



evo  
TECHNOLOGIES

EVO CO2  
LASER MACHINE

# User Manual



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# Chapter One Introduction

## 1. Preface

EVO laser technology remains an efficient, precise and safe system for the dermatologist in the skin community all over the world.

It is a kind of minimal invasive surgery, which lies in between invasive and non-invasive treatment. This technology is known as EVO Photothermolysis theory (dot-matrix light and heat decomposition), which was published in 2004 by Dr. Rox Anderson, one of the laser medical experts from Harvard University. This theory was immediately approved and applied by experts from all over the world.

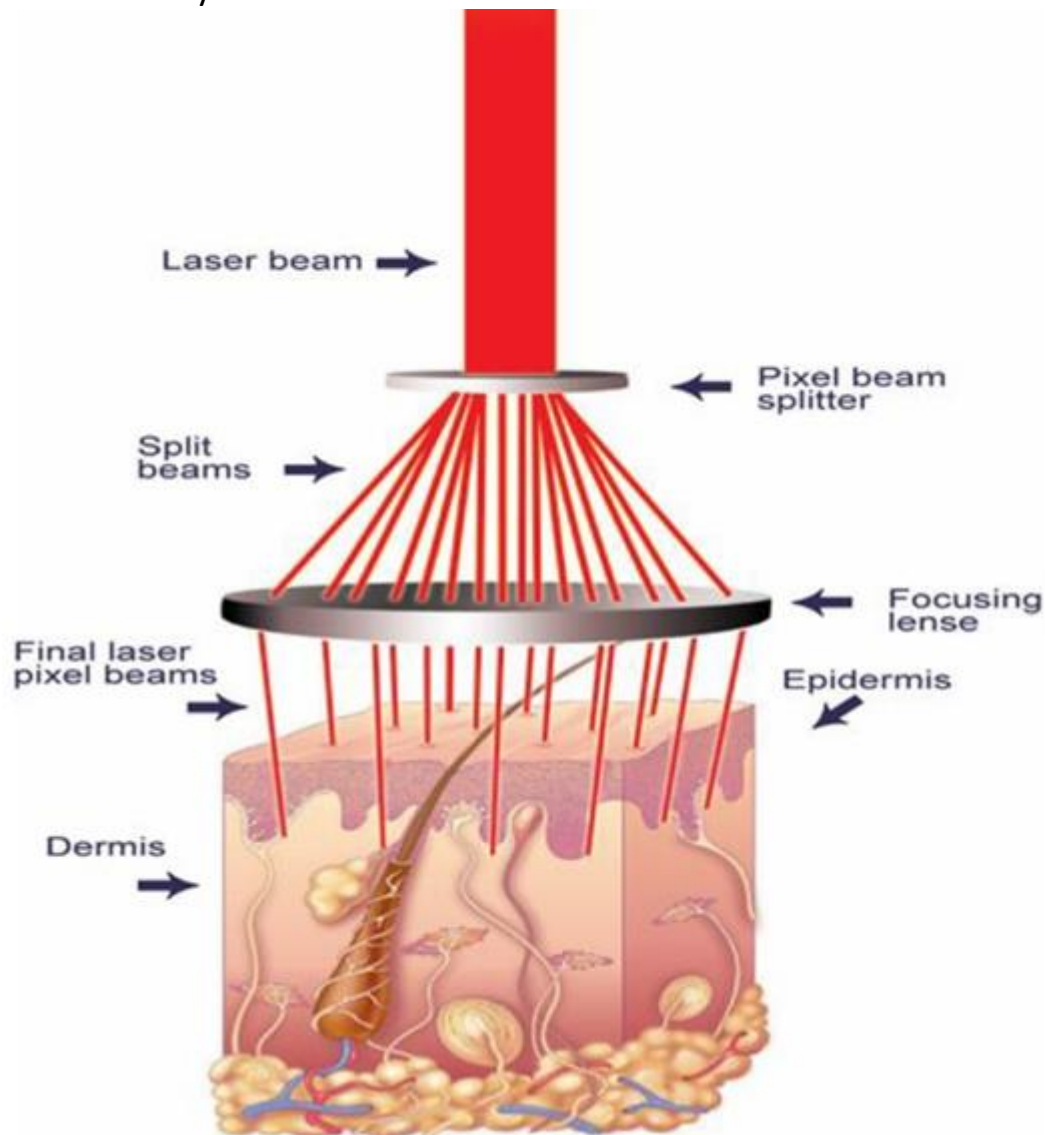
Tremendous advances have been made in the medical application of the laser in the past few decades. The CO<sub>2</sub> laser has effective in the revision of acne scars, skin lifting, speckles and pigment removal, photorejuvenation as well as vaginal tightening.

Moreover, technological advances in CO<sub>2</sub> laser construction have meant smaller spot sizes and greater precision for laser surgery, and more flexibility in tip sizes and protocols for fractional CO<sub>2</sub> laser treatment. The range of dermatological applications of the CO<sub>2</sub> laser is expected to continue to increase in the future.

## 2. Treatment Theory

EVO Photothermolysis (selective photothermolysis effect) theory is an extension of the traditional theory of Selective Photothermolysis. With its wavelength in the mid-infrared at 10,600 nm, CO<sub>2</sub> laser energy is well absorbed in water. With the addition of fractionation of the beam of energy into myriad microbeams, the EVO CO<sub>2</sub> laser has offered a bridge between the frankly full ablative indications and the nonablative skin rejuvenation systems in the rejuvenation of photoaged skin on and off the face. It is to evenly mark with tiny holes, and then there will be a series of biochemical reactions inside the skin. As the EVO laser treatment will only cover part of the skin tissue as well as the new tiny holes do not overlap, therefore part of the normal skin stays the same, which will fasten the recovery. Patients can return to normal

life in 4~5 days.



VRL treatment is a golden 360° emitting technology, which laser has the effect on the vaginal mucosa tissue around 50 to 70°C. Then it can stimulate collagen tightening, remodeling and regenerating, so that thickens the walls of the vaginal canal and improving the cell circulation and dynamic response, then adjusting PH value, resulting in rejuvenating nourishing vagina.

Conclusion: It has not only rapid and evident results like invasive treatment, but also less side effects and shorter recovery time like the non-invasive treatment.

### 3. Functions

- 1) Skin renewing and resurfacing.
- 2) Wrinkle removal, skin tightening.

- 3) Acne and scar removal, melasma removal.
- 4) Smooth burnt scars and surgery scars, traumatic scars, etc.
- 5) Remove intractable chloasmas and pigmentation.
- 6) Sun damage recovery.
- 7) Cutting flesh nervus.
- 8) Vaginal tightening, moisture.
- 9) Accelerate collagenous fiber hyperplasia largely, and remodel.
- 10) Improve vagina mucosa microcirculation function.
- 11) Increase cell secretion and dynamic response function.
- 12) Correct PH, improve internal environment.

## 4. Specifications

CO2 laser source	RF laser tube (COHERENT)
Output power	40W
Wavelength	10,600nm
Scan pattern	Square, rectangle, round, triangle, oval, 6-diamond shape, line graphics
Scan pattern size	0.1 x 0.1mm – 20 x 20mm
Scan mode	Free scan; sequence scan; maximum distance scan
Spot size	0.01 – 0.07mm
Pulse duration	0.1 – 10ms adjustable
Spot distance	0.1 – 2.6ms adjustable
Pulse energy (Power)	1 – 100mj adjustable on LCD screen
Interval between scanning	0 – 6s
Laser apparatus	Sealed off laser device stimulated by direct current
Condenser focus	F = 50mm
Beam divergence angle	0.3 mrad
Aiming beam	635nm infrared ray
Beam transport device	Korean 7 articular arm
Cooling system	Air
Dimension of machine	44*44*112 cm
Dimension of package	57*64*126 cm & 77*26.5*14.5 cm
N.W.	45 KG
G.W.	77KG & 6KG
Packing	Aluminum alloy case
Voltage	220V/110V

# Chapter Two Installment

## 1. Package



Packaging boxes

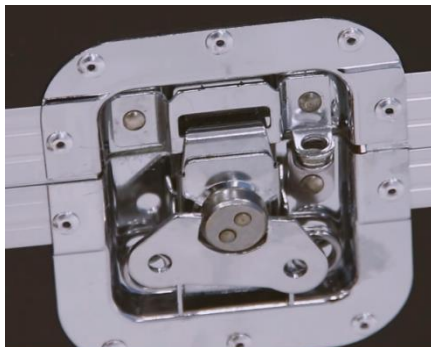


Figure 1



Figure 2



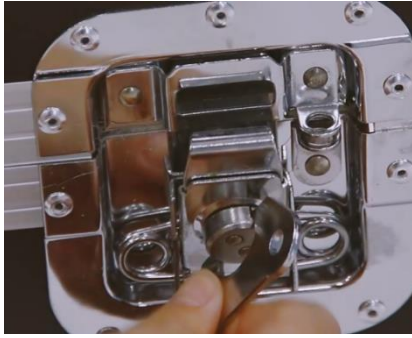


Figure 3

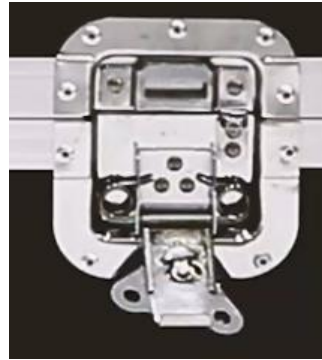


Figure 4

**The method of opening the packaging box:**











- Raise the wrench
- Turn the wrench counterclockwise one round
- Pull the wrench to open the lock

**2. Appearance introduction**





### 3. Equipment list

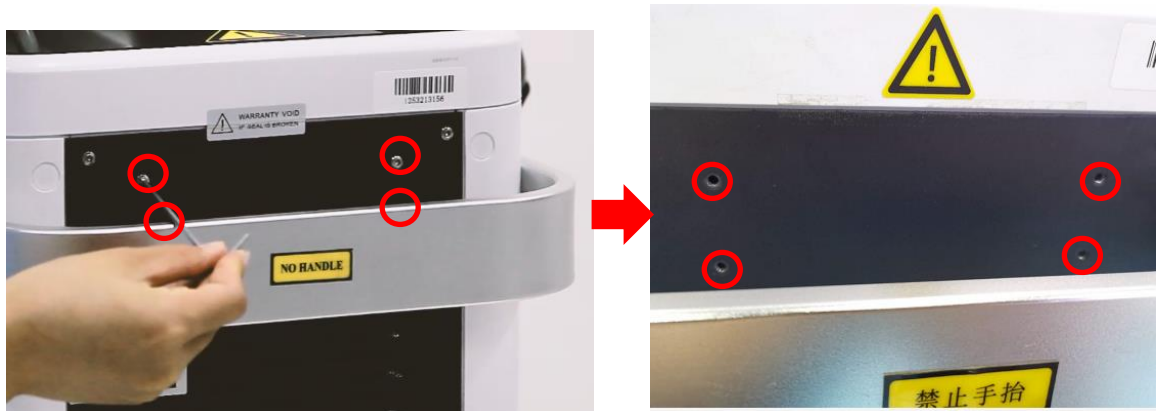
Item	Name	Picture	Quantity(unit)
1	EVO CO2 PRO		1
2	Frame		1
3	Laser arm		1
4	EVO probe		1
5	EVO probe (for vulva)		1
6	VRL probe		1
7	Co2 probe (50mm)		1
8	Co2 probe (100mm)		1
9	Glasses		1
10	Goggles		1

11	Foot pedal		1
12	Power cable		1

## 4. Installment

Condition: Place the instrument steadily in a clean operating room or operating room with a room temperature of 22-28 degrees and a humidity of not more than 20%.

### A. Frame installment



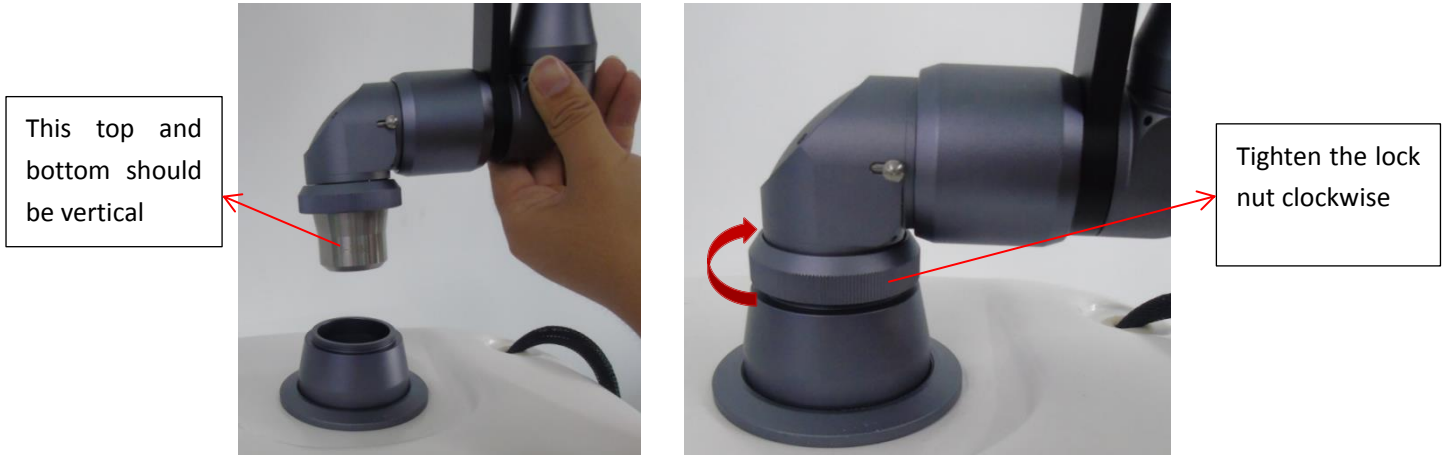
Step 1: Please unscrew the four screws on the back case



Step 2: Align the screw holes on the frame with the four screw holes on the machine, and then install the frame into the machine.

## B. Articular arm installment

Align and insert the articulated arm, be sure to insert it to the end, the gap distance is about 2mm, as shown in the following figure:



After install laser arm well, please arrange the wiring harness on laser arm, make sure it looks well, and put the arm into the card slot to stable it, as the below picture:



Note: The data cable and air pipe cannot have a dead angle of 90 degrees, and there can be no resistance when turning 360 degrees.

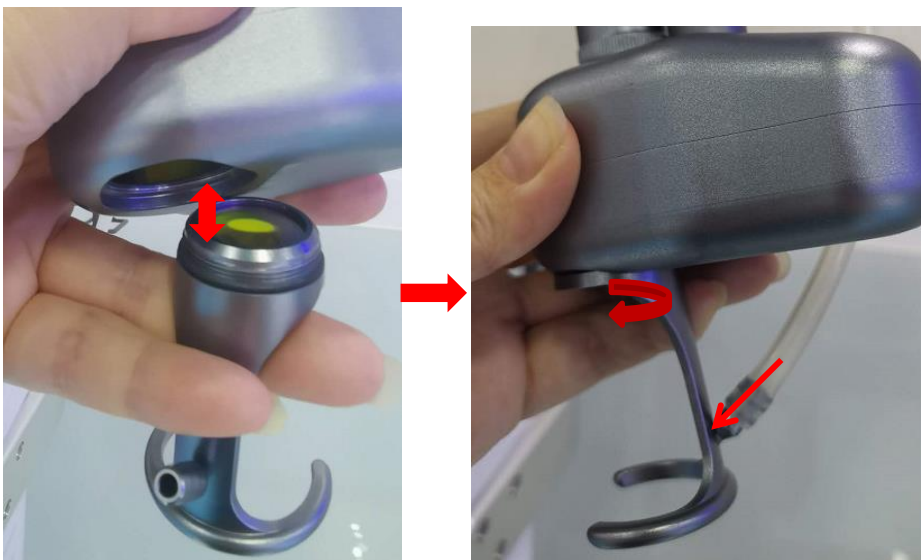
## C. Probes installment

- 1) Align the EVO CO2 PRO head with the laser arm, and then turn the laser arm section clockwise, as shown in the figure below:



- 2) EVO CO2 PRO the probe with the EVO head, and then insert the air pipe with the probe.

(The semicircle probe, the vulva probe and vaginal probes are installed with the same way)



- 3) Replace the cutting probe.  
Firstly, unplug the air pipe from the treatment probe.  
Secondly, loose the fractional head and disconnect the data cable from laser arm.

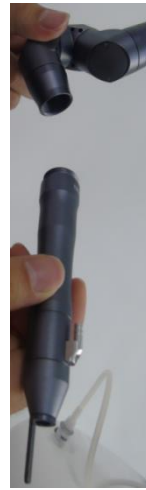
Thirdly, install the cutting head with the laser arm in a clockwise direction.  
Forty, Insert the air pipe with cutting probe.



1



2



3



4

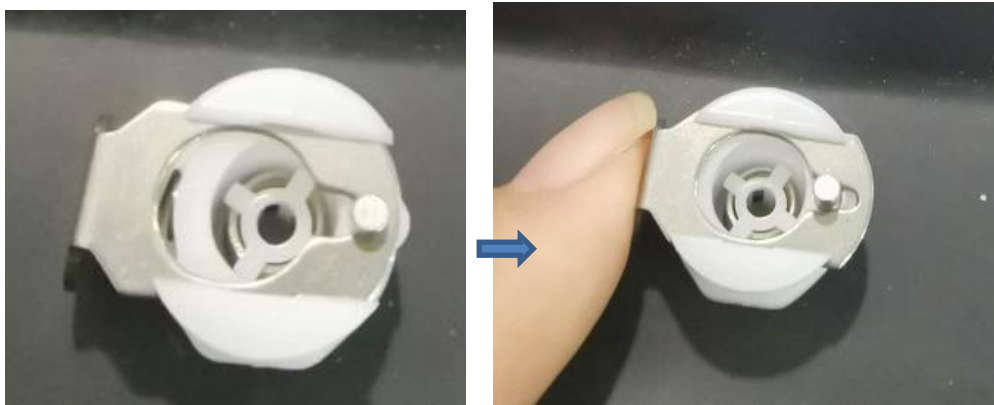


5

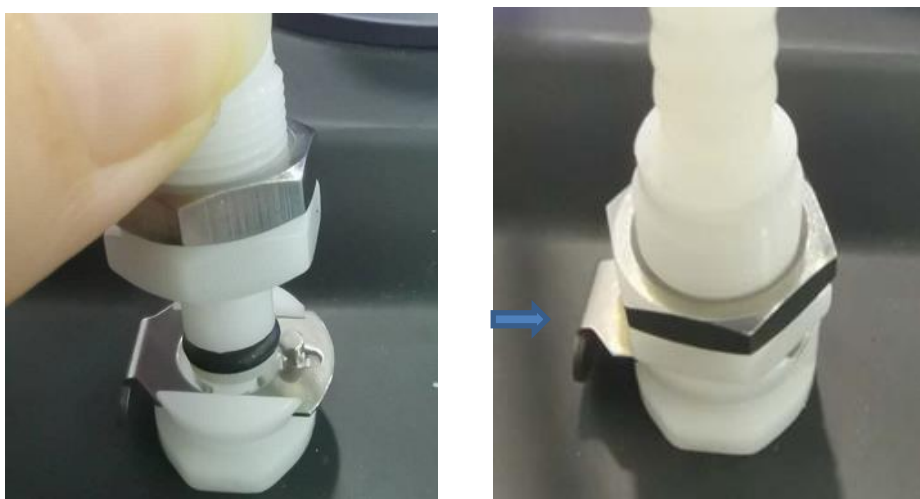


#### D. Air pipe installment

Firstly, press the metal piece to make sure it is press in:



Secondly, insert the air pipe with the quick-insertion nozzle directly, you can hear “Click” voice.



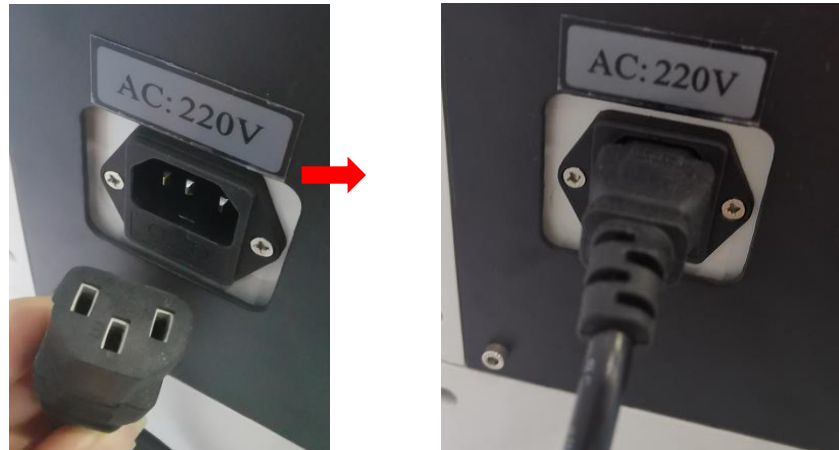
Thirdly, if want to draw the air pipe, please press the metal piece and then you can draw it.





## E. The power cord and pedal installment

- 1) Connect one end to the power socket of the instrument, and the other end into a single-phase three-wire power socket with good grounding. (The machine must use a three-pronged plug with a grounding pin, and ensure that the power socket of the instrument is well grounded.)



- 2) Installation of foot pedal:



Note: There is a gap at the position of the yellow arrow at the foot of the pedal on the left. When installing, the gap should be pushed up and you can insert it directly.

**Notice:**

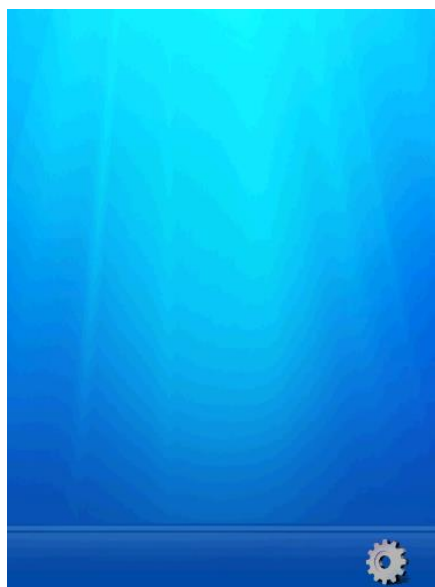
The private laser system can be installed in the hospital. The installation precautions include:

- Unpack and install the private laser system in a pre-selected location;
- Check the integrity of the equipment and its components;
- Whether the grounding of the power supply is good;
- The operating head must be firmly installed and the data cable connected well;
- The input voltage must be consistent with the machine outlet type!
- Whether all functions of the test equipment are normal.

## Chapter Three Opening screen

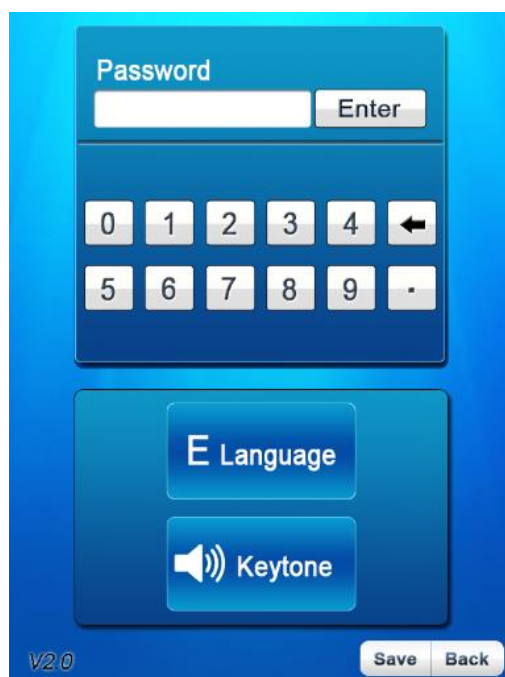
### 1. Selection Interface

Turn on the machine, enter the logo interface, and touch the screen to enter the function selection interface.

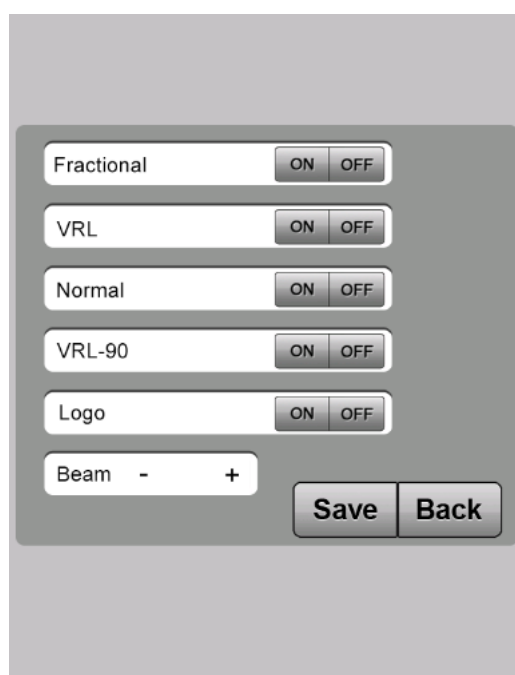


### 2. Setting Interface

When receiving the machine, there is no need to modify the data according to this interface. This interface is for after-sales maintenance of the machine. If necessary, please ask the technician for help.



Input the password and enter next interface.



ON/OFF: show or hide the functions.

### 3. Function selection Interface

- After entering the system, select the mode and set parameters.
- Then point Ready, stepping the pedal, starting treatment.



### A. EVO Interface

The image shows a detailed view of the EVO interface with several callout boxes pointing to specific features. The interface is divided into several sections:

- Top Section:** A central white area with a blue border containing a small square graphic and a larger orange square graphic. Above and below this area are arrows for movement. To the right are 'Preview' and 'Save' buttons. Below the central area are seven numbered buttons (1-7) and 'Standby' and 'Ready' buttons.
- Parameter Section:** A grid of four parameter controls: 'Power' (with a percentage sign), 'Duration' (with 'ms'), 'Distance' (with 'mm'), and 'Interval' (with 's'). To the right of these are up and down arrow buttons.
- Bottom Section:** A 'Fractional' label and 'Parameter' and 'Back' buttons.

Callout boxes provide the following information:

- 'Let graphics in center' points to the central white area.
- 'A window for aiming the treatment area' points to the orange square graphic.
- 'Movement of scanning graphics' points to the left and right arrows.
- 'Enlarge or reduce the scanning graphics' points to the zoom in (+) and zoom out (-) buttons.
- 'Pulse width: 0.1-10' points to the 'Duration' parameter.
- 'Interval between scanning: 0-6s' points to the 'Interval' parameter.
- 'Power adjustment: 1-100%' points to the 'Power' parameter.
- 'Distance between spots: 0.1-2.6 mm' points to the 'Distance' parameter.
- '7 groups of parameters' points to the numbered buttons 1-7.

△ is to increase, ▽ is to decrease

**A. Power:** Adjust power from 1% to 100%.

**B. Duration:** Adjust the pulse width, the smaller the number, the quicker the laser effect on skin. Scale of **adjustment 0.1—10ms.**

**C. Interval:** **Interval of 2 scanning, adjustment scale 0-6s.**

**D. Back:** Return to previous menu.

**E. Button to enlarge/reduce the graphic:** Enlarge or reduce the graphic.

**F. Save:** Save the parameters after setting up.

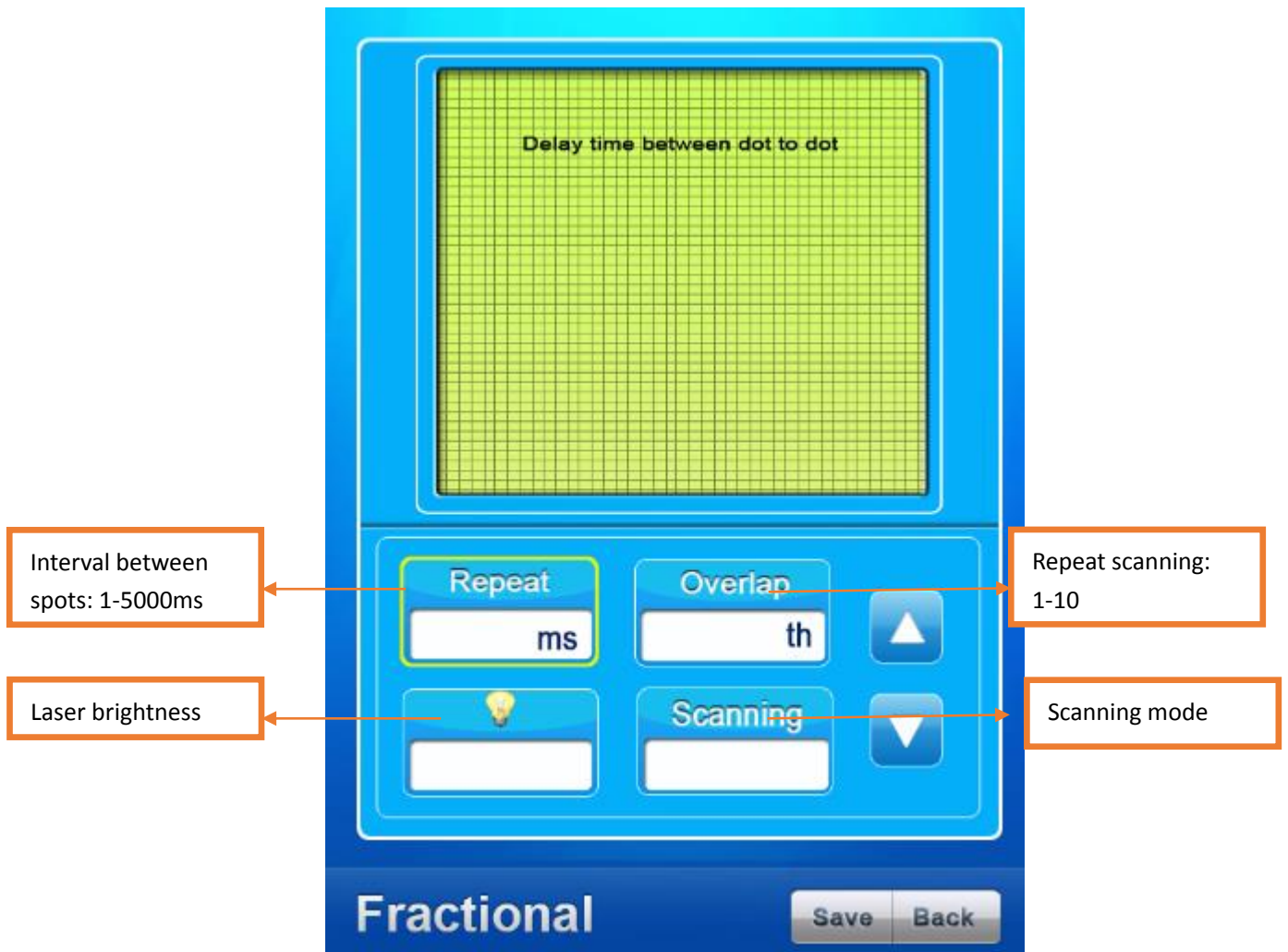
**G. Preview:** Preview scan graphic and aim at treatment area.

**Usage: before treatment, press preview button to preview.**

**H. Parameters:** This functionality into the background settings interface as below.

**I. Standby:** Press the button, the machine will go out of working condition.

**J. Ready:** Press the button directly, starting operation.



**A. Repeat:** Adjust the time between shot to next shot.

Scale of adjustment 1—5000ms.

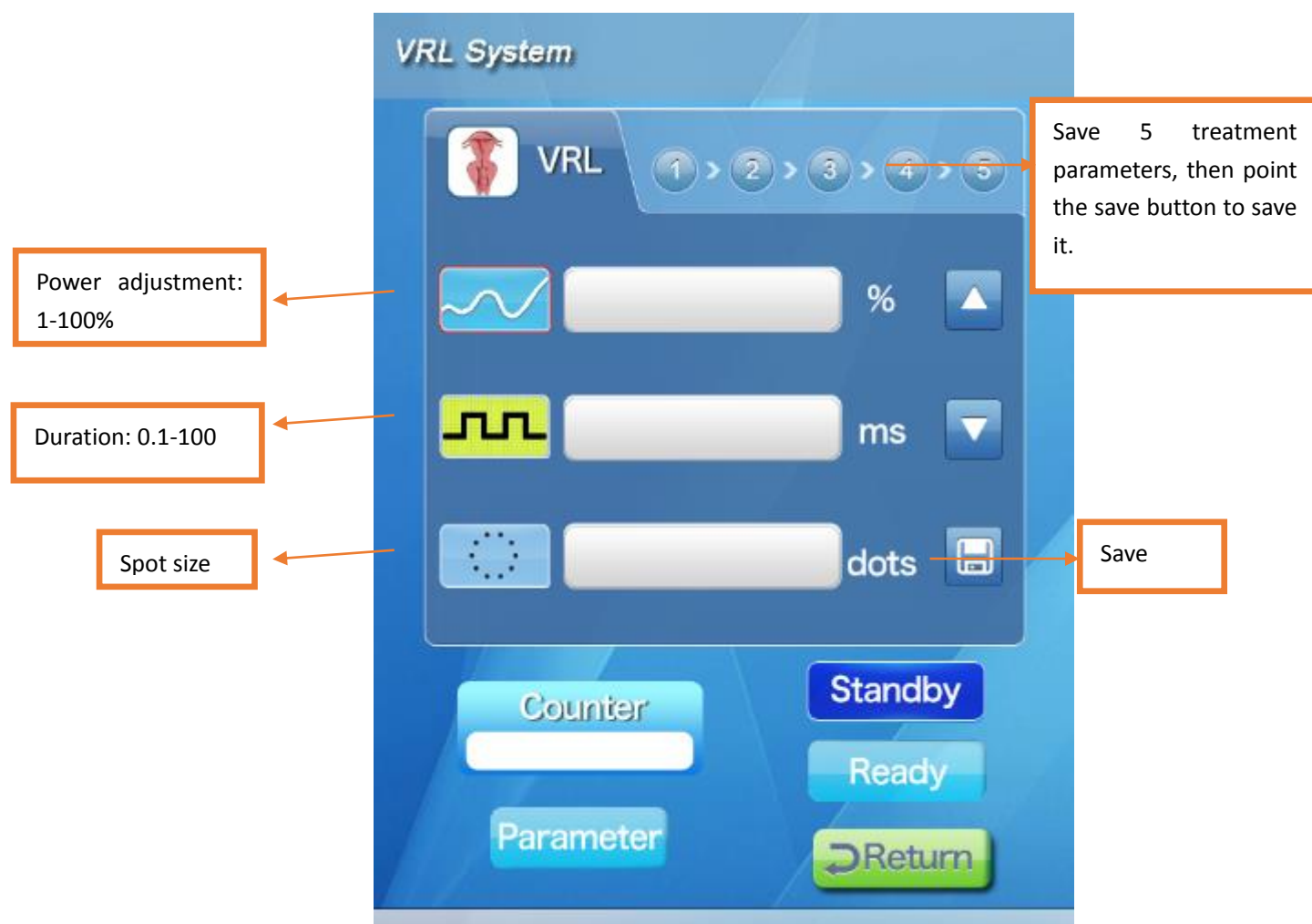
**B. Overlap:** Choose scanning times, adjust scale 1-20.

**C. Scanning:** choose different scan methods:

1. Sequence scanning.
  2. Maximum distance scanning.
  3. Free scanning.
- △ & ▽ are used to choose scan method.

**D. Save:** Save the parameters after setting up.

## B. VRL Interface



**A. Power button:** Adjust power from 1% to 100%. Using the buttons of triangle and inverted triangle in the screen to set, it is recommended to use the value of 100.

**B. Duration button:** Adjust the pulse width, the smaller the number, the quicker the laser effect on skin. Shot Scale of **adjustment 0.1–10ms**. Using the buttons of triangle and inverted triangle in the screen to set, it is recommended to use the value of 4ms.

**C. Return:** Return to previous menu.

**D. Spot size:** This feature is the number of laser spot of 360 degrees, maximum value of 100, be adjusted in units of 4, use the buttons of triangle and inverted triangle in the screen to set, generally set at between 12-28, this value cannot be too big, too big like peeling, vaginal cannot stand it. It is recommended to use the value of 16 points.



**E. Counter:** This function is to counter the numbers step on the pedal.



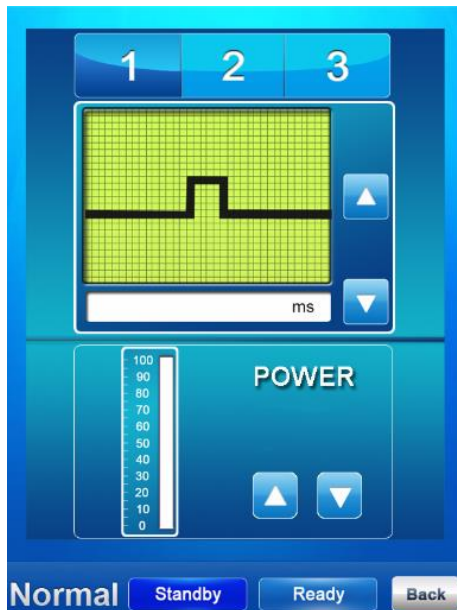
**A. Cone-shaped size:** This feature is the size the laser scanning on the cones, use the buttons of triangle and inverted triangle in the screen to set, normal value is fixed, generally between 4.5mm-5mm, don't need always to adjust it. It is recommended to use the value of 4.8mm.

**B. Overlap:** Use the buttons of triangle and inverted triangle in the screen to set, up to 20 times, 1 is commonly used. It is recommended to use "1th".

**C. PPS:** This function for the laser scanning laps, up to 10 laps, 1 or 2 is commonly used. It is recommended to use "1Hz".

**D. Scanning:** This function is the order of the laser 360-degree shot, divided into three types, order, disorder, and the maximum distance. Use the buttons of triangle and inverted triangle in the screen to set. It is recommended to use "model 3".

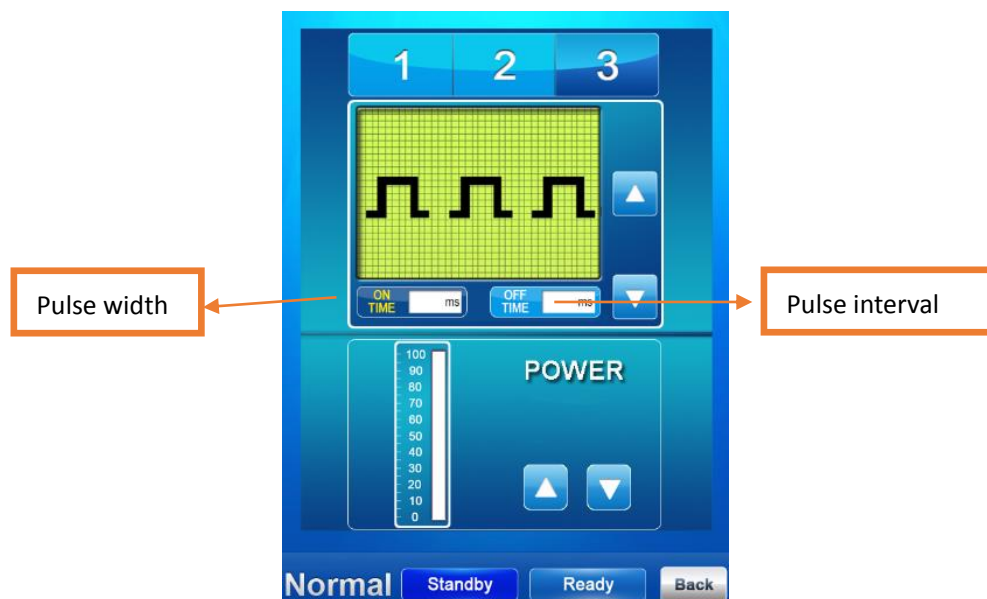
## C. Normal Interface



Mode 1: Dot model



Mode 2: Continuous model



Mode 3: Pulse model

**A. Power button:** Adjust energy from 1% to 100%.

**B. Exchange of mode button:** Exchange in 3 kinds of modes:

1. One pulse.
2. Continuous pulses.
3. Multi pulses.

**C. On time:** It appears under mode 3, adjust pulse width; the smaller value the shorter time of output pulse effect on skin. **Adjust scale 10-1000 ms.**

**D. Off time:** It appears under mode 3, adjust interval between two pulse width; the smaller value the shorter interval, the bigger value the longer interval. **Adjust scale 10-1000 ms.**

## Chapter Four Treatment

### 1. Prepared Materials

Large cotton swabs, syringe (5ml or 10ml), disposable sanitary napkin, saline, iodophor, 75% alcohol, disposable medical hat, disposable vaginal dilator, disposable medical gauze, disposable medical gloves, medical tampon, scorpion.

### 2. EVO CO2 PRO laser for skin treatment



- **Duration:** 0.8-1.2ms, normally don't need to adjust, could adjust the Power to change the energy output. For safe treatment, the duration would be better to be below 2.5ms.

- **Power:** should test the energy before operation, could test by A4 paper, how many pcs of paper the laser could penetrate, for example:
- Acne marks: 1 pc (about 0.08mm depth), there is burnt marks on the second paper, but not broken.  
Acne scar: 2 pcs papers depth.
- **Don't overlap each square, or more thermal will be created. If there is a big gap between the graphics, use "line" to fill in.**



The following chart is the suggested parameters for reference, and these parameters are more suitable for Asian people.

If **deeper skin color**, you should turn down the power, for about 5%; for **whiter skin color**, could turn up the power, for about 5%.

And for experienced doctors, he/she could adjust the parameters according his/her experience.

Items	Power	duration	Overlap	Distance	Repeat	Mode
Rolling scars	50%	1.0-2.4	1th	0.6-0.8mm	4.8ms	3
hyperplastic scar	24%	1.2-3.8				
Slight Stretch marks	15%	1.2-3.8				
Moderate stretch marks	20%-25%	1.2-3.8				
Heavy stretch marks	40%-45%	1.2-3.8				
Pigment	20%	0.8-1.2				
Wrinkles	Starts from 20%	0.8				
Skin rejuvenation			0.8-2.0mm			

➤ **Operation**

- 1) Clean the treatment area.
- 2) Apply anesthetic with a plastic cover, waiting for 30 mins.
- 3) Remove the anesthetic, applying Iodophor, and cleaning with saline.
- 4) Adjust the parameters, testing on paper.
- 5) Starting treatment around the ear area, along with the facial contour to the middle area, half and half facial operation.



**Facial skin rejuvenation operation**



### **Stretch mark removal operation**

➤ **Tips:**

- 1) EVO CO2 PRO Asian people, EVO CO2 PRO laser would easy to cause hyper pigmentation, so it is important to control the energy during treatment, shouldn't be too high, it is better to take more treatments in low energy.
- 2) Inflammatory hyper pigmentation could fade away in 3-9 months, could take hydroquinone cream or Whitening Essence to reduce the pigmentation, take VC & VE orally and topical.
- 3) In half of year after treatment, should pay attention to the sunburn, using sunscreen, wear mask, wear sunhat, or take umbrella when going outside to avoid hyper pigmentation by sunburn.

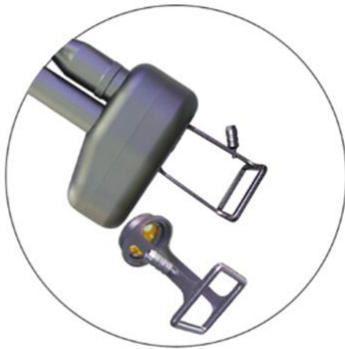
➤ **Postoperative care**

- Ice masks or air cooling for cooling down after the treatment.
- Apply repair masks after the treatment, day and night.
- Apply repair products for medical use, specially used for wound frequently.
- Don't wash the treatment area until all scab falls off naturally. Don't scratch with hands.
- Don't expose treatment area in the sun after treatment in 7 days, should

apply the sunscreen cream when be outside.

- Don't wear makeup before skin fully repaired.
- Every interval treatment time is no less than 2 months.

### 3. Factional CO2 laser for pinker vulva



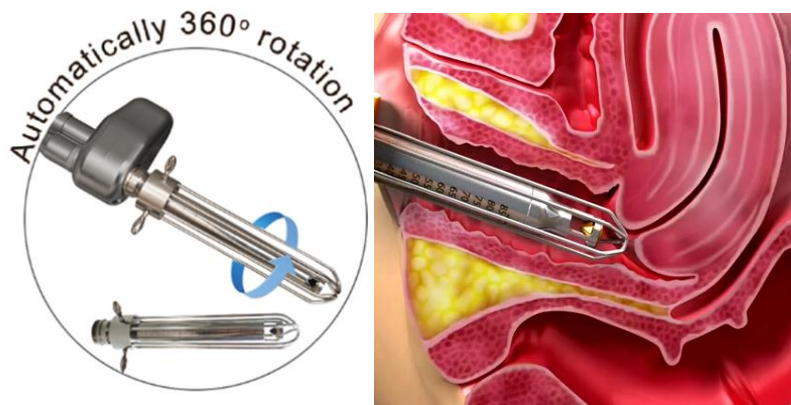
#### ➤ **Operation**

- 1) Clean the treatment area.
- 2) Remove the hair.
- 3) Adjust the parameters, testing on paper.
- 4) Starting treatment around the ear area, half and half operation.
- 5) Recommend parameters:
- 6) Power: starting from 20% , Duration: 0.8-1.0ms, Distance: 0.8mm
- 7) Notice: Dark skin absorbs light easily, please always start parameter from low setting!
- 8) Avoid the mirror exposed to the alcohol.

#### ➤ **Postoperative care**

- No sexual life in 7 days after the treatment.
- Women have severe problems "cervical erosion" or "uterine fibroids", cannot get this treatment.
- When menstrual cannot do treatment, it must be finished 7-10 days can do treatment.
- After the treatment, Skirts or loose-fitting pants are recommended, no tight trousers.

## 4. VRL- vaginal tightening laser-360°



### ➤ Before treatment:

**The first step:** ask your patient whether has contradictions and did below things which decrease either the safety or effectiveness of the treatment.

- A. Sexual life should be avoided for 1 day prior to treatment.
- B. Patients should wait 3 days after period.
- C. Evaluating your patient: observe and document your patient skin color.
- D. Discuss the treatment goals with your patient and establish realistic expectations based on the treatment area, vagina degree of tightness and her vaginal perimeter. If your patient vaginal still at mature age and has full cleaning function system, explain to her that it may not have very much effect because her vagina is still under the normal level numbers of collagen.
- E. Explain to your patient that during the course of the session, she may feel a gradual build-up of heat into the area being treated.

### ➤ Preparations for vaginal tightening:

- 1) Cleaning, use medical cotton dipped in iodophor to clean the vulva (the external part).
- 2) Apply lubricants to the vaginal orifice, and then put in the disposable vaginal dilator.





- 3) Use the long swab dipped in iodophor to clean the vulva for 1-3 minutes.
- 4) Use an injector filled with 20ml saline, cleaning the inside of vagina.
- 5) Use the medical cotton to dry the inside.
- 6) Put in the metal vaginal dilator, take away the disposable one. Then put in the treatment head, starting treatment.

➤ **Parameters:**

- Cone-shaped size: 4.5mm-5mm, recommend 4.8mm, normally don't need to adjust it.
- Overlap: 1th, normally don't need to adjust it.
- PPS: 1 or 4.
- Scanning mode: mode 3, normally don't need to adjust it.
- Power: 100%, normally don't need to adjust it.
- Duration: 6-8ms.
- Spot size: 16(dots), normally don't need to adjust it.

➤ **Operations for vaginal tightening:**

3 times full shooting for one treatment.

For example, the vaginal is 10 cm length,

- **Firstly**, put the metal cover into the vagin, and then put the laser into it to the end.

One shot is around, so keep the shot with the scale in the laser, 1 mm put out and shot once.

So total you will step the pedal 90 times (why it is not 100 times, because orifice 1cm you cannot shoot) after the laser all came out, this is first times shot.

- **Secondly**, wait for 5-30 seconds, put the laser into the end again, and shot

with 3mm out, like you will shot follow the scale with 10cm shot, 9.7cm shot, 9.4cm shot.

After that, you will total step pedal to shot 30 times, at this second times.

- **Finally**, put the laser into the end again, and shot 5mm distance this time, so it means 9.9cm first, 9.4 cm second, 8.9cm ....

This is the third time; maybe you will pedal 10 times, but remember to make the PPS into 4.

### 3 steps:

Procedures	Length for moving outside	Pulse Width	PPS (HZ)
Step 1	1mm	6.0ms	1
Step 2	3mm	7.0ms	1
Step 3	5mm	8.0ms	4

**Result: Normally after one treatment, it could feel tighten 2.5mm**

#### ➤ **Tips:**

Whole treatment needs 3 sessions,

First session: 3times shooting from inside to outside.

Second session: same parameters (1 month later after the first treatment).

Third session: same parameters (1 month later after the second treatment).

If patient still want continually treatment, totally will be 5 times treatment at the first year. However, for vulva, 2 months break, which means, and second treatment you only do vaginal treatment, at third treatment you do both. Next year can do new whole treatment.

**Notice: Black skin absorbs laser easily, please start parameter from low setting appropriately!**

#### ➤ **Postoperative care**

- No sexual life in 7 days after the treatment.
- Women have severe problems "cervical erosion" or "uterine fibroids",

cannot get this treatment.

- **After the treatment, next situation is normal, do not be afraid:**
  - A. If the lady's body is health, the secreta will be no color.
  - B. Secreta is yellow or white: it is semen which left in vaginal, like the vaginal wrinkles.
  - C. Secreta is brown, it is left menstrual blood or waste.
- When menstrual cannot do treatment, it must be finished 7-10 days can do treatment.
- After the treatment, Skirts or loose-fitting pants are recommended, no tight trousers.

➤ **Disinfection**



Please put it in the hot air medical sterilization containers after usage.

Temperature: over 300°C.

It could be reused for many times. But if necessary, personal customization is available.



Please be very careful with the mirror, no dust, no Scratch, keeping it clean and dry.

Please use medical cotton dipped in alcohol to clean the outer side space of the probe.

Avoid the mirror exposed to the alcohol.

**Note: Please don't put it in the hot air medical sterilization containers, or the mirror will melt in high temperature.**

## 5. Normal model for cutting

This probe is special designed for doctors to meet patients' needs, like fleshy nevus, fat granule.



Normally we use f:50 probe.



### ➤ **Postoperative care**

- Apply repair masks after the treatment, day and night.

- Apply repair products for medical use, specifically used for wound frequently.
- Apply masks day and night.
- Don't wash the treatment area until all scab falls off naturally. Don't scratch with hands.
- Don't expose treatment area in the sun after treatment in 7 days, should apply the sunscreen cream when be outside.
- Don't wear makeup before skin fully repaired.

## **Chapter Five Taboos**

1. High blood pressure, diabetes, hemophilia is not recommended.
2. Menstrual period.
3. Pregnant women.
4. It is not recommended to have a vaginal tightening treatment within half a year after giving birth.






## **Chapter Six Maintenance**

1. Insolation prohibited.
2. Take hope-pocket cover the lens against dust, including whole machine.
3. Clean the probe after use.
4. Keep machine in good ventilation, out of dust (important).



5. Unprofessional operation prohibited.

## Chapter Seven Warning



1. No electric current to the whole machine:

-  Check up “emergency button”, keep it bounce in working.
-  Check up “air switch”, keep it up in working.
-  Check up “fuse” on “power socket” at the rear panel.
-  Check up “power cord”, whether is in a good condition or not.
-  Check up whether power supply to machine.



2. Uneven energy output or off position:

-  Adjust laser beam path.
-  Lens (on probe) is dirty, clean by alcohol. Please Use the lens after lens dry, or alcohol fire and damage lens.

3. No infrared ray indicator:

-  Check power supply for infrared ray indicator.
-  Replace new indicator of infrared ray.

4. The blowing pipe does not work

-  Check up air pump whether work good or not uder the intrudcitons of engineer.
-  Whether blowing pipe broken or not