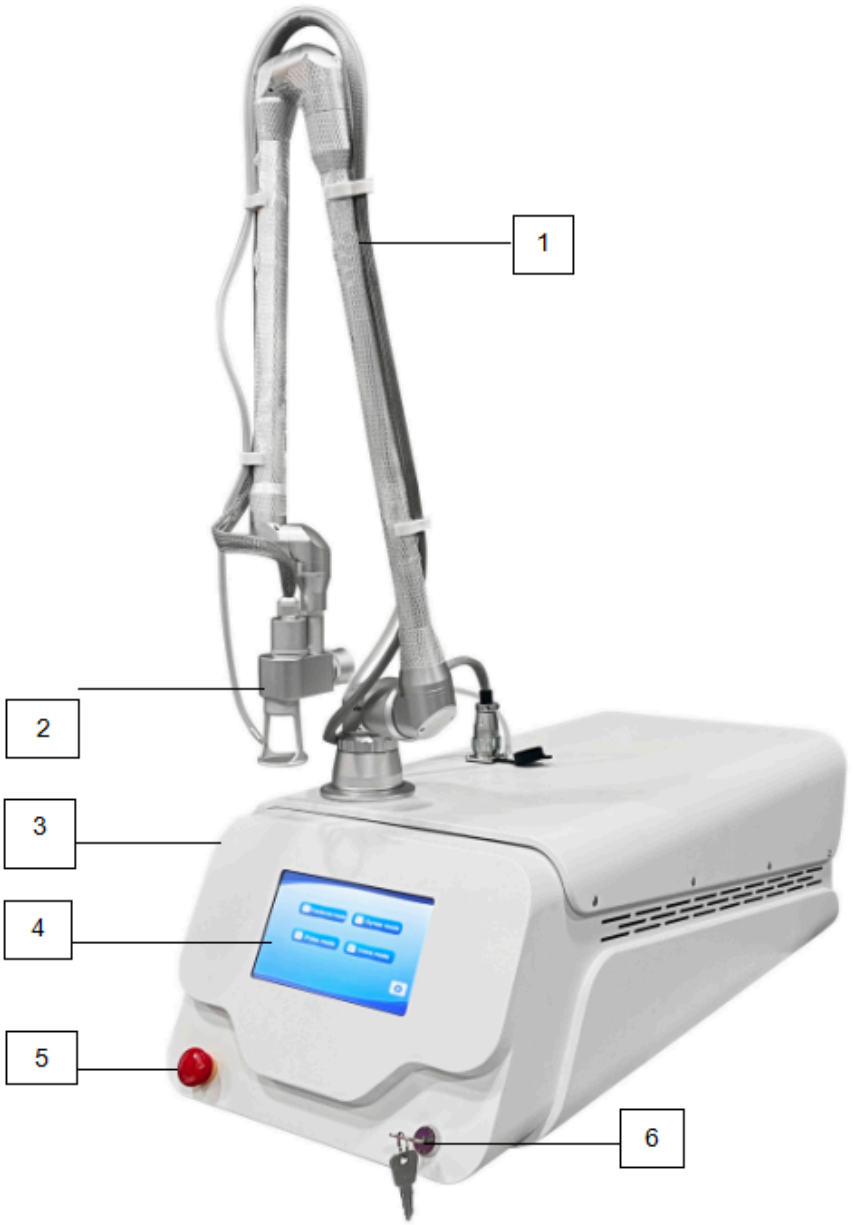
If any damage or other quality problems are found after unpacking, please contact the company or its agent immediately. The company is responsible for solving all quality problems until you are satisfied.

3.2 Equipment list

The laser therapy instrument includes the following components:

		
CO2 scan machine body	Six- joint light guide arm and treatment head	blindfold, key
		
funnel	foot switch	power cable

3.3 The structure of the instrument



This instrument consists of the following parts:

1. Six- joint light guide arm

The laser beam conduction is accomplished by a six- joint light guide arm. The role of the light guide arm is to transmit the laser light to the part of the patient to be operated (target surface) .

2. Scanner

Equipped with a graphics scanner, it can scan and output graphics such as rectangles, circles, hexagons, triangles, etc., and the maximum scanning area is about 20×20 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 display panel

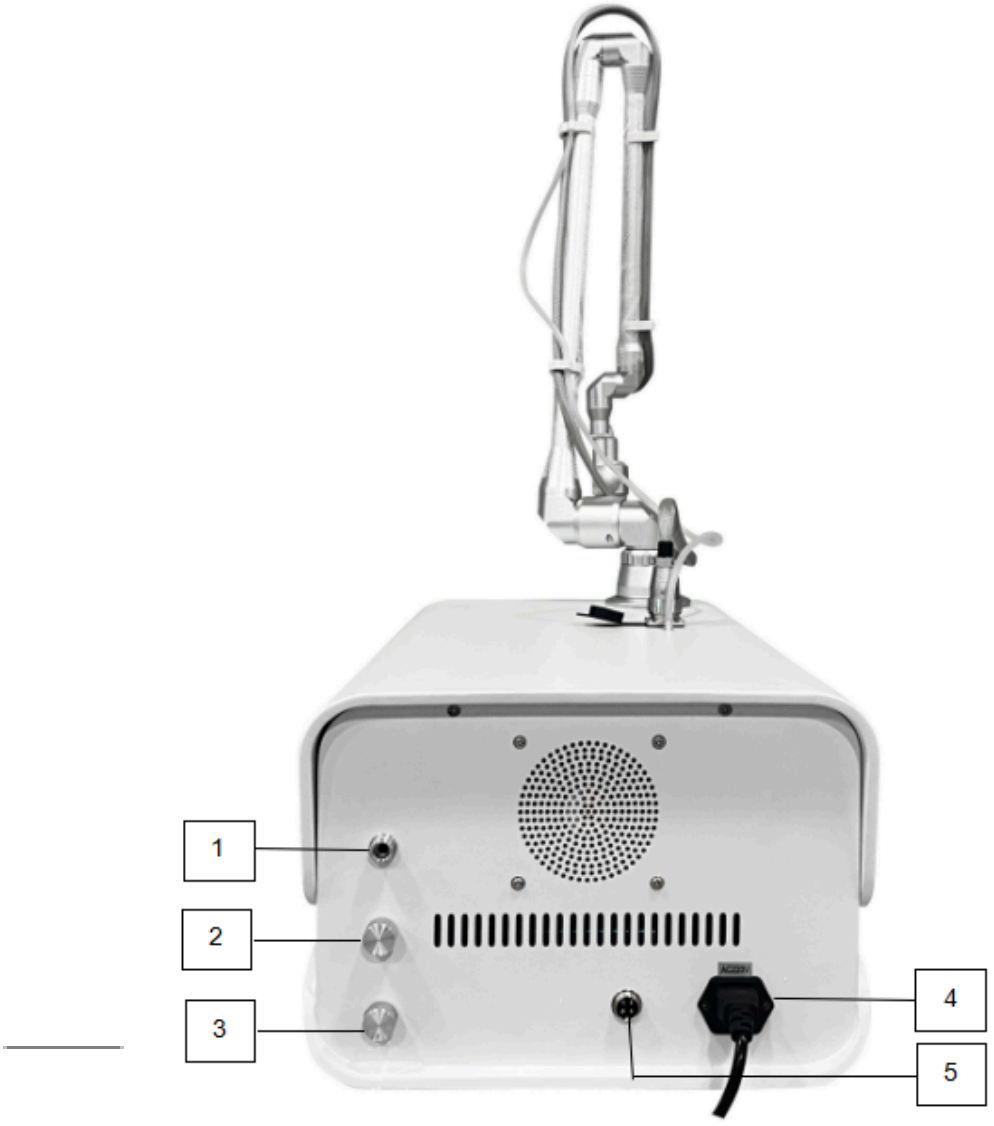
Mainly used for parameter setting

5. Emergency stop switch

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

6. Key switch

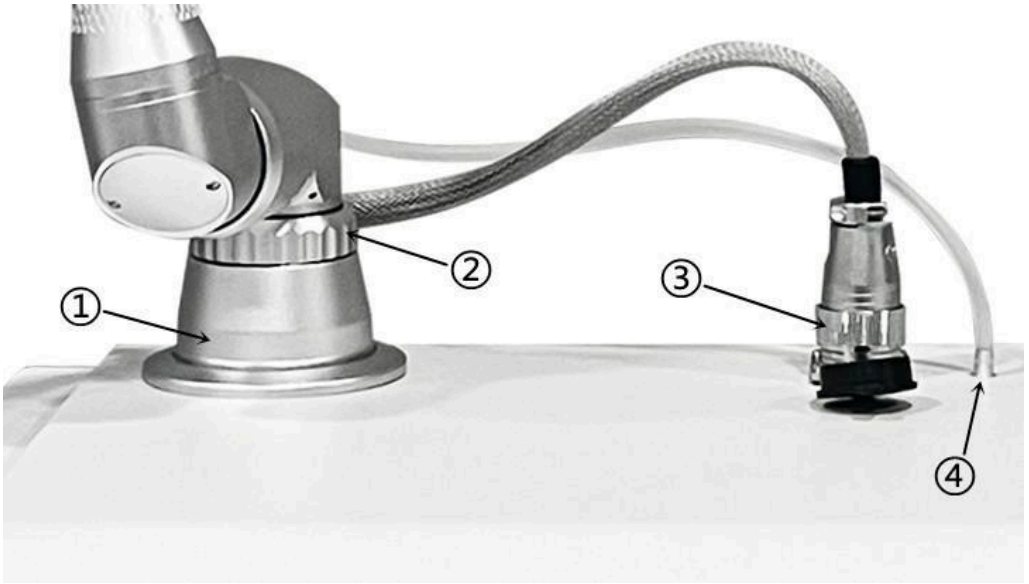
After the key is inserted into the key switch, when it is turned to the "on" position, the instrument will be powered on, and when it is turned to the "off" position, the power will be cut off and the instrument will be turned off .



1. Water injection port 2, overflow port 3, water discharge port 4, power socket 5, foot switch socket

3.4 Installation

1. Install the light guide arm



First, insert the light guide arm into the main unit [① interface], then rotate the light guide arm [② knob] to tighten it, then connect the line to the [③ interface], plug the air pipe into the [④ interface], and the installation of the light guide arm is completed.

2. Add water

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

3. Connect wires and foot switch.

Connect to 220V, 10 A single-phase AC power supply , and connect the foot switch to the instrument foot switch jack. 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 site .

4. Change the water

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

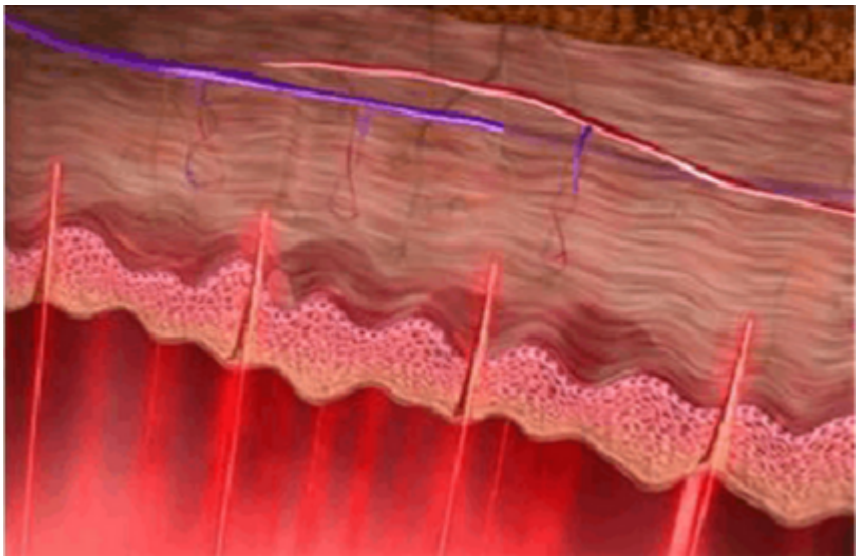
Operating mode	scanning	CO 2
laser type	Encapsulated DC CO 2 Laser	
output energy	1— 6 0W	1W— 6 0W (forward with 1W)
output method	Maximum diameter of scanning circle: 20mm Minimum diameter: 0.1mm	pulse single pulse continuous
	Maximum area of scanning rectangle: 20X20 Minimum area: 0.1X0.1	
aiming light	Red semiconductor indicator light (650nm)	
Control System	Microcomputer control large-screen color touch screen display menu	
Optical transmission	Six joint light guide arm	
cooling system	Closed inner circulation water cooling	

Chapter 4 Instrument Performance Index

1. Instrument principle

The private laser for vaginal relaxation uses the 10600nm water absorption gold standard laser, adopts the perfect combination of three-dimensional lattice technology and 360-degree circular emission technology, generates a high temperature of 50-70 degrees Celsius in the controllable depth of the vaginal mucosa, and stimulates the lamina propria And the fibroblasts in the muscle layer regenerate, and reorganize the damaged collagen fibers and elastic fibers, so as to thicken and tighten the vaginal wall, enhance the firmness and sensitivity of the vagina, and make the vagina firm as before. The private laser will not burn the epidermis due to excessive temperature, and can act on the Mucosa tissue with a thickness of several hundred nanometers each time with homogeneous heat energy.

Using the perfect ratio of wavelength and heat effect of CO2 laser, the strong heat effect can make the collagen fibers, elastic fibers, reticular fibers and organic matrix in the vaginal mucosa proliferate and reshape; The blood flow increases, the cell function is active, and then 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), can produce heat shock protein (HSP), heat shock protein 70 can be converted into growth factor β under laser irradiation, TGF-β plays a key role in inflammatory response and fibrosis response , can induce cells to produce collagen and extracellular matrix. The private youth laser acts on the vaginal mucous membrane and muscular layer, stimulating the collagen fibers in the mucous membrane propria and muscular layer, elastic fibers, reticular fibers and organic matrix to proliferate and remodel a large number, so as to tighten the vagina.

Collagen remodeling and the role of incentive mechanisms

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

Edema - release of chemical mediators (healing mechanism) - collagen contraction

2: Proliferation period (30 days)

Fibroblast proliferation--increase of new matrix molecules--formation of new collagen fibers

3: Refactoring period

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

（2） Improving firmness and lubrication—the principle of CO2 laser vascular reconstruction

The microvascular stimulating effect of the CO2 laser makes the blood vessels dilate and the blood flow increases, which in

turn increases the oxidation and nutrients of the cells and activates the cell functions.

1. Increased sensitivity

The integral, dynamic response of the vaginal vasculature to sexual stimulation plays a key role in the arousal phase of the genital response. Such as reducing vasodilation can lead to sexual problems, especially genital sexual arousal disorder, decreased sensitivity. Accompanied by insufficient vaginal lubrication or even dryness.

2. Increased lubricity

Increase the release of ATP from the mitochondria, activate the cell function, enhance the secretion of the vaginal mucosa, lighten the color, and enhance the lubricating effect.

2. Project advantages.

1. Strong tightening, long lasting effect

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

2. Painless, safe and short treatment time

1. The private youth laser adopts 15*15 and 9*9 image beam modes, and the normal mucosal tissue is reserved between the image beam points to make the heat diffusion more uniform and avoid thermal damage.

2. The treatment is simple and fast, and the whole process only takes 10-15 minutes to complete. Due to the definite curative effect of the private youth laser, the treatment is safer, and the patient acceptance is high, and it can change the vaginal problems in all directions and restore the "young" state.

3. The operation is simple, the treatment is efficient and safe, no rest is required after the operation, and work will not be affected.

4. It can treat various parts of the body, with good effect, wide source of disease and rich income.

5. The latest international technology, light-based cosmetic methods with a lot of clinical experience.

6. The highest energy output of this machine can reach 80mj, which is the highest among similar products.

7. The machine consists of two parts, the host and the handle. Our company maintains the original performance of the erbium glass laser but miniaturizes it, and integrates it into the handle, which 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 without changing the host.

9. Non-exfoliating treatment, no pain, short time, no adverse reactions, especially suitable for young and middle-aged people.

10. The machine has three microbeam array outputs with different point densities. They are easily changed on the handle. For each point density, a variety of point energy levels are set to provide users with tailor-made treatments for different lesions, so as to achieve the most satisfactory treatment effect.

3. The scope and effect of treatment.

1) Privacy function:

1 Yin shrinkage: fast tightening, long-lasting tightness and firmness increased by 60%

2 Yin beauty: lighten the pigment, beautify the labia and increase the tenderness by 70%.

3 Moisturizing Yin: Increase secretion, eliminate dryness and lubricity increased by 80%.

4 Yin nourishing: deep anti-aging, preventing aging and increasing youthfulness by 80%.

5 Increase sensitivity.

6 Private and healthy, balance PH, improve internal environment.

Adapt to the crowd:

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

2), dot matrix and pulse function:

1. Various scars (surgical scars, burn scars, scald scars)
2. Remove pigmented lesions (freckles, sun spots, age spots, sun spots, melasma, etc.)
3. Eliminate stretch marks.
4. Comprehensive skin rejuvenation (skin rejuvenation, skin tightening, shrink pores, nodular acne
5. Vascular disease (capillary hyperplasia, rosacea)
6. Remove false and real wrinkles
7. Get rid of acne scars

4. Core technology

Smooth technology

1. The ideal laser wavelength can be absorbed by micron-level tissues on the mucosa, avoiding thermal damage to deep

tissues or organs.

2. The laser energy is output in the form of short pulses at optimized intermittent intervals, which can avoid thermal damage caused by high temperature on the skin surface, and a uniform thermal effect is formed on the surface layer with a thickness of several hundred microns in the mucosal tissue.

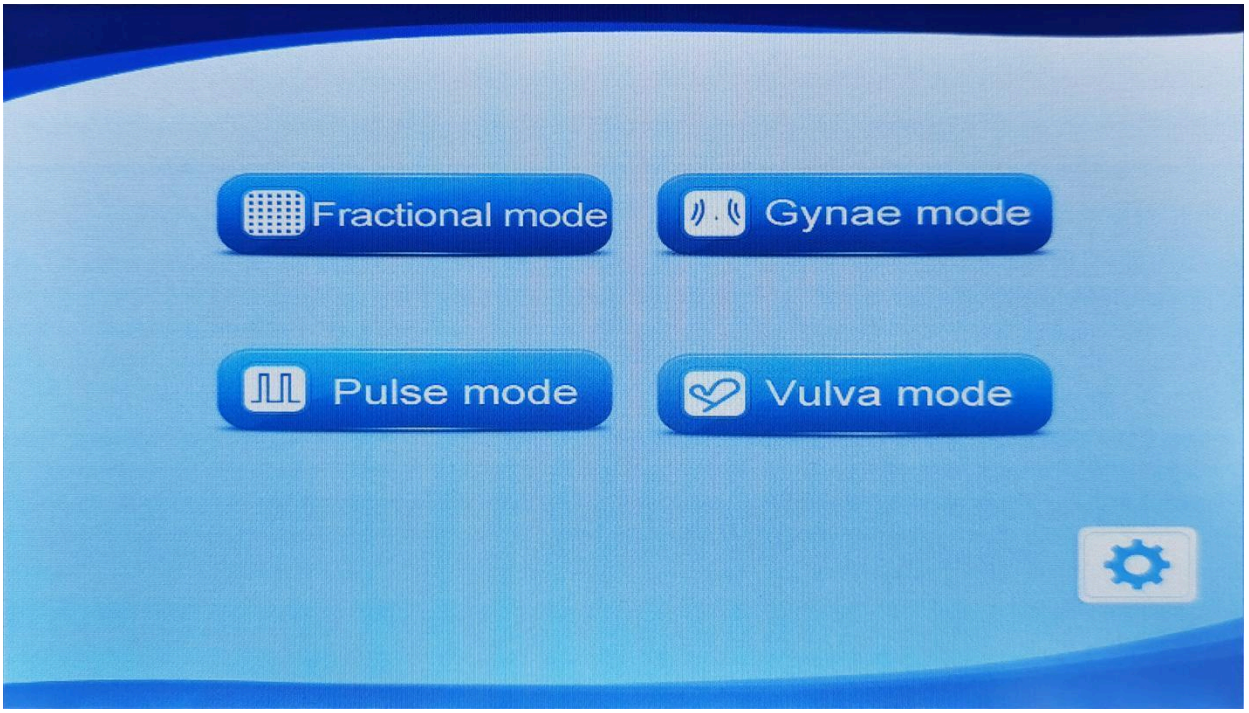
3. Use the Smooth mode to treat vaginal mucosal tissue in a non-invasive mode that is as gentle as a feather, and there will be no bleeding, because this mode can precisely control the temperature to avoid tissue damage.

Gold 360 Ring Launch Technology

The laser passes through the gold-plated 360° reflective handpiece and acts on the vaginal wall in a circular light-emitting pattern. The treatment method does not touch the vaginal wall, but applies the laser energy to the entire vagina evenly and comprehensively. This technology makes the operation of vaginal laser tightening easier, the treatment time is shorter, and the safety is higher.

Chapter 5 Operation Steps

After starting up, the touch screen first enters the start-up interface : select any function and click to enter the work interface .



If you enter the CO2 lattice mode and click the " Fractional mode " option , you can enter the CO2 lattice function working interface (as shown in Figure 1)

If you enter the private mode and click the " Gynae mode " option , you can enter the private function working interface (Figure 2)

If you enter the pulse mode and click the " Pulse mode " option, you can enter the pulse function working interface (Figure 3)

If you enter the vulva mode and click the "Vulva mode" option, you can enter the vulva function working interface (Figure 4)

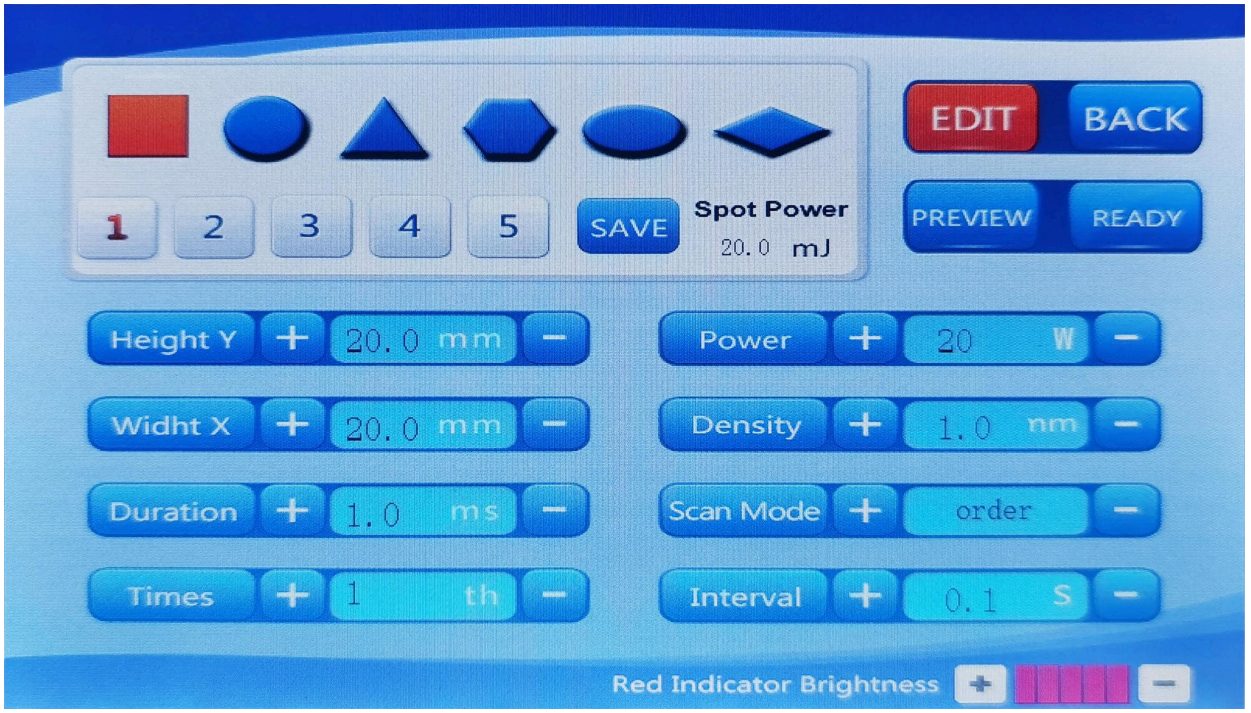


Figure 1 Dot matrix function

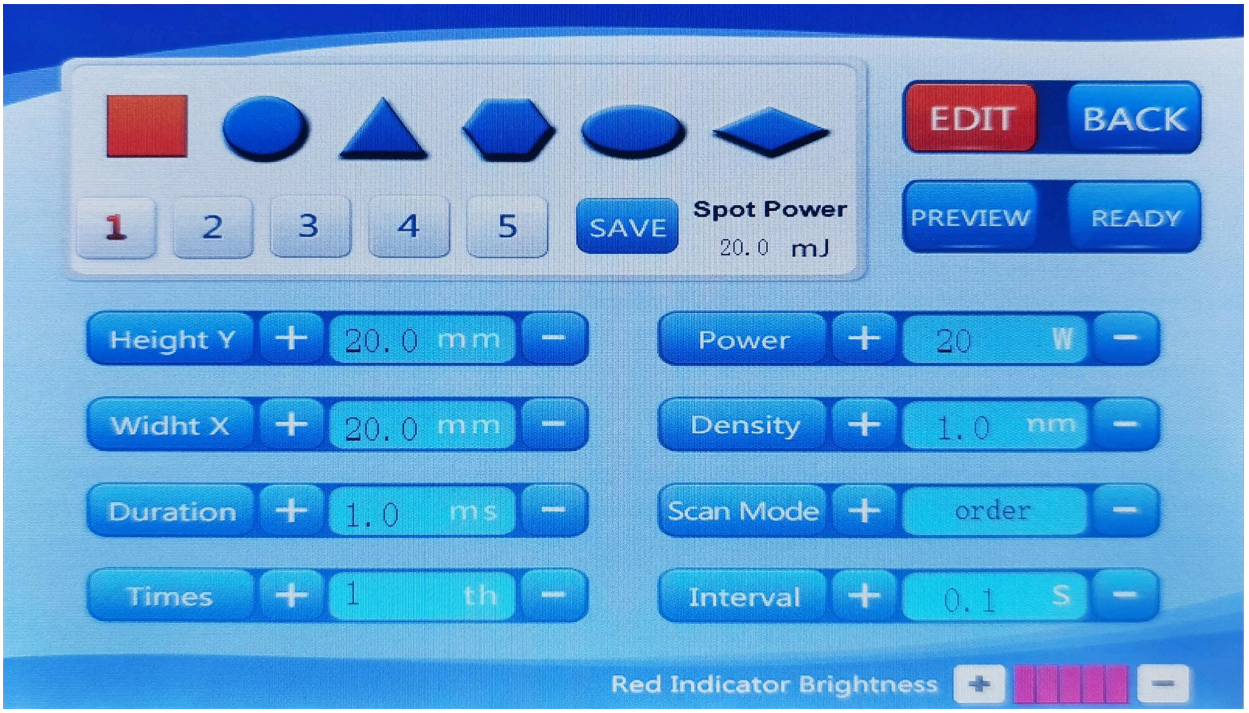


Figure 2 Privacy function

Figure 3 Pulse function

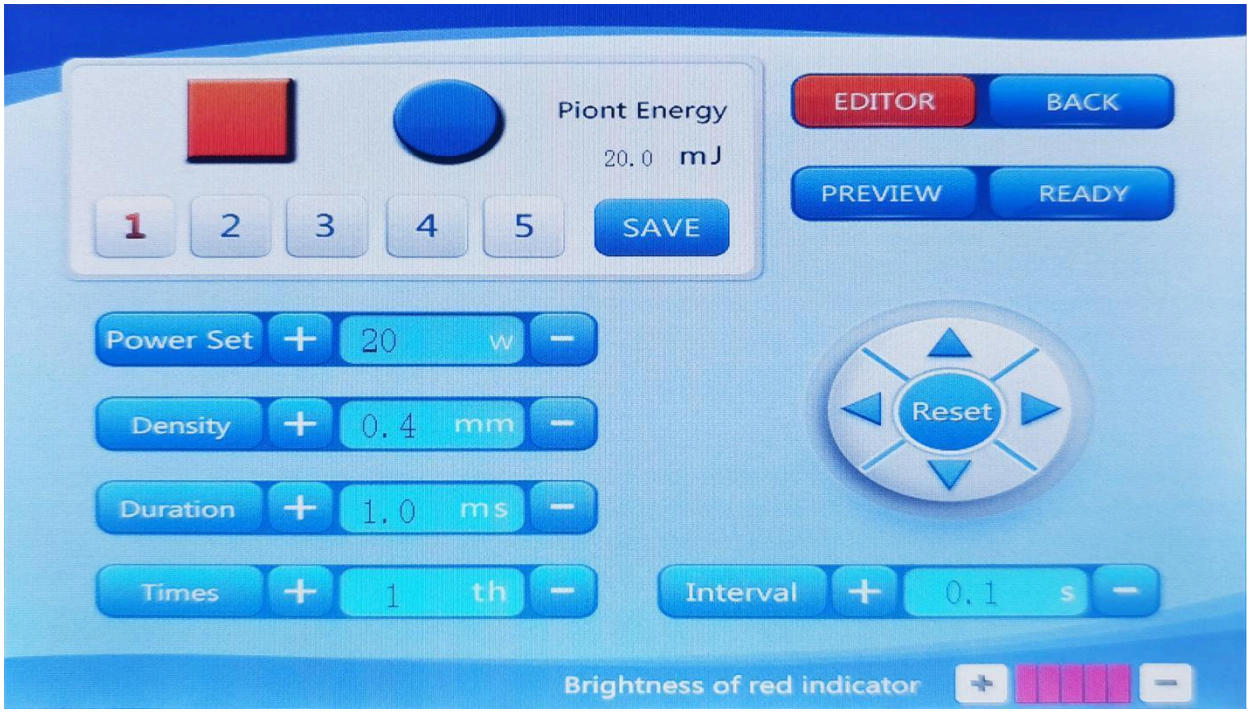
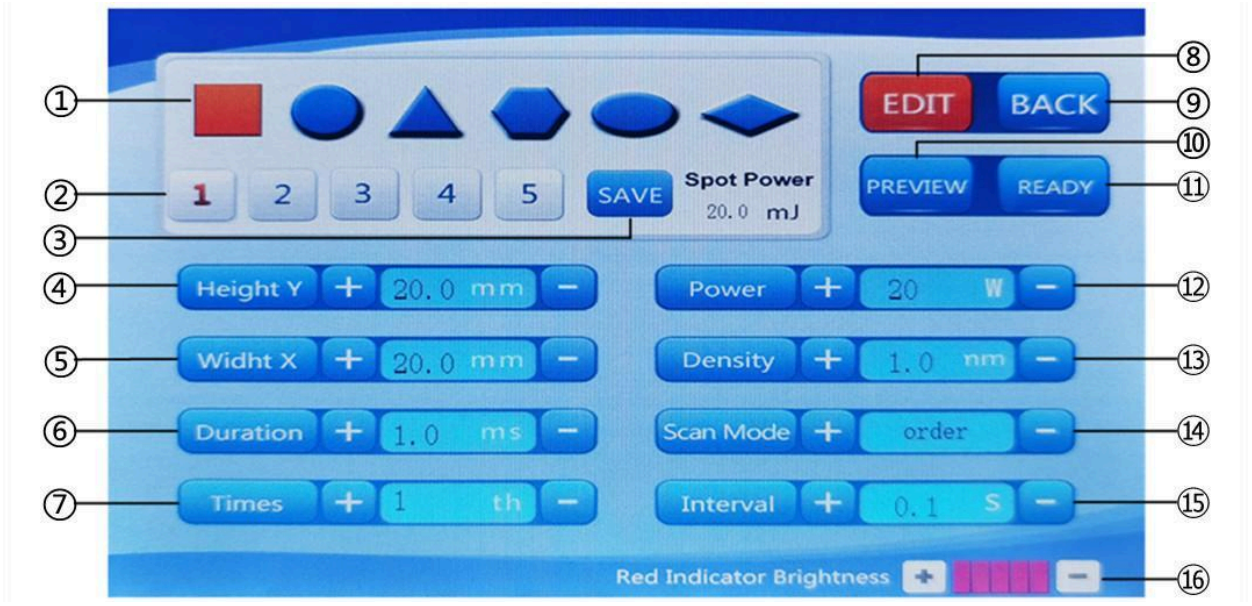


Figure 4 vulva function

1. C02 dot matrix function working interface



①: Select the graphics to operate on the skin, and control the dot matrix shape graphics .

② **12345:** Press the number 1-5 to select the stored space, and you can call it by pressing the number button at any time

during use.

③ **SAVE:** Press save to save all the parameters of the current page to the selected space .

④ **Height Y:** Use the parameter button to adjust , the height of the graphic is 20-1mm .

⑤ **Widht X:** Use the parameter button to adjust , and the width of the graphic is 20-1mm.

⑥ **Duration:** Use the parameter button to adjust, control the laser action dwell time of each point in the scanning process 0.1ms-10ms

⑦ **Times:** Use the parameter button to adjust, control the scan times of the dot matrix 1-20th

⑧ **EDIT:** Edit adjustment parameters.

⑨ **BACK:** Back, return to the operation function option interface.

⑩ **PRVEIEW:** When the preview button is pressed, the scanner will emit an indicator light to preview the selected graphics .

⑪ **READY:** After the parameters are adjusted, press the ready button, the scanner is aligned, and the laser scan is launched when the pedal is pressed .

⑫ **Power:** Use the parameter button to adjust and control the laser output power from 0.5 to 60W .

⑬ **Density:** Use the parameter button to adjust, and control the distance between the dots of the dot matrix to 0.1-2.0nm , which has achieved the purpose of controlling the dot matrix density .

⑭ **Scan Mode:** Use the parameter button to adjust, and the scanning mode of the control dot matrix is divided into three types:

Sequential mode: scan points sequentially from side to side

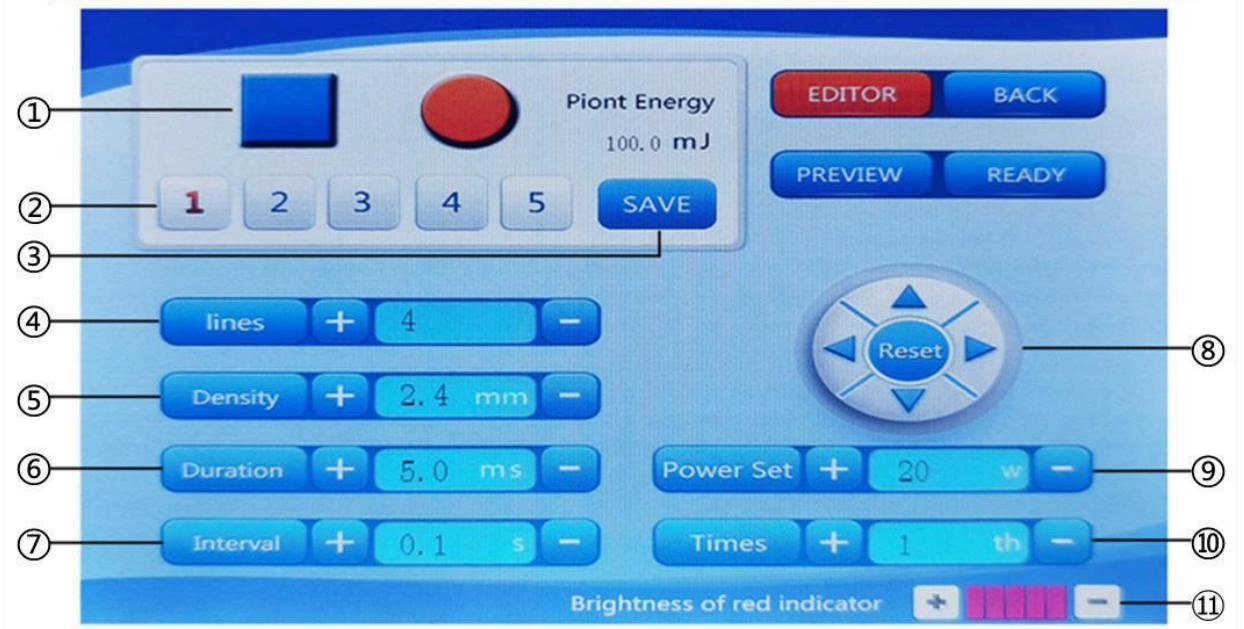
Out-of-sequence mode: scan points are random

Middle split mode: The scanning point and the next scanning point in the same row keep half the distance of the dot matrix

⑮ **Interval:** Use the parameter button to adjust to control the scanning gap time between the midpoint and the next point in the scanning process 0.1-5.0s

⑯ **Red Indicator Brighthess:** Adjust the brightness of the red indicator.

2. Privacy function working interface



①**:** Select the graphics to operate on the skin, and control the dot matrix shape graphics .

② **12345:** Press the number 1-5 to select the stored space, and you can call it by pressing the number button at any time during use.

③ **SAVE:** Press save to save all the parameters of the current page to the selected space .

④ **lines:** Use the parameter button to adjust and control the number of scanning lines.

⑤ **Density:** Use the parameter button to adjust, and control the distance between the dots of the dot matrix to 0.1-2.0nm , which has achieved the purpose of controlling the dot matrix density .

⑥ **Duration: Use the parameter button to adjust, and control the laser action** dwell time of each point in the scanning process from 0.1ms to 10ms .

⑦ **Interval:** Use the parameter button to adjust, control the scanning gap time between the midpoint and the next point in the scanning process 0.1-5.0s

⑧ **Reset:** Use the up and down indicating buttons to adjust the up and down directions of the dot matrix graphics , and use the left and right indicating buttons to adjust the left and right directions of the dot matrix graphics .

⑨ **Power Set:** Use the parameter button to adjust, control the laser output power to 1-6 0W

⑩ **Times:** Use the parameter button to adjust, control the scan times of the dot matrix 1-20th

⑪ **Red Indicator Brighthess:** Adjust the brightness of the red indicator.

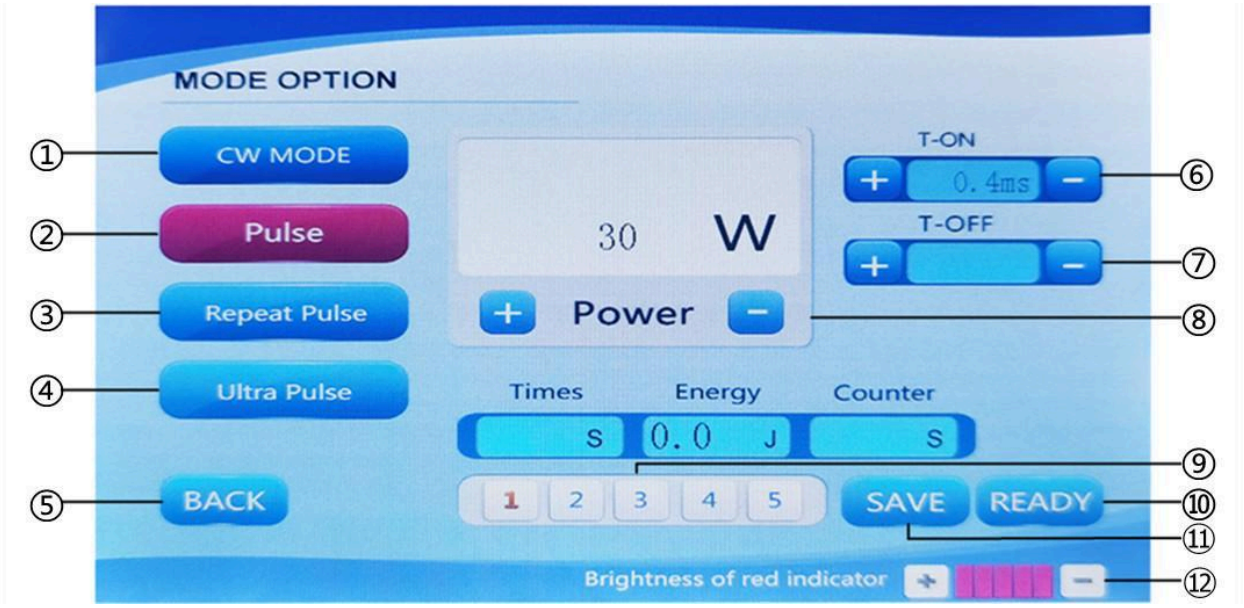
EDITOR: Edit adjustment parameters.

BACK: Back, return to the operation function option interface.

PRVEIEW: When the preview button is pressed, the scanner will emit an indicator light to preview the selected graphics .

READY: After the parameters are adjusted, press the ready button, the scanner is aligned to the position, and the laser scan is launched when the pedal is pressed .

3. Pulse function working interface



① **CW MODE:** continuous mode

② **Pulse:** pulse mode

③ **Repeat Pulse:** repeat mode

④ **Ultra Pulse:** ultra pulse mode

⑤ **BACK:** Back, return to the operation function option interface.

⑥ **T-ON:** pulse width adjustment 1-100ms

⑦ **T-OFF:** interval time 1-100ms

⑧ **Power:** Use the parameter button to adjust, control the laser output power to 1-6 0W

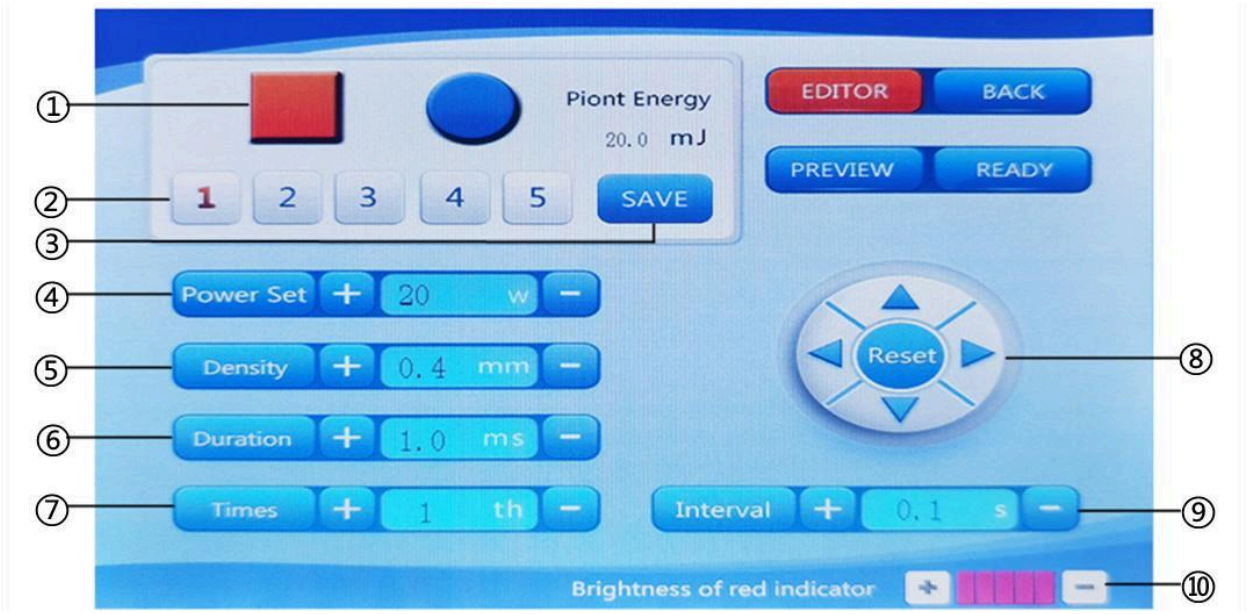
⑨ **12345:** Press the number 1-5 to select the stored space, and you can call it by pressing the number button at any time during use.

⑩ **READY:** After the parameters are adjusted, press the ready button, the scanner is aligned with the position, and the laser scan is launched when the pedal is stepped on .

⑪ **SAVE:** Press save to save all the parameters of the current page to the selected space .

⑫ **Red Indicator Brightness:** Adjust the brightness of the red indicator.

4. Vulva function interface



①: Select the graphics to operate on the skin, and control the dot matrix shape graphics .

② **12345:** Press the number 1-5 to select the stored space, and you can call it by pressing the number button at any time during use.

③ **SAVE:** Press save to save all the parameters of the current page to the selected space .

④ **Power Set:** Use the parameter button to adjust, control the laser output power to 1-6 0W

⑤ **Density:** Use the parameter button to adjust, and control the distance between the dots of the dot matrix to 0.1-2.0nm , which has achieved the purpose of controlling the dot matrix density .

⑥ **Duration: Use the parameter button to adjust, and control the laser action** dwell time of each point in the scanning process from 0.1ms to 10ms .

⑦ **Times:** Use the parameter button to adjust, control the scan times of the dot matrix 1-20th

⑧ **Reset:** Use the up and down indicating buttons to adjust the up and down directions of the dot matrix graphics, and use the left and right indicating buttons to adjust the left and right directions of the dot matrix graphics .

⑨ **Interval:** Use the parameter button to adjust, control the scanning gap time between the midpoint and the next point in the scanning process 0.1-5.0s

⑩ **Red Indicator Brighthess:** Adjust the brightness of the red indicator.

EDITOR: Edit adjustment parameters.

BACK: Back, return to the operation function option interface.

PRVEIEW: When the preview button is pressed, the scanner will emit an indicator light to preview the selected graphic .

READY: After the parameters are adjusted, press the ready button, the scanner is aligned to the position, and the laser scan is launched when the pedal is pressed .

Steps:

1. Inner genitals:

The figure in the upper right corner of the interface is a circle (15*15) , and the specific parameters are as shown in the figure below. During the operation, the mouth expander expands the vaginal opening, and the bracket is inserted until there is resistance, and then the 360-degree sleeve is inserted. Insert it to the bottom, and pay attention to the scale value on the treatment head, step on the foot pedal for luminous treatment once, pull the cannula at a distance of 0.5cm, step on the foot pedal for luminous treatment again, and pull it out 0.5cm again. Repeat this until the cannula reaches Vaginal opening, and

then re-insert to the end, repeat the operation twice, and treat the inner genitals three times in total.

2. Vulva and vaginal opening .

The figure in the upper right corner of the interface is a square (9*9) , adjust the parameters as shown in the figure below, about 5CM away from the vaginal opening, step on the foot to emit light, and carry out treatment.

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. natural position without force to maintain a good same light path.
3. Remove the cutter head and other tools for cleaning and disinfection.
4. When the instrument is not in use, unplug the key switch and keep it safe to prevent unauthorized personnel from using or operating the instrument.

Chapter 6 Troubleshooting Guide

If the instrument fails, refer to the table below to find out 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 the after-sales service department of our company .

warn:

The instrument may generate high voltage and CO 2 laser radiation during normal operation , and a little carelessness will cause harm to the human body . Therefore, be careful when maintaining the instrument .

Troubleshooting Guide

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

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

Table 8-1 Maintenance guide that can display fault information

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

Table 8-2 Maintenance guide without displaying fault information

Symptoms	Cause of failure and repair method
When the switch key is turned to the "ON" position, the instrument has no action	Not connected to AC power The emergency stop switch is not turned on The main control switch on the rear panel is not turned on The low-voltage power supply is damaged or the main control board fails to work
Aim indicator light is too weak	Rotate aiming light adjustment knob position of the light guide system has fallen too much dust , the dust needs to be removed or the light guide arm needs to be replaced laser is damaged and needs to be replaced
CO2 does not fall on the aiming light spot	Offset with optical path
When the instrument is in the ready state, there is no blowing	The air pump is not connected to 220 VAC The trachea is not connected The air pump is damaged, the air pump needs to be replaced other electrical faults
No CO2 laser fires when the foot switch is pressed	The wiring of the foot switch is not in good contact Instrument is not in ready state Laser tube damaged High voltage power failure other electrical faults
Power cannot be calibrated	Damaged control panel Misalignment with the optical path The laser tube is used for too long The control board is not working properly High voltage power supply or laser tube damage other electrical faults