

# **Fractional CO2 Laser Machine**

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# **User Manual**

**Thank you and congratulations on your choice of the Fractional CO2 Laser Machine.**



Before Installing or Operating this equipment, please read these instructions carefully, and keep near the device for future reference.

**CAUTION:** Operating the machine when the water tank has no water or not enough water is absolutely prohibited! the laser unit whilst water is in the tank.

### **Manufacturer's Disclaimer Statement**

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# Chapter 1 - Introduction of Fractional CO2 Laser Machine

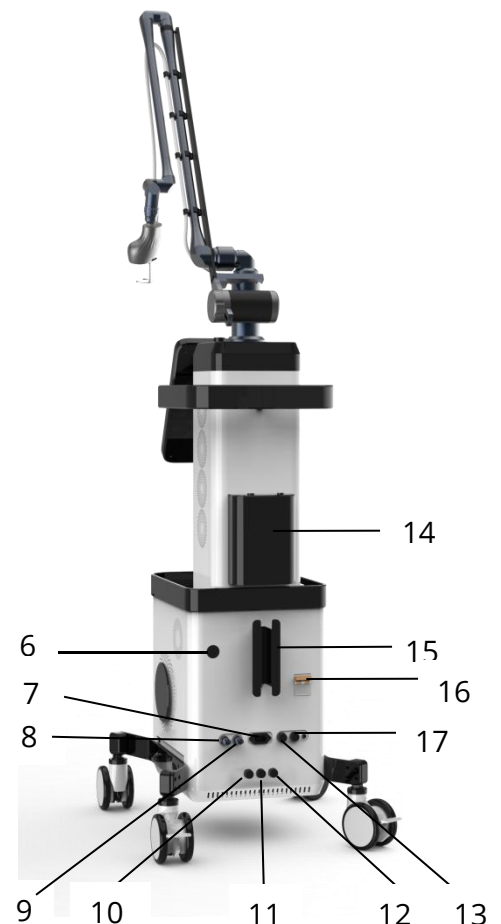
## 1.1 Treatment Principle

Fractional laser is based on the Fractional Photothermolysis (FP) theory proposed by American scientist Manstein in 2004. The theory refers to dividing a continuous laser spot into a series of discontinuous and uniformly distributed focusing lattices, and the generated tiny light beams act on the skin. After the skin tissue absorbs the laser energy, it forms multiple tiny thermal damage areas with columnar structures. Also known as Microscopic Treatment Zones (MTZs), an annular tissue coagulation zone or thermal injury zone is formed around each MTZ. After treatment, the epidermal defect is rapidly repaired and the dermal structure is reconstructed through the cell migration of the surrounding normal skin tissue, so as to achieve the purpose of partial skin remodeling and regeneration.

Laser thermal coagulation and thermal ablation form a minimally invasive small hole with a diameter of about 0.12mm and a depth of about 2-4mm (this depth is related to the maximum depth of solar elastic fibrosis). At this time, the normal tissue between the post-traumatic pores and the small holes produce thermal bridging, and the skin trauma repair mechanism (inflammation stage, value-added stage, remodeling stage) is activated to regenerate a large amount of collagen, so as to achieve the reconstruction of the dermal frame structure, the facial contour sculpting, wrinkles disappear, the skin texture is delicate, and the acne scar is smoothed.

## 1.2 Device Structure

The Fractional CO2 Laser Machine structure consists of the following units:



<ol style="list-style-type: none"><li>1. laser arm</li><li>2. galvo</li><li>3. touch screen</li><li>4. key switch</li><li>5. emergency stop button</li><li>6. water inlet</li><li>7. power connector</li><li>8. Interlock switch</li></ol>	<ol style="list-style-type: none"><li>9. connector of pedal</li><li>10. water outfall</li><li>11. pump exhaust switch</li><li>12. vent</li><li>13. fuse</li><li>14. storage box</li><li>15. clip of cord</li><li>16. leakage protection</li><li>17. fuse</li></ol>
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# Chapter 2 - Safety and Compliance

## 2.1 Client Safety

Client's safety mainly depends upon well-trained operators, client consultation, correct skin analysis and a suitable treatment room. The attending operators must inform the client of all the risks with the use of this device. Clients should be instructed to wear protective glasses or other tools (black out goggles, eye shield etc.) to protect the eyes during treatment.

## 2.2 Beam Reflection



**WARNING:** If the laser beam strikes any semi-glossy or reflective surfaces, dangerous and potentially blinding reflections or scatter can result. Never work around the laser or enter a room where the laser is operating without wearing laser safety glasses.

To perform measurements to avoid reflections of the laser beam that may lead to assessment hazards, it is recommended that the following minimum measures should be taken:

- ◆ Windows and shutters should be non-reflective, and may require fire protection when using higher power lasers.
- ◆ Walls, ceilings and accessories should be painted with light-colored matte paint to enhance lighting and reduce specular reflections.
- ◆ Avoid using reflective surfaces, such as cabinets with glass panels.
- ◆ Make sure to cover any reflective surfaces when necessary.
- ◆ Keep the optical trolley away from debris, take out jewelry, watches, etc.

The lighting in the operating room should be sufficient to allow the operator to observe the skin reaction and perform the operation. The high level of illumination will minimize pupil size and reduce the risk of stray laser light reaching the retina.

## 2.3 Safety Precautions



**HANDLE WITH CARE:** Precision fragile laser components are installed inside the 7 joint laser guiding. Prevent from heavy knocks and dropping during use or storage.

- ◆ Please make sure to turn off the instrument when you clean the laser or the laser lens.
- ◆ Never emit laser beams onto an area not to be treated.
- ◆ The emergency cut off switch is used to shut down the device in case of any emergency. After engaging the emergency shut off button, turn the device off by rotating the key in a counter clockwise direction.
- ◆ Rotating the emergency cut off switch in the direction indicated by the white arrows will release the button.

## 2.4 Electric Safety

To ensure safe use, the rated voltage of the operating system is 220V, the maximum input current is 10A or 110V, and the maximum input current is 15A. This machine is equipped with an automatic leakage protection device. When a leakage occurs, the machine will automatically cut off the protection system.

## 2.5 Fire Prevention



**WARNING:** High power lasers have a potential for igniting combustible materials.

- ◆The laser light device generates thermal energy. Avoid using combustible material such as acetone or alcohol near the device.
- ◆If alcohol based products are used to disinfect the laser device, ensure that the alcohol has completely evaporated prior to operation.
- ◆Flammable and explosive objects, anesthesia, drugs, alcohol, gas etc, should be removed from the laser treatment room.



# Chapter 3 - Installation Procedure

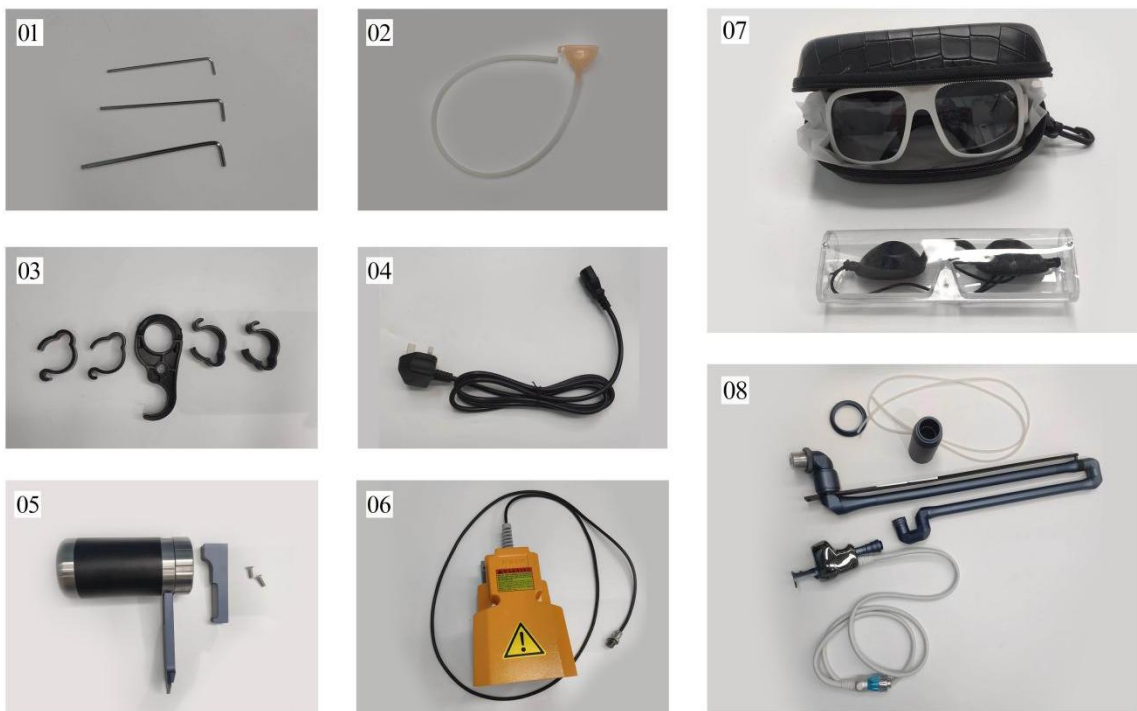
The process of installation includes:

- ◆Unpacking the device and checking contents.
- ◆Assembly of its components and ensure that all connections are firmly in place.
- ◆Installation of Laser arm.
- ◆Fill the water tank with distilled water only.
- ◆Connect the power supply.
- ◆Switch on the device and test all functions / parameters of the system.

## 3.1 Accessories List

Unpack the unit, remove all packaging material, and examine for damages.

Do not proceed with installation if unit is damaged.



1. Screw 2. Funnel and tube 3. Clips 4. Power cable	5. Bob-weight 6. Pedal 7. Laser glasses and goggles 8. Parts of the light guide arm
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**IMPORTANT ATTENTION:** Please keep all packaging for safe storage and in case of any warranty

returns or servicing.

It is forbidden to open the machine and tear down all the components without any authorization.

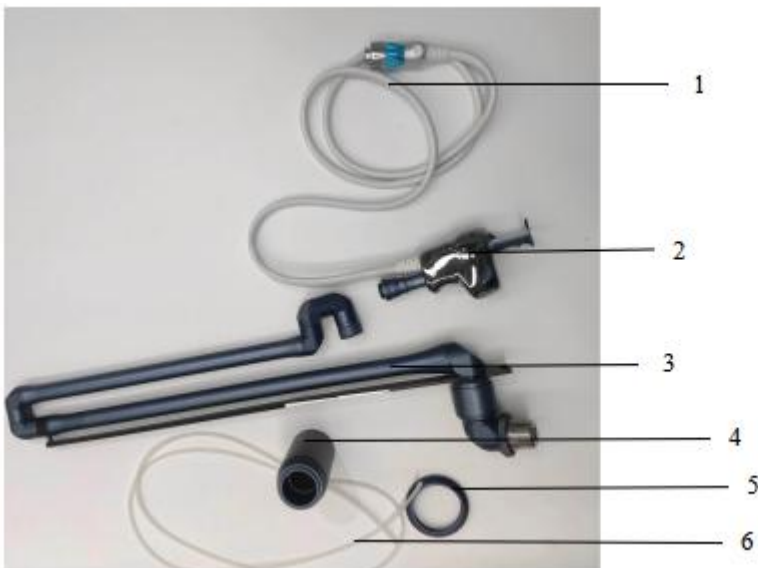
### 3.2 Installation Requirements

Place the equipment according to the requirements below:

- ◆Treatment Room Temperature: 10°C~30 °C
- ◆Relative humidity:  $\leq 75\%$
- ◆Air pressure: 860-1060hpa
- ◆Power requirement: AC 220v $\pm 10\%$ ; 50Hz $\pm 2\%$  ;
- ◆Water: Distilled water
- ◆Keep the fans and vents clear of any obstructions to maintain airflow and prevent overheating.

### 3.3 Installation of the Laser Guiding Arm

Below is a diagram of each component that makes up the complete guiding arm.



1. Galvanometer signal line
2. Galvo
3. Main Joint Guiding arm
4. Laser entrance(emitting window)
5. Locking plate
6. Exhaust pipe

Below are picture by picture steps on installing the laser guiding arm.



**Step1:** Align the holes of these three parts and fix them with screws.



**Step2:** screw the laser entrance(emitting window) into the machine.Then place locking plate over the laser entrance(emitting window) and screw into place until tight.



**Step3:** Place light guide arm into laser exit window and screw it until tight.



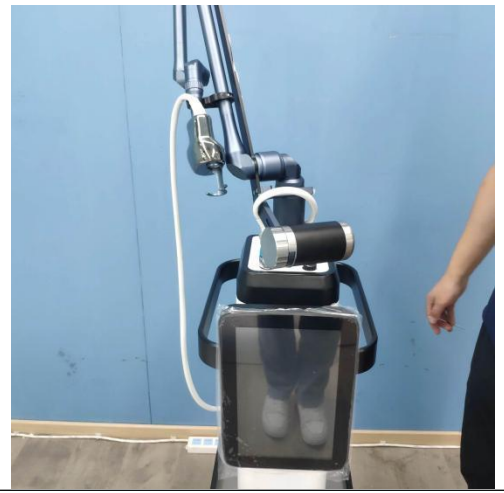
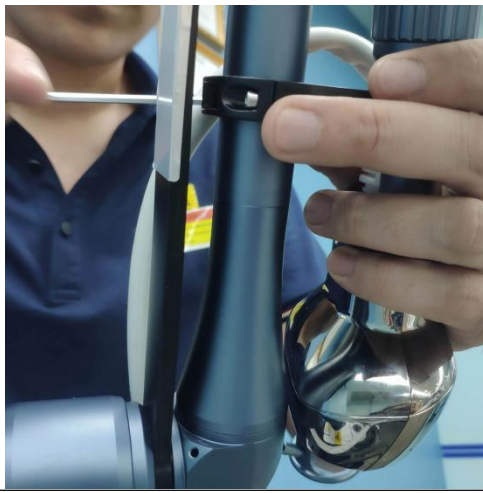
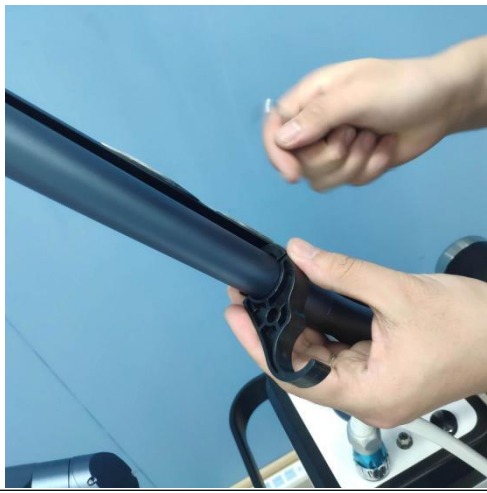
**Step4:** Align the galvo with the light guide arm.



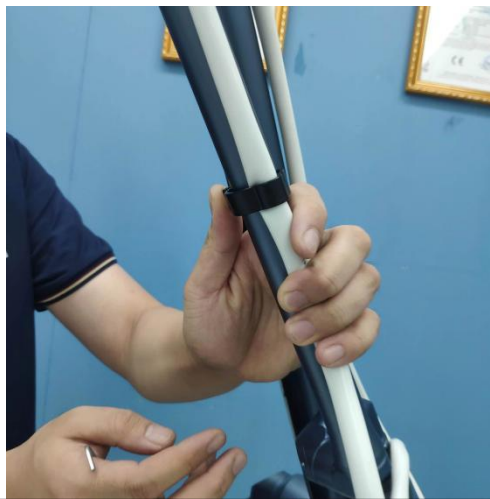
**Step5:** Install the galvanometer signal line.



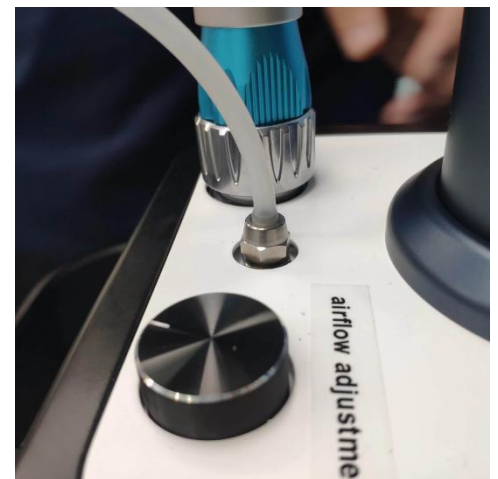
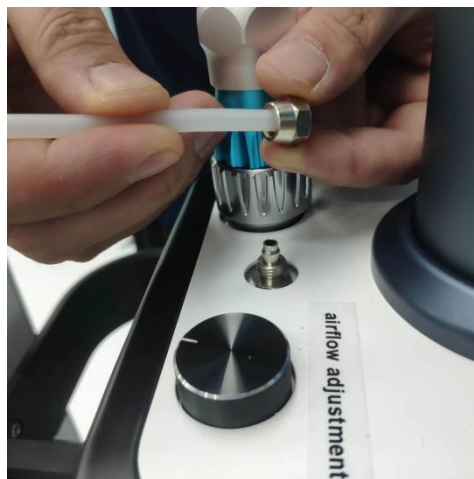
**Step6:** Unscrew the clip.



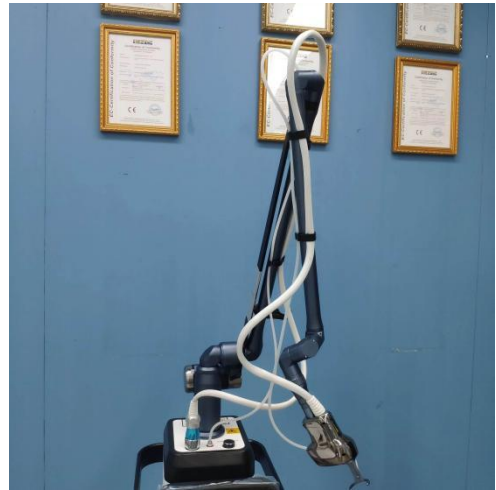
**Step7:** Install the clip in the proper position of the light guide arm and then put the hand piece on the clip.



**Step8:** Fix the plastic pipe on the light guide arm with remaining clips.



**Step9:** Unscrew air pump outlet and then align the exhaust pipe with the air pump outlet.



**Step10:** Fix the exhaust pipe on the light guide arm as the picture shows.

### 3.4 Install the Interlock Switch



Connect foot Interlock Switch to rear of the machine and tighten the clockwise. Ensure the connection is firmly secure, being careful not to over tighten.

### 3.5 Fill up the Water



**CAUTION:** Operating machine when the water tank has no water or has not enough water is absolutely prohibited!

We advise pure water, because normal water has scale, using normal water will result in:

- ◆A risk of blocking the water pipe.
- ◆Potential burn out of cavity.

- ◆Weakening the power.
- ◆Invalidate any warranty.



**Step1:** Unscrew the knob of vents and water inlet



**Step2:** Connect the soft end of the water pipe to the water inlet and pour the water into the machine. Carefully pour distilled water into the funnel. Lift the funnel above the machine to facilitate filling



**Step3:** Water will flow out of the vent. This means that the water tank in the device is now full of water and then screw the knobs of the vents and water inlet.

### 3.6 Installation of Foot Pedal

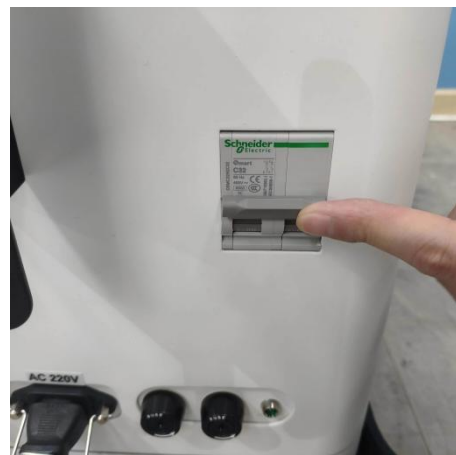


Connect foot pedal cable to rear of the machine and tighten the clockwise. Ensure the connection is firmly secure, being careful not to over tighten.

### 3.7 Connect Power Supply



**Step1:** Plug in the power cable and fix it as the picture shows.



**Step2:** Switch on the leakage protector.





**Step3:** Release the red emergency stop button, insert the key switch and turn on the machine.

**NOTICE:** Once the machine is turned on allow the water to properly circulate for 5 minutes before entering precombustion mode.

# Chapter 4 - Operational Procedure

## 4.1 Requirement for Operators

- ♦The operator should be aware of the expertise required to use a medical laser, should be trained to meet local and national laws and adhere to best practice for the country the machine will be used in.
- ♦Complete Core of Knowledge Training
- ♦Have full insurance that covers Public Liability, Contents and Treatment Risk insurance.

## 4.2 Safe Operation

Make sure the operation room is clear when operating the equipment.

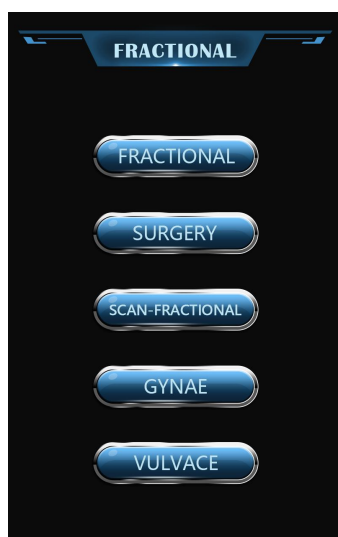
- ♦Operators must wear white or light coloured work clothes in order to reduce radiation to body.
- ♦The illumination in the operating room should be sufficient, so that the operator can observe skin reaction and perform the operation.
- ♦Have correct signage when laser is in use.
- ♦Don't use any reflective surfaces while you use the laser machine.
- ♦The operator must carry out a full consultation before any laser treatment and be informed about any diseases and symptoms of the clients and tell them the possible normal responses during and after operation.
- ♦Operators must keep the laser beam away from non-treated areas.
- ♦Operators must make sure the clients eyes are properly protected with the correct goggles/glasses for the specific treatment wavelength being used for treatment.

## 4.3 Examination

Examine to make sure the equipment is installed according to the installation instructions and requirements. Check the water level is normal and the working environment is suitable.

## 4.4 Specific Functions

There are five modes with different functions.



## **FRACTIONAL and SCAN-FRACTIONAL**

Overall skin rejuvenation, improve large pores, dark yellow skin, rough skin problems. Anti-aging, improve sagging, remove wrinkles. Remove eye bags, acne marks, rosacea, scars, stretch marks, all kinds of scars. Lesions, freckles, age spots.

## **SURGERY**

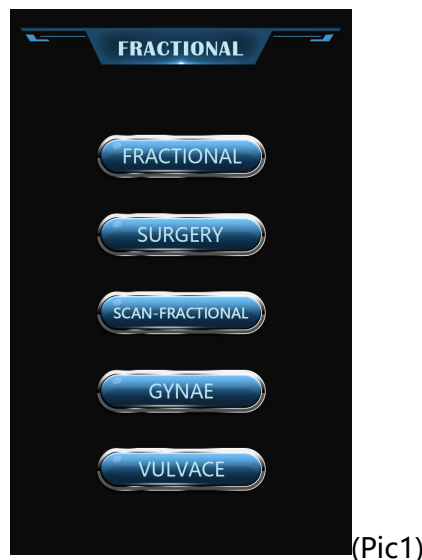
Removal of various moles, warts, tumors, and various benign growths.

## **GYNAE and VULVACE**

Improves problems such as vaginal laxity, dryness, dullness of the vagina. Treatment of gynecological inflammation, urinary incontinence and vulvar plastic surgery.


### **4.5 Interface Operation**

After turning on the machine, you will see the following operation interfaces(Pic1).



Choose the treatment mode which you would like to use, and set the treatment parameters.

#### **4.5.1 FRACTIONAL mode**

Click  to enter fractional Mode interface, there are two modes: PROFESSIONAL MODE and INTELLIGENT MODE.(Pic2).



(Pic2)

Click PROFESSIONAL MODE or INTELLIGENT MODE according to customer needs, if you choose PROFESSIONAL MODE, then you will see the interface like (Pic3).

 A detailed screenshot of the "FRACTIONAL" professional mode interface. The interface is dark-themed with blue accents. At the top, it says "FRACTIONAL". In the center, there is a circular graphic display area showing a red light preview. Below this are several control panels:
 

- Scan & Shape:** A "Scan" button with a dropdown menu showing "Disorder", and a "Shape" button with a dropdown menu showing a square icon.
- Preview & Save:** A "Preview" button and a "Save" button.
- PE & CR:** A "PE" button and a "CR" button.
- Parameter Groups:** Five numbered buttons (1-5) representing commonly used saving parameters.
- Power & Duration:** A "Power" panel with a slider and "w" unit, and a "Duration" panel with "ms" unit and +/- buttons.
- Distance & Overlap:** A "Distance" panel with "mm" unit and +/- buttons, and an "Overlap" panel with "th" unit and +/- buttons.
- Interval:** An "Interval" panel with "ms" unit and +/- buttons.

 At the bottom, there are "BACK", "STANDBY", and "READY" buttons.
 

Graphic display area

3 emission modes: halve,order,disorder

5 kinds of graphics

Power intensity

Output power

Output time of each spot

Interval time of each spot

Graphic red light preview


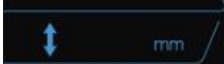




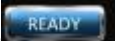
5 groups of commonly used saving parameters

Coverage rate

The distance between each spot

Overlap of energy

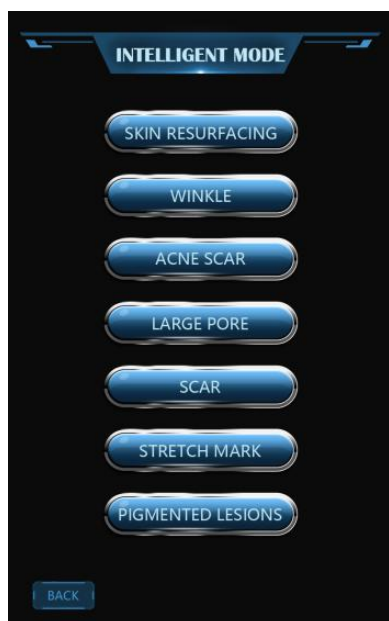
(Pic3)

Click  to adjust the parameters. Click  and then click  to adjust the height of treatment area. Click  and then click  to adjust the width of treatment area. After setting all the parameters, press  to be ready for the treatment, then press  to begin the treatment. You can adjust the parameters according to the table below.

Suggested Parameters (Fractional)									
Symptom	Parameters	Power(W)	Duration(MS)	Interval (MS)	Distance (MM)	Overlap (TH)	Shape	Area	Interval between treatments
Skin Resurfacing		43	0.5	2	0.7	1	Square	Maximum	45D
Wrinkle		43	0.6	5	0.8	1	Square	Maximum	45D
Acne scar		43	0.7	4	0.7	1	Square	Maximum	45D
Large pore		43	0.5	5	0.8	1	Square	Maximum	45D
Scar		49	0.7	3	0.5	1	Customize	Maximum	45D
Stretch mark		49	0.7	2	0.7	1	Customize	Maximum	45D
Pigmented lesions		49	0.7	4	0.7	1	Square	Maximum	45D

Notice: The mode is used by disorder.

If you choose INTELLIGENT MODE, you will see the following interface.(Pic4&Pic5)



(Pic4)




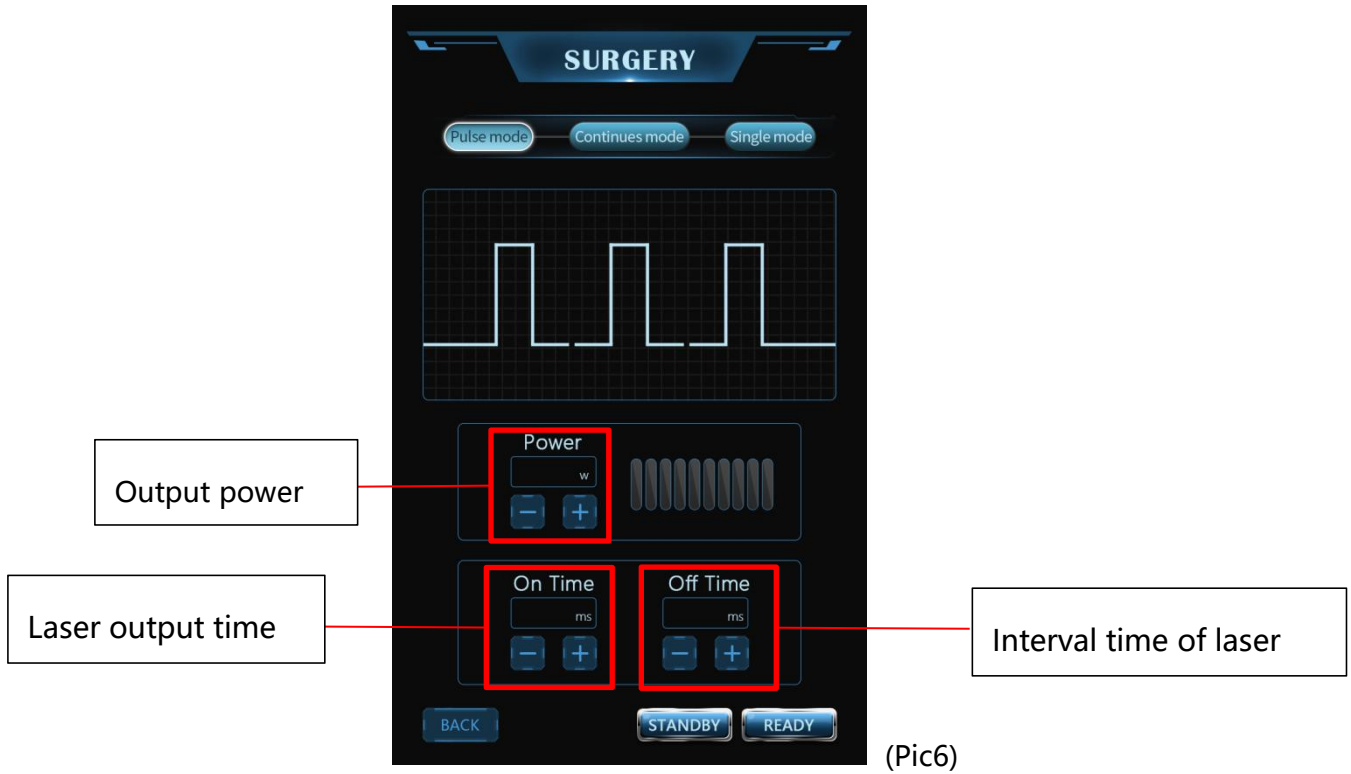
(Pic5)

You can choose the mode according to customer needs, and then you can see pic5, the machine will

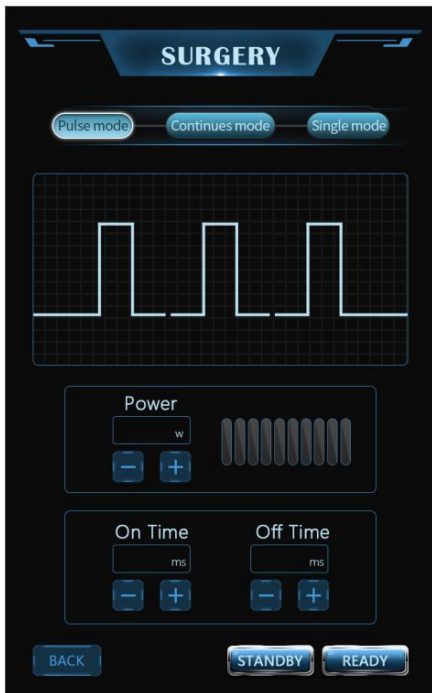
preset the parameters according to your choice, but you can still adjust the parameters according to the actual situation.

#### 4.5.2 SURGERY mode

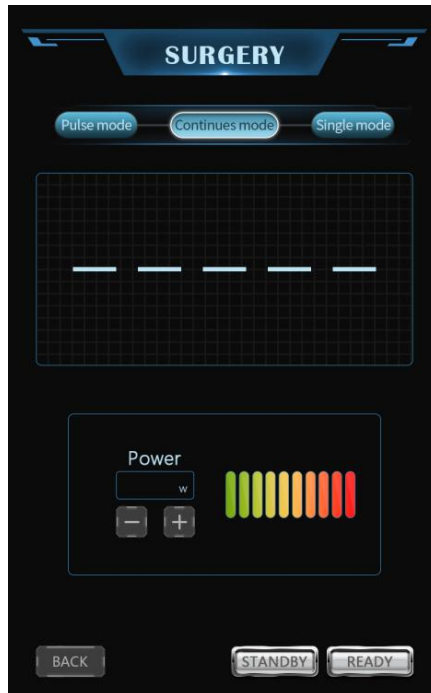
Click  to enter surgery mode interface(Pic6)



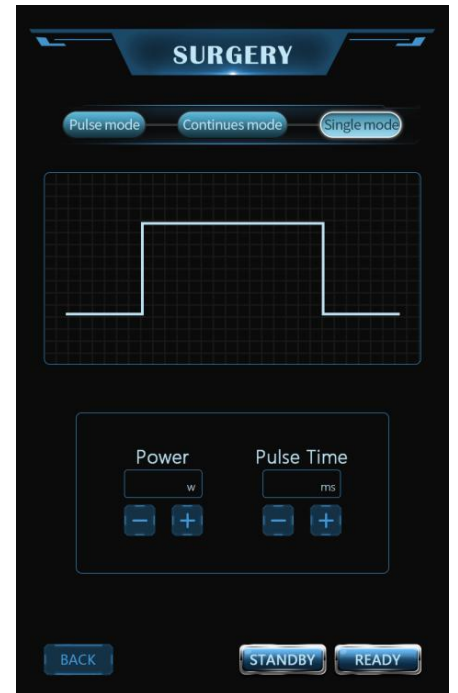
Surgery mode has three mode: pulse mode(Pic7) ; continues mode(Pic8) ; single mode(Pic9), you can choose the mode according to customer needs.



(Pic7)



(Pic8)

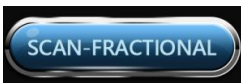


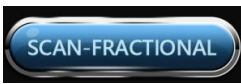
(Pic9)

You can adjust the parameters according to the table below.

Suggested Parameters (Surgery)				
Mode	Parameters	Power(W)	Duration(MS)	Interval (MS)
1 (pulse mode)		14	0.5	100
2 (continuous mode)	Doctor-specific tumor resection (Not for non-professionals)			
3 (single point mode)		5-8	5	/

### 4.5.3 SCAN-FRACTIONAL mode










Click  to enter scan-fractional mode interface(Pic10)

The interface for SCAN-FRACTIONAL mode includes the following components and callouts:

- Graphic display area:** The central circular area showing a grid and a red light preview.
- Graphic red light preview:** A red circular light effect in the center of the display.
- disorder mode:** A button labeled "Scan ▶ Disorder".
- 5 kinds of graphics:** A button labeled "Shape ▶" with a small square icon.
- 5 groups of commonly used saving parameters:** Five numbered buttons (1-5) for saving parameter sets.
- Power intensity:** A button labeled "PE" with a small "mj" unit indicator.
- Coverage rate:** A button labeled "CR".
- Output power:** A control panel for "Power" in Watts (W), with minus and plus adjustment buttons.
- Working time of each spot:** A control panel for "Duration" in milliseconds (ms), with minus and plus adjustment buttons.
- The distance between each spot:** A control panel for "Distance" in millimeters (mm), with minus and plus adjustment buttons.
- Interval time of each spot:** A control panel for "Interval" in milliseconds (ms), with minus and plus adjustment buttons.
- Navigation and Status:** Buttons for "Preview", "Save", "BACK", "STANDBY", and "READY".

(Pic10)


Click  to adjust the parameters. Click  and then click  to adjust the height of treatment area. Click  and then click  to adjust the width of treatment area. After setting all the parameters, press  to be ready for the treatment, then press  to begin the treatment. You can adjust the parameters according to the table below.


Suggested Parameters (scan-Fractional)									
Symptom	Parameters	Power(W)	Duration(MS)	Interval (MS)	Distance (MM)	Overlap (TH)	Shape	Area	Interval between treatments
Skin Resurfacing		34	0.5	2	0.7	1	Square	Maximum	45D
Wrinkle		34	0.6	5	0.8	1	Square	Maximum	45D
Acne scar		34	0.7	4	0.7	1	Square	Maximum	45D
Large pore		34	0.5	5	0.8	1	Square	Maximum	45D
Scar		39	0.7	3	0.5	1	Customize	Maximum	45D
Stretch mark		39	0.7	2	0.7	1	Customize	Maximum	45D
Pigmented lesions		39	0.7	4	0.7	1	Square	Maximum	45D

Notice: The mode is used by disorder.



#### 4.5.4 GYNAE mode




Click  to enter GYNAE mode interface(Pic11)



The screenshot shows the GYNAE mode interface with the following callouts:

- Diameter adjustment:** Points to the 'mm' field and the '+' and '-' buttons.
- 5 groups of commonly used saving parameters:** Points to the five numbered buttons (1-5) in the center.
- Power intensity:** Points to the 'PE' field.
- Output power:** Points to the 'Power' field.
- Working time of each spot:** Points to the 'Duration' field.
- The number of laser output points:** Points to the 'Point Number' field.
- Coverage rate:** Points to the 'CR' field.
- The number of laps:** Points to the 'Scan Rows' field.
- Overlap of energy:** Points to the 'Overlap' field.


(Pic11)

Click  to adjust the parameters. After setting all the parameters, press  to be ready for the treatment, then press  to begin the treatment. You can adjust the parameters according to the table below.

Suggested Parameters (Gynae)									
Symptom	Parameters	Power(W)	Duration (MS)	Point Number	Scan Rows	Overlap (TH)	Spot Size	Interval between treatments	Sessions
Tighten		52-70w	1-4	12-28	1	30-80	5	At Least 60D	3

### 4.5.5 VULVACE mode




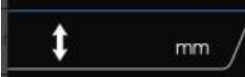

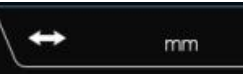



Click  to enter surgery mode interface(Pic12)

The screenshot shows the VULVACE surgery mode interface. At the top, there is a 'VULVACE' header. Below it is a central 'Graphic display area' showing a circular grid with a red light preview. To the left of the display are 'Scan' and 'Shape' buttons. To the right are 'Preview' and 'Save' buttons. Below the display are five numbered buttons (1-5) for saving parameters. At the bottom, there are three main control panels: 'Power' (with a scale from 0 to 1000 mJ), 'Duration' (with '-' and '+' buttons), and 'Distance' (with '-' and '+' buttons). Below these are 'Interval' and 'Overlap' controls. At the very bottom are 'BACK', 'STANDBY', and 'READY' buttons. Red boxes highlight various elements, and lines connect them to descriptive labels.

Labels and their corresponding elements:

- Graphic display area
- Graphic red light preview
- 3 emission modes: halve, order, disorder (points to Scan button)
- 5 kinds of graphics (points to Shape button)
- 5 groups of commonly used saving parameters (points to buttons 1-5)
- Coverage rate (points to CR button)
- Power intensity (points to PE button)
- Output power (points to Power panel)
- Working time of each spot (points to Duration panel)
- Interval time of each spot (points to Interval panel)
- The distance between each spot (points to Distance panel)
- Overlap of energy (points to Overlap panel)

(Pic12)

Click  to adjust the parameters. Click  and then click  to adjust the height of the treatment area. Click  and then click  to adjust the width of the treatment area. After setting all the parameters, press  to be ready for the treatment, then press  to begin the treatment. You can adjust the parameters according to the table below.

Suggested Parameters (Vulvace)

Symptom	Parameters	Power(W)	Duration(MS)	Interval (MS)	Distance (MM)	Overlap (TH)	PE(JM)	CR(%)	Shape	Area	Interval between treatments	Sessions
Rejuvenation		61	0.3-0.4	3	0.7-1.0	1	8-30	76-64	Customize	Customize	At Least 60D	3

# Chapter 5 - The Operation of the Machine

## 5.1 Operation of Fractional Mode

### 5.1.1 Treatment of operation

#### Before the treatment

◆ Fully communicate with customer. Understanding the guest's needs, physical condition (whether there are injections, whether skin care products containing hormones are used, whether they have been exposed to the sun recently), take photos, and fill in customer information files.

◆ Check if the instrument is working properly, clean the lens before treatment.

◆ Explain to clients how they might feel during treatment.

#### During the treatment

Step 1: Preparation of treatments: facial cleanser, face towel, anesthetic, plastic wrap, iodine, normal saline, medical cotton ball, gauze, disposable sterile cap, disposable medical gloves, goggles and glasses, epidermal growth factor, medical facial mask, ice pack, mirror.

Step 2: Clean the treatment area with towel and the saline, make sure that there is no make up on the surface.

Step 3: Apply soothing cream to the treatment area, cover with plastic wrap for 30-40 minutes.

Step 4: Wipe the anesthetics with iodine or saline.

Step 5: Wear a goggles for customers.

Step 6: Turn on the machine and choose the mode you need. After setting all the parameters, you can start the treatment.

Step 7: Step on the pedal to make the light out step by step. The light outlet of the treatment handle is gently attached to the skin, and the vertical skin is always maintained.

Step 8: Ask the customer's feelings in time during the operation, observe the reflection of the skin, and adjust the treatment parameters in time.

Step 9: Facial skin resurfacing must be operated with the whole face, and try not to overlap during operation, so as to avoid excessive energy of overlapping parts.

#### After the treatment

◆ Apply epidermal growth factor, apply repair mask for 15-20 minutes, and then wipe with saline or pure water.

◆ And instruct customers to pay attention to postoperative precautions and daily care, fill in the file, and make an appointment for the next treatment time.

◆ Turn off the instrument in time after the operation and clean the treatment head.

### 5.1.2 Taboo Crowd

◆ Do not take this treatment during pregnancy.

◆ Do not do the skin that has been exposed to the sun within two weeks.

◆ People who are using hormones and functional skin care products are advised not to do photoelectric therapy.

- ◆ Severe heart disease, high blood pressure, diabetes and other immune system diseases should not be done.

- ◆ Don't do it during sensitive skin period. Avoid the wound. Avoid skin diseases such as eczema and urticaria.

- ◆ Those who have been slightly filled and those with silicone parts cannot be treated with this treatment. The rest will be filled after three months.

- ◆ Cautious operation of scar physique.

- ◆ People who are photosensitive can't do it.

- ◆ Those who have had gold wire implants all over the face are not allowed to do it on the face.

### **5.1.3 Precautions**

- ◆ After the end of treatment, do not touch the part with your hands immediately to prevent bacterial infection.

- ◆ Very few individuals may have normal pigmentation in the skin after treatment, which will gradually subside after 1-3 months.

- ◆ Do not expose to the sun within two weeks before and after treatment.

- ◆ Do not use hormone products or functional skin care products within six months before and after treatment.

- ◆ Do not use hot water in the treatment area on the day after treatment, or bathe in hot springs and saunas, and clean with warm or cold water.

- ◆ Do not eat spicy foods, seafood, photosensitive foods, foods rich in B copper ions within one week after treatment.

- ◆ After the treatment, if local redness and swelling appear, apply a week of moisturizing and repairing mask after ice application in time.

- ◆ After treatment, epidermal growth factor should be used everyday, and medical facial mask should be applied 2-3 times a day for the week before medical mask.

- ◆ If there is scab formation after treatment, be sure to allow the scab to fall off naturally to avoid leaving pigmentation.

- ◆ Some guests will have some white pimples after the first treatment. This is an inflammatory reaction of the skin, and it can be recovered by applying the mask for three consecutive days.

## **5.2 Operation of Scan-fractional Mode**

### **5.2.1 Treatment of operation**

#### **Before the treatment**

- ◆ Fully communicate with customer. Understanding the guest's needs, physical condition (whether there are injections, whether skin care products containing hormones are used, whether they have been exposed to the sun recently), take photos, and fill in customer information files.

- ◆ Check if the instrument is working properly, clean the lens before treatment.

- ◆ Explain to clients how they might feel during treatment.

#### **During the treatment**

Step 1:Preparation of treatments: facial cleanser, face towel, anesthetics, plastic wrap, iodine, normal saline, medical cotton ball, gauze, disposable sterile cap, disposable medical gloves, goggles and glasses,epidermal growth factor, medical facial mask, ice pack, mirror.

Step 2:Clean the treatment area with towel and the saline, make sure that there is no make up on the surface.

Step 3: Apply anesthetics to the treatment area, cover with plastic wrap for 30-40 minutes.

Step 4: Wipe the anesthetics with iodine or saline.

Step 5: Wear a goggles for customers.

Step 6: Turn on the machine and choose the mode you need.After setting all the parameters,you can start the treatment.

Step 7:Step on the pedal,the light will automatically get out in the way you choose, until you lift the pedal. The light outlet of the treatment handle is gently attached to the skin, and the vertical skin is always maintained.

Step 8: Ask the customer's feelings in time during the operation, observe the reflection of the skin, and adjust the treatment parameters in time.

Step 9: Facial skin resurfacing must be operated with the whole face, and try not to overlap during operation, so as to avoid excessive energy of overlapping parts.

#### **After the treatment**

- ◆ Apply epidermal growth factor, apply repair mask for 15-20 minutes, and then wipe with saline or pure water.

- ◆ And instruct customers to pay attention to postoperative precautions and daily care, fill in the file, and make an appointment for the next treatment time.

- ◆Turn off the instrument in time after the operation and clean the treatment head.

### **5.2.2 Taboo Crowd**

- ◆Do not take this treatment during pregnancy.

- ◆Do not do the skin that has been exposed to the sun within two weeks.

- ◆ People who are using hormones and functional skin care products are advised not to do photoelectric therapy.

- ◆Severe heart disease, high blood pressure, diabetes and other immune system diseases should not be done.

- ◆Don't do it during sensitive skin period. Avoid the wound. Avoid skin diseases such as eczema and urticaria.

- ◆ Those who have been slightly filled and those with silicone parts cannot be treated with this treatment. The rest will be filled after three months.

- ◆People with scar physique.

- ◆People who are photosensitive can't do it.

- ◆Those who have had gold wire implants all over the face are not allowed to do it on the face.

### **5.2.3 Precautions**

- ◆After the end of treatment, do not touch the part with your hands immediately to prevent bacterial

infection.

- ◆Very few individuals may have normal pigmentation in the skin after treatment, which will gradually subside after 1-3 months.

- ◆Do not expose to the sun within two weeks before and after treatment.

- ◆Do not use hormone products or functional skin care products within six months before and after treatment.

- ◆Do not use hot water in the treatment area on the day after treatment, or bathe in hot springs and saunas, and clean with warm or cold water.

- ◆Do not eat spicy foods, seafood, photosensitive foods, foods rich in B copper ions within one week after treatment.

- ◆ After the treatment, if local redness and swelling appear, apply a week of moisturizing and repairing mask after ice application in time.

- ◆After treatment,epidermal growth factor should be used everyday, and medical facial mask should be applied 2-3 times a day for the week before medical mask.

- ◆If there is scab formation after treatment, be sure to allow the scab to fall off naturally to avoid leaving pigmentation.

- ◆ Some guests will have some white pimples after the first treatment. This is an inflammatory reaction of the skin, and it can be recovered by applying the mask for three consecutive days.

## 5.3 Operation of Surgery Mode

### 5.3.1 Treatment of operation

#### **Before the treatment**

- ◆ Fully communicate with customer. Understanding the guest's needs, physical condition (whether there are injections, whether skin care products containing hormones are used, whether they have been exposed to the sun recently), take photos, and fill in customer information files.

- ◆Check if the instrument is working properly, clean the lens before treatment.

- ◆Explain to clients how they might feel during treatment.

#### **During the treatment**

Step 1:Preparation of treatments: medical tray,anesthetics, iodine, saline, medical swab or cotton ball, disposable medical gloves, forceps, goggles and glasses.

Step 2:Clean the treatment area with towel and the saline, make sure that there is no make up on the surface.

Step 3: Apply anesthetics to the treatment area, cover with plastic wrap for 30-40 minutes.

Step 4:Wipe the anesthetics with iodine or saline.

Step 5: Wear a goggles for customers.

Step 6:Turn on the instrument to select the surgery mode, adjust the instrument parameters , test the energy on the paper and click the start button to operate.

Step 7: Pick up the vegetation with tweezers for cutting.

Step 8: Ask the customer's feelings in time during the operation, observe the reflection of the skin,

and adjust the treatment parameters in time.

Step 9: Do not aim the operating head at the customer's eyes; do not aim at the mirror surface.

#### **After the treatment**

- ◆ keep the treatment area clean and dry.
- ◆ And instruct customers to pay attention to postoperative precautions and daily care, fill in the file, and make an appointment for the next treatment time.
- ◆ Turn off the instrument in time after the operation and clean the treatment head.

### **5.3.2 Taboo Crowd**

- ◆ Do not take this treatment during pregnancy, period, and breastfeeding.
- ◆ Do not do the skin that has been exposed to the sun within two weeks.
- ◆ People who use retinoic acid drugs and hormone drugs (can only be operated after one month of discontinuation).
- ◆ People who have been treated with chemical peeling, grinding and other peeling techniques (can only operate after one month).
- ◆ Those who have been slightly filled and those with silicone parts cannot be treated with this treatment. The rest will be filled after three months.
- ◆ People who are photosensitive can't do it.

### **5.3.3 Precautions**

- ◆ After the end of treatment, do not touch the part with your hands immediately to prevent bacterial infection.
- ◆ keep the treatment area clean and dry.

## **5.4 Operation of Gynae Mode**

### **5.4.1 Treatment of operation**

#### **Before the treatment**

- ◆ Fully communicate with customers, understand the basic situation of customers, and establish customer files.
- ◆ Ask the customer whether there is inflammation, healthy or mild inflammation after going to the hospital for examination, and whether the private firming mode can be operated.

◆ Put the private hexagonal prism, inner vaginal catheter, uterine expander, etc. into a pressure cooker at 100°C for disinfection; or after high-temperature disinfection, put them in a UV disinfection cabinet for use.

- ◆ Operation in a sterile room.

#### **During the treatment**

Step 1: Preparation of treatments: Iodophor, physiological saline, medical gauze, disposable sterile gloves, disposable sheets, trays, Uterine dilator, hexagonal bracket, vaginal catheter.

Step 2: Clean the treatment area with Iodophor disinfectant.

Step 3: Wipe the treatment head with iodine or saline.



Step 4: Adjust the mode and parameters to operate.

Step 5: First use the uterine expander, then put in the hexagonal prism, and then put in the vaginal catheter for the first operation.

Step 6: Pull the inner vaginal catheter outward one scale for the next operation.

Step 7: During the operation, ask the customer how they feel and adjust the parameters suitable for the customer to operate according to the scale of the inner vaginal catheter.

Step 8: Disinfect the area around the customer's operating site after the operation.

#### **After the treatment**

- ◆ Turn off the machine and disinfect operating tools.
- ◆ Inform customers about the precautions and cycles after surgery.

### **5.4.2 Taboo Crowd**

- ◆ People with gynecological inflammation (vaginitis and cervicitis, etc.).
- ◆ People with scar physique.

### **5.4.3 Precautions**

- ◆ Pay attention to the hygiene of private parts.
- ◆ Prohibition of intercourse within one week.
- ◆ Avoid smoking, alcohol and spicy food.
- ◆ Avoid sitz baths, avoid using vulva lotion, soapy water to directly clean the vulva.
- ◆ Avoid strenuous exercise, avoid cycling, swimming and other fitness activities.

## **5.5 Operation of Vulvace Mode**

### **5.5.1 Treatment of operation**

#### **Before the treatment**

- ◆ Fully communicate with customers, understand the basic situation of customers, and establish customer files.

#### **During the treatment**

Step 1: Labia operating head, iodine, saline, medical cotton balls, disposable medical gloves, epidermal growth factor, ice packs.

Step 2: Disinfection of labia operation head.

Step 3: Wipe the treatment area with iodine or saline.

Step 4: Turn on the instrument and select the vulvace mode - adjust the graphics - adjust the instrument parameters - select the scan mode - click the preview - click the start button to operate the treatment.

Step 5: The light outlet of the treatment handle is lightly attached to the skin, always keeping it vertical to the skin.

Step 6: During the operation, timely ask customers how they feel, observe the reflection of the skin, and adjust the treatment parameters in time.

Step 7: Try not to overlap when operating to avoid excessive energy in the overlapping part,

resulting in pigmentation.

#### **After the treatment**

- ◆ Finally, apply epidermal growth factor, and remind customers of postoperative precautions and daily care, fill in the file, and make an appointment for the next treatment time.
- ◆ After the operation, turn off the instrument in time and clean the treatment head.

### **5.5.2 Taboo Crowd**

- ◆ People with severe heart disease, hyperlipidemia, hypertension and hyperglycemia.
- ◆ Menstruation, pregnancy, lactation.
- ◆ People with photosensitivity.
- ◆ People with scarring physique.
- ◆ People who use retinoin drugs and hormone drugs (Operation after 1 month of suspension).

### **5.5.3 Precautions**

- ◆ Pay attention to the hygiene of private parts.
- ◆ Prohibition of intercourse within one week.
- ◆ Avoid smoking, alcohol and spicy food.
- ◆ Avoid sitz baths, avoid using vulva lotion, soapy water to directly clean the vulva.
- ◆ Avoid strenuous exercise, avoid cycling, swimming and other fitness activities.

## **5.6 Adverse Reaction**

Since different people have different reactions to laser removal of spots or tattoos, it is important for customers to pay attention to skin changes after treatment. It is normal for scabs, blisters, scabs, and swelling to appear within two weeks.

However, if they have any extreme reactions or experience any of the following symptoms, they must stop the treatment immediately:

- ◆ Persistent pain will not go away with over-the-counter pain medication.
- ◆ The treated area looks infected. (yellow or honey-colored exudate and scabs)
- ◆ Fever exceeds 100°F.
- ◆ If the treated area becomes excessively swollen.
- ◆ Excessive bleeding or any drainage.

## **5.7 Other things to know**

The following are tips for the operator in the process of removing spots or tattoos:

- ◆ If the client has not done this before, please shave the treatment area before starting the laser treatment.
- ◆ Clean the treatment area, but the treatment area must be dry, otherwise it will affect the treatment.
- ◆ Take pictures before and after each treatment for reference.
- ◆ For tattoo removal, we recommend that you deal with large tattoos bit by bit in a separate treatment to avoid causing too much discomfort to the client. If you process too much at one time, your

body may not be able to effectively remove ink fragments. You can also help build customer confidence by looking at the comparison before and after treatment.

- ◆Use lower energy in areas with thinner bones and skin.
- ◆The treatment time is usually no more than 30 minutes, including all paperwork and photos.
- ◆We recommend that customers wait 6-8 weeks between meetings.
- ◆Because of the more pigment, the effect of removing spots or tattoos in the first few treatments will be more obvious.
- ◆The digestion and transport function of macrophages can last a long time, during which the color will become lighter, sometimes as long as a year.

# Chapter 6- Maintenance of Laser Instrument

For assuring a safe and reliable operation, periodic maintenance and good care are very important. This section describes daily and other regular maintenance of the Laser treatment system that can be carried out by the operator.

## 6.1 General Cleaning

Clean the outer part of the equipment regularly with soft damp cloth or microfibre cloth. You may also use a neutral detergent, and alcohol free wipes. You should clean the lens regularly after use. The spatter of pigment and tissue may splash into the lens during the treatment period. This could influence the consistency of the light.

You should clean the output lens once a week or when required such as during and after Carbon facial as there may be a carbon build up on the lens after treatment.

The output lens should always be free of dirt and attachment.



**Warning !**

**It is strictly prohibited to check and clean output lens during machine open!**

## 6.2 Regular Cooling Water Changes Are Required

The frequency of water change depends on the usage:

- ◆ If the machine runs every day, the water should be replaced every 2/3 months.
- ◆ If the machine runs once or twice a week, the water should be changed every 6 months.
- ◆ No matter whether the machine is used or not, the cooling water must be replaced once a year.

See Chapter 3 for instructions on adding and removing water. After changing the water, you must allow the water to circulate normally for 5 minutes.

If the temperature in the treatment room (where the laser machine is located) is lower than 2°C, all cooling water in the laser device must be drained and replaced with new cooling water.

**PLEASE NOTE:** Only use distilled, de-ionised or pure water in this device. Bottled or tap water is not suitable to use, as the impurities in the water will cause scale build up which will affect the normal workings of the device and cause irreparable damage which will void any warranty.

## 6.3 Transport, Storage and Moving

- ◆Minimize transportation, because the risk of damage to the equipment is greater.
- ◆When moving or storing, please keep and use the original packaging.
- ◆If you move to another treatment room, please keep the equipment level when moving.
- ◆Do not shake or knock the device. The mirror of the laser guide arm may be misaligned.
- ◆The internal calibration of the laser cavity is very accurate, and it is easily affected by excessive force.

Be careful when storing and using, taking care to avoid knocks, collisions, squeezing and vibration. And the machine needs to be reset after each use and stored in dust proof.

- ◆The main technical parameters and technical requirements shall be calibrated and measured according to the following procedures, and the verification period shall not exceed 1 year.

- ◆When the environmental temperature of the instrument changes greatly, the power of laser blasting is weakened, the heating effect is strengthened, the test paper smokes, and the sound is full. The electro-optical switch should be adjusted by professional and technical personnel.

- ◆When the laser output value on the working surface deviates by plus or minus 20% from the preset value, professional response to instrument calibration and debugging. If a malfunction occurs during use, the user is not allowed to disassemble or replace the instrument and equipment at will, and should contact the dealer in time, and the company will send professional personnel to repair it.

- ◆ Before long-distance transportation, the cooling water in the water tank should be drained. When moving or storing, keep and use the original packaging. Don't move the device unless necessary. If you move to another treatment room, keep the equipment level when you carry it.

- ◆Avoid machine moisture condensation; ensure the safety and service life of the machine.

- ◆ 220V/110V, 2000W voltage stabilizer should be installed to prevent voltage instability and pulse interference from causing damage to the machine.

- ◆Before starting the machine, please make sure that the air-cooling and water-cooling systems are working properly.

- ◆The machine should be placed in a room with a temperature higher than 20°C, and stay for at least 6 hours before use.

## 6.4 Troubleshooting Guide

This section outlines the most basic troubleshooting steps for the Fractional CO2 Laser Machine.

### 6.4.1 The machine will not start

- ◆Check the power supply has electricity and the attaching plugs are securely inserted both ends and socket is switched on.
- ◆Check the red emergency button is released.
- ◆Check key is in correct position.
- ◆Examine fuse and replace if necessary.

#### **6.4.2 The water cycle is abnormal when you start the machine**

- ◆Check the water level, if there is not enough water inside to cycle properly this will trigger the water level cut- out switch.
- ◆Replace the cooling water inside as per instructions.

#### **6.4.3 There is no laser beam output when you press the pedal**

- ◆Check that the machine is in the correct working state.
- ◆Check the pedal, cable and connecting plug for damage, if any part is damaged contact us for a replacement.
- ◆Check the ready key is pressed.

#### **6.4.4 The energy becomes weak or there is no light that comes out**

- ◆Any impurities adhered to the treatment lens will lead to blocking the light, please check the lens. If there is any pigmentation, dirt or dust etc.; clean as directed.
- ◆You must stop working and not use the machine in 30 minutes if the apparatus has overheated.
- ◆Examine the optical lens to see if it is damaged.

#### **6.4.5 You may get an electric shock when you touch the machine**

- ◆You should use the three grounding plugs and the electrical outlet must be correctly earthed.
- ◆The voltage is unstable, you should introduce a voltage stabilizer.

#### **6.4.6 There is no noise when you press the preheating key**

- ◆Please raise the temperature appropriately if indoor temperature is too low. You can install air conditioning.
- ◆The fans are broken or the fans have friction with other parts. Please change a new fan or clear the fans obstruction.
- ◆The indoor humidity is too high, keep the room dry.

## Contact Us

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