
Installation and Usage of Skin photo rejuvenation system FG 800

Catalogue

I. Components of the device

◆ Main machine

- Power supply system
- Computer system
- Cooling system
- Controller

◆ Handle

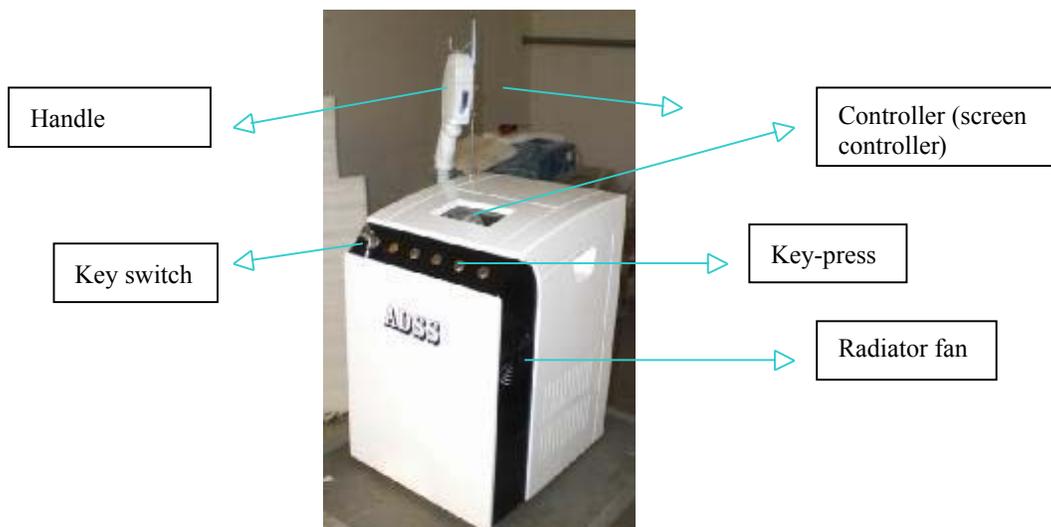
- Handle
- Crystals

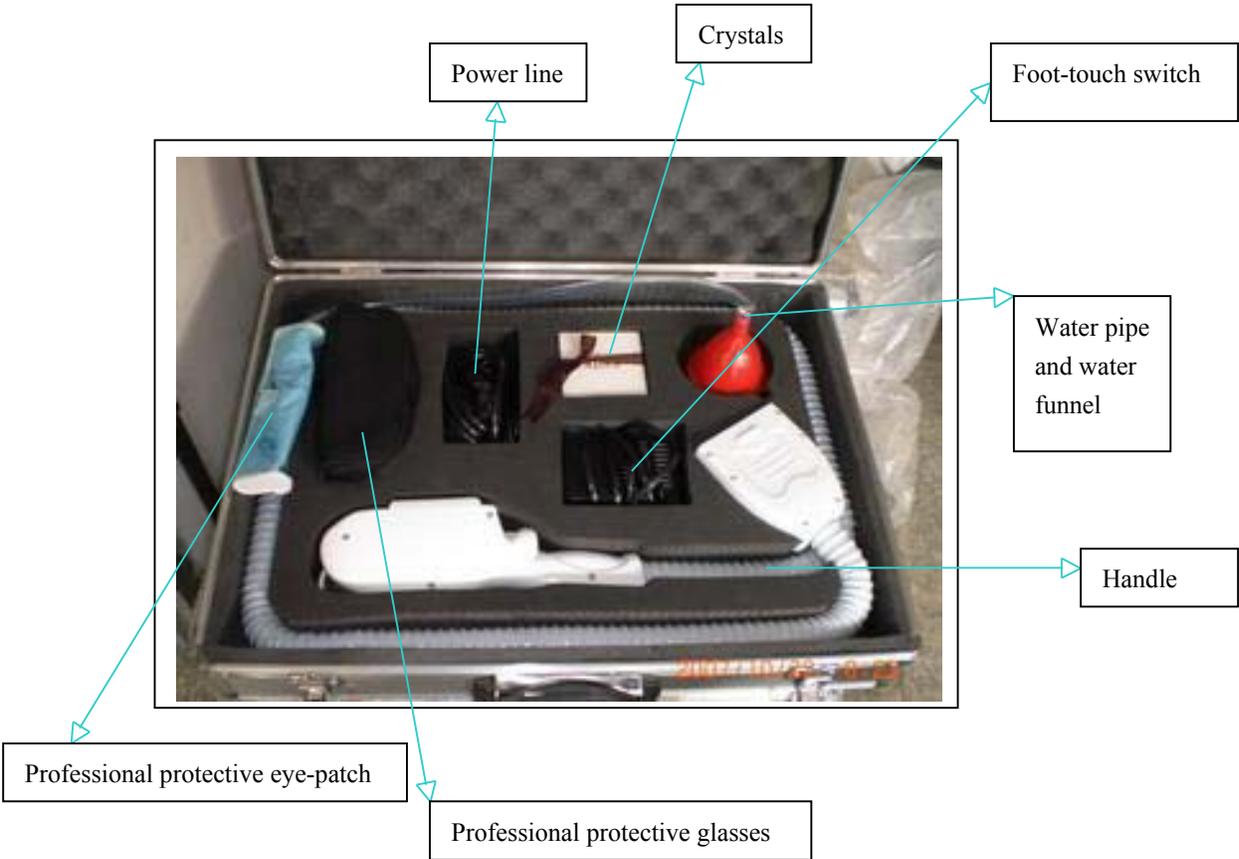
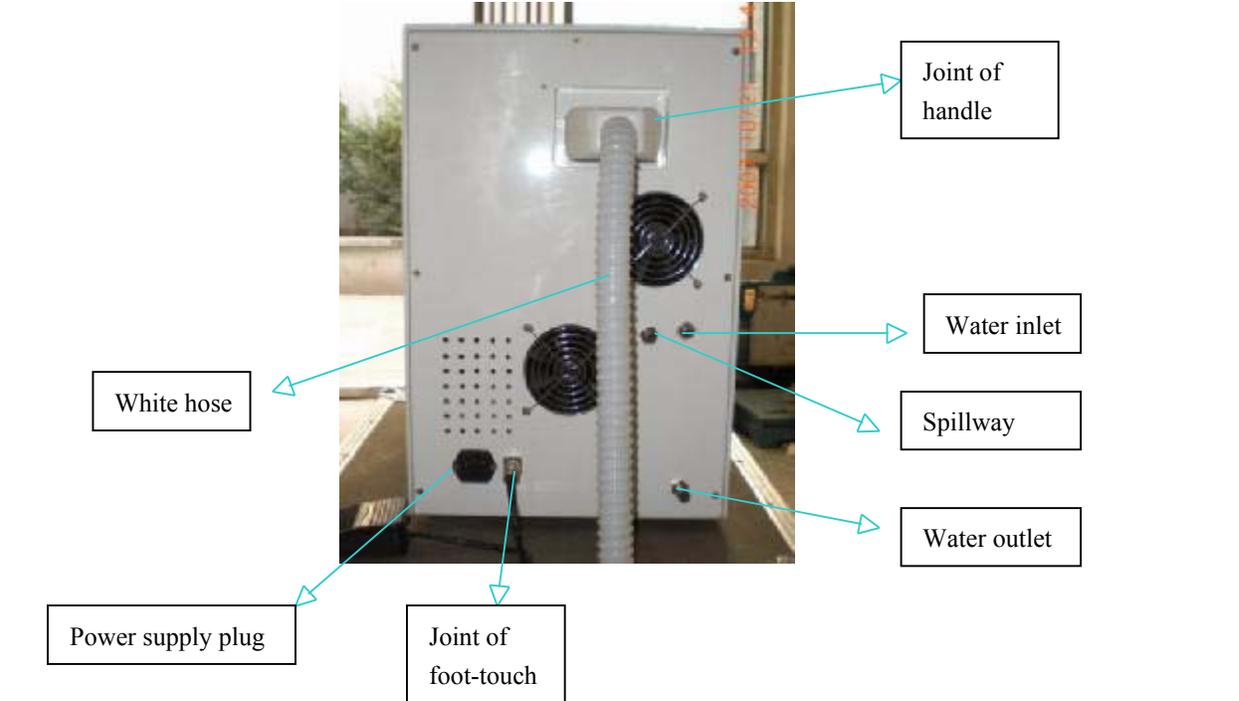
◆ Assembly parts

- K
- Cleaner
- Power line
- Water pipe
- Water funnel
- Foot touch switch
- Professional protective glasses
- Professional protective eye patch

II. Installation

1. Illustration





2. Installation

- a. Disconnect the package and place the device on the plane ground. (If there's water on the surface of the device, please wait for till dry then input water to test.). Keep 22⁰ -28⁰C temperatures and the humidity not more than 20% in the treatment room.
- b. Input water (water source: pure water or distilled water): screw off the screw caps of water inlet and spillway at the same time (clockwise screw to tighten the screw caps, anticlockwise screw to screw off the caps), connect the water tube and water funnel well and insert the water inlet; when there's water automatically spilt from the spillway, means the input water is enough, show as follows:

Remarks: after input the water, please tighten all screw caps on back panel again.

Change the water inside of the machine every 1-3 months

Automatic split of water
means enough input water



- c. Plug one end of the handle in the joint, show as follows:



Aim at the joint to plug in the plug with level force, following one clicking sound, then this protuberant white button rebound at the same time



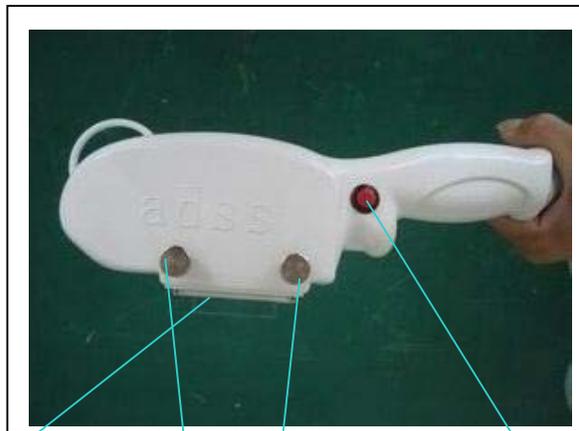
When draw out the end of the handle, please press this protuberant white button and draw outside with level force.

- d. Plug in the power line and turn on the power supply

After turning on the power supply, please observe the water circulation inside the device. Normally, you will hear the sound of water flow. About 3-5 minutes later, the probe runs cold, at this time, it's able to insert the relevant crystal and start to treat.

If there is no water circulation inside the device, or the probe does not cool, it's possible that there is air in the pump. At this moment, please turn on and turn off the device (just switch the switch of power supply, on back panel) for 3-6 times. When every time to turn off the device, please wait for the appearance of welcome screen then grip the white hose (the hose in handle) to the angle of 90 degrees and slack, then turn on the device again, Which could exhaust the air to the water tank, then the air will exhaust from the orifice for spilt water and the orifice for input water (of course, at this moment, should screw off the screw caps of the orifice for spilt water and input water at the same time).

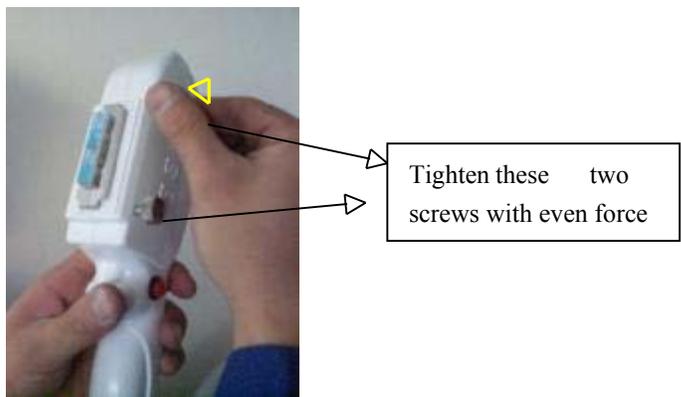
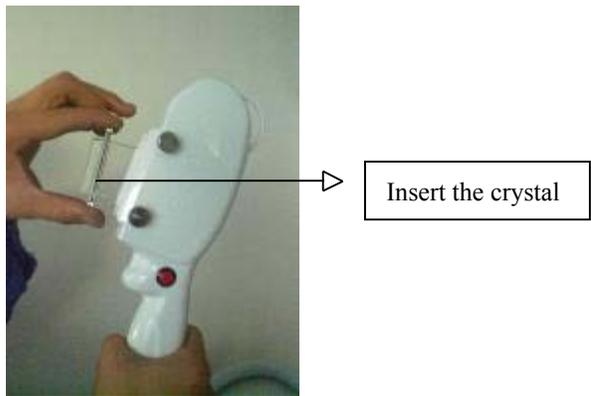
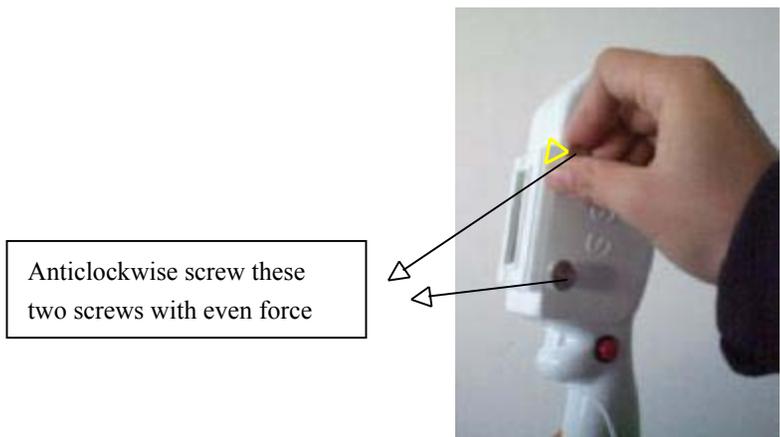
- e. Introduction and usage of the handle, show as the following picture:



Crystal

Screws that fix the crystal

Button that controls the released light



Red crystal is used for the hair removal treatment,
Blue crystal is used for all the skin diseases treatment.

III. Treatment Theory and Operation

1. Treatment theory

A. Physical stimulation effect: when it acts on skin and occurs the chemical effect, the intensive pulsed light makes the molecule structure change inside of the collagen fiber and flexibility fiber

of dermis, and renew skin flexibility. Moreover, the light energy could enhance the blood vessel function, and improve blood circulation, to remove the wrinkle and shrink the coarse pores.

B. Light pyrogenation effect: the quantity of pigment group in ill structure is super higher than of that in the normal skin, whose temperature is also higher than of the normal skin after absorbing the light. Take advantage of the temperature difference, which will obturate the blood vessel and decompose the pigments, without any damage on the normal structure.

At the same time, the treatment theory of Delier IPL series Equipments can be explained by the optional light pyrogenation theory. The melanin absorbs the short wavelength light of 250-1200nm, the maximum absorbing values of the bright-red chemical complex of hemoglobin and oxygen are 418nm, 542nm, 577nm. Therefore, it's easy to be absorbed and transported to the collagen layer, the wavelength light of 530nm releases from the probe, which results in the pyrogenation of the collagen fiber. The collagen fiber can be able to absorb large light of 400-600nm, including some light of 530-1200nm releases from the probe, which will result in the injury of the collagen fiber, enhance the activation of the cells and the collagen synthesis. Renew of I collagen can be observed, and also be effective to the renew of III collagen, which is in blood vessel mostly. At the same time, skin rejuvenation treatment will be effective on pigments dispelling, telangiectasia lightening, fine wrinkle lightening, pores contracting and a best skin improvement.

2. Features :

- a. Simplicity: intuitionistic controller makes the operation much easier. After simple training, the operator could skillfully operate the device. Humanized design of the handle makes an easiest operation.
- b. Efficiency: best treatment effect, no side effect, makes the treatment more comfortable.
- c. Safety: in this beauty system, IPL and RF can be used together or separately, operator could choose the low light energy or the high radio frequency energy, that greatly reduce the risk of burn epidermis after the treatment. After this system treatment, almost no inflammation on face syndrome etc. So the patients are unnecessary to worry about burning skin in epidermis, which originating from over energy or the probe closely near skin
- d. Economical: best results, low cost of maintenance. Moreover, because of unnecessary higher IPL energy, prolong the lifetime of the handle for 2 or 3 years, which greatly reduce the cost. Easy daily maintenance, easy master after the simple training
- e. Wide range of treatments, great effect, and with high safety factors

3. Applications:

- a. Deeply wrinkle removal and face lifting: integrating with the IPL and RF technology, deeply remove the wrinkle and lift face
- b. Unwanted hair removal: take advantage of intensive pulsed light and RF energy (could act on skin below 6 mm), directly act on the hair follicle to remove the thick dark hair, and tiny hair
- c. Pigment and vascular treatments
- d. Skin rejuvenation and breast lifting

4. Taboo:

-
- a. Pregnant women
 - b. Insolation in the sun
 - c. Sensitive to light, medicine, or are taking medicine that sensitive to light
 - d. Not representative naevi or malignant pathological changes in the treatment area
 - e. Pacemaker or quiver dispelling device user
 - f. Herpes or trauma
 - j. Pimple record
 - h. People who accept Hirudin etc. treatment(should stop using it before 2 weeks).
 - i. Severe diabetes patient, high blood pressure sufferer, and epileptic

5. Security introduction of the intensive pulsed light

Skin photo rejuvenation system FG 800 is high technology iatric equipment, for various face blemish elimination and redundant hair removal on body. After eligible training, it's safe to use. Operators and assistants must know the security notice in this chapter. Most important, it's the mostly safe design for both treatments. All are as following:

- a. Adopt the closed filters and crystal of transferring light, and the light only emit from the probe
- b. Independent electro circuit, automatically stop working when super energy
- c. The red pause switch facilitates your urgency

【WARNING】 Any intensive light without incorrect using can injure the body. In the course of working, the device will produce high pressure. So every operator should keep warning, operating according to this introduction.

Patient: it's more important that seasoned operator and appropriate disposal treatment room.

Moreover, the patient should also know the treatment theory and wear the professional protective eye-patch, protecting eyes from burning.

Operator: during the treatment, it's possible to touch the intensive light. So it's necessary to wear the 3 grade blinder.

Treatment room: the room must clear mark "using intensive light"

【MAIN WARNING】

For safe using, should carefully read the warning notice:

- a. Except the authorized mechanic, any others have no right to examine and repair the IPL setup, especially the inside of device that including electrical source, cooling system, optic organs and handle. Notice the dangerous high pressure inside.
- b. Make sure whether it's accordant to your resident voltage or not.
- c. Maintenance must after turning off the device and drawing out the electrical source line. Or it's most possible to injure people and damage the equipment.
- d. Keep the filter and the probe clean. Do not let the cooling gel enter into the probe
- e. Stop turning on when finding slack from handle. If turning on, please close right now.

【WARNING ON INTENSIVE LIGHT】

- a. The intensive light is possible burn eyes or fire. So it's necessary to protect in any way.
- b. Over light energy could burn skin, that results in atrophy or pigment deposit.
- c. Do not directly see the intensive light or laser light during treatment, even wear the protective glasses and eye-patch.
- d. Do not point the handle to the air. Generally, hang it in the bracket. Point to the treatment areas when operating.

6. Security introduction of the electricity and equipment

- a. Keep close both panels and cover board.
- b. High pressure inside the equipment. It's possible to deposit electricity in some parts after switching off. So it's not allowed to open equipment beyond the authorized mechanics.
- c. When maintaining, please close power, cover board, and observe in person.
- d. Total weight is 21 KGs, so please take care when moving.
- e. Safe power line designed with 3 cores.

【PREVENT FIRE】

- a. The temperature will rise after absorbing light energy, so please take actions to reduce the flammable risk on treatment areas or around area.
- b. Do not use ethanol, acetone or other flammable things on skin before treatment. If necessary, please use soap or water.
- c. When listerizing the handle or other parts in ethanol, please wait till dry.

【SYSTEM SAFETY SETTINGS 】

- a. There are some safety settings inside equipment, so please know their places and using methods.
- b. Key: it's used to open or close the power, only provide by our company.
- c. Imperative switch: the red switch is used to switch off power on emergency. Press it can switch off the power right now. Wrest it clockwise, the device will be go on wording. Or the device keeps turning off.

【CLASS OF EQUIPMENT】

- a. Class of motor protection: 1 CLASS, BF CLASS
- b. Anti-corrosive liquid: general
- c. Not allowed to use in the air mixed flammable anesthetic and nitrous oxide
- d. Operation manner: continuous operation

7. Operation of the controller:

- a. When turning on the device, the screen will show as the picture one:



Picture one

b. Some seconds, the screen show the treatment menu, as picture two:



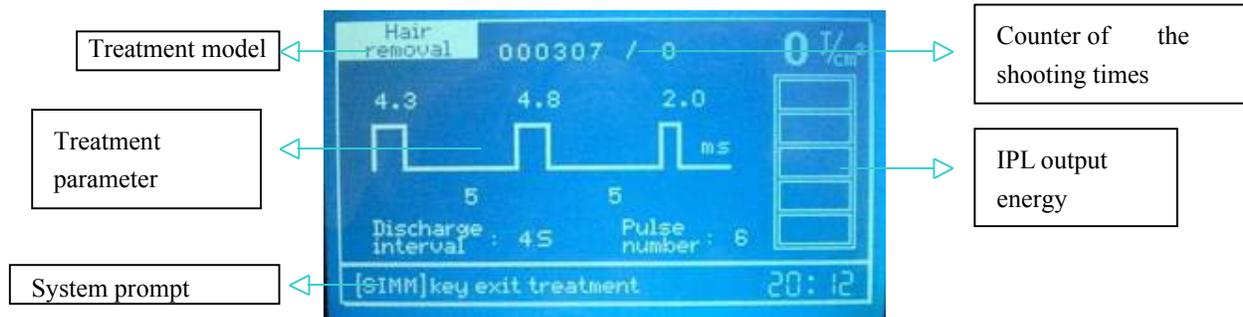
Picture two

Select the relevant treatment through “ ” “ ” such as Hair Removal, Skin Rejuvenation..... Now take Hair Removal for example, firstly press “SIMMER” on screen, to light the lamp; then press “ENTER” to enter into the treatment mode. At this time, the system starts to charge, show as follows:



Picture three

c. After charge, it automatically enter into the treatment model



Picture four

Treatment Parameters: current treatment parameters

System Prompt: current indication of key

d. Press “MENU” on screen to adjust the parameters. “MENU” is equal to the Cursor, press step by step. Total eight articles are optional.

IPL output energy: it will display the value of current IPL output energy, and the range is 0-50 J/cm². It can be directly adjusted in the treatment, through “UP” and “DOWN”

Discharge interval: to adjust the frequency of pulses, the range is 1-4s

Pulses number: the range is 1-6

Width of first pulse: the range is 1-10ms, every 0.1ms per unit

Interval of first pulse: to adjust the interval between the first pulse and the second pulse, the range is 1-99ms, every 1ms per unit.

Width of sub-pulse: the range is 1-10ms, every 0.1ms per unit

Interval of sub-pulse: to adjust the interval between the first pulse and the second pulse, the range is 1-99ms, every 1ms per unit.

Repeat width of pulse: the range is 1-10ms, every 0.1ms per unit

(Press “UP” and “DOWN” to adjust the parameters of pulses)

After all adjustment, press “ENTER” to return to treatment model. At the same time, the system will automatically save all parameters settings. Show similar with picture four. When the probe runs cold, press the button on handle to start the treatment.

When stop the treatment, please press, “ENTER” to return to the treatment (show as picture two), and then press, “SIMMER” to quench the lamp. At this moment, it’s able to turn off the device.

f. System settings and examine

Under the state of treatment menu, press “MENU” to enter into system settings. Show as picture five:



Picture five

Press “UP” and “DOWN” to select the system parameter, then press “ENTER” to enter into the relative system.

Total five articles for adjustment:

Key tone: ON/OFF

Fluence tone: key tone of energy adjustment, ON/OFF

System time: "UP" to adjust the hour settings, "DOWN" to adjust the minute; press "ENTER" to save the settings.

Press "MENU" to quit the system settings, and return to the treatment menu.

8. Clinic operation

①. Before treatment

- a) Classification of skin: it's safe and effective to the white, brown or yellow skin.
- b) Sign the agreement
- c) Clean the skin, and eliminate the perfume and cosmetics.
- d) Use digital camera for memory, take photo from different orientations
- e) If necessary, use external anesthetic one hour before the treatment; if for the hair removal treatment, please cut the hair to 1mm before treatment.
- f) Before the treatment, please make sure enough water and water circulation inside the device, and must wait for the probe cooling then allow doing the treatments. If the probe is not cold or become hot, please stop all operation and do not use the device, avoid damaging the device.

②. In the process of treatment

- a. Patients take the protective eye-patch, at the same time, the operator also wear the professional protected glasses, respirator and medical gloves.
- b. Spread approximate 3mm cooling gel in front the ears and below the chin. Making test of 2-3 spots according to the former parameter designed. After 3-5 minutes, observe the reflection of skin, to make sure the treatment parameter. However, it needs to wait for a little longer time.
- c. When taking the treatment to the protrudent parts in the bone structure (like forehead, mandible and cheekbone). Appropriately adjust the RF energy based on different conditions of patients.
- d. During the treatment, vertically slide the bipolar probe on skin with level force, and observe whether it's touched well or not. Overlapped shoot makes sure to good effects of treatment area.
- e. In the process of treatment, continuously step the foot-touch, will result in uneven output energy. Please one press of the button on handle and one move, or step the foot-touch step by step
- f. When ending the treatment or try to change another treatment area, firstly release the button on the handle or foot-touch, avoiding electric shock by chance
- g. It's can be adjusted the energy, according to the actual conditions of the patients.

③. Notices of treatments

- a. Avoid sunlight and burn before and after treatment, could use the suntan lotion (cream) (SPF>30) to avoid direct sunshine.
- b. Avoid chemical or mechanical stimulation before and after 1 week of the treatment
- c. Do not take filled things or injection treatment before and after 2 weeks of the treatment

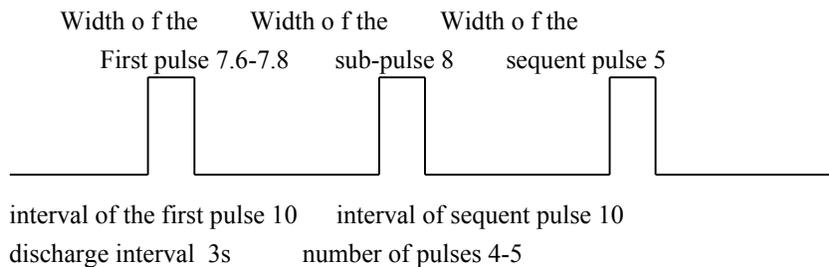
- d. Avoid direct or indirect heat stimulation to the treatment area after 3 days of the treatment, especially to those of high pigment deposit.
- e. If taking laser skin care treatment before this treatment, please wait for 3 weeks at least.
- f. After the treatment, patients are not allowed to eat the foods of dark color or great pungent within two weeks, such as the sauce, coke, seafoods, capsicum etc.
- g. It's not allowed insolation in the sun before and after the treatment
- h. It's not allowed that use any cosmetics after the treatment, suggested that use the natural moisturize products
- i. Please cooling the bad reaction area after the treatment with , like tumescence and causalgiase.

9. Parameters of each treatment

①. Pigment treatment

- a. 1-3 or 3-6 treatments as one cycle.
- b. Every 3-4 weeks for one treatment. Because the human metabolism period is 3-4 weeks, some decomposed pigment cells are phagocytosed by the lymphocyte, and expel from body along with the metabolism.
- c. Feelings in the treatment: some pain feelings like needle pricking. 3-30 minutes after the treatment, pigment will be darker. Pigment scab will shed 3-7 days later.
- d. Effect of cooling gel: cooling and light transporting
- e. Usage: spread the cooling gel on the treatment area before treatment, about 3mm thickness; 20minutes after the treatment, scrape the cooling gel, or cooling with ice for 10 minutes
- f. Operating sequence: clean skin and spread cooling gel on the treatment area; after the treatment, make a ice cooling treatment. Overlapping size of spots: 1-2mm

g. Parameters:



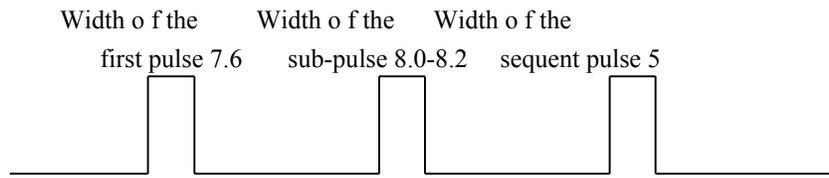
②. Hair removal treatment

- a. 3-5 treatments as one cycle.
Because the hair has its own growth cycle and dormant cycle, so it's effective to remove the hair in growth cycle, 3-5 treatments.
- b. Every 3-4 weeks for one treatment. Because the human metabolism cycle is 3-4 weeks, some decomposed pigment cells of hair follicle are phagocytosed by the lymphocyte, and expel from the body along with metabolism.
- c. Feelings in the treatment: some pain feelings like needle pricking. 3-8 hours after the

treatment, a little inflamed feelings on skin. Lightly tweezer the hair root, naturally shedded and no pain, which means the best effect.

- d. Effect of cooling gel: cooling and light transporting
- e. Usage: spread the cooling gel on the treatment area before treatment, around 3mm thickness; 20minutes after the treatment, scrape the cooling gel , or cooling with ice for 10 minutes
- f. Operating sequence:
Clean skin, shave the unwanted hair on the treatment area or shear the unwanted hair, 1mm to the hair root; and spread cooling gel on the treatment area; after the treatment, make a ice cooling treatment for 5-15 minutes

g. Parameters:



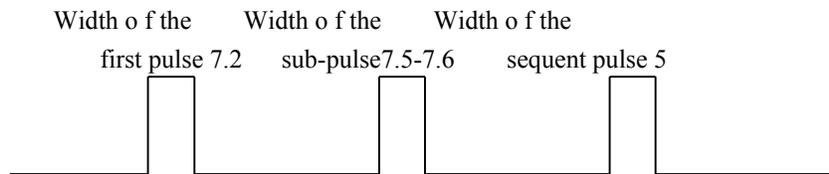
Interval of the first pulse 12 interval of sequent pulse 12

Discharge interval 4s number of pulses 4-6

③. Wrinkle removal treatment

- a. 1-3 or 3-6 treatments as one cycle.
- b. Every 3-4 weeks for one treatment. Because the human metabolism cycle is 3-4 weeks, The stimulated collagen fiber cells and flexibility fiber cells will be growing and renewing along with the metabolism.
- c. Feelings in the treatment: some pain feelings like needle pricking. Skin will be light red with some swollen feelings after treatment.
Effect of cooling gel: cooling and light transporting
- d. Usage: spread the cooling gel on the treatment area before treatment, about 3mm thickness; 20minutes after the treatment, scrape the cooling gel, or cooling with ice for 10 minutes.
- e. Operating sequence:
Clean skin and spread cooling gel on the treatment area; after the treatment, make a ice cooling treatment. Overlapping size of spots: 1-2mm

g. Parameters:



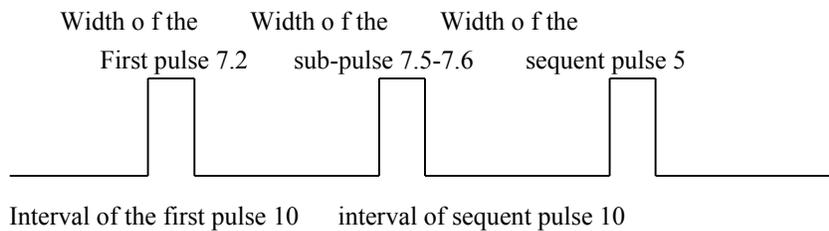
Interval of the first pulse 10 interval of sequent pulse 10

Discharge interval 3s number of pulses 4-5

④. Skin whitening treatment

- a. 1-3 or 3-6 treatments as one cycle.
- b. Every 3-4 weeks for one treatment. Because the human metabolism cycle is 3-4 weeks, some decomposed pigment cells are phagocytosed by the lymphocyte, and expelled from the body along with metabolism.
- c. Feelings in the treatment: Swollen feelings inside skin.
- d. Effect of cooling gel: cooling and light transporting
- e. Usage: spread the cooling gel on the treatment area before treatment, about 3mm thickness; 20minutes after the treatment, scrape the cooling gel, or cooling with ice for 10 minutes
- f. Operating sequence:
Clean skin and spread cooling gel on the treatment area; after the treatment, make a ice cooling treatment. Overlapping size of spots: 1-2mm

g. Parameters:

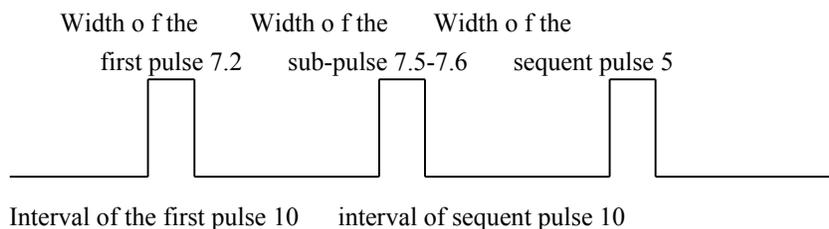


Discharge interval 3s number of pulses 4-5

⑤. Skin rejuvenation treatment

- a. 1-3 or 3-6 treatments as one cycle.
- b. Every 3-4 weeks for one treatment. Because the human metabolism cycle is 3-4 weeks, the stimulated collagen fiber tissues and flexibility fiber tissues will be steady along with the metabolism.
- c. Feelings in the treatment: Swollen feelings inside skin.
- d. Effect of cooling gel: cooling and light transporting
- e. Usage: spread the cooling gel on the treatment area before treatment, about 3mm thickness; 20minutes after the treatment, scrape the cooling gel, or cooling with ice for 10 minutes.
- f. Operating sequence:
Clean skin and spread cooling gel on the treatment area; after the treatment, make a ice cooling treatment. Overlapping size of spots: 1-2mm

g. Parameters:

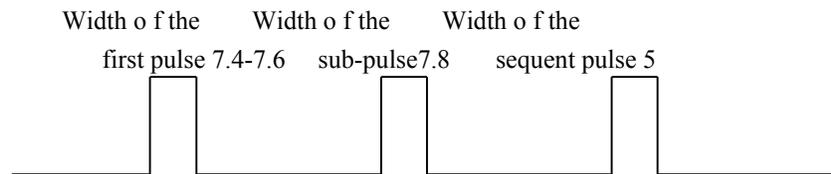


Discharge interval 3s number of pulses 4-5

⑥. Vascular treatment

- a. 1-3 or 3-6 treatments as one cycle.
- b. Every 3-4 weeks for one treatment. Because the human metabolism cycle is 3-4 weeks, the stimulated capillary vessel tissues will be shrinking and steady along with the metabolism .
- c. Feelings in the treatment: some pain feelings like needle pricking. A little inflamed feelings on skin after the treatment.
- d. Effect of cooling gel: cooling and light transporting
- e. Usage: spread the cooling gel on the treatment area before treatment, about 3mm thickness; 20minutes after the treatment, scrape the cooling gel, or cooling with ice for 10-20 minutes
- f. Operating sequence:
Clean skin and spread cooling gel on the treatment area; after the treatment, make a ice cooling treatment. Overlapping size of spots: 1-2mm

g. Parameters:

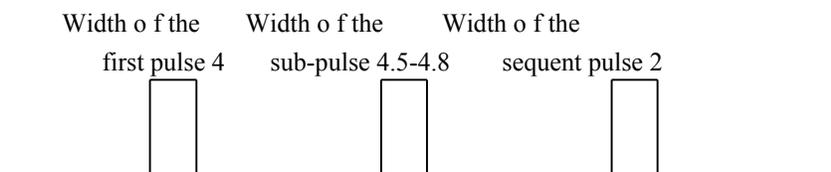


interval of the first pulse 10 interval of sequent pulse 4
discharge interval 4s number of pulses 4-5

⑦. Breast lifting treatment

- a. 1-3 or 3-6 treatments as one cycle.
- b. Every 1-2 weeks for one treatment. The treatment theory is that stimulating the renewal of the mammary gland cells, and enhancing the ligament tissue, to plump the breast naturally. Because the human metabolism cycle is 3-4 weeks, the stimulated capillary vessel tissues will be shrinking and steady along with the metabolism.
- c. Feelings in the treatment: Swollen feelings inside breast.
- d. Effect of cooling gel: cooling and light transporting
- e. Usage: spread the cooling gel on the treatment area before treatment, about 3mm thickness; 20minutes after the treatment, scrape the cooling gel
- f. Operating sequence:
Clean skin, spread some essential oil on breast and massage, then spread cooling gel on breast. No overlapping spots.

g. Parameters:



Interval of the first pulse 5-6 interval of sequent pulse 5-6

Discharge interval 3s number of pulses 3

Remarks:

IPL energy:

- a. Please do not press the button on handle before touching treatment area.
- b. Keep pressing the button in handle as moved it, one shot for one treatment area. At the same time, please keep the probe vertically slide on skin for each movement.
- c. When finish the treatment or try to move to another treatment area , firstly release the button on the handle or foot-touch, avoiding electric shock by chance
- d. IPL parameter in the treatment:

White skin: generally start from 15, then increase or decrease the parameter according to the actual sense of the patients

Black skin: generally start from 10, then increase or decrease the parameter according to the actual sense of the patients

Dark black skin: generally start from 10, then increase or decrease the parameter according to the actual sense of the patients

Moreover, the IPL parameter to the dark black skin treatment will be 5 lower than the value to the black skin treatment.

Above all operation must consider the actual sense of the patients.

VI. Simple maintenances:

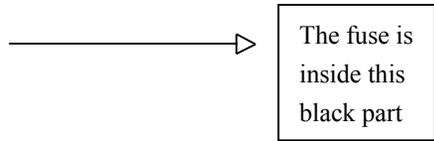
1. No stress on the touch-LCD, prevent from breaking up
2. Keep the filters clean. It's not allowed to clean the filters with ethanol, prevent from burn when intense pulse light release.
3. The handle is fragile, please take special care when pick up and dropt..
4. Every 1-3 months to change the water. After changing water, please make sure water circulate normally before usage.

Analysis On Simple Malfunction :

1. No power supply

- ① Check up whether there is power supply
- ② Check up whether the power line is connected well.
- ③ Check up the fuse, which could be pulled out at the bottom of hole for power plug.

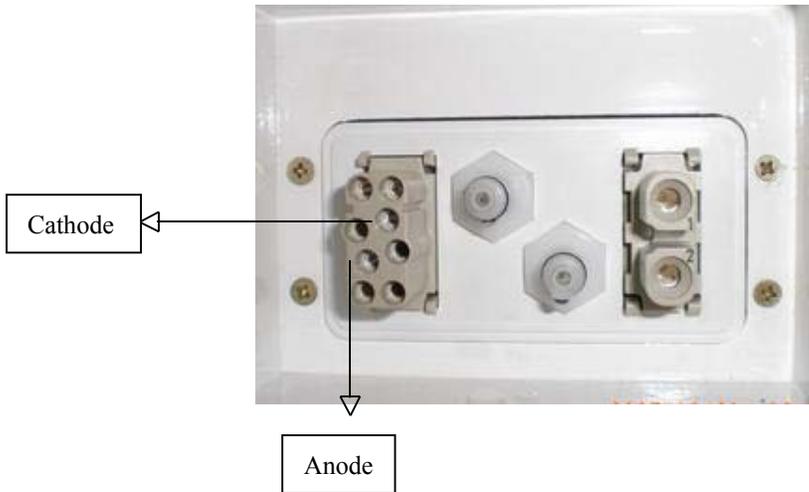




2 、 Non-Refrigeration of the probe

- ① Check up whether there's water in water tank and water circulation
- ② Check up the direct power supply switch, whether there's 12V direct current output

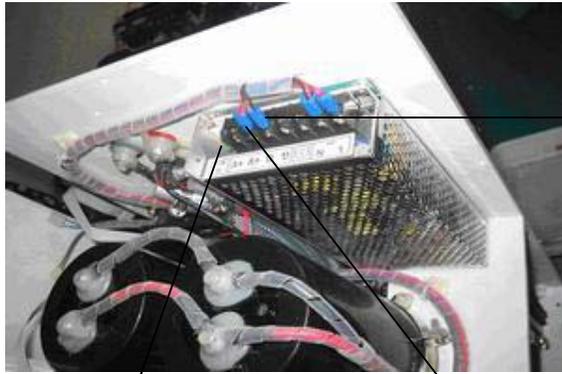
Reason of Non-Refrigeration :



- a. After turning on the machine, you should test the above Anode and Cathode with multimeter.
12V/ DC output means the power source is well
- b. Check up whether the Peltier is well or not:



- Please check up whether this two electrode is well or not, which relate to the Peltier.
- c. If above two electrode is well, please disconnect the panel, show as follows:



Cathode

Anode

Check if the green light is on or not after turning on the power source. If it's on, means there is 12V direct power output

If there is no output, means that the direct current electrical source part is broken.
 Type: 220V/AC input, 12V/ DC/ 9A output or 12V DC/ 10A output

d. Check up whether the water circulation is good: to open the panel of handle, as follow:

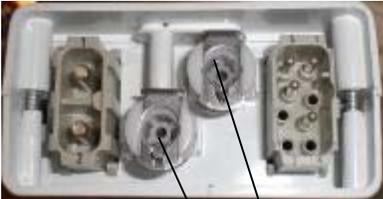
◆ Screw off these 6 screws, and then disconnect the panel

off these 6 screws, and then disconnect the panel



Six screws

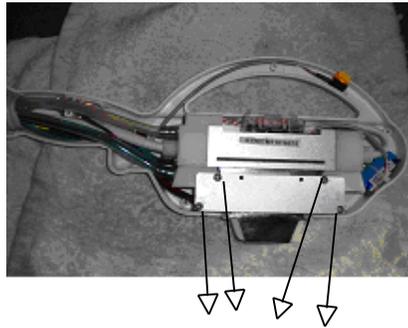
◆ disconnect the water plug with the connected water pipe, then plug these two plugs into the joint on the back panel; blow air into the water plug with mouth, and see whether it is ventilated. Or directly turn on the device, and see whether there is spilt water from these two plugs. (Remarks: for the last test method, we suggest that take a basin or other vessel load the spilt water.)



Water plug

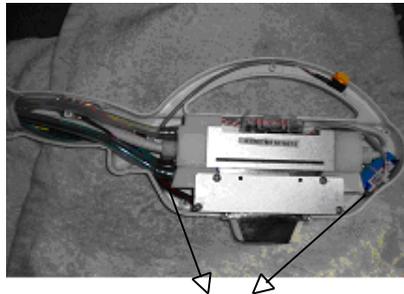
3. The xenon lamp is not on:

-
- a. The lamp is exhausted; the lamp broken down.
 - b. Poor contact (anode and cathode wire)
 - c. Simmer board broken down
4. Only screen display, but can't enter into the treatment unit.
 - a. Touch screen broken down
 - b. Poor contact between the power supply and the controller
 5. Leak from the probe
 - a. The xenon lamp broken down
 - b. Poor connection inside. Please disconnect the panel of the handle, and tighten the screws, show as follows:



Tighten these four screws, and another four on opposite side of the above small board

6. Replace the xenon lamp
 - a. Disconnect the panel of the handle
 - b. Screw off these two screw caps (show as follows), and then cut the wire on the two ends of the lamp.



Screw off these two screw caps

- c. Take out the xenon lamp, show as follows:



The lamp wire is wrapped well with the insulating pipe , making sure good insulation

Red end is Anode , match up to the wire inside the handle

d. Connect the new xenon lamp

Weld the lamp wire with the wire inside the handle, in accordance with the connection method of red wire on lamp to red wire inside the handle