

CO2 Fractional Laser System

User's Manual

Read this manual carefully before using

Attention

We seriously announce that for others' and your safety

- *Read this manual before using.
- * People can repair or check the machine after 5 min of the machine turn off.
- *It is forbidden to disassemble the machine while it is working.
- *People must stand on the nonconductor place while check, repair and fix up the machine.
- *All operators must receive training in application technique and security knowledge about CO2 laser!
- *The operators must pay great attention to the potential danger of beams of CO2 laser light!
- *Only the maintainers of or authorized by our company can repair and maintain the rejuvenator.
- *Don't face the laser output beam to eyes or other healthy skins directly in any case.
- *Avoid aiming the laser beam at smooth reflection surface, such as stainless steel, mirror surface etc. in order not to hurt eyes or skins by the reflection of laser beam.
- *If the unit is cleaned by alcohol, the laser irradiation only can be used after the alcohol becomes dry. The laser beam should avoid irradiating inflammable and explosive cargo.
- *In order to make the viewing fields of the operated part clear and avoid focusing lens of the bit being polluted, smoke-extracting facility should be equipped when operating.
- *Suggest the operators and patients wear laser-eye shield with corresponding wavelength when operating.
- *High-voltage power exists inside the apparatus so that unspecialized technician is not allowed to open up the cabinet in order to avoid electric shock danger.
- *If extraordinary noise and smell is found when the apparatus is working, the apparatus must be stopped for inspection immediately. Power should be cut off before inspection.
- *The apparatus assembles glass laser tube inside. So pay attentions not to fall down when transport it.

Warning

Any operation against the instructions of this Manual would possibly result in injury or danger!

Safety

In consideration of the user's safety, the machine is designed to minimize the harm of strong light to people and environment. Improper operation would result in severe injury to customer, operator or environment.

For your safety, please pay much attention to the followings:

I. Security of laser Light:

The wave length of CO₂ laser is 10.6μm.

Warning

The window outputting laser light is installed at the front-edge outlet of applicator tool!

▲ Do avoid the strong optical radiation from the window!

Warning

All operators working within the irradiated space of strong light must wear protective glasses!

▲ Don't directly see the laser light from the front-edge outlet of applicator tool.

▲ Keep combustible and detonable stupeficient, fluid and gas (such as alcohol, ether, laughing gas and oxygen) far away from irradiation space of laser light, where appropriate measurements of protection should be taken.

▲ Try to avoid using metal apparatus which can reflect light as possible as you can for fear of reflecting laser light. Even when using, ensure not to directly expose laser light on the metal apparatus.

▲ During operation, operators shouldn't wear watch, necklace, bracelet or other light-reflecting articles.

▲ Effective protection measurements must be offered to customers' eyes, such as gauze, eye shield and tarsi.

▲ Don't use laser light to irradiate other places other than affected part and target skin; when hand tool is moved or after use, the front-edge of it must be put toward the safe place.

▲ There should be a warning sign hanged over the entrance to laser Light Room. None is allowed to enter or exit the Room during operation.

II. Eyes Protection:

▲ All operators working within the irradiation space of laser light must wear protective glasses!

▲ Careful and effective eyes protection must be offered to customers!

▲ Protective glasses cannot absolutely absorb all laser light or reflected laser light by glasses, reflection mirror or smooth metal surface. For this reason, please don't directly see the upper laser light with protective glasses.

▲ Gauze, eye-shield and tarsi are all effective to protect customers' eyes.

III Safety of operation room:

▲ The operation room must be equipped with smoke exhaust and dust exhaust equipment. And labeling "caution" on the equipment, which saying the discharging from the laser machine may contains particulates of biologic tissue.

▲ The operation room must be avoid the existence of the following matter: incensive anaesthetic, oxidizing gas such as N₂O and O₂.

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1 INTRODUCTION:

1.1 Range of application:

Fractional resurfacing is a new laser treatment modality that creates numerous microscopic thermal injury zones of controlled width, depth, and density that are surrounded by a reservoir of spared epidermal and dermal tissue, the normal skin been left between the injury point. allowing for rapid repair of laser-induced thermal injury. This unique modality, if implemented with high repetition Ultra Pulse Laser systems, enables high-energy treatments while minimizing risks, it is less pain, less down time and good effect.

Cosmetic Application	Rhytides (Wrinkles)
	Mottled dyspigmentation
	Telangiectasia (Red Spots)
	Solar lentignes (Brown spots)
	Large pores
	Rough skin texture
Medical applications	Actinic keratosis (sun-damaged skin, precancerous lesions)
	Seborrheic keratosis (sun-damaged skin, precancerous lesions)

	Sebacous hyperplasia (yellow, shiny bumps on the face)
	Rhinophyma (nose swelling and tissue over growth)
	Epidermal Melasma (Brown spots)

1.2 Range of Contraindication

- * Those who are sensitive to light, severe cardiopathy or high blood pressure.
- * People who have done skin chemical or laser operation in the last half a year must not use the product.
- * Pregnancy woman.
- * People took drugs that cause photo-sensitisation, recently.
- * People who have sever keloid scar and systemic lupus erythematosus.
- * People with skin pigmentary conditions.
- * People with hepatitis, tuberculosis and AIDS is forbidden to use it.
- * People with blood disease is forbidden to use it.
- * People suffering from hight fever is forbidden to use it.
- * People with psychopathy is forbidden to use it.

1.3 Specifications

Laser Type:	10.6μm
Output Power:	≥20W
Starting Voltage:	≤25kV
Operating Voltage:	≤15kV
Operating Current:	≤25mA
Focal length of working head:	f=100mm f=50mm
Indication Beam:	Green Semiconductor Laser (532nm, 5mW)
Transmission System:	7-Articulation Joint Spring-Balanced Light Guiding Arm
Smoke Exhausting System:	Built-in air blow
Cooling System:	Built-in circulating water cooling
Environmental temperature:	5-40℃
Relative Humidity:	≤80%
Power Supply:	AC 220V±22V; 50Hz±1Hz
Dimension:	430mm×350mm×1050mm
Weight:	40kg

Working mode:

Continuos: power 1~30W step adjustable each 1 W

Pulse: power 1~30W step adjustable each 1

Interval time: 1~999ms

Ultra pulse: power 1~30W step adjustable each 1

modulated frequency of 1000 Hz

Scanning mode:

scanning mode: Ellipse, Rectangular. Triangular

Repeat Delay: 0.1s---- 5.0s.

Micro Pulse Energy: 5mJ---100mJ.

Treatment Level: 0.30%-----25.0% .

Passes: 1--10 times.

Estimated Power: 125mJ--1000J.

Ellipes estimated power: 31mJ----1000J

Rectangular estimated power:24mJ----981J

Treatment area: 0.1*0.1mm, ----- 20*20mm./ 0.1*0.1mm, ----- 15*15mm

Handpiece Velocity: 0.1-----9cm²/s

Treatment Depth:<2.0mm

2. EQUIPMENTS AND ACCESORY LIST

2.1 List of all the parts



S50



Scanner

2.2 Name of each part and elucidation

2.2.1 The main machine



CO2 Fractional Laser Machine
PZ-605

CE



Professional Scanners(two scanner optional)



Focus Length=50mm



Focus Length=100mm



Glasses



Fans



Foot Switch



3 THE PROCESS OF INSTALLING

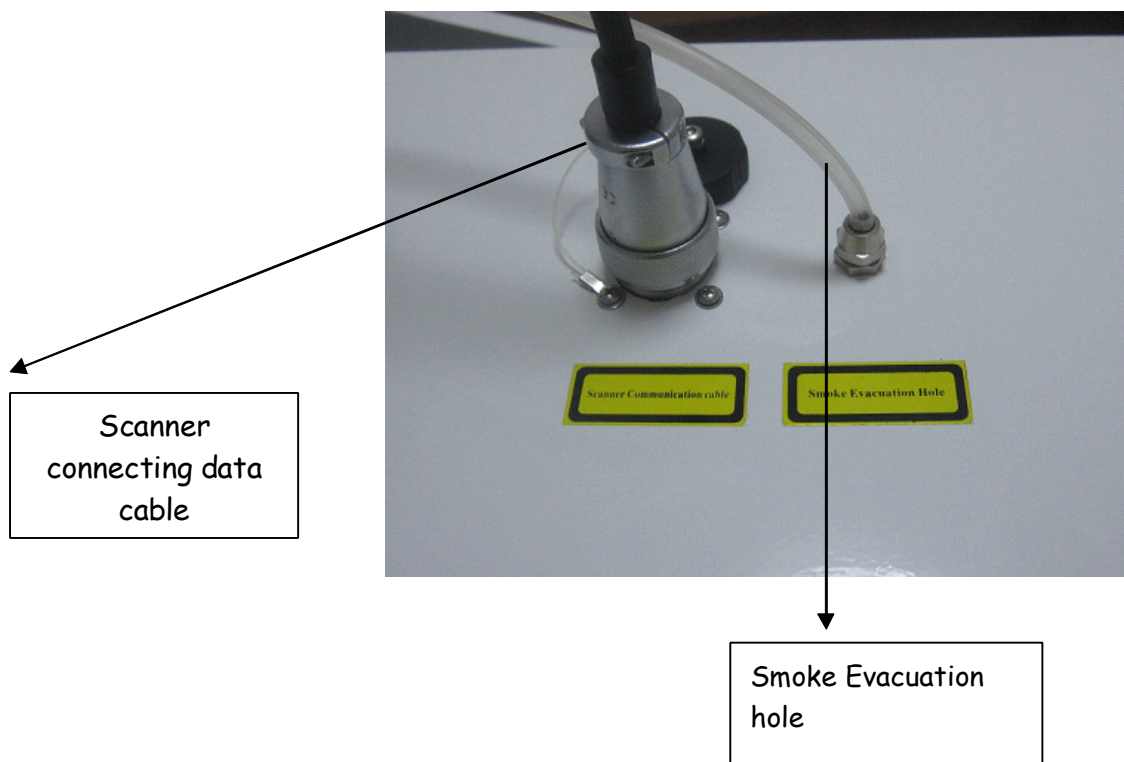
3.1 Preparation for Using

When opening up the packing case, first you should examine the outer-shell of the unit and be sure there is no obvious collision damage. You should also make sure that there is no dropout between structural parts and connecting lines and all the equipped spare parts are complete.

3.1.1 Laser Guiding Arm:

CO2 laser guiding arm is composed of debugging tube, laser guiding arm, scanner, the light conducting arm plug and scanner plug. The light conducting arm plug and scanner plug are on the bottom of the machine.

As we can see in the picture below:



The connecting base is fixed on the laser output end of the unit. Generally speaking, this system can be used when the laser-guiding arm is connected and locked tightly to the connecting base.



Caution: The arm can be circumscribe in a certain direction as marked on the arm.

3.1.2 CO2 Laser Output Beam core Adjustment:

Firstly, take off the laser-guiding arm and equip the debugging tube on the connecting

base. Secondly adjust CO2 Laser device to make CO2 laser beam aim at the core of the debugging tube and make sure the beam goes through the debugging tube coaxially. Thirdly, switch on and select the lowest power, and inspect the position of the flare of the debugging tube end by a piece of pergamyn. Fourthly, adjust laser device repeatedly until the CO2 Laser beam go into from the core of the debugging tube beginning, and go out from the core of the ending. At last, take off the debugging device, put on the laser-guiding arm and lock it tightly.

The process of indication adjustment of isotopic light route is the same as above. Adjusting till the focusing flare of the green semiconductor laser coincides with that of CO2 Laser.

Select lower power after switching on. Inspect the output condition of the laser by a piece of pergamyn at the flat surface of the output end of the laser-guiding arm. If there are double points and double lines, CO2 Laser device or semiconductor laser device should be adjusted accurately and carefully following the above mentioned methods

Use focusing probe to do cutting operation in general. When conducting burning cure in large area, take off the focusing probe and put on the focus-out probe in order to control the size of the flare.

3.2 Attention

- *Don't face the laser output beam to eyes or other healthy skins directly in any case.
- *Avoid aiming the laser beam at smooth reflection surface, such as stainless steel, mirror surface etc. in order not to hurt eyes or skins by the reflection of laser beam.
- *If the unit is cleaned by alcohol, the laser irradiation only can be used after the alcohol becomes dry. The laser beam should avoid irradiating inflammable and explosive cargo.
- *In order to make the viewing fields of the operated part clear and avoid focusing lens of the bit being polluted, smoke-extracting facility should be equipped when operating.
- *Suggest the operators wear laser-eye shield with corresponding wavelength when

operating.

*High-voltage power exists inside the apparatus so that unspecialized technician is not allowed to open up the cabinet in order to avoid electric shock danger.

*If extraordinary noise and smell is found when the apparatus is working, the apparatus must be stopped for inspection immediately. Power should be cut off before inspection.

*The apparatus assembles glass laser tube inside. So pay attentions not to fall down when transport it.

3.3 Installation

1. Make sure whether the power voltage coincides with the voltage needed by the unit.
2. Screw into earth plug
3. Insert the plug of the foot switch connecting line into the socket on the back of the unit.
Push the notch till the connection is reliable.

4. Insert remote interlock



5. Insert the two ends of the power line into the power input socket and power socket separately. (The power socket must have a good earth); connect the earth nail on the under bed of the outer-shell with ground firmly.



6. Insert the key into the switch hole of the control board, and turn the key 90 degree in the direction of right-hand, and in the meantime, the power is on and the circulating water pump and the cooling fan inside the unit are turned on.
7. Turn off the power after several minutes' test run.

OPERATION INSTRUCTION

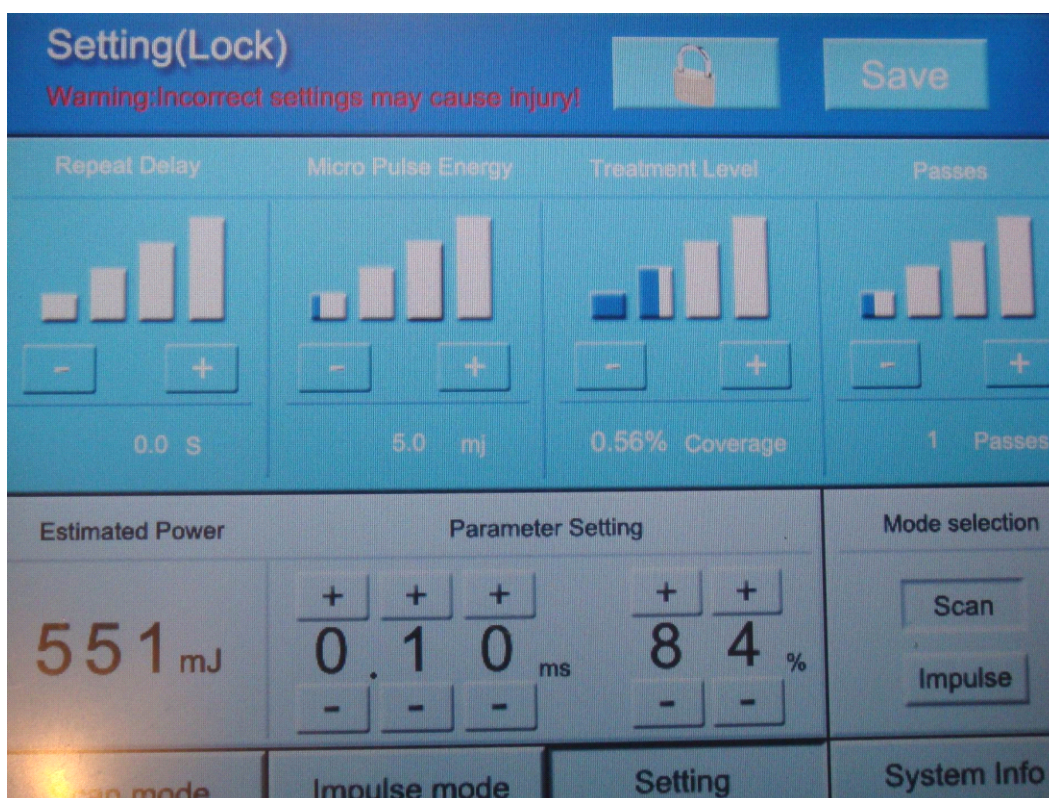
4.1 The operation of the screen.

Turn the key of POWER SWITCH in the direction of right-hand, the computer automatically inspects the unit simultaneously. If it works regularly, the Figure 1 will be shown:

CO2 Fractional Laser System

Then you will hear the sound of fans. Touching the screen you will enter the next operation mode. After few second you will see the screen as below Figure 2

Figure 2



Then you can choose scan mode or impulse mode according to your treatment.

If you see the screen as below

Figure 3:

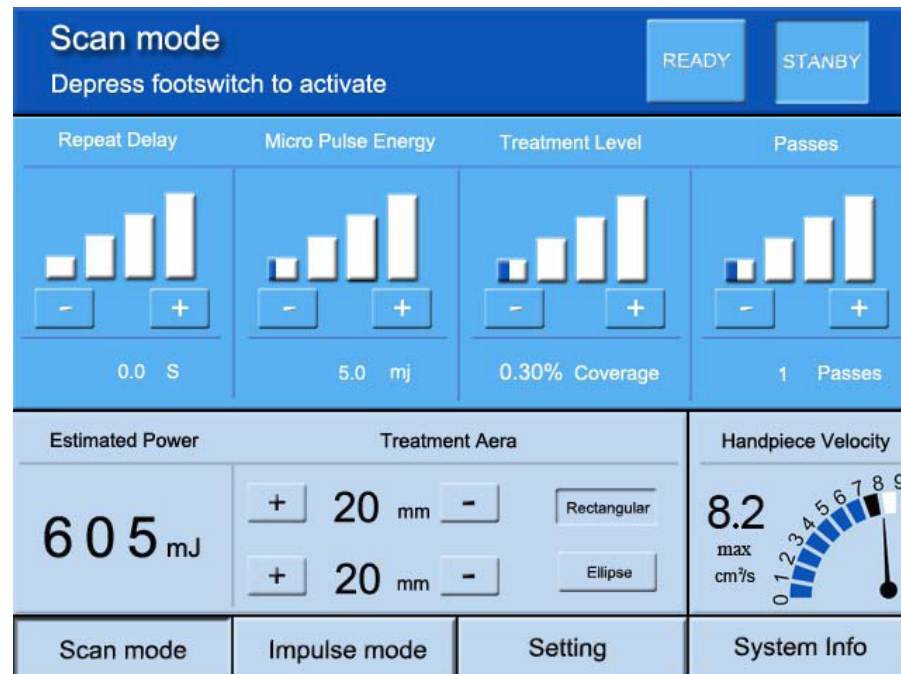


Figure 3

There is a red warning sentence on the left top of the screen in the meanwhile you will hear sound of warning "du-du-du". That is to say the machine is not ready to use. You can check the back door of the machine to make sure whether it locked or not. If it is not locked, we can't use the machine. We can close and lock it again.

4.2 Steps for operation

4.2.1 Scanning mode

When we enter into the scan mode, we will see the screen as below Figure 4

Figure 4

- Micro Pulse Energy

It refers to the energy of one single point of laser, and should be adjusted by the doctors.

The minimum energy is 5mj, the maximum one is 50mj.

To prevent dangerous consequence caused by mis-operation, every time the machine is turned on, the energy would be back to the minimum one, regardless of the set energy in operation.

- Treatment Level

It is the density of laser point.

It refers to the ratio relationship between the actual lighted skin area and the original set area.

The minimum one is 0.30%, the maximum one is 25.0%.

- Passes

It refers to the repeated times to finish the whole scan chose by operator.

10 steps are adjustable, the minimum one is 1 time, the maximum one is 10 times.

- Repeat Delay

It refers to the interval time between each scanning. When the Passes number is over 1, it can be adjust.

The minimum one is 0.1s, the maximum one is 5.0s, 0.5s adjustable per step.

- Treatment Area

It refers to the shape of laser light area.

Two scan modes are available, Rectangular one, and Ellipse one.

Operator could randomly adjust the width and length.

The minimum one is 0.1*0.1mm, The maximum one is 20*20mm.

- Handpiece Velocity

It refers to the velocity of scan working head scanned area per second.

The minimum one is 0.1cm²/s, the maximum one is 9cm²/s.

- Estimated Power

It refers to energy value of the laser total output automatically calculated by the system itself, according to the relative parameters setting by operator, the unit is KJ, J, and mJ

Ellipses estimated power: 31mJ----1000J

Rectangular estimated power: 24mJ----981J

Attention: the expected power is in theory, it would be little over or beyond the actual power if improper power seted.

The doctor will choose the right parameters according to the treatment. After the doctor choose the right parameters, press "ready". The machine is ready to use. We will hear sound of "du-du-du" while pressing ready. The machine make sound of

"du-du-du" refers to ready to use.

Whenever you change the parameters and make it ready, the machine will make the sound of "du-du-du"

4.2.2 Impulse mode

When you choose impulse mode, you will see the following screen: (Figure 5)

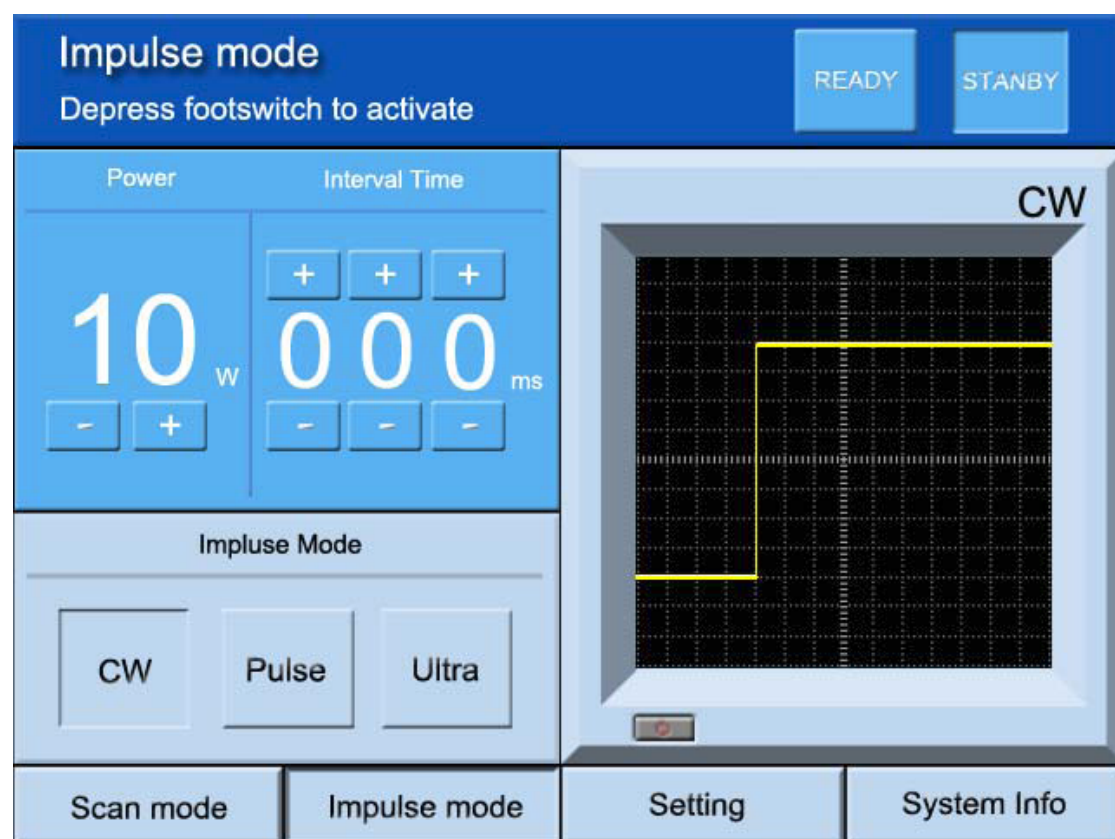


Figure 4

In this impulse operation mode, we can choose three kinds of working mode

- CW: Continuous mode

In the CW Mode, the laser would be lighted on skin continually without stop, when operator presses the foot-switch.

The adjustable parameter is the output power, from 1 to 30w.

- Pulse: pulse mode

In the Pulse Mode, the laser would be lighted on skin as pulse form.
The adjustable parameter is output power, from 1 to 30w, and interval time, from 0 to 999ms.

- **Ultra: super pulse mode**

In the Ultra Mode, the laser would be lighted to skin as Ultra Pulse form.
The super Pulse Frequency is 1000Hz, the adjustable parameter is output power, from 1 to 30w.

The doctor will choose the right parameters according to the treatment. After the doctor choose the right parameters, press "ready". The machine is ready to use. We will hear sound of "du-du-du" while pressing ready. The machine make sound of "du-du-du" refers to ready to use.

Whenever you change the parameters and make it ready, the machine will make the sound of "du-du-du"

5 MALFUNCTION EXCLUDING AND DAILY MAINTAINING

5.1 Maintenance of Instrument

▲ The machine will be kept by professional trained personnel. The keeper must make sure that the machine should be in good condition and clear. (we can use non-corrosive detergent to clean the shell of the machine)

▲ Avoiding the mechanical damage and the damage of CO2 tube, when we remove the machine

▲ We must keep the 7 joint torsion spring articulated arm with scanner and foot switch in the safe place orderly and cover with dustproof cover after the treatment.

▲ The keeper must check the machine after treatment. He must confirm the machines is in good condition and then he can keep the machine. He will keep the keys of the machine separated with the machine.

5.2.1 The checking of CO2 tube periodically

The periodical time: once a year

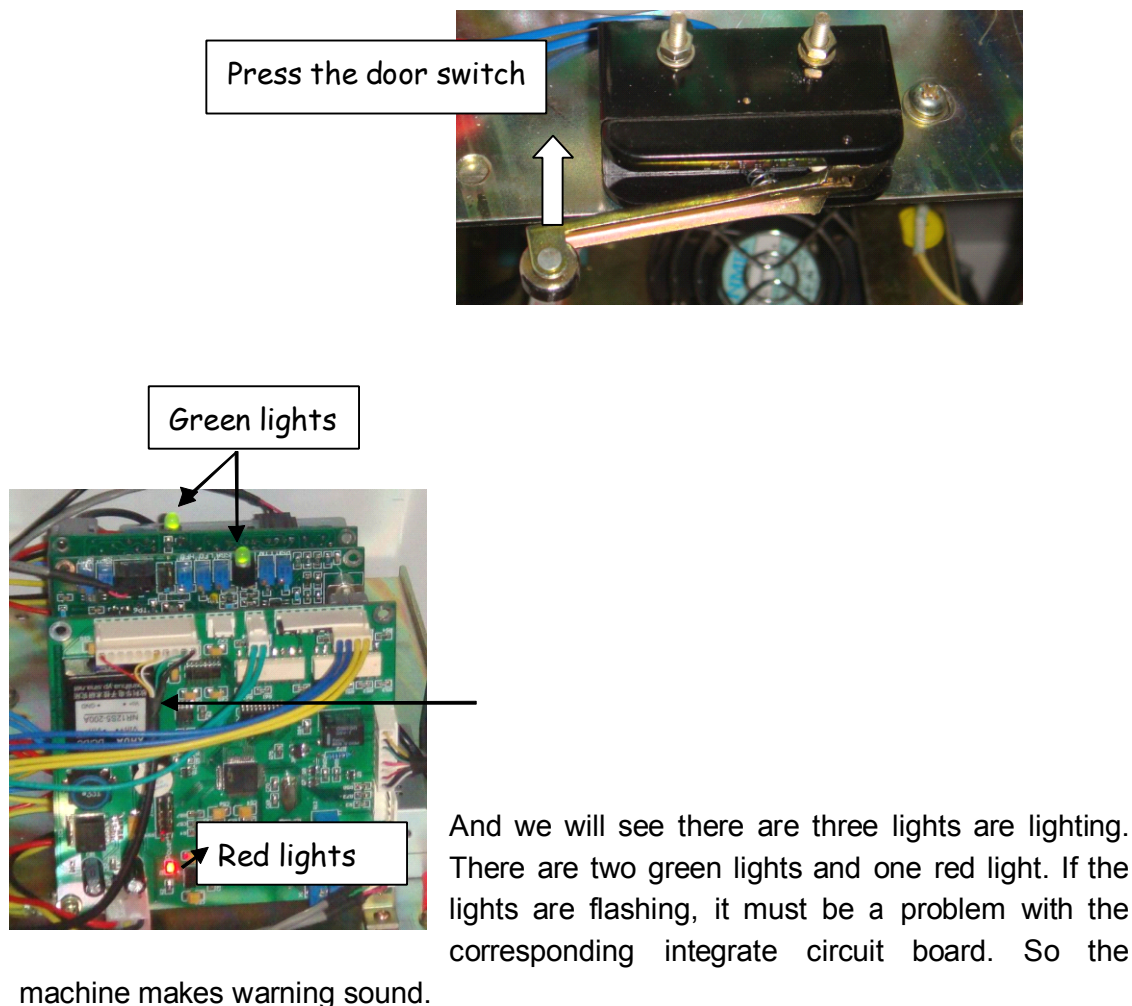
The checking must be made by a qualified person.

5.2.2 Replacing fuse

Using screwdriver to unscrew the fuse. Putting new fuse into the plug. Then screwing it tightly.

5.2.3 Warning sound checking

When we set up the machine, we may hear a warning sound "du-du-du". There must be a problem with the machine. If the back door of the machine is closed well. Please open the back door of the machine, and press the back door switch to let it to be at the door closed condition.



If the problem is caused by the integrate circuit board, we can disassemble it and fix a new one.

If the three lights work in good condition, and back door locked well, but the machine is still making warning sound, you can contact us immediately.

6. SHIPMENT CONDITION

Temperature of environment: -40℃~+70℃

Relative humidity: 10%~100%

Pressure: 500~100hPa

The machine must be placed in the warehouse without the pollution of alkaline, acid and irradiation by intense light.

It is forbidden to roll and throw the machine.

Avoiding vibrating during the shipment.

7. PACKING LIST

No.	Name	Quantity	Unit	Note
1	Cabinet	1	set	
2	7-Articulation Joint Spring Light Guiding Arm	1	set	
3	scanner	2	set	
4	Focus Incision handpiece	2	set	
5	Power Wire	1	piece	
6	Foot Switch	1	piece	
7	Key for Power Supply	2	piece	
8	Fuse (2A)	4	piece	
9	Asbest	1	piece	
9	User's Manual	1	set	
10	Guarantee Card	1	set	

8.CO2 FRACTIONAL LASER TREATMENT

Section 1: Before the treatment

- **1** Two weeks before the surgery, the client should not take any medications

containing aspirin (acetyl salicylic acid), since these products affect the bloods clotting mechanism and therefore may lead to excessive bleeding during and after surgery, hence resulting increased bruising.

•**2** Taking high doses of vitamin E preparations, eating large amounts of garlic and consuming alcohol can also produce the same result and should be avoided. If pain medication is necessary, we recommend you take ibuprofen/paracetamol.

•**3** It is better the Client quit smoking, at least two weeks before and until 2 weeks after surgery. It is well known that smoking causes narrowing of the blood vessels, which leads to a decreased blood supply to the skin, thus slowing and interfering with the healing process.

•**4** Be sure to inform your surgeon of any medications you take, as well as possible allergies including (drug, latex, plasters and so on).

•**5** The surgeon will decide whether preliminary examinations are necessary, such as blood tests, an electrocardiogram, or x-rays of the lungs. If this is the case, these tests should be performed several weeks before the surgery.

•**6** It is best not to wear any makeup when the client comes in for the operation. Wear loose clothing that doesn't need to be pulled over head; the client may also want to bring a scarf to cover the bandages on the way home.

•**7** Do not eat or drink anything for 6 hours before your operation.

•**8** Make certain you have someone to collect you and stay with you overnight after the surgery. You are not allowed to drive a car for 48 hours after the surgery, due to the effects of the anaesthetic.

•**9** On the day of the operation, the surgeon will explain each step of the procedure, and the nurse will assist you throughout the operation. A local anaesthetic will be injected subcutaneously (under the skin) with a very fine needle. You will feel a slight sting and a light burning sensation, but that will disappear almost immediately. The anaesthetic will last about 2-3 hours and will guarantee you have a painless procedure.

•**10** At the end of the operation, your face will be cleaned with a sterile solution; a dressing will then be applied as well as a facial band that will sit under chin and around the head.

Section 2: Operation Procedure

- 1 Clean the skin.
- 2 About 20-30 minutes prior to treatment, apply a topical anesthetic to the treatment area.
- 3 Right before treatment beginning, wash off the anesthetic and apply a thin layer of the tracking gel.
- 4 During treatment, apply cold air for patient comfort.
- 5 After treatment, use our semi-conductor laser (physiotherapy laser) to enhance the patient's treatment experience and accelerate the benefits of Fraxel treatment.

Section 3: Note in the Operation Procedure

- 1 Topical anaesthesia is not required for most patients. This should be discussed with patient prior to treatment. Avoid premenstrual days.
- 2 Wash thoroughly and let the skin dry before treatment.
- 3 Cover the patient's eyes with non-reflecting protective goggles or water-soaked gauze.
- 4 Treatment is safe for the face, neck, chest and hands.
- 5 Initial settings are generally not high enough. The patient will not experience any discomfort at this "soft" setting.
- 6 Treatment of wrinkles – Power setting needs low. The index setting will vary according to skin type and depth of wrinkles. Reduce the index setting to increase the exposure time and spot penetration. The new index setting is when the patient feels bearable discomfort but no pain. For treatment of deeper wrinkles prescribe an oral painkiller 1-hour prior to the procedure. This will enable the patient to sustain a lower index.
- 7 Treatment of acne scars – Index setting needs low. The power setting will vary according to skin type and severity of the acne scars. Increase the power setting until the desired effect on tissue is achieved. The patient should feel no pain. For treatment of deeper scars prescribe an oral painkiller
- 8 1-hour prior to the procedure. This will enable the patient to sustain a higher power.

Set the scan area.

- **9** After fractional resurfacing, the laser can be switched to traditional CO2 mode for ablation of skin growths (e.g. skin tags, seborrheic keratoses etc.) or to traditional resurfacing mode in selected areas.

Section 3:Post-treatment

- **1** Do not wipe the treated area. The scar will promote the healing process. The patient will experience a burning sensation on the skin that lasts between 30 minutes and 3 hours.

- **2** Apply a fragrance- and preservative-free moisturizer to the treated area. After one to two days, the erythema will be replaced by a progressively darkening sun- tanned look. At this point, makeup can be applied.

- **3**

- 1)** You will experience a burning sensation on the skin that will last between 30 minutes and up to 3-4 hours following your treatment on the first day.
- 2)** If you have discomfort following the treatment, take Tylenol or speak with your doctor about a prescribed pain-killer such as Vicodin. Take with food.
- 3)** You may want to take a few days off of work. Treatment to the facial area will result in an appearance similar to a darker tan/sunburn for the first day. A fine scab will be formed by the skin do not be concerned, this promotes the healing process.
- 4)** After 1-2 days the scar /necrotic skin will disappear and the skin will have a tanned look. At this point, makeup may be applied. Redness may persist for up to 3 days. On the 4th day or so your face will get darker and then near the 5th to 6th day peeling will occur. More intense treatments can take up to 7 days for recovery.
- 5)** Wash using a mild soap like Purpose, Neutrogena or a soap-free cleanser like Cetaphil.
- 6)** Wash the treated areas everyday and apply Aquaphor Ointment to the treated sites and lips 4 times a day, or more frequently if tightness is noticed. Avoid Hot water.
- 7)** Eye Area: Treatment to the upper Eye lids may results in swelling and create a slight squint. Redness may persist up to 3 days. Clean your eyes with cool water and dab or pat very lightly with a soft towel. Avoid Hot water. Lubricating

the eye with drops (i.e. artificial tears) will help to decrease the dryness of your eyes.

- 8)** If the skin around the mouth is tight, Minimize Facial Expressions, remember to lubricate with Aquaphor Ointment, as needed and use a straw to drink.
- 9)** Rest. Avoid strenuous exercise, bending, straining, stooping or lifting heavy objects for 1 week after procedure. These activities may cause more swelling and pain on your face and slow down your recovery. See other side
- 10)** Sleep in a slightly elevated position. Using 2-3 pillows under your head & neck, or sleep a few nights in a reclining chair.
- 11)** Avoid sun exposure for at least six months. A sunscreen SPF 15 or higher should be applied every day. Use a hat and sunglasses. Your skin is extremely vulnerable to the sun after having a laser treatment. Protecting your skin and limiting sun exposure ensures the best cosmetic results.
- 12)** Please schedule a follow-up appointment for 2-3 days after the procedure with your doctor or the esthetician. You may not need to come in but at least it will be set if you should want to be seen.

Attention: Treatment with the Fractional CO2 laser takes anywhere from 30 minutes to 1.5 hours depending on the area(s) that are treated.

If a repeat treatment is required, this is usually performed at least 1 to 2 months later.

Section 3: What To Expect After Treatment

- **1** Fractional Laser Treatment produces side-effects. The intensity and duration of your side effects depends on the treatment aggressiveness your individual healing characteristics.
- **2** Generally, patients who are treated more aggressively experience more intense side-effects that last longer. However, some patients have greater than “expected” reactions to less aggressive treatments and others have fewer side-effects to aggressive treatments than would ordinarily be expected.

●3 Notify your physician if the severity of your side-effects becomes a problem for you.

●4 **Swelling.** You will notice most the swelling on the first morning after treatment, particularly under the eyes. Swelling usually lasts two to three days. To minimize swelling, do the following:

- * Apply cold compresses to the treatment area for 10 minutes of every hour on the day of treatment, until you go to bed.

- * Sleep elevated the first night. Use as many pillows as you can tolerate.

●5 **Redness.** Most redness resolves during the first week after treatment, but a rosy “glow” can remain for several weeks. If you wish, you can apply makeup immediately after treatment to minimize the redness.

●6 **Dry Skin.** Your skin may feel dry, peel or flake. You may notice a “sandpaper” texture a few days after treatment. This is the treated tissue working its way out of your body as new fresh skin is regenerated.

●7 **Bronzing, Crusting and Small Dark Dots.**

- * Fractional Laser Treatment causes destruction to microscopic cylinders of the skin which then exfoliates during the healing process.

- * In individuals with heavily pigmented skin, or in areas where sun damage has produced pigmented lesions, these microscopic wounds, known as MENDs, contain large amounts of melanin. Because there are so many MENDs,

- * they can make the skin look bronzed, or smaller areas appear crusted (do not try to scratch them off).

- * When high energies are used to produce deep and wide lesions, the MENDs can sometimes be seen as individual dark dots.

- * On the face, the MENDs will shed within 7-10 days. Off the face, it may take as long as 3 weeks for the MENDs to shed.

●8 **Raw Skin.**

If you develop areas of raw skin post treatment, keep them moist with something like Aquaphor or Bacitracin. You do not need to apply band-aids, but keep the areas moist and do not pick at them. They will heal very rapidly on their own and without any problems.

•**9 Expected downtime**

Face up to 3 days

Neck up to 5 days,

Chest and Hands up to 6 days

Superficial wrinkles and skin defects usually disappear after one session.

- 10 Deeper wrinkles and acne scars** may require more than 3, up to 5 times, spaced one to two month apart.

CO2 Fractional laser treatment clinic data

Scanner treatment	Micro pulse energy	Interval time	Treatment level	Scanning mode	Passes/ Repeat times	Treatment process	Kind remarks
Wrinkle removal	12.5mj; 15mj	1ms; 2ms	1.56%, 6.25%	Rectangular; Big line	Repeat 3 or 4 times until skin white.	1-2 processes for small wrinkles, 4-5 processes for deep wrinkles	In 2 and following treatment, The data setting could be smaller, if still in heavy disease, the data could be a littler larger.
Scar Removal	7.5mj- 15mj	1ms- 2ms	1.56%- 6.25%	Ellipse 0.2*0.2mm, 0.5*0.5mm	Repeat 3 or 4 times until skin white.	2-3 processes for light scar, 4-5 processes for heavy scar	In 2 and following treatment, The data setting could be smaller, if still in heavy disease, the data could be a littler larger.
Vascular removal	12.5mj; 15mj	1-2ms	1.56%; 2.89%	rectangular	Repeat 3 or 4 times until skin white.	2-3 processes for light vascular, 4-5 processes for heavy vascular	In 2 and following treatment, The data setting could be smaller, if still in heavy disease, the data could be a littler larger.
Large pores	7.5mj, 12.5mj, 15mj	1-2ms	1.56%- 6.25%	Ellipse	Repeat 3 or 4 times until skin white.	2-3 processes for light condition, 4-5 processes for heavy condition.	In 2 and following treatment, The data setting could be smaller, if still in heavy disease, the data could be a littler larger.
Mole removal	15mj or more	1-2ms	25%	Ellipse	Repeat 3 or 4 times until skin white and little blood out.	2-3 processes for light condition, 4-5 processes for heavy condition.	In 2 and following treatment, The data setting could be smaller, if still in heavy disease, the data could be a littler larger.

General rule:

1. Short interval time, heavier injury, more recovery time. Longer interval time, lighter injury, less recovery time.
2. For tiny pain, it's better have some Anesthetics on the treatment skin. After 20 to 30 minutes, the treat could begin.
3. Bigger treatment level, bigger treatment area, larger total output energy.
- 4 the scan area should cover the whole treated skin.
5. More than 1 month rest-time needed between two procedures.
6. The whole procedure:
 - a. Disinfection,
 - b. Anesthetics,
 - c. begin treatment,
 - d. have burn-medicine on treatment area.