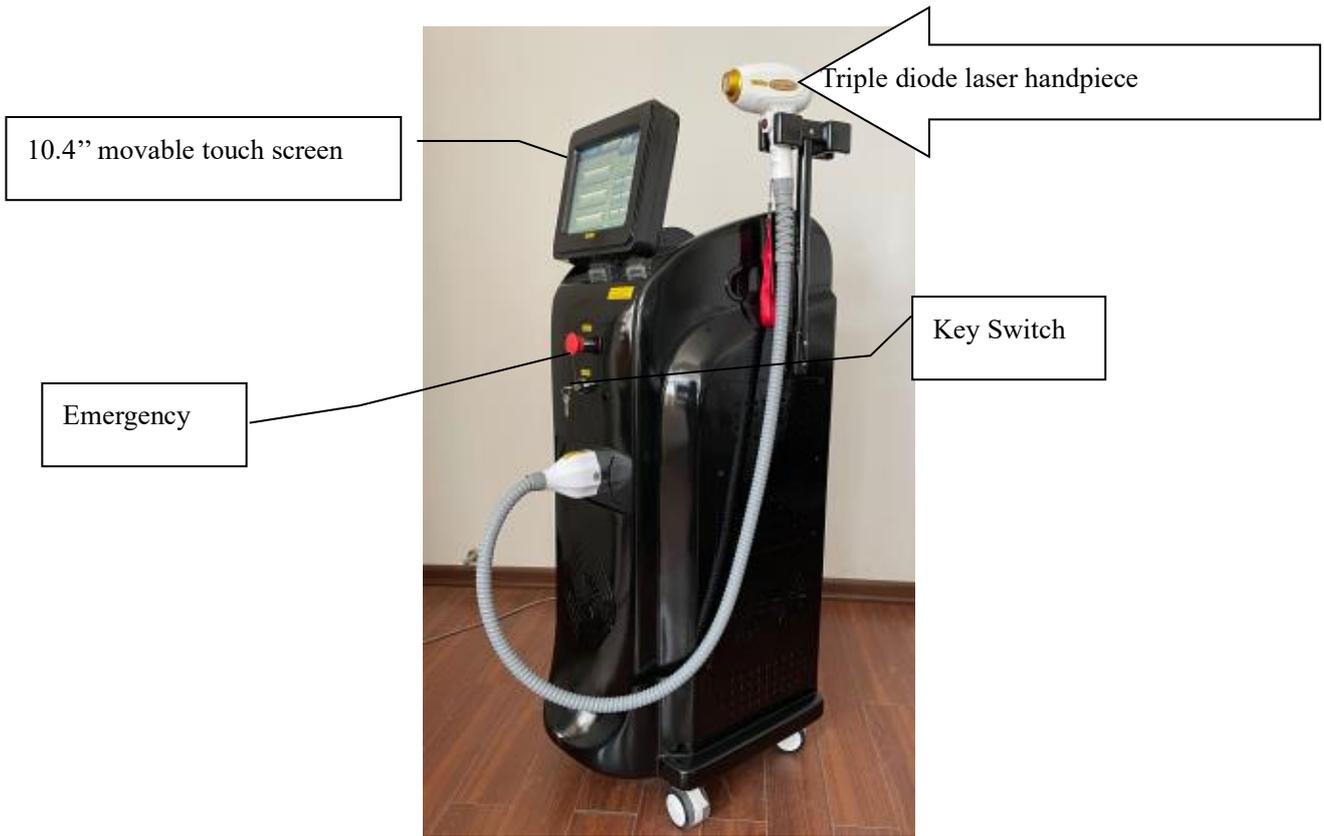

Triple Diode Laser 808nm+1064nm+755nm Hair Removal System

Operation Manual

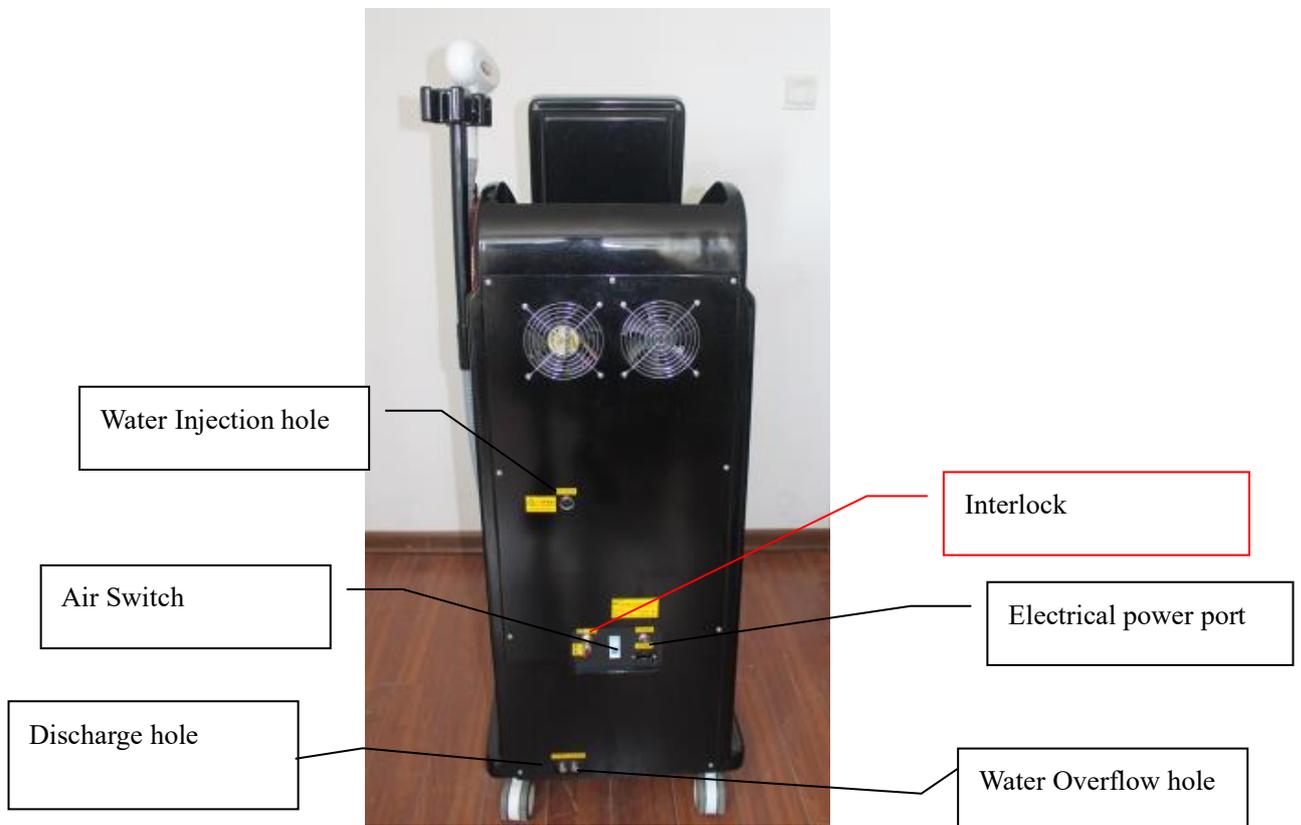


Model Name: LS10

Chapter 1: Introduce



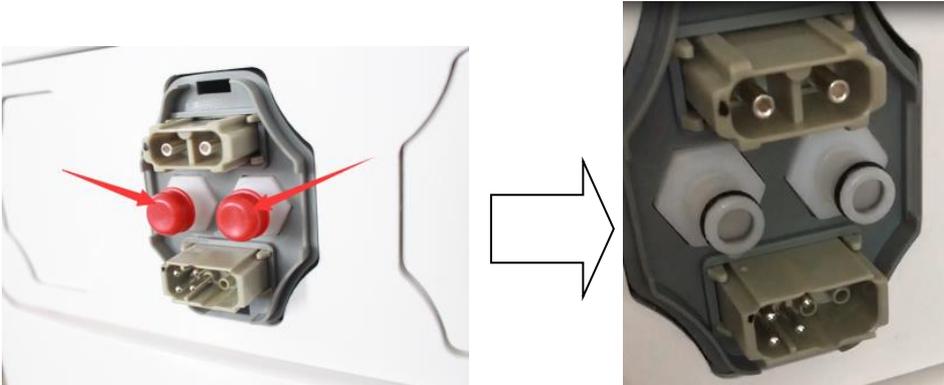
Front View



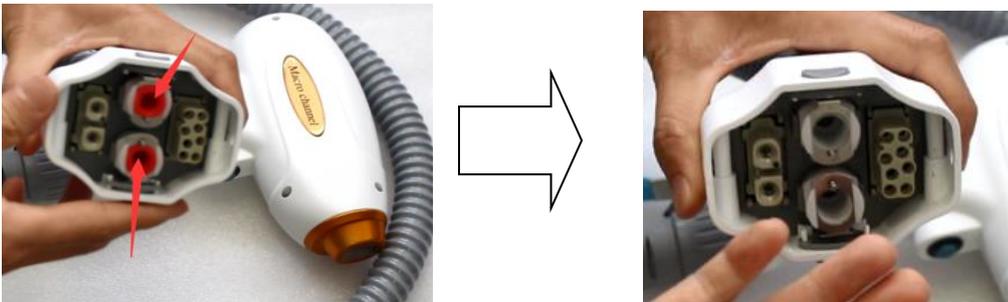
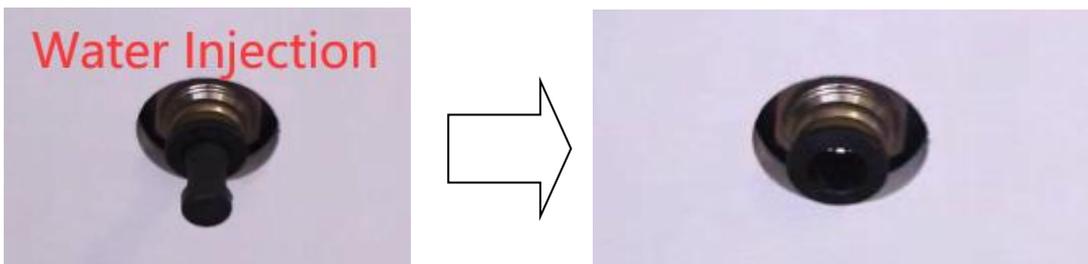
Back view

Chapter 2 Installation

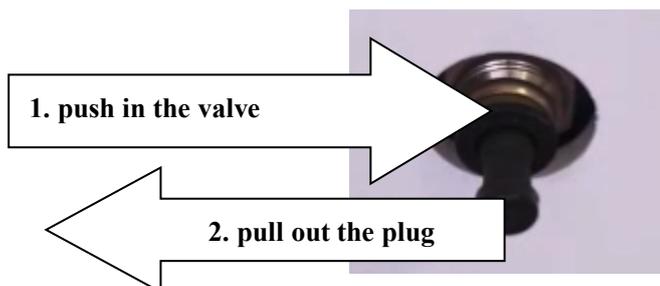
1. Remove the 5 water plugs firstly.



Please be very careful to remove the cap above to avoid a damage on water valves.(There is video to show you how to remove it)



The method to take down the overflow plugs is to 1) push in the valve as below, and at the same time, pull out the plug.



The water valves on the connectors are not auto-lock type. That means water inside will flow out when you unplug the handpiece. (water in machine will not run out because the connector on the machine is higher than the water tank inside).

Therefore, if you need to ship the machine, please discharge water from both machine and handpiece and plug the water valves as below to prevent the residual water from leaking.



2. Install the handpiece holder



3. Connect the handpiece onto the machine

3.1 Press down the 2 buttons firstly.

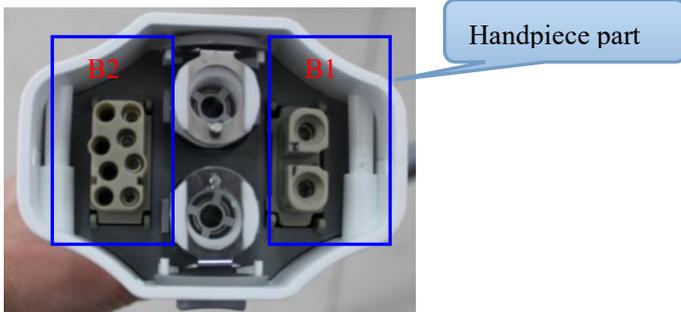
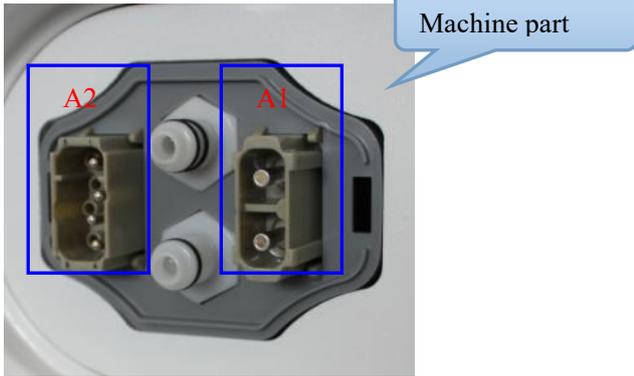
There are two buttons on both above and below of each handpiece. The two buttons may be in the upspring or press-down state. Before connect it onto the machine, it must be in the press-down state. So press down the 2 buttons firstly.



3.2 Connect it in the right direction.

There are two parts of the connectors: machine part and handpiece part. Please look at the following

pictures. A1 connects to B1, and A2 connects to B2. It cannot plug if connecting A1 to B2.



3.3 Use some power of your hands to plug it. When you plug one well, you can hear the click – the button springs and it locks. Then you can try to pull the handpiece connector slightly to check whether or not it locks well. Then hang up the two handpieces onto handpiece holders.



4. Water Injection

Distilled water is necessary.

Open the overflow hole.

Plug the water pipe into the water injection hole and inject water until water runs out from overflow hole. That means the water tank in the machine is full of water.



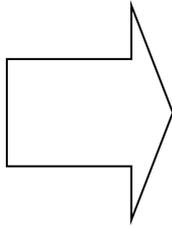
Then close the water overflow hole.

Chapter 3. Operation

1. Plug interface if your machine has it and plug the power cable.



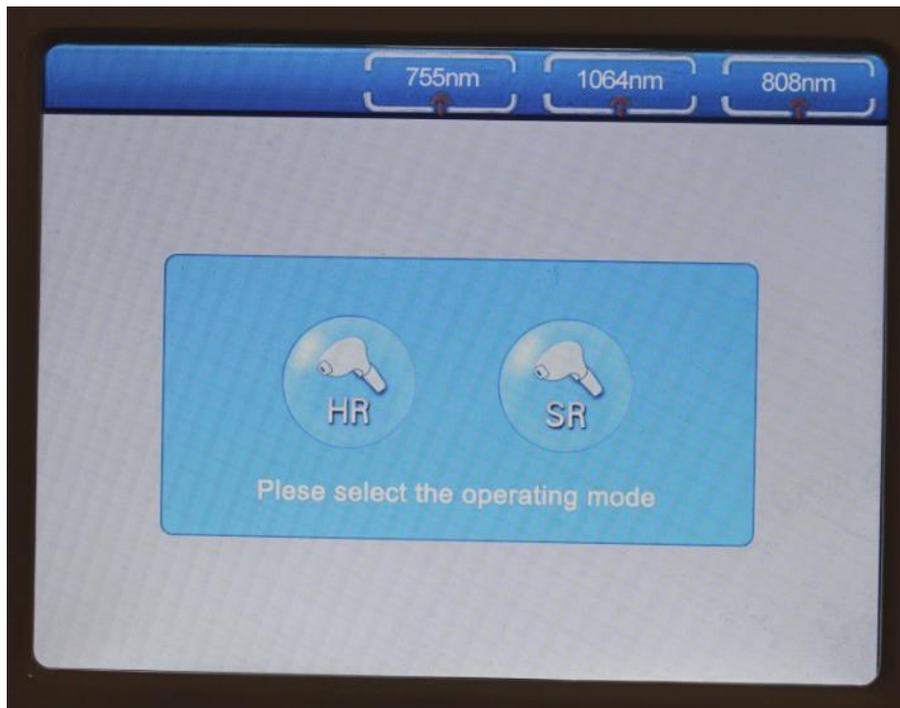
2. Turn on the air switch



3. Turn on key switch and emergency switch

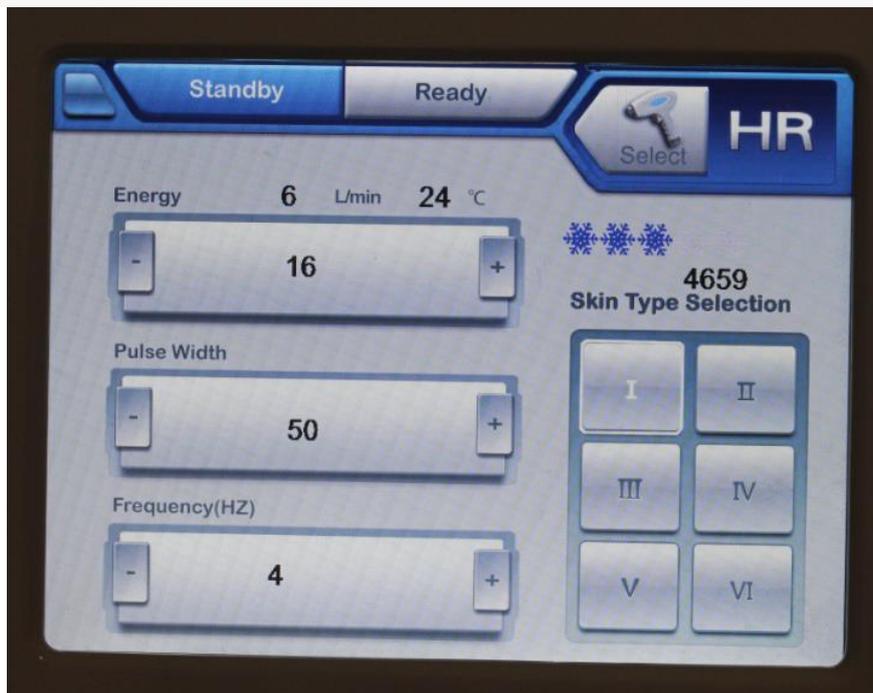


① Turn on the screen:



HR is hair removal. SR is skin rejuvenation

② Click HR, into treatment interface



Energy: 1-100 adjustable; Pulse Width: 5-400 adjustable; Frequency: 1-10 adjustable.

You can also adjust the contact cooling on handpiece:

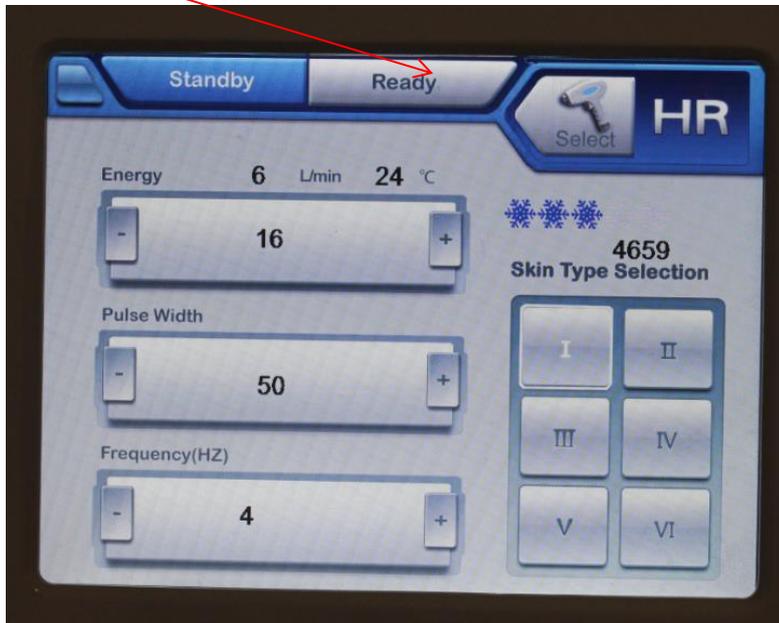


this area can store settings.

How to store settings?

E.g, you have got a good settings as below for a skin type. You will click

Ready , the settings are stored.



Chapter 4. Treatment

1. Operation Steps

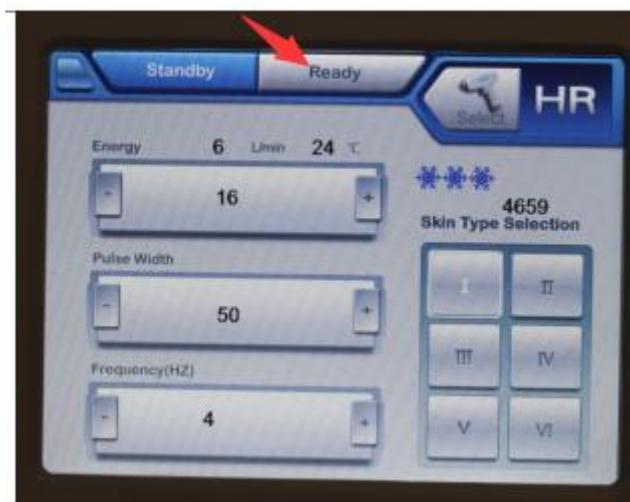
- 1) Shave the hair in the treatment area.



- 2) Seat the patient in the treatment chair after make him wear the protective glasses. The operator should also wear protective glasses. The operator then chooses the best operating position between the treatment range and the touch control screen.
- 3) Paste 1-2mm cold gel on the area need treatment, by doing this will help the skin to remain cool under the laser pulse and increase the rate of the penetration. The light pulse irradiates on the cold gel, every area that need light pulse treatment should be pasted by new cold gel.



- 4) Switch the key clockwise to start the machine, and then the screen will display the main page.
- 5) Choose treatment parameters according to the specific conditions of the patient.
- 6) After you have adjusted all parameters, press "READY". Then the machine is in working condition.



- 7) Take the handle piece. Press the switch on the handle piece to shot the laser pulses. Keep pressing the button and the laser output will continue. Do not press & release for single pulse.



Press the switch

Sliding fast hair removal treatment



- 8) After you finish or pause the treatment, please press “STANDBY”.
- 9) After you finished all treatments, cleaning the treatment head, the dust or impurity on the treatment head will affect the effect of the treatment and the life of the machine, so it should be kept clean all the time. You can use soft clothes to wipe it, and then put the laser treatment head back to the groove.
- 10) Switch the key inverse clock to turn off the machine.

NOTE : Any sudden situations, press the Quick-stop button to stop the laser, and then turn off the key. The Quick-stop Button is designed to shut off the laser, not shut off the VAC. The Key is designed to shut off the VAC input.

2. Treatment Notice

- 1) The treatment of the hair removal needs experienced professionals. Do not use it if you have no experience for such kind of laser device.
- 2) Operators and patients must wear laser goggles to protect eyes from any laser damage threat.
- 3) Please notice that this is a high power laser device and if the patients feel very painful, please stop the laser and check if there is anything happens to the patients' skin. Adjust it as a proper power that the patients can stand to do the treatment.

-
- 4) Skin color is very important. For white to light color, you can adjust the laser power up to 80~100% for a higher performance, and the energy can be adjusted to 40~90J/cm². For light color to light brown, you need a lower laser power (30%~60% for example), with a longer pulse width to protect any skin burning. Also you need to extend the treatment time for the dark skin to inject enough energy to the skin and follicles.
 - 5) The skin must be shaved before treatment.
 - 6) The handle piece is better to be operated at **SCANNING** mode. It is faster for treatment.
 - 7) Skin contact gel is no necessary for treatment. It won't make the treatment better or improve the skin feeling.
 - 8) You need to wait for several minutes before the cooling tip becomes cold.
 - 9) Keep contact between the cooling tip and skin. And you can also use the edge of the Aluminum head of the handle piece to cool down the skin during treatment.
 - 10) Never shot the laser pulses to eyes, or watch the laser directly.

Chapter 5: Maintenance and Warranty

This chapter describes the daily maintenance including cleaning the system, cleaning the crystal.

Water Filter



The water filter is in the machine. It is better to change a new one in 1-3 months. It needs to open the back panel of the machine to change it. Please contact supplier for how to change it.

Maintenance

- 1) The water must be checked and changed every 6 months.
- 2) The machine must be operated in a room with air-conditioner. The room temperature is better <28°C.
- 3) The environment temperature can not go below ZERO, or the ice may damage the water tanks and water channels inside the machine and the handle piece.
- 4) Clear the gel on the handle piece and make sure there is no dust attached on the handle piece window.
- 5) Do not bend the tube of the handle piece too hard, or this may cause flow switch ERROR.
- 6) Do not plug in & out the handle piece connectors frequently. This may cause bad connections and may cause water leakage or not well electrical connections.
- 7) Do not shot the laser at random targets, or it may cause burning or fire.

Warranty Notice

Please take necessary protections for the operation of the machine and handle piece, and notice that following situations can not be warranted:

- 1) Operation the system without water.
- 2) Power up the system without connecting the handle piece.
- 3) Regular drops of the handle piece.
- 4) Wrong input VAC.
- 5) Other manual operating mistakes.

Cleaning the main unit

Using soft wet cotton ball to clean the crust of the machine at least once a week, neutral cleanser is permitted, but do not let the liquid to permeate into the inside of the machine

Cleaning Treatment Heads

The treatment head should always be kept clean, clean of the treatment head is necessary after each treatment. When cleaning the treatment head, you can use wet soft clothes, and then air it to become completely dry.

Instrument troubleshooting guide

Following list some problem of the machine as well as the solve solution.

1. The system can not function properly	<ol style="list-style-type: none">A. Check whether the power cable is well connected;B. Check whether the emergency button is pressed down, turn the button inverse clock can release it;C. If can not be solved, please contact the engineer.
2. Turning black within the treatment head	<ol style="list-style-type: none">A. The treatment head exceeded the life, please replace it;B. Ensure the water flow is normal, please try again;C. The treatment head may be damaged, please contact the engineer.

3. Leaking water from the treatment head	The treatment head is damaged, please contact the engineer.
4. Voltage failure	Contact the maintenance engineer
5. Open failure	Contact the maintenance engineer
6. Comparative high temperature of the cooling system	A. Close the system, let the machine become cool, then restart it B. Contact the maintenance engineer
7. Reduced power of the treatment head	It implies that the treatment head is near the limit of useful life.

Chapter 6 Parameters

6.1 Basic parameter Settings

Dark hair	Short pulse width
light hair	Long pulse width
Thick hair	Long interval, low energy
Thin hair	Short interval, high energy
Dense hair	Low energy
Sparse hair	High energy
Dark skin	Long interval, low energy
White skin	Short interval, high energy
Sensitive skin	Low energy

Chapter 7: Clinical practice

7.1 Training

808nm laser hair removal machine should be operated by professionally trained doctors, nurses, technicians or other professionals. Recommending health care workers to participate in 808nm laser hair

removal machine professional training .It can also provided by many experienced physicians.

7.2. Indications and contraindications

7.2.1. Indications

permanent hair removal (beard, armpit hair, four limbs hair, etc.)

7.2.2. Contraindications

 Warning
Do not treat its implementation if patients found the following characteristics

- 1, local and body inflammation;
- 2, immune system defects;
- 3, the physical scars patients;
- 4, photosensitive skin and people using photosensitive drugs;
- 5, mental unhealthy and high expectations customers;
- 6, pregnant women;
- 7, the suspected skin cancer patients;
- 8, blood clotting is not normal and are using aspirin and antioxidants;
- 9, customers have received post-exposure recently or sun exposure customer;
- 10, recent days (within 3 months) ,using cosmetics containing hormones (such as some freckle products) customers;
- 11, epilepsy, diabetes, bleeding tendency customers;
- 12,customers with skin infections in the irradiated sites
- 13, sun tan after exposure;

7.2.3 Screening of patients

Ask patients their expectations for improvement in the skin is very important before the treatment .

808nm laser hair removal machine is quite attractive for the fast-paced way of life patients. Because it does not need patients spend a lot of time waiting for recovery in the entire course of treatment .The treatment does not require patients to lay to rest. Patients can return to work immediately or lives after treatment. For the patients who are highly expected treatment results, not recommended to have a treatment.

7.3 Treatment guidelines

Warning 
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Before the implementation of the treatment of patients ,please read this paragraph

- 1, Physicians should conduct a comprehensive examination on their patients before the treatment time .According to the specific situation of patients,firstly give their patients a test spot in need of treatment area, (particularly for patients with dark spot test,spot test very necessary);
- 2, pregnant women, epilepsy, people with mild sexual measles, recent sunburn , treated by chemotherapy and broken capillaries,should follow doctors' recommendation to do a surgery .
- 3, skin scrape hair in the treatment area, with neutral detergent solution to clean the skin surface, do not use any cosmetics;
- 4, using a large number of Condensed eraser surface of the skin in treatment areas (preferably using a imported or dedicated cold gel, the better);
- 5, the hair removal treatment, the treatment head should be aimed at treatment areas of skin, slightly contact with the skin surface .Must keep the mirror of treatment head clean.
- 6, sometimes the treatment appear a slight skin redness .It is normal phenomenon.After treatments later it will go away within a few hours .
- 7, the treatment parameters settings should be recorded for later use;
- 8, 20 minutes after the treatment finished, washed cold gel ,do cold in the treatment region .Using frozen gauze, water soaked into the plastic bag to do cold.
After surgery blisters and ulcers generated in the skin ,can be cured by antibiotic ointment and burn cream (such as: Silverol or Biafine, etc.). Also low concentrations of steroid cream can be used to reduce swelling.
If the blisters scab, should use vaseline or other moisturizing cream to keep it soft. Within 24 hours, do not use any cosmetics, one month to avoid too much sun and strong exercise, adjust the diet, go out to wear sunscreen;
- 9, 808 nm laser hair removal usually takes 4-6 treatments, each treatment interval of generally 1-1.5 months.
- 10, usually three times after treatment, and can be reached significant treatment effects.

7.4. Pre-treatment

7.4.1, Inquiry

Newly diagnosed patients, the attending physician should (or other qualified medical personnel) :

- 1),Excluding patients in recently 3-4 weeks with dark brown skin ,which caused by daylight or artificial light tan.
- 2), 3-4 weeks will be excluded from sunlight or artificial light tan dark brown skin of patients.

3), asked in detail about the patient's medical history, including received what forms of treatment previously to determine whether he / she is suitable to accept the 808nm laser hair removal treatment.

4), find out why patients seek treatment and his / her expectations.

5) discuss the 808nm laser hair removed treatment plan with the patient.

7.4.2 explanation

Newly diagnosed, the attending physician should tell the patient the following(or other qualified medical personnel):

- treatment, there may be some discomfort / pain;
- After treatment, there may be temporary swelling / edema occur;
- To achieve the desired therapeutic effect may require several treatment, usually 4-6 times. Efficacy of the treatment need to follow the gradual expression and the patient's actual expectation;
- There have temporary hyperpigmentation and skin texture changes and other minor side effects risk.

7.4.3 eye protection

When using 808nm diode laser hair removal machine, all persons in the treatment room (including patients and all health care workers) must wear protective glasses to protect the retina. When the intense pulsed light is used near the eye, doctors should give the patient over their eyes. Of course, the best protective measures is to let the patient closed his eyes before the laser pulse launching after the system ready to issue a "beep" sound,.

7.4.4, photo

Photographic archive for the patient before and after surgery (the patient face left, right and front). Because many patients are unable to objectively evaluate treatment progress, these photos can be used as evidence.

Patient photography should be used in the same environment similar to the speed, flash index and the focal length, so the photos can do different time objective comparison.

7.5 Treatment

1) • allow patients to wear protective glasses sitting in the chair. Operators also wear safety glasses, and remind the patient do not open their eyes during surgery. Operator select the best operating position between the patients' face and touch control panel.

2) • General from inconspicuous parts of the face, such as the front of the ear begin treatment. In the treated area coated with 1-2mm cold gel, which will help cool the skin under the laser pulse and increase the penetration of light pulses on the skin. Pulse emission in the cold gel, each light pulse treatment to receive the site should be coated with a new cooling gel.

3) • placed in the treatment of head and perpendicular to the cold 1-2mm thick gel, the optical crystal contacts in the skin, rather than the cold gel

4) • When the system issued a "tick" and ready sound. Pressing the trigger switch, a laser pulse.

5) (Selection of parameter is a very important aspect in clinical training, We recommend doctors firstly

beginning with 808nm laser hair removal machine to do the treatment of intense pulsed rejuvenation should be very careful to carry out parameters. If you encounter more difficult cases, clinical experts should be consulted.)

6) • in the course of treatment, when patients need referral for additional treatment, can appropriately increase the energy density to obtain better results according to requirement. However, before the start of treatment still need to launch the test spot to observe.

7) • After the treatment does not need any post-operative care. Patients can immediately put to work or lives. Only parts of the general treatment of sun treatment, proper skin care can improve the strong pulse of the relevant chromophore formation, pore size reduction and mitigation of color and light Shen aging effect.

8) • After treatment, the color Shen and brown spots will be to deepen the color, it will reduce and disappear after a few days.

7.6, postoperative care

7.6.1 overview

After the skin blisters or ulcers can be produced by antibiotic ointment or burn ointment. Low concentration of ointment can also be used to reduce swelling.

If the blisters scab, available moisture ointment like Vaseline to keep it moist.

7.6.2, to prevent sun exposure

one month after treatment ,patients should used high-factor sunscreen to protect the treatment area from sunlight. Sun exposure may increase the regeneration rate of melanin resulting in hyperpigmentation.

7.6.3, make-up

Most doctors allow patients immediately use cosmetics after surgery, but this also require the patient once found the treatment zone in the gap or crusting should should immediately inform doctor and stop makeup.

In most cases, the low energy light rejuvenation 808nm with low surgical risk, and safe to work right away or lives.

7.6.4, continue treatment

The following are the recommendations to continue treatment of the patient, only reference for doctors: Patients should be in a course of treatment (4-6 times) back to the hospital referral after 3 weeks.

7.6.5, side effects

If in the course of treatment and after treatment typical side effects phenomenon may occur:

- 1) Low heat burning feeling may last a half hour or so;
- 2) minor redness, 4-12 hours ,a day it can generally dissipated;
- 3), purpura, blisters, edema

You can use the green cream to reduce reaction, the late stage of skin restoration BFGF (at shallow burn care).

- 4) pigmentation:

Appear in darker skin or people affected by sunlight exposure may, or vitamin C aqueous solutions by ultrasound BFGF import or whitening care in the slow fade.

5) hypopigmentation or depigmentation, may be related to high energy radiation, generally self-healing;

7.6.6, end of treatment

When the end of the treatment depends on the doctor. Generally when the red spots on skin, telangiectasia and pigmentation, which are significantly reduced; skin texture, sun burns red light and the extent and degree of aging can be a significant improvement in the end of treatment.

7.6.7, postoperative skin care

Morning

—Use soft, neutral ground cleaner and cold water to clean the skin

—Add synthesis of vitamin C cream on the skin

—Add sunscreen on the skin

Night

—Clean the skin

—Apply moisturizing cream

7.7, Advantage of the treatments

1, no damage

2, the pain is not obvious

3, fast, effective, easy to use

4, no vacations after treatment

5, for a variety of color, can improve overall skin condition

Fitzpatrick Classification: Skin reaction to sun exposure

Skin Type	Color	Reaction to sun exposure
I	White	Always burn, never tanned
II	White	Easy burn but not easy tanned
III	White	Sometimes burn and tanned
IV	Medium Brown	Not easy burn, but tanned
V	Dark Brown	Seldom burn but easy tanned
VI	Dark	Easy go tanned

Addendum: Laser Service File (for reference)

Material for customers

808nm laser hair removal technology is a new optical technology, the technology for beauty. The energy density is about 10-100J/cm² in order to achieve hair removal results.

The strong laser pulse with specific wavelength and spectrum can penetrate skin, directly effect on the hair follicle tissue, and make the hair remove effectively. There are no adverse reactions for face treatment. Patient can go on normal life and learning without any interference.

Recommended settings

The following settings are just for reference but not final. Please adjust the settings base on the following chart according to different people.

Skin type	Laser Power	Pulse Width	Frequency
1	50	50	3~5
2	40	45	3~5
3	15	40	3~5
4	15	35	3~5
5	15	20	3~5
6	10	10	3~5

Specifications:

Parameter	Value
Wavelength	808nm 1064nm 755nm
Laser Power	1~100J/cm2
Pulse Width	5ms~400ms
Repetition Rate	1Hz~10Hz
Beam Type	Collimated
Skin Cooling	Water + Air + Sapphire
Laser Window	15x20mm
Laser Cooling Liquid	Purified Water
LCD Screen	10.4' Touch LCD
Environment Temperature	5~28°C
Environment Moisture	<80%
Input VAC	110V or 220V
Machine Dimension	51x49x111cm
Net Weight	45KG