

# DIODE YAG LASER

## USER MANUAL



When operating this machine, please read the manual of its instrument carefully.



Before testing the machine to work properly, do not throw away any package: (The diode handle is in the foam on top of the machine and can sometimes get stuck in the box.) to avoid losing the accessories which is in the foam;

## **Special Note**

### **1-1: Check the package:**

The machine cannot be inverted, and the package cannot be damaged. If there is any damage, please notify DHL and the seller and register it;

### **1-2: Installation of the machine:**

After receiving the new machine, it is recommended to place it in a warm room for 24 hours to prevent the residual water in the water tank from freezing and damaging the machine; (In winter, due to the different temperatures in each country, the residual water in the water tank will freeze on the road if the temperature is very low);

### **1-3: Check the machine accessories:**

When you open the package, please check all the accessories, and you can provide pictures for the seller to check;

It is recommended to start assembling the machine when you open the package. Some accessories are in the foam. When you open the box, the foam may be stuck in the box. If you throw the box away, sometimes the accessories will be lost;

### **1-4: Machine safety: The manual has guidance**

1-4-1: Install the hanger firmly (securely install the screws);

1-4-2: Install the handle correctly. All handles must be installed before the machine can be started;


1-4-3: Add purified water or distilled water to the machine. Do not add mineral water;

1-4-4: Store the extra accessories and use it in the future;

1-4-5: When starting the machine for the first time, connect the power cord and turn the emergency stop device to the right. The red button pops up; then turn the key;

1-4-6: After using the machine, turn the key to turn off the machine;

1-4-7: When the machine is working and encounters danger, press the emergency stop device to cut off the power immediately;

1-4-8:  When the machine encounters a malfunction, please use pictures and videos to show the problem of the machine, contact the seller to solve it, and do not open the machine for inspection by yourself;

# Chapter 1 Read before operating

## 1.1 Notes

Please read the user manual carefully before operating the machine!

- 1) Make sure the device is in normal status, avoid unnecessary harm.
- 2) Don't put the equipment into a strong electric current and magnetic field, otherwise it may cause a fault.
- 3) Check whether the power supply voltage matches the equipment. Don't use AC current more than 240V.
- 4) Don't operate the equipment in a high temperature or humidity place, avoid electric shock or fault.
- 5) Make sure that the equipment is connected to the power supply before work.
- 6) Before work, make sure that connection is good between circuit and accessories.
- 7) Don't shake or strike the equipment during the operation.
- 8) Don't use the equipment if cables or connections are damaged, fall to the ground, water, or other damage.
- 9) Don't put the cover board and electric wire to be used as a carrying handle.
- 10) Electric wire and hose should get away from the heat source.
- 11) It's better to operate the equipment in a dry place, don't use it outdoors.
- 12) Only use accessories provided by our company.
- 13) Please turn off the power supply after work/before cleaning / maintenance.
- 14) Don't clean it with detergent, solvent or chemicals.
- 15) Don't use machines with aerosol products.
- 16) Avoid water spraying on machines.
- 17) Never use the modified or remolded equipment.
- 18) Don't use the machine if your skin feels uncomfortable or hurt.
- 19) Pregnant women are forbidden to use it.
- 20) Please consult a doctor before working with it if you have any questions.
- 21) When the emergency happens, please press the emergency button (red button) to turn off the device.

**Note:** Only personnel trained by the dealer have the right to maintain the internal facilities of the instrument. Any unauthorized handling may cause damage to the instrument and invalidate the warranty.

## 1.2 Operator training

Only personnel who have undergone professional training, understand the effects of treatment and possible risks can use the equipment. The operator must read the user manual carefully

before operating the equipment. The success of treatment depends mainly on the experience of the operator and the understanding of professional knowledge.

### **1.3 Electrical and equipment safety**

The power supply used by the equipment is 200V~240V (50/60Hz) single-phase power supply, international standards (120V~260V, 50/60Hz); 20A (90~130V, 50/60Hz) single-phase three-wire socket.








The equipment is in contact with the ground through three wires. The ground wire must be reliably grounded. Only authorized personnel can repair the equipment, otherwise the warranty will become invalid


Note: Avoid using flammable materials such as acetone and alcohol within the operating range.

## Chapter 2: Machine Configuration + Assembly

### 2.1 Accessories list:

| Part picture  | Part name          | Quantity/set or pics    |
|---|--------------------|-------------------------|
|    | Host               | 1 set                   |
|   | Diode Handle       | 1 pic                   |
|  | Diode handle       | 5 pics                  |
|  | YAG handle         | 1 pics                  |
|  | Head of YAG handle | 532nm+1064nm<br>+1320nm |

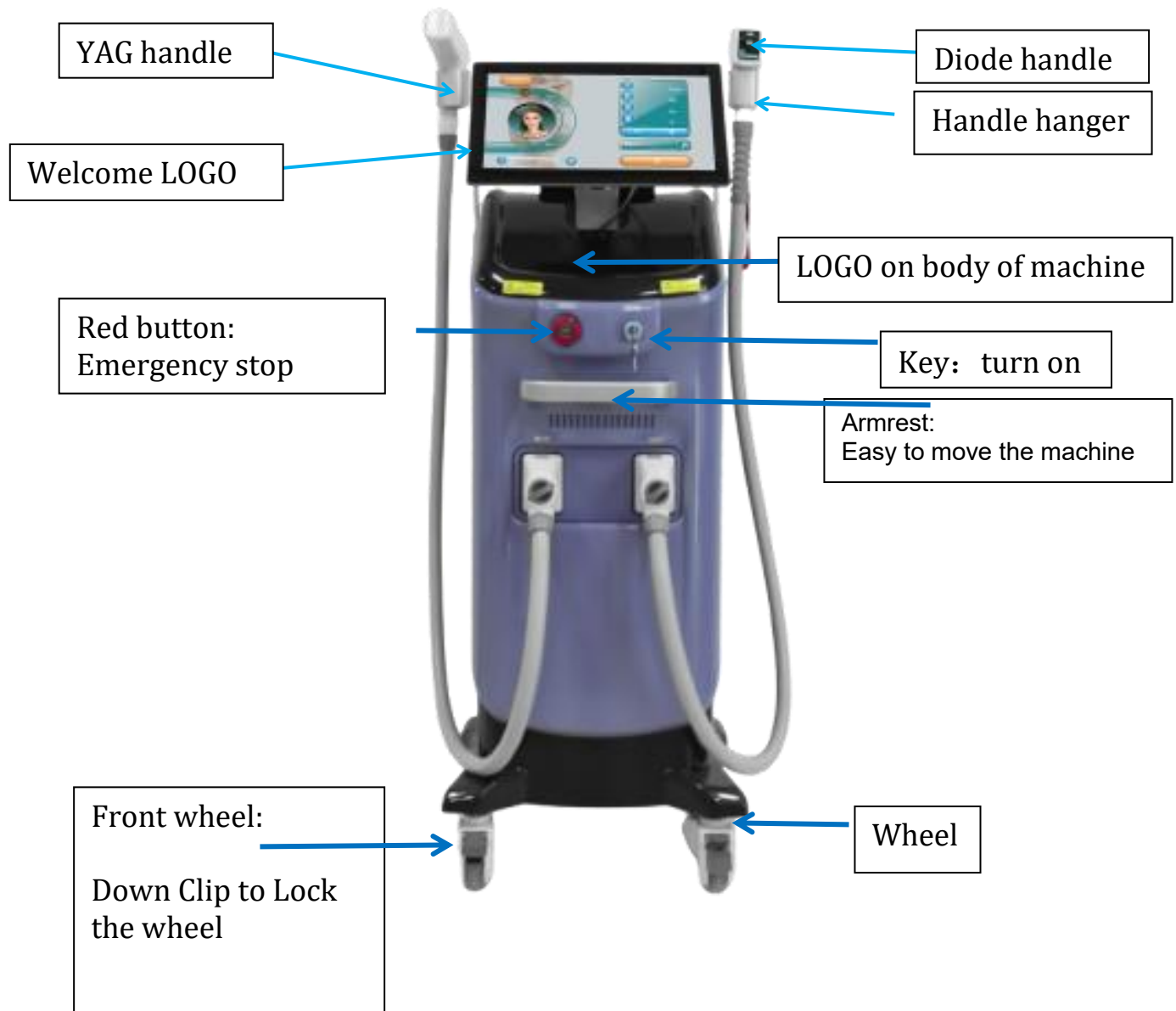
|   |  |              |
|---|--|--------------|
|    | <p>Elight+Diode +YAG<br/>Operating glasses</p>                                     | <p>2 pic</p> |
|    | <p>Keys and screws</p>   | <p>some</p>  |
|    | <p>Eye patch (to be worn by<br/>the customer)</p>                                  | <p>1 pic</p> |
|   | <p>Different Handle hanger</p>   | <p>2 set</p> |
|  | <p>Water funnel, tube:<br/>insert into the water<br/>injection hole, add water</p> | <p>1 set</p> |
|  | <p>Water pipe for water<br/>overflow /water<br/>discharge</p>                      | <p>1 set</p> |
|  | <p>Filter: one in the<br/>machine, extra as spare</p>                              | <p>1 pic</p> |
|  | <p>Power Cable</p>   | <p>1 pic</p> |

|   |             |       |
|---|-------------|-------|
|  | Foot switch | 1 pic |
|---|-------------|-------|

## 2.2 :Specifications

| Specification                   | Data  |
|---------------------------------|---|
| Machine                         | Elight Diode YAG laser machine                                |
| Screen size of the device       | 15.6 inch   |
| Diode laser Wavelength          | 808nm or 808nm/755nm/1064nm<br>or 808nm/755nm/940nm/1064nm    |
| Diode Spot size                 | 15mm*15mm,15mm*20mm,15mm*30mm, nose tip                       |
| YAG handle Configuration        | Handle with red aiming: 3 heads<br>532nm+1064nm+1320nm        |
| Cooling system                  | water cooling+wind cooling+Ring<br>TEC cooling+500W Condenser |
| Screen size of the Diode handle | 3.2 inch  |
| Machine power                   | 4000W   |
| Diode Energy density            | 0-50J/cm <sup>2</sup>   |
| Laser handle power              | 1200W or 1600W or more  |
| Voltage                         | 100-240V/50-60HZ  |

## 2.3: Machine configuration introduction



Picture 2-3

## 2.4 Installation

### 2.4.1: Procedure of Installation

The device should be installed in an environment free of corrosive gas, dust, and particles. Corrosive gas will damage the electronic and optical components and connecting wires of the device. More dust and particles in the air can cause damage to filters and electrical components. The temperature and humidity range of the equipment installation environment should meet the performance parameters of the equipment.



#### 2.4.2: Equipment installation process:

- 1) Take out the device.
- 2) Leave the machine for one day in a warm room to avoid excessive humidity or freezing caused by long-distance transportation.
- 3) Assemble the components of the device to ensure that the connections at each interface are stable (See below for guidance: 2.4.3).
- 4) Fill the water tank with distilled water (See below for guidance).
- 5) Connect the handle of the device to the power supply of the device.

After all components and power connections are complete, turn on the device and test its performance and system parameters while ensuring that the device is connected correctly.

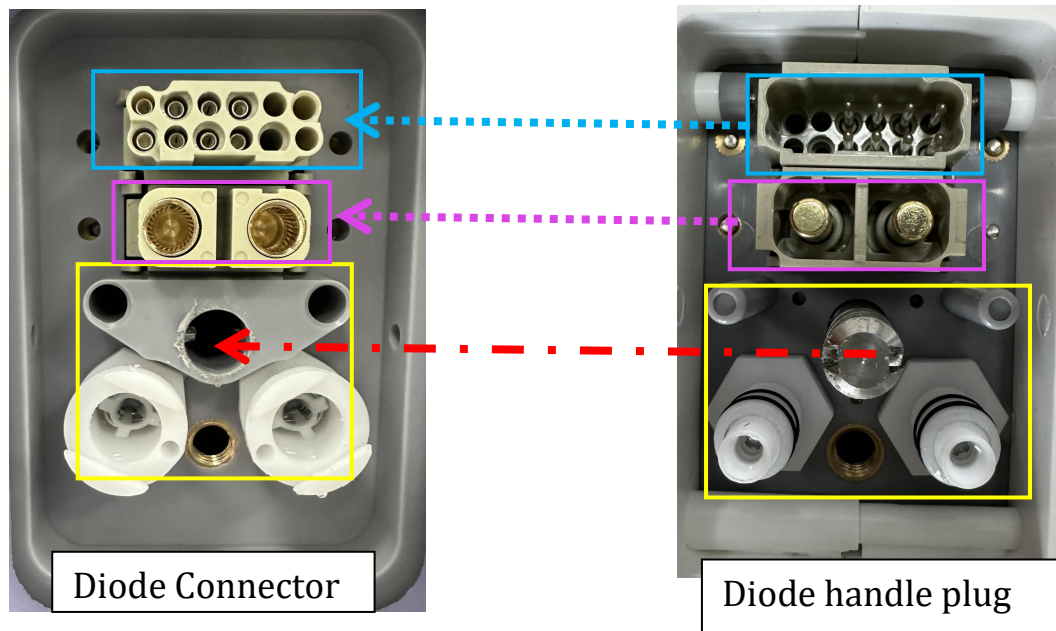
#### 2.4.3 Installation of the operating handle:

- 1) First fix the handle hanger, it must be firm to avoid breaking the handle;
- 2) The pointer must be aligned: handle plug and connector of handle, handle connector, and then rotate to avoid bending the pointer;
- 3) Water can be added only after the handle is installed;



**YAG Connector**

**Diode Connector**



- ① Align the pointer ;
- ② After inserting, rotate the button on the handle;
- ③ Hold the handle with your left hand and turn the button clockwise with your right hand to lock the handle; The handle will be installed well.



Turn the button on the handle  
by clockwise to lock the handle

4) When adding water, the handle should be placed under the host of machine (not to drop the handle) to discharge the bubbles in the handle. After adding water, start the device and let the water circulate for at least one minute before performing relevant treatment (purpose: to allow water to flow smoothly in the handle to avoid lack of water in the handle, which will burn the lamp of handle).

5) When starting the machine for the first time: remember to rotate "red button" to the right to make the "emergency stop button" pop up;

#### 2.4.4: Water filling

1) After the new machine arrives, it must be placed in a warm room for 24 hours to melt the ice remaining in the machine (the temperature is too low in winter, and the water in the machine will freeze on the road);

2) The ambient temperature should be 5°C~40°C; the humidity should be less than 80%, and the treatment room should be clean.

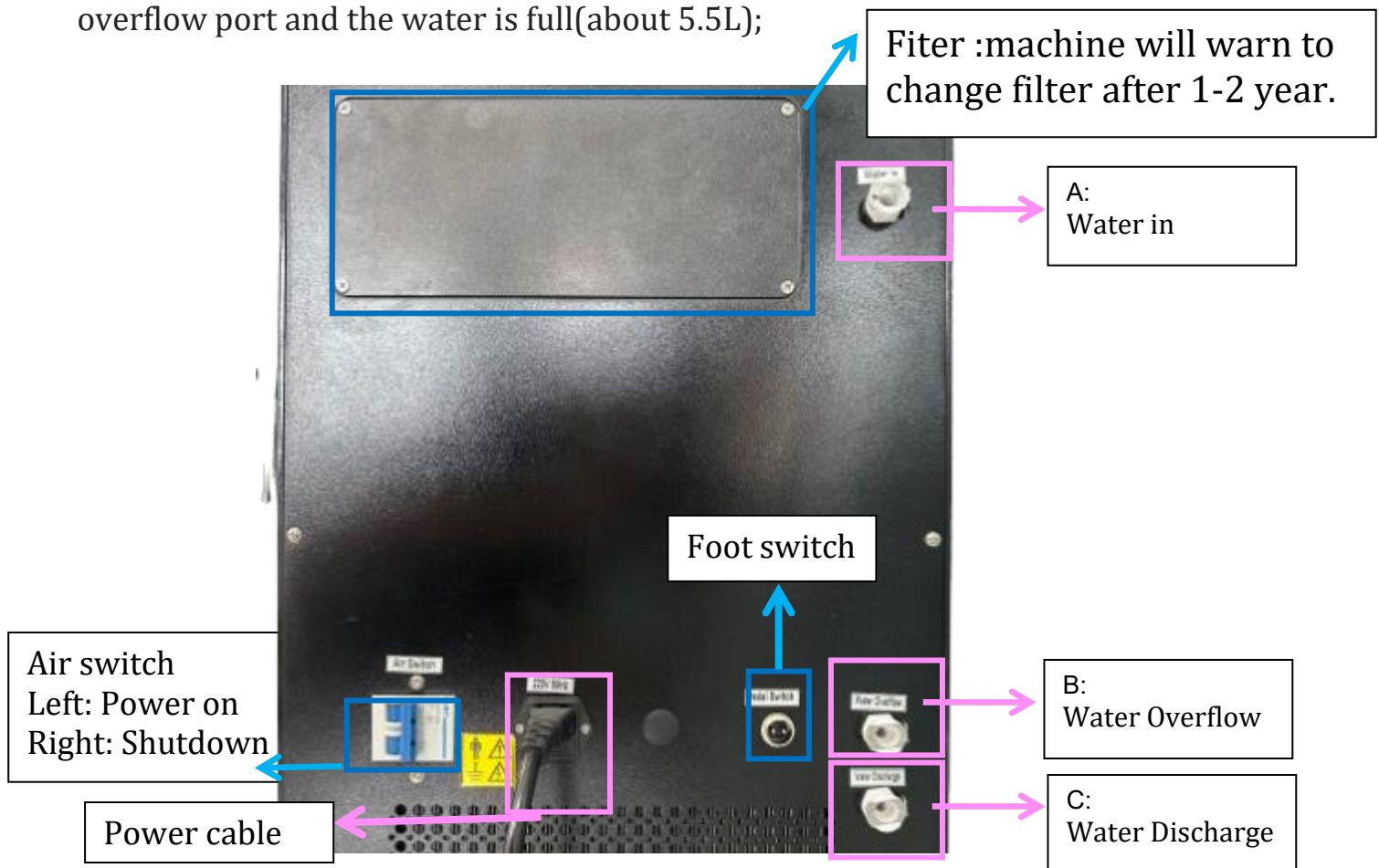
Before filling water, please make sure that the overflow hole is unobstructed and the handle is installed intact; otherwise, water cannot be filled .

#### 2.4.5: Water filling requirements

1) The first thing to do for a new machine is to fill the equipment with water: distilled water or purified water must be added, not mineral water.

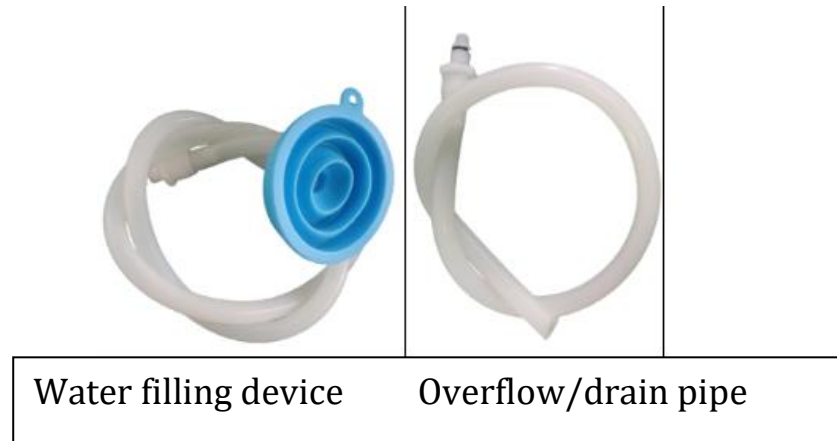
2) When the new machine is started for the first time, if an alarm sounds, please take a video (check the operation interface) and contact the salesperson immediately;

3) After a few months, if the machine keeps alarming after it is started, it should be that there is less water and it needs to be refilled. Water flows out from the overflow port and the water is full(about 5.5L);

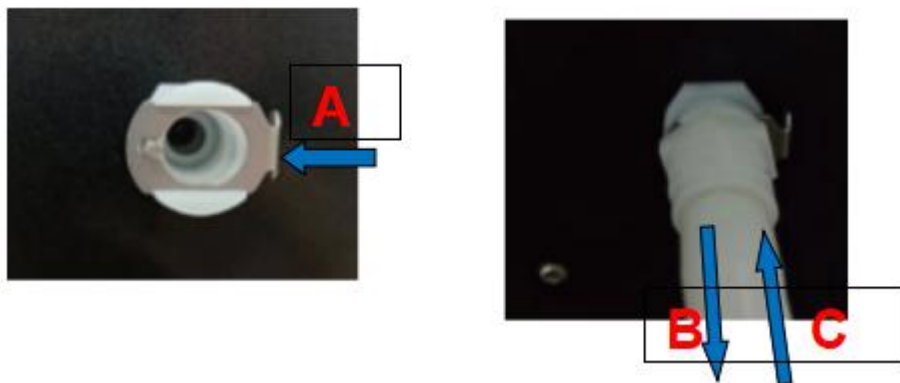


Water in:

- (1) Insert the white pipe connector into "water overflow" hole, place a basin underneath;
- (2) Insert the white connector port of the water injection funnel into the "water in" hole, and inject water into the device through the funnel.
- (3) when water flow from "water overflow" hole, stop add water, machine water is enough;



- (4) After the water injection is completed, use hand press the (A) iron piece of: "Water in" hole / "water overflow" hole / "water discharge" hole;
- Then insert the tube: C to add the water injection device from the "water in" hole.  
Then remove the tube B to remove the water injection device from the "water in" hole. As shown in



#### 2.4.6 Water circulation testing

After the equipment is filled with water, connect the power cord . After the connection is completed, perform water cycle debugging on the equipment.

The steps of water cycle operation debugging are as follows:

- 1) Before starting the equipment, you must ensure that the emergency stop switch is in the bouncing state. If the emergency stop switch is pressed, turn right the emergency stop button to make it pop up.
- 2) Turn the circuit breaker switch on the back of the device to the "ON" position.
- 3) Turn the key switch clockwise to automatically operate the water circulation cooling system inside the device.
- 4) Observe whether the water circulation of the equipment is normal.

If there is no water leakage, water flow alarm, etc., let the device run automatically for more than 2-3 minute before it can be used. (if closed machine, every time start machine, must wait 2-3 mins, then use machine)

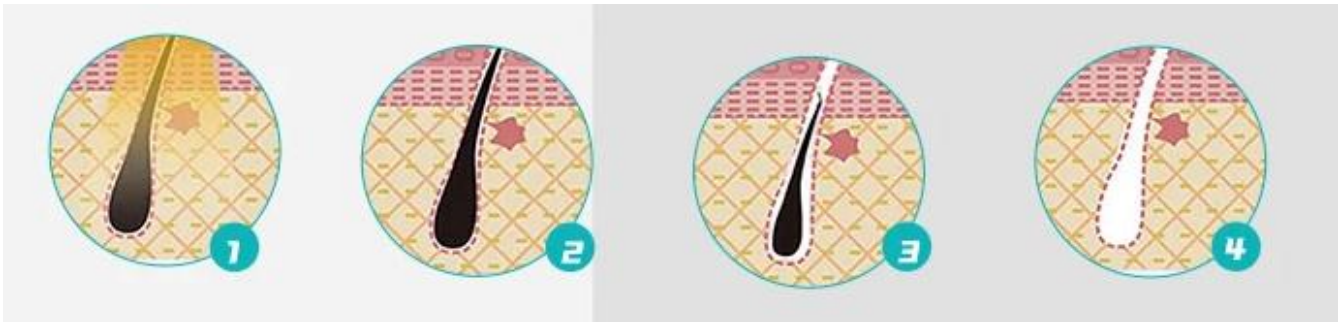
Note: Change the water every 2-3 months (if too much customers) or 5-6 months (if customers is little) . Please use purified water or distilled water. Drain as much water as possible from the cooling system.

I have tested :5.5L purified water

Each time you start the machine, please wait 3-5 minutes before using the handle to work, to ensure that the water circulates fully in the handle (there is a water pump inside the machine to increase the water pressure and allow the water to flow in the handle)

## Chapter 3 Diode Basic Introduction

### 3-1 : Theory: Basic Introduction



The Golden Standard for laser hair removal machine - 755nm, 808nm , 940nm, 1064nm integrated into one device.

2-1-1. Diode laser hair removal technology is based on the selective dynamics of light and heat.

2-1-2 The laser goes through the skin surface to reach the root of the hair follicle; light can be absorbed and converted into heat damaged hair follicle tissue, so that hair loss regenerates without injury to surrounding tissue. It provides less pain, easy operation, the safest, technology for permanent hair removal now.

The bar in the diode laser handle emits light of different wavelengths, which are absorbed by the melanin groups in the hair follicles, thereby destroying the melanin groups and stopping the supply of nutrients to the hair, causing the hair to fall out. After several treatments, the effect of permanent hair removal is achieved.

### 3-2 Bar wavelengths of handle to treat different hair color :



#### 3-2-1: 755nm wavelength :

Recommended for treating fair skin types(Skin I~III) with fine hair. The 755nm laser is characterized by more powerful melanin absorption, making it suitable for the light-colored



and thin hair. In this way, this wavelength aims to remove the hair on such areas as eyebrows, upper lip, etc.

### 3-2-2: 808nm wavelength :

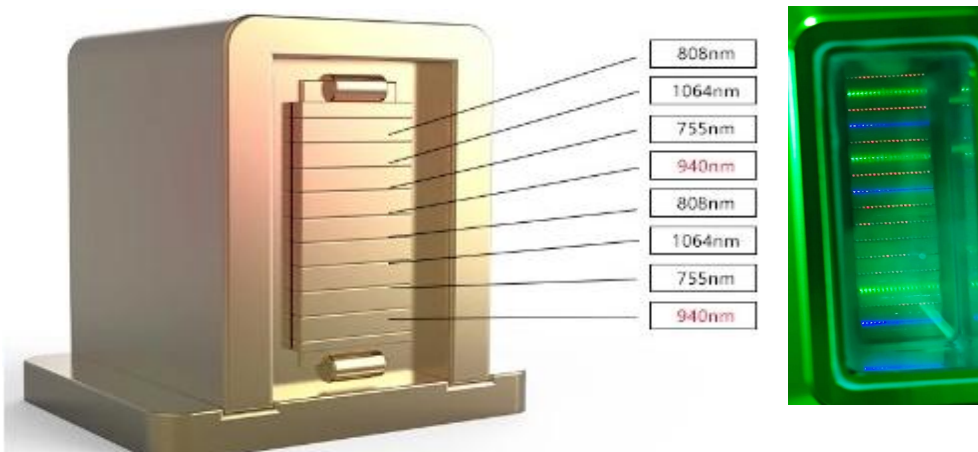
Recommended for treating all skin types, particularly patients with greatly dense hair at the first session. The 808nm laser can penetrate into the subcutaneous fat tissues as well as deep dermis so as to act on various body parts, making hair removed at any depth in an express and thorough way.

### 3-2-3: 940nm wavelengths:

Moderate melanin absorption and increased penetration Perfect for dark hair whose roots are somewhat shallow.

### 3-2-3: 1064nm wavelength:

Recommended for treating dark skin types(Skin IV-VI). With the features of lower melanin absorption yet deeper penetration in follicles. The 1064nm laser mainly provides solutions for dark hair color. In other words, this longest wavelength focuses on the treatment areas like scalp, armpits, bikini line, etc.

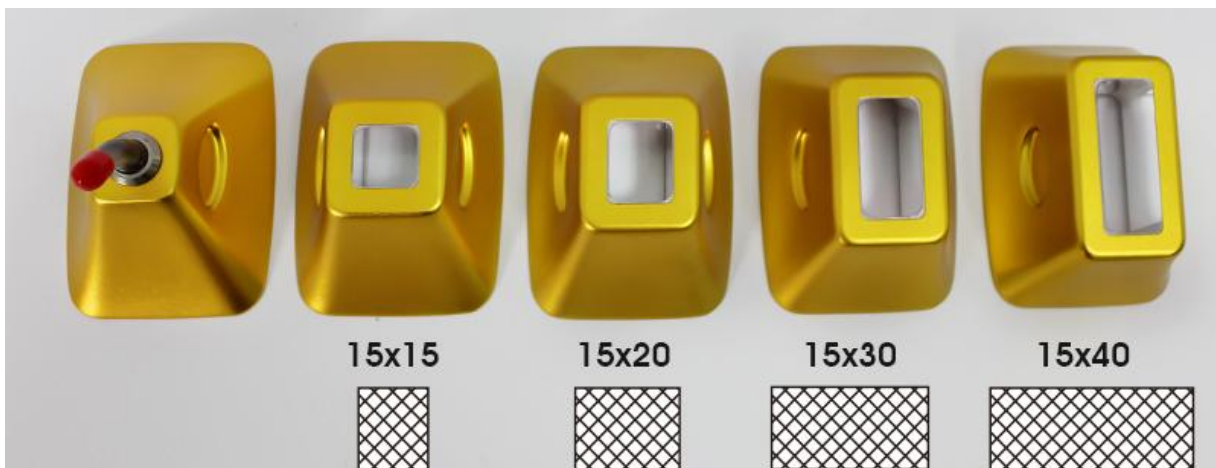


- (1) Hair of different colors has a relationship with the absorption coefficient (light absorption capacity) of light of different wavelengths;
- (2) Production cost: 1064nm wavelength bar and 755nm wavelength bar are more expensive than 808nm wavelength bar;
- (3) The bars in the handle are modularly assembled in a dust-free workshop. When working, all the bars work at the same time;

### 3.3 Handle Configuration:

- (1) The handle can be replaced with 4 different sizes of treatment heads: 15mm\*15mm, 15mm\*20mm, 15mm\*30mm, nose tip;
- (2) The treatment head is automatically adsorbed on the handle, making it easy to replace;
- (3) 12 high-quality laser bars imported from "USA-COHERENT" provide enough and stable energy, ensuring good treatment effects.

The laser generator can fire up to 50 million shots, long sever life.



Cooling system: Semiconductor + Wind + Microchannels water outlet + Sapphire + TEC, guarantee a painless and comfortable hair removal experience.



### 3.6 Application

- ❖ Permanent hair removal for all kinds skin types (I, II, III, IV, V, VI.).
- ❖ Apply for almost of body areas such as lip, beard, chest, armpit, back, arm, legs, etc.

#### NOTE:

- ❖ SKIN TYPE I: This is a very fair complexion. Those with light-colored eyes and blonde or reddish hair color. Very sensitive to the sun and easily be burned whenever exposed to the sun, but never be tanned.
- ❖ SKIN TYPE II: This is a light complexion, light-colored eyes, blonde,reddish or light-brown hair color. Very sensitive to the sun, and easily burned and gradually be tanned.
- ❖ SKIN TYPE III: This is a medium complexion. Those with light or dark eye color and usually brown or darker hair color. Sensitive to the sun, rarely be burned and always be tanned.



- ❖ SKIN TYPE IV: This is a dark complexion. Those with dark eyes, usually dark brown to black hair color. Moderately sensitive to the sun, rarely be burned and always be tanned.
- ❖ SKIN TYPE V: This is a darker complexion. Middle Eastern, Indian skin. Dark eye color, usually black hair color. Minimally sensitive to the sun and always be tanned.
- ❖ SKIN TYPE VI: This is a black complexion. Those with black eyes and hair



I II III IV V VI

color. The least sensitive to the sun and never be burned



# Chapter 4: YAG Basic Introduction

## 4.1 :YAG PrincElighte for tattoo removal



YAG Laser delivers light of specific wavelength in ultra-short (nanosecond).The high peak energy pulses are absorbed by the pigments and results in an instantaneous blast, that is light blasting princElighte.The pigments and results are shattered into fragments, some can be bounced out of the skin and others can be split into tiny paricles that can be engulfed by phagocytes and then eliminated by the lymphatic system,and the pigment gradually fades and disappears.



Pigment hides in the dermis of the skin.

Laser selectively acts on the pigment;

Pigment blasts while absorbing the energy;

Pigment is engulfed by macrophage and excreted;

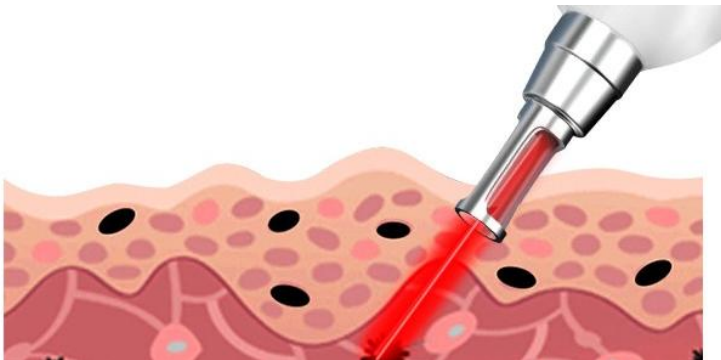
## 4.2 YAG functions:

Age Spots Removal; Tattoo Removal; Carbon Peeling (removing pores, oil and dirt);  
Mole  
removal; Onychomycosis (removing fungi);

★ Not recommended for treatment: Chloasma Removal;

#### 4.3 YAG handle Configuration:

4.3.1 handle with red aiming to easy aim treatment part.



4.3.2 YAG handle with 3 heads:



①Black doll (1320nm) tip: shrink pores, balance grease secretion, tighten, remove fine lines.

Treatment :acne, rough skin, light epidermis acne, acne to print.

②1064nm tip: Removal Black, blue, green color tattoo ,eyebrows,freckle ,nevus etc pigmentation;

③532nm tip: Removal Red, brown color tattoo ,eyebrows,freckle ,nevus etc pigmentation.

# Chapter 5: Elight Basic Introduction

## 5.1 Elight Working Principle

### **Photorejuvenation = Intense Pulsed Light = Elight**

It is a relatively wide, continuous, multi-wavelength incoherent light with a wavelength range of 420-1200nm.

1. Photothermal absorption principle: When strong pulsed light penetrates the skin, it can be preferentially absorbed by the pigment masses and blood vessels in the skin. Without damaging the normal skin, it can decompose the pigment masses and pigment cells in the skin. In addition, it can coagulate the hemoglobin in the blood vessels and close the blood vessels, thereby treating problems such as pigment plaques and capillary dilation.

2. Photochemical action: It can change the internal molecular structure of dermal collagen fibers and elastic fibers and restore the original elasticity of the skin. The photothermal effect it produces can enhance vascular function and improve facial microcirculation, thereby achieving the effect of eliminating wrinkles, shrinking pores, and improving uneven skin tone, dullness, and yellowing.

#### Eg. Remove red blood

The blue-green spectrum of the Elight can be selectively absorbed by the hemoglobin contained in the red blood cells, generating a strong photothermal effect in an instant, and the heat is transferred to the endothelial cells of the capillaries. If the heating time is long enough, the blood vessels will coagulate and denature (similar to the process of steaming egg cakes). The capillaries that lose their contraction and relaxation functions after deformation will be decomposed and absorbed by the human body's phagocytic system and gradually eliminated;

#### Eg. Remove acne, acne marks, and oily skin

Elight 430nm can be specifically absorbed by the sebaceous glands, thereby shrinking the enlarged glands, restoring the original volume, improving the seborrheic state, and shrinking the pores;

① It can decompose the blackheads at the hair follicle opening, making the hair follicle opening unobstructed, which is conducive to the smooth removal of the contents;

② It can stimulate the synthesis of protoporphyrin of acne bacteria, causing photosensitivity reaction, and then killing acne bacteria;

③ It has a strong light-adjusting effect, which can eliminate local inflammation and promote the elimination of erythema, marks, and capillary dilation;

④ Strong light can help the collagen regeneration and rearrangement of the dermis, which is conducive to the recovery of acne scars.

Therefore, Elight is used in the medical and beauty industries to improve sun spots, rosacea, treat acne, age spots, pigmentation, improve skin, and can also be used for hair removal. Because this therapy is effective, economical, and non-invasive, it is a popular treatment method.

## 5.2 Function:

Wrinkle removal - effectively eliminates and relieves wrinkles of varying degrees around the eyes, forehead, etc.;

Skin rejuvenation - shrinks pores, improves skin texture, and increases skin elasticity;

Whitening - removes freckles, age spots, acne (pimples), etc., decomposes melanin, and makes the skin fair.

① Hyperpigmentation: Elight effectively reduces the visibility of dark spots, age spots, and sun damage.

② Vascular lesions: Improves mild facial red blood symptoms (severe cases require 980nm laser treatment, but spider veins require consultation with a doctor).

③ Acne: Elight focuses on acne-causing bacteria, helps reduce acne and improves overall skin transparency.

④ Wrinkle removal/lifting:

Skin tightening (face lifting and skin tightening in various parts of the body), smile lines (wrinkles around the nose), enlarged pores, acne scars, fishtails/eye bags, nasolabial folds, and Sichuan-shaped lines

⑤ Hair removal: Elight removes excess hair by targeting melanin in hair follicles (removing shallow fine hair, removing thick black hair).

Advantages: fixed point, moving in sequence, mainly for the face, the face is uneven, and it is not convenient to slide; for body treatment, it is recommended to use SHR or Diode laser for fast sliding to save time.

## 5.3 Advantages of Elight

① Short treatment time, 15-20 minutes per treatment;

② Quick recovery after surgery, no delay in treatment, long-lasting and superimposable treatment effect;

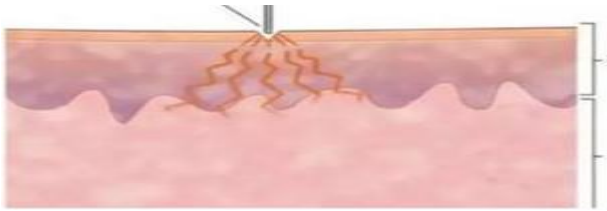
③ Non-ablative physical therapy, highly directional, accurate site of action, no damage to surrounding tissues and skin appendages;

④ Adaptable to different skin conditions, safe and effective, no damage to the skin.

## 5.4 Elight VS Laser : difference

5.4.1 LASER (Q-YAG or pico laser or CO2 laser) is a light with precise action and low diffusion when radiating.

For example, when treating freckles, the laser only targets the melanin in the dermis, and does not affect the water molecules, hemoglobin or capillaries in the skin.



What are the common treatments for freckles?

General treatment: Avoid sun exposure.

Local treatment: Depigmentation preparations: hydroquinone cream, salicylic acid ointment, tretinoin cream.

Surgical treatment: Dermabrasion can be used for severe cases.

Chemical peel therapy: trichloroacetic acid solution or phenol spot application or liquid nitrogen freezing, etc. Laser treatment: Q-switched Alex 755nm laser treatment of freckles is safe and effective.

Systemic treatment: mainly oral vitamin C and vitamin E.

#### 5.4.2 Elight is a light with a wide range of action and a large diffusion when radiating.

For example, when treating red blood streaks (telangiectasia), it can also improve dull skin tone, large pores and other problems. This is because the target of intense pulsed light is not only capillaries, but also melanin and collagen in the dermis.

Summary: laser is more "advanced" than Elight, so it is cleaner when removing spots and birthmarks;

#### 5.4.3 The adjustability of Elight light waves determines that intense pulsed light can deal with a variety of skin problems.

Such as spot removal, red blood streak removal, hair removal and skin rejuvenation, etc., while improving the main causes of skin problems, the wide spectrum can also solve the secondary factors that cause skin problems, while taking into account the role of improving skin aging symptoms, and has the ability to solve multElighte factors of skin problems.

#### 5.4.4 Elight is safer.

Intense pulsed light is a strong light emitted in a pulsed manner. When the light is emitted, the energy is emitted, and the pulse delay cools the target tissue, thus ensuring the safety of the treatment.

#### 5.4.5 In the treatment of pigmented lesions

Laser (such as picosecond laser, Q-switched laser, etc.) has precise action levels and more delicate treatment, especially for small spots, which can treat/improve skin problems in a targeted manner;

Intense pulsed light (such as photon multifunctional treatment platform, etc.) causes less damage and does not affect daily life and work.

#### 5.4.6 In the treatment of vascular lesions

LASER (such as dye laser, etc.) can focus on the hemoglobin absorption peak of 500~600nm, and the treatment is more precise;

Elight can improve skin quality and achieve skin rejuvenation while treating vascular problems.

#### 5.4.7 From the perspective of clinical indications

Laser and intense pulsed light can treat various disfiguring problems such as vascular problems, pigment problems, photoaging problems, acne, epilepsy scars, etc. that are often encountered in skin beauty. However, the two technologies have their own advantages, and the specific choice should be based on the specific situation.

#### 5.4.8 Laser and Elight are indispensable to each other

Elight contains a series of wavelengths, which are effective in skin rejuvenation, hair removal, removal of red blood streaks and certain pigmentation spots, while LASER is more targeted in treatment. For example, for removing pigmentation spots or acne scars, lasers with specific wavelengths are used for treatment, which has better effects.

#### **5.4.9 Freckles recommendations:**

Elight improvement, multiElight treatments;

YAG blasting to remove melanin;

Elight improves spotted freckles in children;

Seborrheic age spots caused by age are more numerous and flat, so Elight improves them;

Seborrheic age spots caused by age are smaller, so use ruby laser;

If the spots are already obviously rough and bulging, CO2 laser treatment may be needed;

If it is chloasma: If YAG treatment is used, a considerable part of chloasma will worsen after treatment if improper care is done, because chloasma is not just a simple pigmentary disease, but also has inflammatory components. If vascular inflammation is the main cause, it is very easy to worsen after laser treatment. Therefore, if you have spots on your face, you must see a doctor to confirm the diagnosis and carry out corresponding treatment. Never go directly to a beauty salon for laser treatment.



# Chapter 6: Start the machine

## 6.1 Before Operation

- ❖ It is necessary that users should read the manual carefully prior to the application of this machine.
- ❖ Consult patients on whether they have any of the contraindications mentioned previously (see diode laser, YAG laser contraindications).
- ❖ It is suggested that this machine is operated in a separate room.
- ❖ Make sure the handle and power cable are well connected into the machine.
- ❖ Please do a physical examination to ensure treatment effect and prevent the anaphylactic reaction.
- ❖ Disinfect the probe and other therapeutic devices.
- ❖ Shave the treated area when doing hair removal and keep it clean.

When the water level alarming icon show red color ,and “ ! ” marker is appeared ,that is mean the water is too less .

Solution: please fill water in time.

## 6.2 Water tank temperature alarming

Water tank temperature value is too high ,and the“ ! ”marker is appeared ,the system will switch to the standby status automatically .

Solution: Please check whether the water circulation component working normal or not, or whether there are any destroy or broken of the components. If all above problems are not seen, please contact the device producer or distributor.

## 6.3. Handle water temperature alarming

Handle temperature value is too high ,and the“ ! ”marker is appeared ,the system will switch to the standby status automatically .

Solution: Please stop to use the handle and wait some time, then turn on the device again. If the handle temperature alarming continues, please contact after-service engineer or your distributor.

## 6.4 Water flow alarming

Water flow alarming

When the water flow lower, the water drop icon is lighted, that is mean the water flow alarming, the device system will switch to the standby status automatically.

Check the water level to see whether there is enough water (add water again). Please check the handle connect well or not, whether there is water leaking. If all the above problems are not seen. Please contact the device seller.

## 6.5 During Operation

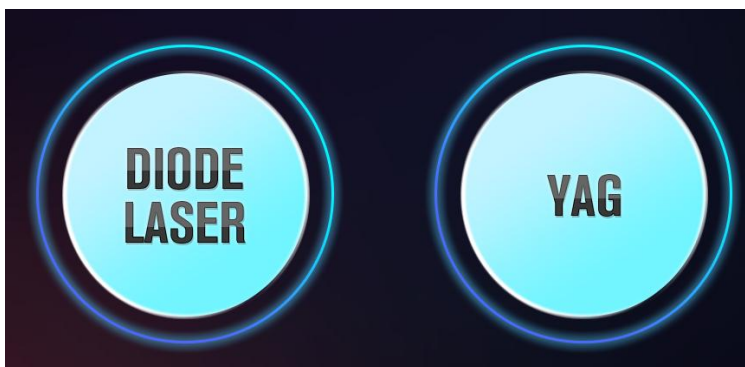
❖ Turn on the machine:

- Lift the emergency button: If the red Emergency Switch is pressed down, the power will be shut off immediately. It should be released when you are trying to start the machine.



- Turn the start key clockwise and then the machine start to work.
- Ensure good water flow. Switch on and off the machine for 2 minutes respectively. Then repeat this cycle for 3 times to normalize the inside water circulation.

After turning on the machine, into system : Diode system or YAG system or Elight system:



Click : DIODE LASER or YAG into system

# Chapter 7: Diode laser hair removal operation

## 7.1 Contraindication ⚡

- (1) History of keloids and photosensitivity disorders;
- (2) A skin infection in the area to inflammation or be treated or a history of herpes simplex;
- (3) Those who have used other forms of hair removal within 6 weeks;
- (4) Those who are allergic to hydroquinones or other bleaching agents;
- (5) Women during pregnancy or lactation;
- (6) Women during menstruation;
- (7) Prohibited for heart disease, hypertensive disorders;
- (8) History of use of 13-cis-retinoic acid (Isotretinoin) within 6 months.
- (9) Those with malignant tumours;
- (10) Other high-risk groups;

## 7.2 system operation:

### 7.2.1 Parameter setting:

When the system in Standby status ,press Ready button the device will switch to the Ready status. When the system in Ready status ,press Ready button the device will switch to the standby status

### 7.2.2 Treatment procedure and How to operate the device:

Before treatment, the operator communicates with the treatment subject in detail, cleans the treatment area with a mild cleansing milk, simply shaves and shaves the treatment area, and finally applies 1 to 2 mm of cold gel on the treatment area.

Start the system and enter the treatment parameter setting interface;

Select according to the actual situation of the treatment object, set the treatment parameters, click the standby/working button to enter the working state.

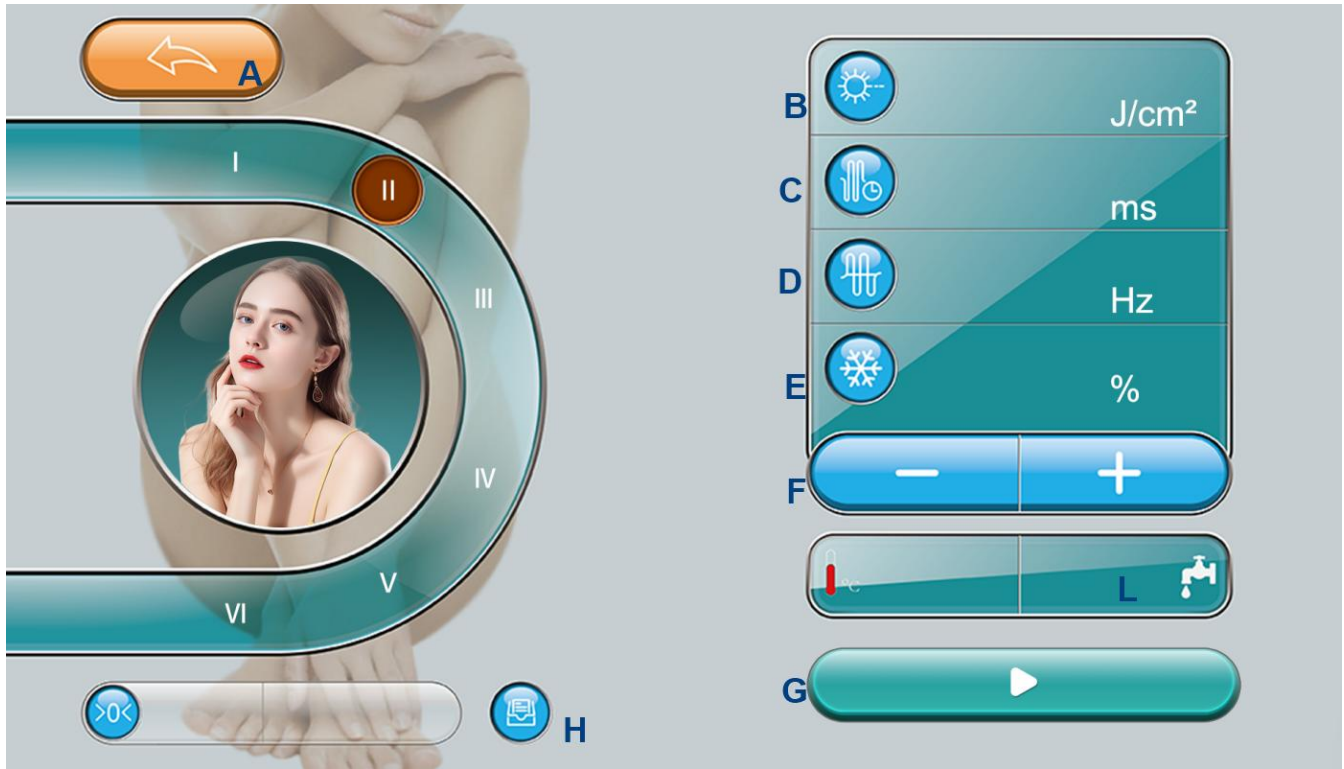
## 7.3 The diode laser system: click “DIODE LASER”Enter the following interface




- 1) Area: face/body;
- 2) Skin type: I, II, III, IV, V, VI;


According to customer's demand to set follow parameter (part/skin color)


‘to enter into the responding treatment interface:




A : return to the previous interface.;

B: Energy, represents the energy of the light emitted, the greater the energy, the better the effect (within the customer's tolerance), click "  ", then adjust "—" or "+", reduce or increase;



C : Pulse width ,represents the treatment time of the emitted light. The larger the pulse width, the better the effect (within the customer's tolerance range); click "  ", then adjust "—" or "+", to decrease or increase;



D : Frequency, represents the speed (number of times) of light emission within 1s. The higher the frequency, the better the effect (within the customer's tolerance range). Click "  ", then adjust "—" or "+", decrease or increase;

E: Cooling. The lower the handle cooling temperature, the more heat the handle will generate when working (energy, pulse width, and frequency will increase heat generation. The faster the handle slides, the faster the heat dissipation (but too fast is not good, the treatment time on the same hair will be reduced. The number of slides can be increased to strengthen the treatment). The handle cooling lowers the

temperature, so it is normal for the customer to feel warm); click " , then adjust "-" or "+", to decrease or increase;

F: Adjustment button. After selecting " BCDE" , adjust "-" or "+" to decrease or increase the BCDE parameters.;

H: :  After set parameters , Must click it to store parameters for direct use next time;

G: :Click "Ready" to enter  "Standby", the handle starts cooling, then press and hold the handle button, the handle will start to work;


Click the main interface button  and  to start and stop working.

(1) Adjust parameter: "ENERGY", "PULSE WIDTH", "ENERGY" according to the actual treatment needs of the patient (Please refer to the recommended parameters in the next part).

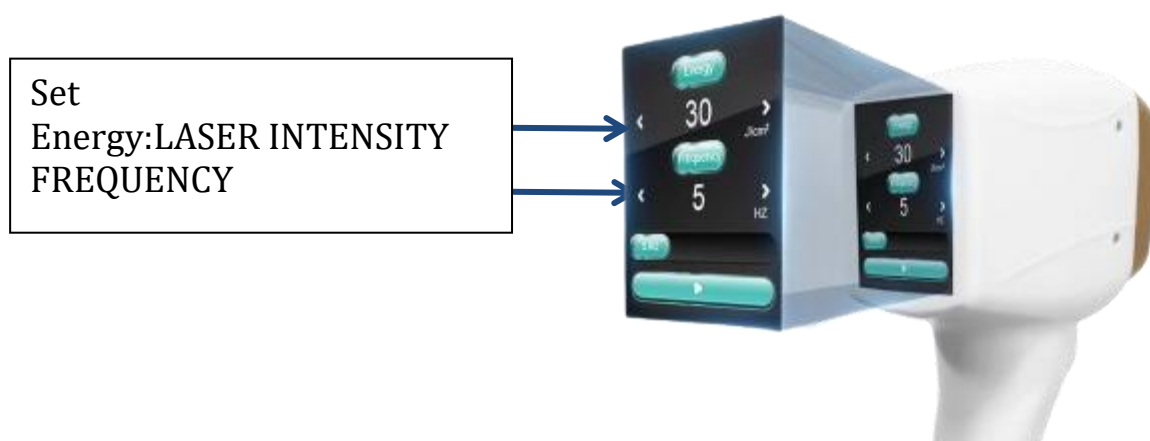
(2)"FLUENCE" is affected by pulse width, frequency and laser intensity. When any one of them changes, it will change automatically.

(3)The intelligent system let the 3 wavelength work together (755nm, 808nm, 940nm, 1064nm) based on the parameter settings, no manual selection required.

- Click the button "-" and "+" to reduce and increase the value.

- Click the button "  " to return to the previous interface.

Just swipe the screen to perform the corresponding operation, efficient and convenient.



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1. Because of the skin color and personal physical differences, each person's tolerance is different, and using parameters will be different. They can be appropriately increased or decreased according to the reference value of the table.

When the customer feels that the heat is not obvious, increase the table parameters appropriately.

When the customer feels that the heat is too high, appropriately lower the table parameters.

2. Adjust the parameters according to operating proficiency. When the operation is proficient, the frequency can be appropriately increased. When the operation is not proficient, the frequency can be appropriately lowered;

3. Be sure to slide at a constant speed during operation. The sliding speed will be faster when the frequency is high, and the sliding speed will be slower when the frequency is low.

When the energy is strong, you can slide one part repeatedly 3-5 times, and then remove to other parts and repeat the operation until the skin is reddish, the hair follicles protrude, and the hair can be easily pulled out to achieve the best hair removal effect.

## 7.4 Preparation before treatment and use handle

(1) 12-24 hours before treatment, use a razor to hang off the hair (it is recommended to use a razor to hang off the hair while taking a shower one day in advance; if it is a beard, it is better to shave it again before treatment).

(2) Apply 1-2mm of cold gel on the treatment area (apply cold gel to the current treatment area in sequence);

**Daub ultrasonic Gel on the skin in 1-2mm thick.**



(3) Put on protective goggles for operator and patient to protect their eyes from the laser.

(4) Make the treatment tip contact tightly with the skin, and then slide the handle at a constant speed back and forth for about 4 ~ 5 times.

(5) Handle Contact the skin horizontally, slide first, and then gently press the handle button (without releasing it). When you want to stop treatment, release the handle button first, and then stop sliding.

Pay special attention: the handle treatment head needs touch skin during treatment. It is attached to the skin, and it will feel hot if you leave it; but do not



press the handle too hard, rely on the weight of the handle to press on the surface of the skin;

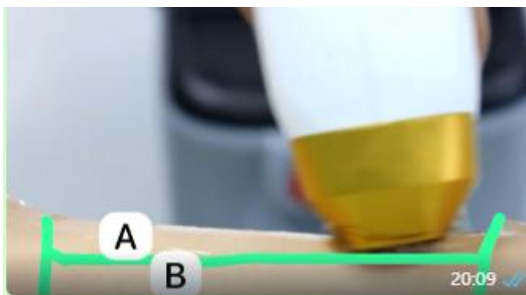


Use the diode laser handle to slide back and forth on the treatment area as shown in the video. If the customer has a strong tolerance (high parameters, good treatment effect, and fewer sliding times), if the customer has a weak tolerance (dark skin color, low parameters), more sliding times.

(6) During the treatment process, the operator should observe the treatment status of

(7) the treatment subject in real time, and adjust the treatment parameters according to the actual situation if necessary;

(8) During the treatment process, the treatment head should avoid staying in the same treatment site for a long time; the operator and the treatment object should do protective work in real time to avoid injury;



- For example, you can slide back and forth a few times in area “A”, treat area “B”, and then return to area “A” for treatment. Based on the post-treatment condition, determine whether the treatment is complete.
- There is no set number of times: sliding speed, frequency, energy. During each treatment, the treatment head must be close to the skin, and it will feel hot when it leaves the skin!
- Generally, slide 6-10 times to see the changes in skin and hair (the better the setting parameters are, the better it is based on the customer's feelings);

(9) After treatment, clear the gel on the handle and put it back into the machine.

NOTE: Any sudden situations, please press the Emergency Button to stop working.

|   |   |
|---|---|
| The white skin and lighter Skin                       | 1.Increase the power engery                               |
|   | 2.Decrease the pluse delay=(pluse interval) more cooling  |
| The daker skin  | 1. Decrease the power energy                              |
|   | 2. Increase the pulse delay ( allow more cooling)         |
| The lighter the hair /pigments                        | 1.Increase the power engery                               |
|   | 2. Decrease the pluse delay= ( pluse interval)            |
| The darker the hair/ pigment lesion                   | 1. Decrease the power engery                              |
|   | 2.Increase the pluse delay= (pluse interval) more cooling |
| Fine Blood Vessels ( vascular lesion)                 | 1.Increase the power engery                               |
|   | 2. Decrease the pluse delay= ( pluse interval)            |
| Thick Blood vessels                                   | 1. Decrease the power engery                              |
|   | 2. Increase the pluse delay= ( pluse interval)cool more   |
| The smaller the target size / lesion ( vascular)      | 1.Decrease pulse delay                                    |
| The larger the target size/ lesion ( vascular)        | 1. Increase pulse delay ( allow more cooling )            |
| Bony prominences (forehead, molar area, shin, bikini) | 1. Decrease the power energy                              |

## 7.5 Parameter definition explanation

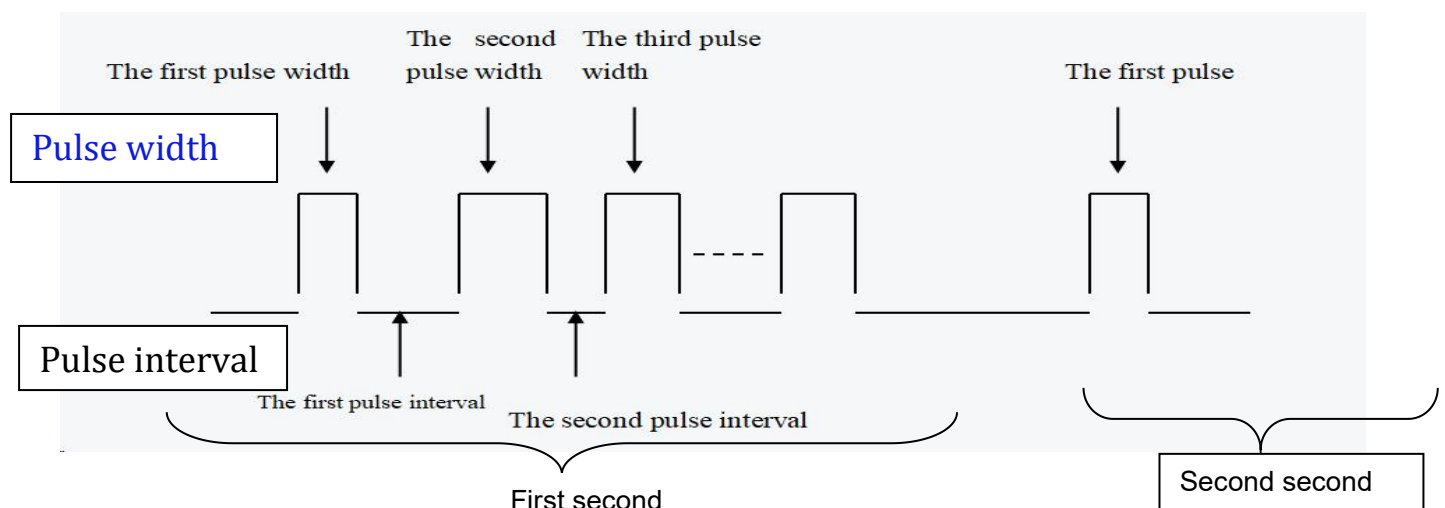
**Energy:** diode laser energy affects the effect and can be expressed as felt heat;

**Pulse width:** the treatment time generated by each light output;

**Frequency:** the number of times light is emitted per second;

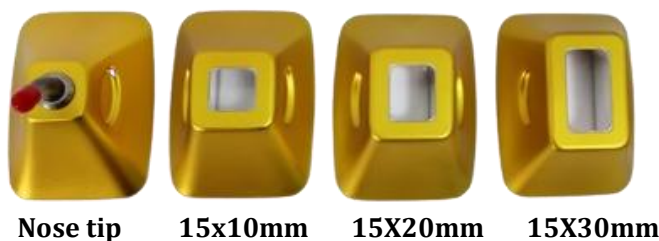
**Pulse interval:**stop shot light , so can cool,It is related to frequency;





For example

- 1) the energy is 20J, which is very low and will not feel too hot, so customers can tolerate increasing the pulse width;
- 2) The energy is 50J and it feels very hot. To shorten the light treatment time (pulse width), the treatment time will be reduced. In order to achieve good results, you can increase the number of times of light per second (frequency) to increase the cumulative treatment time;
- 3) According to the test, the smaller the spot, the greater the energy will be with the same parameters, so it is necessary to reduce 2J;



- 4) PrincElight: diode laser light destroys the melanin group in the hair follicles, making them unable to provide nutrition to the hair, causing the hair to become thinner, grow slowly, and finally stop growing;

## **Chapter 7: Diode laser hair parameter recommendations**

### **7.1 The advantage of the new system:**

The parameters can be adjusted according to skin color, part of body, and hair condition, and the treatment parameters can be automatically stored, which is convenient for the next use.

What we give is only the recommended safety parameters, which are suitable for everyone. The specific parameters need to be adjusted according to the customer's feelings, suggest to test with low parameters first, according to

①customer feeling(Women and children have lower tolerance and the treatment parameters for the same location are lower than those for men;);

②sliding speed (slow sliding, low parameters are better than fast sliding);

part (face, bikini area has low tolerance, parameters need to be lower than other parts),

Sensitive parts, such as face, arm, bikini, need to reduce energy parameters, lower frequency or a smaller pulse duration .

③hair condition (dark/coarse/dense, need to reduce parameters), for example:  
skin color: from I to V, lower frequency, energy, a smaller pulse duration,

④spot (small spot, high energy concentration, need to reduce parameters than large spot);

- Generally, the armpits, beards, bikini, and chest areas have abundant hair, which absorbs more energy. It is recommended to increase the cooling, reduce the energy, or the pulse width. The parameters must be adjusted according to the customer's feelings.

- For areas with sparse or fine hair, you can increase the energy or pulse width to achieve better results;

- Increasing the energy, pulse width, and frequency will cause the hair to absorb more energy and increase the treatment effect, but the client should feel warm, not hot, so the parameters must be set according to the client's feelings;

- Because of the skin color and personal physical differences, each person's tolerance is different, and using parameters will be different. They can be appropriately increased or decreased according to the reference value of the table. When the customer feels that the heat is not obvious, increase the table parameters appropriately.

- When the customer feels that the heat is too high, appropriately lower the table parameters.

- Adjust the parameters according to operating proficiency.
  - When the operation is proficient, the frequency can be appropriately increased.
  - When the operation is not proficient, the frequency can be appropriately lowered.
- Be sure to slide at a constant speed during operation.
- The sliding speed will be faster when the frequency is high, and the sliding speed will be slower when the frequency is low.
- When the energy is strong, you can slide one part repeatedly 3-5 times, and then remove to other parts and repeat the operation until the skin is reddish, the hair follicles protrude, and the hair can be easily pulled out to achieve the best hair removal effect.
- The above parameters are for reference only.
- The specific parameter values need to be flexibly adjusted from low to high according to the customer's tolerance and the treatment area. If the customer feels that the energy is low, you can increase the energy appropriately.
- Generally, you should start with low parameters and increase the parameters according to the customer's feelings. Also pay attention to the sliding speed (pay attention to applying cold gel to help slide and cool down. The customer's treatment area will feel warm, smell of burned hair, and pores will protrude. Like goosebumps, it means a good effect);

## **8.2 : shave hair**

Please shave hair 1-2 days in advance, Increase energy based on customer experience, if smells the scorched hair, removes the hair with tweezers, no pain, the best effect.

## **8.3 Treatment interval:**

One treatment /per month;

course of treatment: continued 3-4 time treatment;

suggest increased more 1-2 times until the permanent epilation result is achieved.

## **8.4 Treatment effect judgment:**

- It is recommended to shave the hair one day in advance when taking a shower (beards need to be shaved again before treatment). If you smell a burning smell, use tweezers to pull out the hair that is out of the skin without pulling the skin! If the skin is red and the pores are raised like goose bumps, it means that the treatment has achieved a good effect!
- In theory, the treatment is performed once a month, and after 3-5 treatments,



permanent hair removal can be achieved! The number of treatments required varies for different treatment areas. The better the effect of each treatment, the fewer treatments are needed!

### 8.5 Notice: suggestion parameter list:

The above parameters are for reference only! Please adjust parameters according to the patient's feelings. (The system has set recommended parameters)

| Skin Type I    |                             |                |                   |                 |
|----------------|-----------------------------|----------------|-------------------|-----------------|
| Treatment area | Energy (J/Cm <sup>2</sup> ) | Frequency (HZ) | (Pulse Width /ms) | Cooling 10-100% |
| Face           | 35-40                       | 3--4           | 40-60             | 30%-50%         |
| Arms           | 40-45                       | 4--5           | 60-80             | 40%-50%         |
| Armpit         | 35-40                       | 3--4           | 70-90             | 50%-70%         |
| Chest          | 40-45                       | 3--4           | 65-95             | 40%-60%         |
| Shoulder       | 35-40                       | 4--5           | 55-85             | 40%-50%         |

|                |                |                |                |                 |
|----------------|----------------|----------------|----------------|-----------------|
| Abdomen        | 40-45          | 3--4           | 75-95          | 40%-60%         |
| Legs           | 40-45          | 3--4           | 65-85          | 40%-60%         |
| Back           | 40-45          | 4--5           | 70-90          | 40%-50%         |
| Bikini         | 35-40          | 2--3           | 40-60          | 40%-50%         |
| Skin Type II   |                |                |                |                 |
| Treatment area | Energy (J/Cm²) | Frequency (HZ) | Pulse Width ms | Cooling 10-100% |
| Face           | 30-35          | 3--4           | 30-50          | 30%-50%         |
| Arms           | 35-45          | 4--5           | 55-70          | 40%-50%         |
| Armpit         | 30-35          | 3--4           | 60-80          | 50%-70%         |
| Chest          | 35-45          | 3--4           | 60-85          | 40%-60%         |
| Shoulder       | 35-40          | 4--5           | 50-80          | 40%-50%         |
| Abdomen        | 35-45          | 3--4           | 65-85          | 40%-60%         |
| Legs           | 35-45          | 3--4           | 55-75          | 40%-50%         |
| Back           | 35-40          | 4--5           | 65-85          | 40%-50%         |
| Bikini         | 30-35          | 2--3           | 35-55          | 50%-70%         |
| Skin Type III  |                |                |                |                 |
| Treatment area | Energy (J/Cm²) | Frequency (HZ) | Pulse Width ms | Cooling 10-100% |
| Face           | 28-33          | 3--4           | 30-40          | 50%-60%         |
| Arms           | 38-43          | 4--6           | 50-60          | 30%-50%         |
| Armpit         | 28-33          | 3--4           | 50-65          | 50%-70%         |
| Chest          | 38-43          | 3--4           | 50-70          | 40%-60%         |
| Shoulder       | 33-38          | 4--6           | 45-65          | 40%-60%         |
| Abdomen        | 38-43          | 3--4           | 55-70          | 30%-50%         |
| Legs           | 38-43          | 3--4           | 45-60          | 30%-50%         |
| Back           | 33-38          | 4--6           | 55-65          | 30%-50%         |
| Bikini         | 28-33          | 2--3           | 30-40          | 50%-70%         |
| Skin Type IV   |                |                |                |                 |

| Treatment area | Energy (J/Cm <sup>2</sup> ) | Frequency (HZ) | Pulse Width ms | Cooling 10-100% |
|----------------|-----------------------------|----------------|----------------|-----------------|
| Face           | 25-30                       | 3--4           | 25-35          | 40%-60%         |
| Arms           | 35-40                       | 4--5           | 40-60          | 30%-50%         |
| Armpit         | 25-30                       | 3--4           | 30-50          | 30%-50%         |
| Chest          | 35-40                       | 3--4           | 40-60          | 30%-50%         |
| Shoulder       | 30-35                       | 4--5           | 40-50          | 30%-50%         |
| Abdomen        | 35-40                       | 3--4           | 45-60          | 30%-50%         |
| Legs           | 35-40                       | 3--4           | 35-50          | 30%-50%         |
| Back           | 30-35                       | 4--5           | 45-55          | 30%-50%         |
| Bikini         | 25-30                       | 2--3           | 20-35          | 40%-60%         |
| Skin Type V    |                             |                |                |                 |
| Treatment area | Energy (J/Cm <sup>2</sup> ) | Frequency (HZ) | Pulse Width ms | Cooling 10-100% |
| Face           | 20-25                       | 3--4           | 20-30          | 40%-60%         |
| Arms           | 30-35                       | 4--5           | 20-40          | 40%-60%         |
| Armpit         | 20-25                       | 3--4           | 25-40          | 40%-60%         |
| Chest          | 30-35                       | 3--4           | 30-50          | 40%-50%         |
| Shoulder       | 25-30                       | 4--5           | 30-40          | 40%-50%         |
| Abdomen        | 30-35                       | 3--4           | 35-50          | 40%-50%         |
| Legs           | 30-35                       | 3--4           | 25-40          | 40%-60%         |
| Back           | 25-30                       | 4--5           | 35-45          | 40%-60%         |
| Bikini         | 20-25                       | 2--3           | 15-28          | 40%-60%         |
| Skin Type VI   |                             |                |                |                 |
| Treatment area | Energy (J/Cm <sup>2</sup> ) | Frequency (HZ) | Pulse Width ms | Cooling 10-100% |
| Face           | 15-20                       | 3--4           | 15-25          | 40%-50%         |
| Arms           | 25-30                       | 4--5           | 20-35          | 40%-60%         |
| Armpit         | 15-20                       | 3--4           | 20-30          | 50%-60%         |
| Chest          | 25-30                       | 3--4           | 25-40          | 40%-50%         |

|          |       |      |       |         |
|----------|-------|------|-------|---------|
| Shoulder | 20–25 | 4--5 | 25–35 | 40%–50% |
| Abdomen  | 25–30 | 3--4 | 25–40 | 40%–50% |
| Legs     | 25–30 | 3--4 | 20–35 | 40%–50% |
| Back     | 20–25 | 4--5 | 25–35 | 40%–50% |
| Bikini   | 15–20 | 2--3 | 10–20 | 50%–60% |

Frequency and the corresponding maximum pulse width

|                |     |    |    |    |    |
|----------------|-----|----|----|----|----|
| Frequency/HZ   | 2   | 3  | 4  | 5  | 6  |
| Pulse width/ms | 150 | 99 | 75 | 60 | 48 |
| Frequency/HZ   | 7   | 8  | 9  | 10 |    |
| Pulse width/ms | 42  | 36 | 33 | 30 |    |

## 8.6 Precautions after Diode laser treatment

- (1) During treatment, the residence time of the treatment head at the treatment site should not be too long;
- (2) Use wet wipes or wet towels to gently wipe and clean the cold gel on the treated area;
- (3) Within 24 hours after treatment, avoid using hot water to take a shower, avoid using antiperspirant, and avoid swimming in the pool with High chlorine. (After 12 hours, you can use warm water to clean the cold gel, and the time is not recommended to exceed 20 minutes without cleaning products;
- (4) After treatment, the skin will be red, which will disappear after 1-2 days;
- (5) Please use the soft neutral cleaning products and warm water to clean skin after 3 days;
- (6) Massage and aerobic exercises are prohibited within a week.
- (7) For the treatment site, avoid sweating in sauna bath for 3 to 7 days;
- (8) Avoid high humidity and heat environment;
- (9) In one month after treatment, prohibit eating spicy, seafood, irritating food; eat less sensitive vegetables (for example, celery, white radish, spinach, coriander, etc.)
- (10) Pay attention to sunscreen, avoid direct sunlight after treatment. When going out apply sunscreen or sunscreen spray (sun protection factor 30 +). If the UV is strong in summer, you can wipe it up a few times, wear a parasol or wear a sun hat and please use high SPF sun cream and avoid sunburnt .

(11) Avoid chemical or mechanical stimulation for 7 days after treatment. The use of functional cosmetics on the treatment site has been prohibited within the past month. A light make-up is available after the treatment , But the operator suggests to stop the make-up ,once there is any destruction or infection and contact your beautician or doctor to help you.

(12)Use a moisture face mask to supply more water to your face .

(13)Use the VC cream or neutral moisture cream to protect the skin .



## Chapter 9: Precautions before YAG laser treatment

### 9.1 Is it suitable for YAG laser treatment?

Different methods should be adopted according to the cause of pigmentation.

Common removal methods are divided into the following categories:

(1) Congenital pigmentation skin diseases: such as freckles, freckle-like nevus or Ota nevus, etc., can be treated with picosecond laser or Q-switched laser treatment, which can achieve good results. Café de café spots are also congenital pigmentation skin diseases and can be treated with laser;

(2) Acquired penetrating pigmentation: such as eyebrow tattoos, tattoos, etc., can be treated with YAG laser;

(3) Acquired pigmentation skin diseases: such as melasma, post-inflammatory pigmentation spots or cosmetic pigmented dermatitis, etc., should be treated with drugs. Patients should pay attention to avoid light and sun protection to avoid worsening pigmentation. They can often use sunscreen, umbrellas, and straw hats. Topical treatment can be topical tyrosinase inhibitors, such as hydroquinone cream, or topical retinoic acid cream at night. It can also be combined with oral vitamin C or a vitamin C mask.



## **Matters that can Influence Laser Treatment**

There are many factors which can affect the results of successful treatments and complete removal is not always achievable.

Clients should be given realistic expectations of treatment results, and complete removal of pigment can never be guaranteed.

### **9.2 YAG laser treatment: Contraindications People**

#### **9.2.1 Commonly not suitable for people**

Operator must record details of the client's medical history. All patients must complete and sign the history profile prior to treatment. The medical history is reviewed and confirmed with the patient during their consultation.

DO NOT treat anyone with the following conditions unless client obtains a signed letter from his/her doctor confirming that the medical condition(s) will not prevent client from having laser treatments;

- (1) A skin infection in the area to inflammation or be treated or a history of herpes simplex;
- (2) Skin inflammation or damage;
- (3) Keloid or very thick scarring: Some clients are prone to raised scars even if the wound is small;
- (4) Women during menstruation,
- (5) and photosensitivity disorders;;
- (6) Caution: Prohibited for heart disease, hypertensive disorders;
- (7) Those who have used other forms of tattoo removal within 6 weeks
- (8) Those who are allergic to hydroquinones or other bleaching agents;
- (9) Those with malignant tumors;
- (10) Other high-risk groups;
- (11) Pregnant or Breastfeeding;
- (12) Lupus or other autoimmune deficiency;
- (13) Bleeding abnormalities;
- (14) Treatment of Acne in the last six months;
- (15) Inflammatory Skin Conditions (e.g: Psoriasis) or Injuries;
- (16) Hypo-Pigmentation;
- (17) Rheumatoid Arthritis "Gold" Therapy;
- (18) Herpes simplex or fever blisters;
- (19) Diabetes;
- (20) Epilepsy;

- (21) Cancer;
  - (22) HIV/AIDS;
  - (23) Used St John's Wort in the past 3 months;
  - (24) Newly Tanned skin (includes; natural suntan, tanning bed, fake tans) in last 30 days;
  - (25) Waxing/Plucking/Electrolysis/Sugaring within last 6 weeks;
  - (26) Wearing a Pacemaker, or any Metal Pins/Plates;
- Note: This list is not fully comprehensive and other factors may arise during consultation.

### 9.2.2 Common photosensitivity factors

Many prescription drugs and herbal remedies can cause increased Photosensitivity meaning the skin becomes more sensitive to light.

Photosensitivity reactions are generally either Photo-Toxic or Photo-Allergic. Photo-toxic drugs are more common than photo-allergic drugs. Reactions can include:

1. Extreme sunburn
2. Swelling
3. Stinging and Burning
4. Hives

It is important that you obtain a list of common photosensitising medications for reference.

### 9.2.3 Skin Typing

One of the important parameters for the success of laser treatments is the correct typing of the skin.

Skin type is often categorized according to the Fitzpatrick skin type scale, which ranges from very fair (skin type I) to very dark (skin type VI). The two main factors that influence skin type and the treatment programme devised by physicians are:

- ① Genetic disposition
- ② Reaction to sun exposure and tanning habits

Skin type is determined genetically and is one of the many aspects of your overall appearance, which also includes the colour of eyes, hair, etc. The way skin reacts to sun exposure is another important factor in correctly assessing skin types. Recent tanning (sun bathing, artificial tanning or tanning creams) has a major impact on the evaluation of your skin colour. Treat as the next darker type if unsure.

### **9.3 Before treatment, do energy testing 2 weeks in advance;**

### 9.3.1 Client Consent

All patients must complete and sign client consent to the treatment form prior to treatment. The medical history is reviewed and confirmed with the patient during their consultation.

### 9.3.2 Patch Test

Patch tests should be applied to establish the highest level of energy that the patient's skin can tolerate without adverse reaction.

- (1) Determine the patient's skin type and select the settings for the three test spots accordingly.
- (2) Remove any make-up or lotions and cleanly shave the area to be tested. Make sure the area is completely dry.
- (3) Each test spot should be clearly delineated. Increasing energy for each successive spot left to right or bottom to top for consistency in assessment and documentation.
- (4) After 5-10 minutes, record the initial reaction on the test spot notes.
- (5) Test spots on patients with skin types V and VI should be at least 2 weeks prior to treatment in case of late emerging side effects. Other skin types may not have to wait as long.
- (6) Upon return, treat the patient at the highest energy tested that did not cause an adverse reaction (crusting, blistering or pigment change).

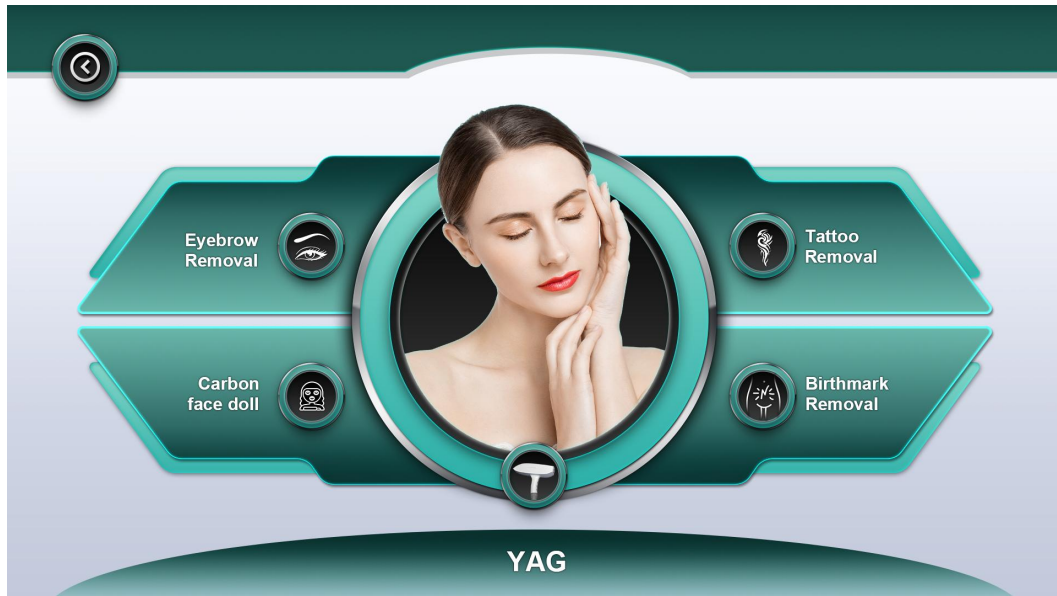
### 9.4 Pre-treatment advice

1. We advise you take the second treatment 4-6 weeks after the first;
2. You can shave the eyebrow before removing the eyebrow with a device in order to examine the effect;
3. Take photos before and after every treatment for reference;
4. We advise you that you should treat large tattoos and nevus little by little and time by time to avoid much discomfort to the client. You can also help build client confidence by seeing the contrast between before and after the treatments.
5. There may be the sound of the pigment breaking when you treat the deep tissue of the tattoo because of the strong absorption to laser energy with 1064nm. The tint colour of the pigment can come out the cuticle after absorbing the energy;
6. Use a lower energy over bony and thin-skinned areas;
7. The results of tattoo removal will be more noticeable in the first few treatments, due to there being more pigment;
8. The function of digesting and transportation of the macrophage can continue for a long time, and the colour can fade more during this period;

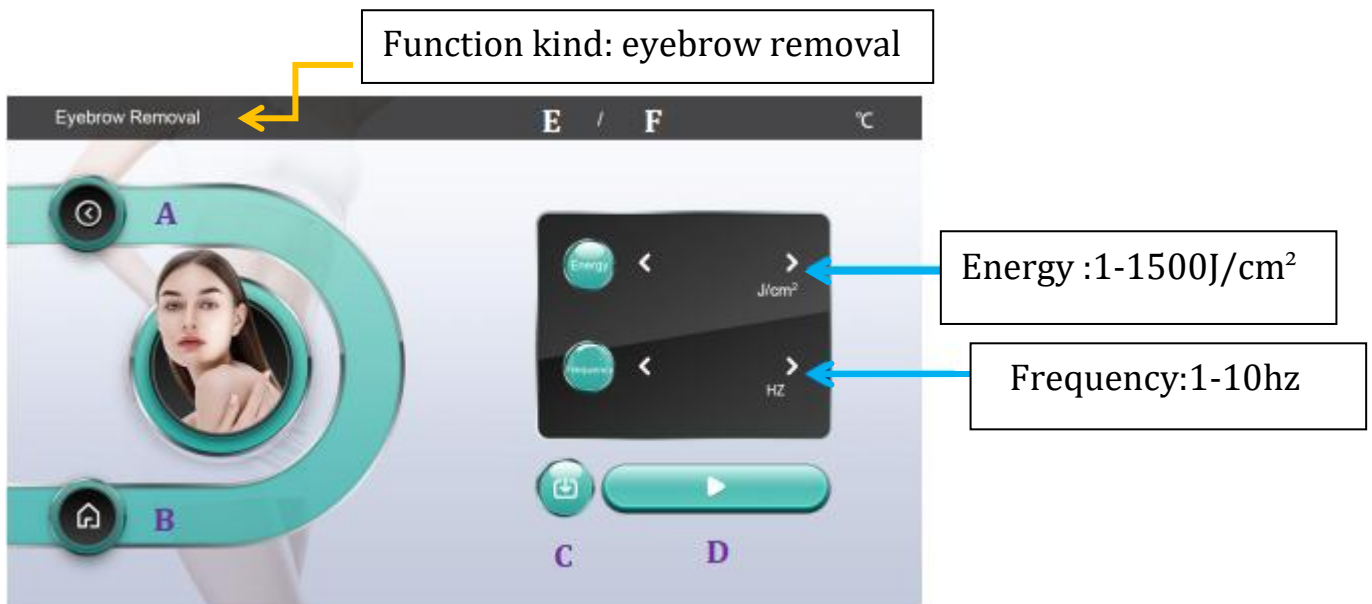
# Chapter 10: YAG tattoo removal system operation

## 10.1 choose YAG laser system

Click “ YAG” Enter the following system



## 10.2 Then click function: “Carbon face doll/Eyebrow removal/tattoo removal/Birthmark removal; Enter the following system:



(1) Choose function: Eyebrow removal;



(2) A: Click “ ”, Return to the function selection interface;



(3) C: Click “ ” Store the set parameters for direct use next time;

(4) D: Click ready button “  ” to Standby “  ”,



its mean: The handle is in the waiting work state; The handle will emit a red light (aimed at the treatment position),

(5) E: the handle work shots after start machine by this time;

(6) F: the total of handle work shots after you got the machine(There is also a counter on the handle);

(7) If you keep pressing the foot switch, the handle will keep shooting light(If your machine has a handle button that can also control the light output from the handle, please pay attention to safety when holding the handle, and the treatment head should face the ground to avoid injury);



(8) To end treatment or temporarily stop treatment, please release the foot pedal switch while the handle will stop working; then please click the standby button “  ” to the ready button “  ” to ensure that you do not accidentally step on the foot pedal switch to cause danger;

(9) If the beauty operator who have no experience in YAG operation, please should practice with YAG handle with 1320nm head first (for the treatment of black face doll skin rejuvenation, handle can only blast carbon scream, and align it with other parts without causing harm, but customers must wear goggles to protect their eyes);



# Chapter 11: 1320nm head of YAG laser treatment

## **11.1 Principle and function of 1320nm:**

Apply a thin layer of carbon cream on the face, wait for the carbon cream to dry, and then use the 1320nm treatment head to treat the skin, so that when YAG laser light shoot on face, the carbon cream explodes and take off the dirt and oil which in the pores, avoiding pore blockage and acne formation;

Black face doll is a very common for skin rejuvenation project, suitable for people of all ages and genders, without side effects.

Black face doll: shrink pores, balance grease secretion, tightening remove fine lines, the treatment of black head, acne, rough skin, light epidermis blain blain to print.

## **11.2 Taboos:**

- 1) People who are allergic to carbon should not experience it
- 2) Not suitable for pregnant women
- 3) Not suitable for Light sensitive

## **11.3 Test:**

Apply carbon cream behind the ears and wait for 15 minutes to see if there is an allergic reaction;

## **11.4 Precautions before treatment:**

clean the face without leaving any skin care products;

## **11.5 Precautions after treatment:**

### **1. Replenish water and cool down**

After treatment, clean the face with warm water. There will be short-term reactions such as redness, swelling and heat on the face. It is necessary to quickly cool down and replenish water. The doctor recommends using a collagen surface patch or a moisturizing mask (put the mask in cold water or refrigerator in advance), which can absorb quickly Heat, cooling, hydrating, antibacterial, can promote epidermal growth and metabolism.

### **2. Pay attention to sun protection**

After treatment, it is necessary to avoid direct sunlight and ultraviolet rays, and it is necessary to strengthen sun protection. It is recommended to use sunscreen above SPF30-50, and bring a parasol or hat when going out to do physical sun protection.

### **3. Do not use irritating skin care products**

Do not use skin care products containing fruit acid, A acid, salicylic acid, exfoliating, high-concentration vitamin C, alcohol and other irritating ingredients within one week after treatment. At the same time, don't wear heavy makeup, and don't use exfoliating and



scrubbing products that stimulate the skin.

### 11.6 Operation guidance

- (1) Install 1320 nm head to YAG handle, 1320 nm is black
- (2) Clean face (Don't leave any skin care products on your face);
- (3) Use a makeup brush or thin wood chips to apply carbon cream on the face  
(Remember to apply evenly, quickly and in a thin layer):

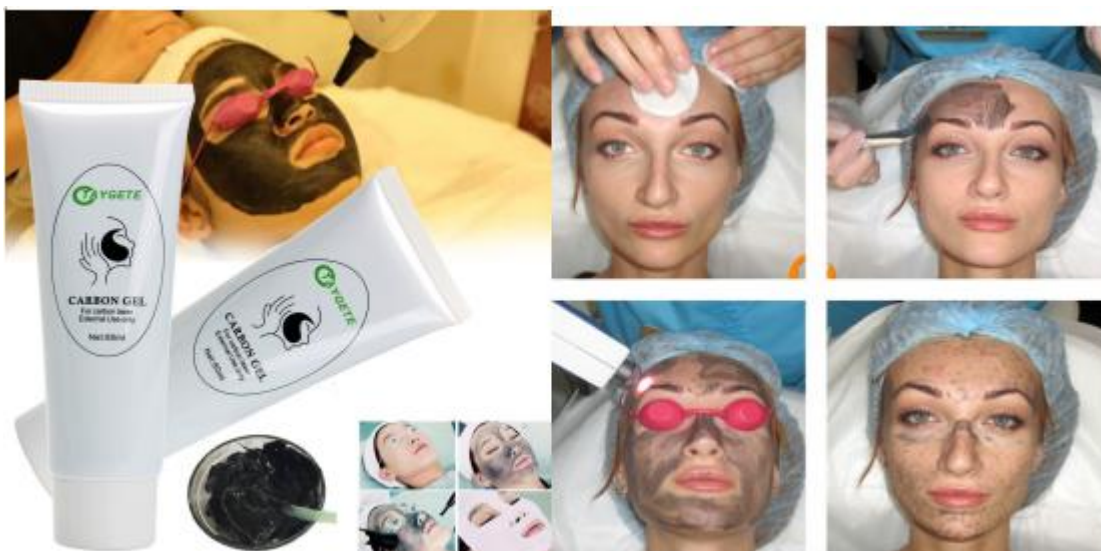


- (4) Wait for the carbon cream to completely dry, then adjust the parameters and prepare for treatment (such as video), **When treating, clients need to bring safety goggles;**



Applying too much or too little will not work; PrincElight: Exploding carbon scream, taking away pores dirt and pores oil

The frequency determines the light output speed, and needs to be set according to your proficiency;



(5) Parameter suggestion (suitable for me, so you should adjust it according to your customers' feeling)

Red part: 650-780J/M2

Blue part: 550-750J/M2

Green part: 480-650J/M2

There are fragile parts on the face and the energy should be lowered. You have to ask the customer's feelings, but you must ensure that the facial toner is crushed, the splash is clean, the toner will take away the pore waste and oil.



(6) do as video: operation video, adjust the parameters to ensure that the carbon cream is hit clean (this can take away the blackheads and grease in the pores),

Parameters need to be adjusted according to customers' feelings and effects;

(7) After treatment: face is clean

(8) After treatment, use a cotton pad or warm water to clean the face. After cleaning, it is recommended to make a moisturizing mask and use moisturizing skin care products:



If the exploded carbon powder sticks to the 1320nm lens, you can use a cotton swab dipped in alcohol to wipe it off, but don't use too much force;

# Chapter 12: Operation Skill of YAG tattoo removal laser

## **12.1 Nd yag laser function :**

The sapphire Q-switch laser tattoo & eyebrow removal equipment can effectively cure pathological changes of endogenous and exogenous pigment formed by mixed pigment--pigment deposit cause by operative errors on dark embroider eyebrow, embroider lip, soak lip, embroider eye line, lip line, tattoo (including traumatic tattoo), allergy source pigment, such as black, blue, green, purple, brown and red color in freckles, cafe-au-lait spots, age pigment, black naevus, etc.

(1)-Tattoo removal;

(2)- eyebrows removal;

(3)-Freckle removal;

(3)-1064nm: Removal Black, blue, green color tattoo ,eyebrows, freckle , nevus etc pigmentation

(4)-532nm : Removal Red, brown color tattoo ,eyebrows,freckle ,nevus etc pigmentation.



## **12.2 Different light rays of YAG laser destroy corresponding pigments?**

(1) The penetration depth of the 1064nm wavelength YAG laser into normal pigmented skin tissue is about 4mm, remove dark-colored tattoos, black and blue pigment particles, traumatic pigment, nevus of Ota.

Indications: Black lip line, eyebrow, eyeliner tattoo removal (black, blue), Remove nevus of Ota, blue nevus, various pigmentation tattoos etc.

(2) The penetration depth of the 532 nm wavelength laser is only about 0.3mm. It can be used to wash red lips, brown eyebrow tattoos, port wine stains (purple birthmarks), brown and red moles on the cheeks, and permanently remove freckles and spider nevi.

Indications: Removal of birthmarks, café-au-lait spots (spots (coffee color)), age spots, freckles,

### **12.3 Preparation before YAG laser treatment by:**

(1) Before each treatment, the user must check the functional performance of the device in order to avoid any risk of harm to patients or other persons. If the device is used in together with peripheral units, the User's Manuals for the peripheral units must also be read thoroughly and understood.

(2) Operators should complete a consultation and build a client file.

The patient fills out the informed consent form for the surgery to let the customer know the indications of the machine, exclude contraindications, and understand the number of treatments, post-treatment reactions and nursing requirements;

(3). Do not take photosensitive drugs, such as retinoic acid, isotretinoin, etc. before treatment;

(4). Taking photos can be used as a basis for comparing the effects before and after treatment, and is also an effective way to reduce medical disputes;

(5). Prepare surgical necessities: eye protection, tissue, headscarf, cold compress bag, erythromycin ointment, topical anesthetic, etc.

(6). Clean the treatment area and disinfect it with 75% alcohol, and put on eye protection for the patient;

Clean the treatment area, disinfect utensil, and shave the treatment area if necessary. You must pay attention that the area to be treated must be dry, as the treatment will be affected if there is water in the treatment area.

(7). Skin preparation. For first-time treatment and patients who are sensitive to pain, you can apply topical anesthetic cream (laser surgery generally does not require anesthesia). You can

lightly rub the treatment area with anesthetic half an hour in advance, or use a cold compress bag to cool the treatment area for 15 to 30 minutes;

(8).Disinfect the treatment head and adjust the parameters to ensure that the wavelength and light spot on the machine and handle are consistent with those on the control panel.

#### **12.4 Demands before operation**

(1)The operator should wear white clothes and relevant wavelength glasses. Keep the operation room clean and make sure illumination is bright enough.

(2)You should keep the room temperature is between 22 and 28°C;

(3)avoid the laser irradiating non treatment area.

(4)The illumination of the operation room must strong enough in order to enlarge indoor occupants' pupil.

(5)Don't use the specular reflection articles while you use the laser machine.

(6)The operator must know about the diseases and symptoms of the sufferers and tell them the possible normal responses during and after operation.

(7)Operators who are professional must keep the laser beam away from non-treated areas.

(8)Operators must make sure the safe of the eyes of sufferer when treating the embroider eye line, because the harm to eye is irreversible.

1. No inflammation in the treatment part.

2. No treatment for pregnant woman.

3. Fomentation on the treatment part avoid skin dehydration.

4. No cosmetic left, clean the treatment part.

5. Taking photo before treatment, compare the effect after operation.

#### **12.5 Preoperative Q&A Registration ( as informed consent Q&A)**

(1)Notice

first you should ask the customer if he\her is scar physique, if had changed skin, if he\her is allergic skin, if he\her is shaded eyebrow or removed eyebrow, tattoo by other ways. You should examine that if the treatment area already has scar, and you should tell the sufferer that maybe there is pigmentation sometimes later after you remove the pigment, and these pigments are caused by sunshine and he\her can get treatment one and a half months later.

(2)the operator should tell the sufferer the situation and treatment princElighte during the treatment using the 1064nm to treat the black and blue pigment in case the unnecessary bothers.

(3) You can shave the eyebrow before removing the eyebrow with a machine in order to examine the effect. We advise you that you should treat the big area tattoo and nevus little by little and time by time in case it is uncomfortable for the sufferer.

You can also help the sufferer to build confidence according to the contrast between before and after the operation.

(4) There may be the sound of the pigment breaking when you treat the deep tissue of the tattoo because of the strong absorption to laser energy with 1064nm. The tint color of the pigment can come out the cuticle after absorbing the energy. Some people may have some drops of blood because of a thin cuticle. In the first treatment, the color of the tissue may become thin, but later the color may recover about ten minutes later.

This kind of effect is normal. The digestion and transportation of the macrophage can continue for a long time, and the color can become thin during this period. We advise you to take the second treatment one and a half months after the first time. The eye is more sensitive, so it tears to influence the effect; generally we take two times to get into the effect.

(5) The hair may be exfoliated after operating as you remove black and blue pigment with 1064nm, but the new hair can tend to normal. There may ooze blood and tint edema in the treatment area. It will be normal if there is the feeling of itch and the tissue is a little hard. All these feelings will disappear in two weeks or about a month, and the time is different according to different people.

(6) Hemoglobin of the tissue absorbs a certain wavelength of 532nm when you remove brown, red pigment with 532nm. The surface of the skin irradiated by laser may turn white, so as to make the pigment drops and pigmentation.

(7) The capillary may break and form congestion as absorbing the wavelength of 532nm, if serious, can cause scab. But it will be better in about 20-60 days according to different people.

(8) The sufferer will be forbidden from drawing an eyebrow, bathing and touching in the blood oozing area, and avoid shining in case causing pigmentation. If serious, the sufferer can take some medicine and erythromycin ointment which is used followed by a doctor.

(9) Clients also will not be allowed to take pepper food and alcohol.

## **12.6 Safety Attentions**

### **1. Laser safety:**

(1) According to laser radicalization safety, laser eyebrow & tattoo removal equipment belong to the fourth laser product;

- (2)Laser is invisible infrared light, wherein, the 532nm laser is a light that is green, dazzling visible light. Accordingly, any operator shall wear a pair of goggles with wavelength range 200~1080nm;
- (3)The laser window is located at the bottom of the treatment head. Anyone must avoid radiation;
- (4)Anyone should never look directly at the bottom of the treatment head or any reflecting laser light;
- (5)Keep combustible and explosive stupeficient, liquid, gas (for example: ethanol aether laughing gas oxygen and so on away far from laser radiation area and defend measures should be taken;
- (6)Don't irradiate laser to metal devices, or laser is reflected and is dangerous to anyone around;
- (7)No reflecting things worn, such as watch, necklace, bracelet, etc;
- (8)Must offer safety sound safeguard to sufferer's eyes, when removal eye line, the worker must keep out sufferer's eyeballs by gauze, the worker should have ophthalmic clinic experience and strict according to company training way.
- (9)Different pigment assimilate different laser, the choice of dosage must from small to big.
- (10)Our company advice you prepare special laser room and prepare air-condition or xerantic machine and paste treatment notice matter.
- (11)Notice: big facula relative lesser power density, small facula relative biggish power density.  
Power density = power big or small / facula acreage

## **2.Eye safety:**

- (1)Any operator in operation area shall wear goggles (200—1080nm) and any sufferer's eyes shall be protected strictly and effectively;
- (2)Never look directly at laser or reflected laser even wearing goggles;
- (3)Using gauze or eyelid plate to cover eyes, wearing goggles are all effective to protect sufferer's eyes. Wherein, humid gauze to cover eyes is more effective, but treatment part should be dry;
- (4)The equipment should be off power when debugging laser or clean laser lens.

## **3.Electric safety :**

- (a)According to electric shock egis sort, the laser eyebrow and tattoo removal series belong to I - B model general equipment.
- (b)Connect measure up international monomial three line electrical outlet, the spec 10A upwards.
- (c)Steady voltage.
- (d)After stop the machine, it inside still leave behind remnant voltage, so can't optionally take apart machine.



## **12.7 How to Change Treatment Heads of Laser**

(1)The laser has two inter-changeable treatment tips, each offering different wavelengths: 1064nm & 532nm, these screw into the end of the hand piece.

(2)1064nm wavelength for black, blue, brown, and other darker colors tattoo removal, this tip is slightly shorter and has a round mirror inside.

(3)532nm wavelength for red, orange, pink, and other lighter colors tattoo removal, this tip is longer and has a square mirror.

(4)1320nm wavelength for skin rejuvenation (Before treatment, you need to clean your face, apply carbon cream with a thin layer, wait until the carbon cream is completely dry, and wear goggles then start treatment)

### **Directions:**

Select the treatment tip according to the treatment of wavelength.

Screw treatment tip in a clockwise direction to attach to handle.

Screw treatment head counter-clockwise to remove.

### **NOTICE:**

Please don't screw the treatment heads too tight.

Please stop the machine, or enter safe mode when you are changing the treatment heads.

### **【Quick Tips】**

The result will be better that treating part by part when you treat large area tattoo.

Please treat with 532nm head first when you treat lighter colour like red. After 2-3 times treatment, the red colour tattoo may possibly turn black or brown. Then treat it with 1064nm head.

## **12.8 Start machine:**

(1)To install: To connect the power supply line and foot switch pedal in the condition that there is no endosmosis and external leakage.

(2)To install foot switch pedal: to make sure the orifice be tightened according to the clockwise.

(3)To install the electric outlet: one side to connect the line to the tail of the machine, and the other side to connect to the three holes outlet.

(4)To electrify: You can insert the key right-lateral to the opening position, and whole of the machine electrify right away.

### **Examination of waterflow**

At that time the whole of the machine electrified and you can hear the normal sound of the water cycle. let the machine run in 5-10 seconds;

Waterflow is very important. If waterflow is bad, the handle is easily broken.

## **12.9 Reference table of all kinds of treatment period of case history:**

| Case \ Time                    | Treatment times | Treatment intervals<br>(intervals of two treatments) | Remark<br>(requirements in treatments) |
|--------------------------------|-----------------|--|--|
| Tattoo                         | 1~4             | 30~45days  | Good effect if blood oozing            |
| Embroider eyebrow              | 1~3             | 30~45 days   | protect eyeball when shaving eyebrow   |
| Embroider eyeline              | 1~3             | 45~60days  | protect eyeball when shaving eyebrow   |
| Dyelip Soaklip<br>Embroiderlip | 1~3             | 30~45days  | choose 532nm the light head            |
| age pigment<br>Fleck           | 1~4             | 30~45days  | Good effect if blood oozing            |
| Naevus<br>Birthmark            | 3~7             | 30~45days  | Good effect if blood oozing            |
| Carbon<br>Rejuvenation         | No limit        | 25-35 days   | Must use carbon cream                  |

## **12.10 Notes on light beam treatment during treatment**

### **12.10-1 Test on a black paper (ink magazine or newspaper, not black tape):**

(1) Let the laser tip vertically to the tattoo area and the laser exit on the laser tip touches the tattoo area.

(2) The laser will shoot when you press the Pedal switch. At this moment, you feel weak shots. Increase the distance between the laser exit and the tattoo slowly and you will find the energy focus when you hear "pa..pa..pa". This distance is the strongest.

(3) When you finish a treatment, please click to have the laser Standby. Then turn off the machine by key switch. It is not good for the laser if turning off the machine directly without .

### **12.10-2 Attention:**

1. When the machine is on, the laser exit on the handle never towards your eyes, or other people. The laser is harmful.

2. The operator should wear protective glasses, and the patient should wear an eyepatch.

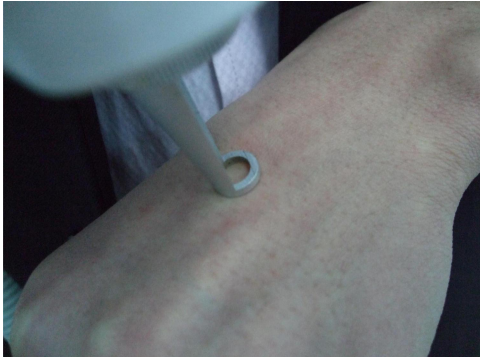
### **12.10-3 Vertical beam**

(1)The light beams should be vertical all the time. All the treatment doses are the parameters referring to the vertical laser beam. If it deviated from the vertical position, the laser flow will be reduced and the laser energy can not be completely utilised.

(2)The light spots should fold and translate to a line when you remove eyebrow, eye line and lip line.

(3)You should remove the spot and naevus gradually in small areas.

(4)The treatment area should ooze blood when you treat the area.



1. Put the head on the skin first



2. Then, prolong the distance between skin and head.



3. The power is most strongest when the laser beam get the focus.



4. Power will be weaker again after the distance between skin and head is longer than the focal point.



5. Looking for a good distance to control the power during the treatment.

Notice:

Larger Focal Point (spot size) = Lower Power Density

Smaller Focal Point (spot size) = Higher Power Density.

### 12.11 Suggestion parameters list

| Treatment Mode             | Frequency | Treatment Distance | Energy    |
|----------------------------|-----------|--------------------|-----------|
| <b>Eyebrow removal</b>     | 2--3Hz    | 1—2cm              | 300—400mj |
| <b>Tattoo removal</b>      | 3--4Hz    | 3—5cm              | 500—700mj |
| <b>Carbon Rejuvenation</b> | 3--4Hz    | 3—5cm              | 500—800mj |
| <b>Birthmark removal</b>   | 3--4Hz    | 3—5cm              | 550—880mj |
| Eye line removal           | 1--2hz    | 1—2cm              | 350—450mj |
| Lip line removal           | 3--4 HZ   | 2--3 cm            | 400-500mj |
| Spots and naevi removal    | 3--4HZ    | 3--5cm             | 600-700mj |

#### **How to control the energy of laser treatment**

In the early stage of the use of laser treatment, you can consider the experience of others. The parameters of the treatment of a certain disease are:

Laser energy Q, pulse frequency Y and spot size D (direct). Energy and Frequency can be adjusted directly through the machine's interface and the select button. The spot size can be achieved by adjusting the distance between treatment tip and treatment area.

Energy density =laser energy/İ\*D namely:  $E=Q/0.787*D$

#### **A: In the actual operation, the energy also needs following points to consider:**

The skin colour, thickness, and rough conditions vary from person to person and due to different sites.

Therefore, the dose is different. When you operate the instrument, the dose should be gradually increased from small to large. You can find a suitable parameter at this moment. For instance, first use some spot to experiment, the spot becomes smaller gradually (that is closing to the scheduling and to lift the treatment head gradually, finally to find the focus position), at the moment energy density (flow) changes from small to large.

**B: Please pay more attention to the changes of the skin colour in the normal part.**

The target pigmentation always exists in corium or deeper in the skin, it should be treated by laser until blood oozes slightly. Another treatment is needed if the pigment cannot be removed thoroughly after 1 treatment.

C: Whether it is skin pigment or vascular skin diseases, we change the energy according to the colour depth. If the colour of the same lesion changes from deep to shallow gradient, the treatment should begin at the darker areas. While moving to the light-coloured, we should raise the treatment tip position. This will make the spot size get larger, and the energy get lower.

D: If the treatment area is large and location is deep, too deep and large area treatment once will lead to local edema, blisters and exudates. So a layered and slicing treatment is suggested.

**Treatment recommendations: Each function**

- ① 1064nm gets rid of blue, black and cyanine pigment.
- ② 532nm gets rid of red, coffee and brown pigment.
- ③ The light head should form a right angle with the treatment area in order to reduce the energy loss. The light spots should fold and translate to a line when you remove eyebrow, eye line and lip line. You should remove the spot and nevus time by time in the little area. The treatment area should ooze blood when you treat the little area.

**Operating technique introduction for different disease**

**Tattoo removal**

Tattoo removal is the major function. It has two wavelength treatment heads. 1064nm wavelength for black, blue, brown, and other darker colors tattoo removal; 532nm wavelength for red, orange, pink, and other lighter colors tattoo removal.



(1) removing single blue and black eyebrow:

The operator chooses the needed energy according to the depth of the pigment and moves slowly to the skin with a light head so as to make the sufferer have a mentality reception process, at the same time the sufferer should close eyes when accepting the treatment. You should set the light speed to 5Hz; the distance from light head to skin is one or two digit space

distance. You may treat from the head or may from the tail of the eyebrow. You can take the second treatment if there is color restoration. The energy can add 20-40 and the light head can drive up 2-3 digit space distance in order to make the effect become well.

(2) shaded eyebrow removal ( the shaded eyebrow can be removed clearly 2 or 3 times)

You can settle the light speed is 3Hz and the energy can be settled according to the above form. First you can treat with 1064nm in 2-3 digit space distances, and then you can treat with 532nm in the second time. The brown pigment belongs to mixed pigment, so you should take more than two times, the period is from 45 to 90 days. You can choose different light heads according to the left color.

The light speed can be settled to 3Hz/5Hz, and you can settle the energy according to the reference form above. The distance between the light head to treatment area is 3 or 4 digit space. The effect will be best if there is blood oozing point. The light head of 1064nm gets rid of blue and black pigment while 532nm gets rid of red and coffee pigment.

The course of treatment is from 45 to 90 days until it is clear.

### **Eye line removal**

Many women love to embroider their eyebrow with different colour ink. It is very popular in China. The embroider eyebrow can be removed easily after women do not require it any more.



The light speed can be settled to 5Hz, and the energy is settled to the lowest point. It is about 2-3digit space distance from light head to the treatment area, and the light will be seen as reference. The sufferer's eyes should be protected with thick medical cloth. First you remove the sufferer's lower eye line, and the sufferer should close his/her eyes, at the same time the eyeball looks up. The operator presses the cloth with index finger, and peels away the lower eyelid with middle finger. The light speed can be settled to 5Hz. When you remove the upper eye line the sufferer should close his/her eyes with an eyeball down gaze. The operator presses the cloth with middle finger and pulls the eyelid with index finger. The light speed can be settled to 5Hz.

### **Lip line removal**

The light speed can be settled to 5Hz, and the energy can be settled according to the reference form above. The distance from the light head to the treatment area is 3-4 digit space. You can remove the black, coffee and deep red with 1064nm for the first time and then use 532nm for



the second time. You can use 532nm to remove thin red, red, thin coffee and thin brown. You must pay attention that you accept the second treatment of removing the lip line, soak the lip and the lip's tattoo for only half one year.

The course of treatment is from 45 to 60 days until it is clear.

### Speckle and naevi removal

The light speed can be settled to 3Hz/5Hz, and you can settle the energy according to the reference form above. The distance between the light head to treatment area is 3 or 4 digit space. The effect will be best if there is blood oozing point. The light head of 532nm gets rid of red pigmentation while 1064nm gets rid of speckles and naevi.

The course of treatment is from 15 to 30 days until it is clear.

### Birthmark and nevus of Ota removal

Just like Nevus of Ota, birthmark is also very difficult to remove. Because they are endogenous pigment. The laser can remove it after 3 to 7 times treatment.

But it **CAN NOT** be treated by laser if the birthmark protrudes the surface of the skin or has hair.



The light speed can be settled to 3Hz/5Hz, and you can settle the energy according to the reference form above. The distance between the light head to treatment area is 3 or 4 digit space. The effect will be best if there is blood oozing point. The light head of 532nm gets rid of red pigmentation while 1064nm gets rid of the birthmark.

The course of treatment is from 45 to 90 days until it is clear.

### Carbon Rejuvenation:

The speed of light can be set to 3Hz/5Hz, and the energy can be selected according to the reference table above. The distance between the treatment tip and the treatment area is 3 or 4 cm. Until face has no residual carbon cream, clean the face after treatment and pay attention to hydrating (use a hydrating mask, the effect is best)

The course of treatment is 15 to 30 days.

## Summary: YAG laser surgical treatment recommended parameters and treatment process



### 1. Treatment of nevus of Ota

- ① It is appropriate to select 1064nm wavelength, set the frequency to 5 Hz, and set the energy to 300-450mj;
- ② For treatment, the laser blasting point is preferably 1 to 2 mm under the skin, and the laser is scanned line by line until the light spot covers all the diseased parts;
- ③ The energy setting is appropriate so that after the light spot is scanned, the melanin is instantly diffused and reduced, and the pigmented area bleeds slightly;
- ④ The appropriate treatment interval is 3 to 6 months. Generally, 3 to 10 treatments can achieve satisfactory results.

### 2. Treatment of black and blue tattoos and eyebrow tattoos

- ① Select 1064 nm wavelength, set the frequency to 3 to 5 Hz, and set the energy to 250-400mi;
- ② For treatment, the laser blasting point is preferably 1 to 2 mm below the skin, and the laser is scanned line by line until the light spot covers all the diseased parts;
- ③ The appropriate energy setting is such that after the light spot is scanned, the melanin instantly diffuses and becomes lighter without bleeding;
- ④ The appropriate treatment interval is 1 to 3 months each time. Generally, 1-3 treatments can achieve satisfactory results.

### 3. Treatment of coffee spots

- Generally, 3-5 treatments are required, and there is a possibility of recurrence. There may be temporary mild pigmentation after treatment. Post-operative care should be taken seriously. Use 532 nm wavelength, energy: 80-150mJ/CM<sup>2</sup>, frequency: 2-4HZ, spot: 3-4mm, interval of 3 months, 50%- 60% effective.

### 4. Treatment of freckles

- ① The first choice is 532nm wavelength, followed by 1064nm wavelength, the frequency is set to 3 Hz, and the 532nm wavelength energy is 80-100mi.
- ② For treatment, the laser blasting point is preferably 1 to 2 mm under the skin, and the freckles are shot one by one. After being hit, the freckles will instantly form white scabs;
- ③ The energy setting should be such that the patient has no significant pain after the light spot is scanned;
- ④ The treatment interval is 1-2 months each time, and generally 1 to 2 treatments can achieve satisfactory results.

### 5. Laser treatment of age spots, rosacea, and superficial capillaries:

- ① The first choice is 532nm wavelength, energy: 80-200mJ/CM<sup>2</sup>, frequency: 2-4HZ, light spot: 3-4mm,

- ② For treatment, the laser blasting point is preferably 1 to 2 mm under the skin, and the blast is performed one by one. Age spots and freckles will instantly form white scabs after being hit;
- ③ The energy setting should be such that the patient has no significant pain after the light spot is scanned;
- ④ The treatment interval is 1-2 months each time. Generally, 2 to 4 treatments can achieve satisfactory results.

#### 6. Wing laser whitening and rejuvenation treatment:

- ① Use a 1064nm wavelength laser whitening and skin rejuvenation treatment handpiece, with a frequency of 5 Hz and an energy of 250-450mJ.
- ② The treatment uses laser scanning line by line until the light spot covers the entire face or all diseased parts;
- ③ It is easier to repeat 2-3 times of scanning in areas with a lot of melanin or severe photoaging;
- ④ Each treatment of the whole face requires 2500-3500 pulses. A course of treatment requires 10-12 times, once a week. Generally, 3-5 treatments will have obvious effects. After the eighth treatment, it is changed to once every half month. After eleven sessions, it was changed to once a month, and one course of treatment produced satisfactory results.
- ⑤ Consolidation treatment: In the future, Maintenance treatment will be performed every one to three months.

## Chapter 13 tattoo removal postoperative precautions

### 13.1 Skin appearance after treatment:

- (1) Reddish swelling on treatment part on the moment, it will disappear shortly.
- (2) To some special customers need energy to be higher, when you make the energy too high, there comes the scab, but it will drop off naturally after 7 days, not to scratch it, skin becomes normally about 2 days. Taking some vitamins can lighten the pigment circumference. Usually there is a feeling of scorching or slightly bleeding; it is normal and no scar.
- (3) When the scabs fade away, the treatment part shows pink, 2-3 weeks later it appears coffee color, and 1-2 months later recover.

(4)In addition, if you use a YAG handle (532nm head+1064nm head), It will cause bleeding on the skin. Do not touch water, sweat, or stay in a hot or humid environment within 7 days, as this may cause infection at the treated area.

(5)After the operation, it is forbidden to paint, wash and exposure eyebrow on the bleeding. Please obey doctors' advice and combine with diet conditioning. You can't drink in three to seven days. If there is the case of more bleeding, serious swelling to the sensitive customer, we advice you take antibiotics drugs (Acetylspiramycin). In recovery period (after 72 hours), we use erythromycin ointment to heal the affected area, we can also wipe restoration liquid to repair.

### **13.2 Care after treatment:precautions**

(1)You may clean the skin with non-stimulator water after treatment.

(2)If there is slight bleeding when the energy is higher, please wipe off and smear the antiphlogistine (such as Ilotycin)until the scar drops off. Not cosmetic or other medicines.

(3)If the treatment part is flush and you feel it is not comfortable, you can do ice compress.

(4)Before the scab drops off, the treatment part must be careful not to touch water, not be scratching, avoid certain foods of hot, dark color of coffee, Coca Cola etc.

Prohibit smoking and drinking .Let the scabs desquamate naturally not scale off in a force.

(5)Not taking plenty of sports to avoid a sweat infection.

(6)After the scab desquamating, No need to coat the Ilotycin (Erythromycin) again, just smear the suntan lotion (SPF15 upwards) even in the room preventing UVA/UV B and keep along 3 to 6 months because of the treatment skin sensitivity to the sunlight. Using suntan lotion or umbrella prevention can improve the effect early.

(7)Period for laser treatment: Depending on the different treatment parts and whether the pigment is dark or not, the treatment may be several times. Normally one period of treatment is 1-2 times, every time at a 20-30 days interval. If there is nothing special, every 2-4 weeks go to the clinic to check again, if there is anything abnormal, please cure it early.

(8) Pigment fadeaway is a slow process, for the pigmentation skin, normally it is 1-3 months.

In order to get a more favorable effect, repeated treatment should be 1-3 months apart.

(9) After 532nm treatment, the treated area will turn black and become scabbed. The patient should be instructed to protect the scab, do not tear it, and avoid water.

(10)

(11) There may be a few bleeding spots after 1064nm treatment, but the reaction is normal.

(12) After treatment, apply local cold compress for 20-30 minutes. Wing laser whitening and rejuvenation does not require cold compress.

(13) If the wound is serious (with bleeding spots or broken skin), apply mupirocin ointment (Bundo. Bang) or chlortetracycline eye ointment to the wound. Severe patients can take oral antibiotics or intravenous antibiotics.

(14) The patient is required to keep the wound surface dry. After treatment, apply epidermal growth factor (recombinant bovine basic fibroblast growth factor topical solution (Beifou agent)) evenly on the polished wound surface, and gently massage it with a cotton swab for 1 minute. To ensure even distribution, apply 3-5 times a day and preferably use it for 3-7 days.

(15) Facial cleansers and functional cosmetics should be prohibited during treatment. Scratching of the treated area and peeling of scabs with hands is not allowed. Wait for the scabs to fall off naturally;

(16) Strict sun protection measures should be taken at the treatment area to prevent local skin pigmentation.

(17) No smoking, alcohol, or photosensitive foods, such as celery, coriander, spinach, carrots, etc. If discoloration remains after treatment, ultrasound can be used to introduce L-vitamin C essence or L-vitamin C.

(18) 1 vitamin C injection; 3-5 capsules of vitamin C and vitamin E for 2-4 times of repair; for severe pigmentation, 3% Hydroquinone can be used treat.

(19) Explain the time of the next treatment. Generally, the treatment interval is 1-3 months.

### **13.3 The reaction during the operation and recovery after the operation**

The pigment of the lesion tissue is broken into gains small enough to be absorbed and digested by macrophage. Part of the particles which in the superficial is discharged from the body and the other part which in deep tissue is regularly permuted in superficial, so the tattoo can return in a short time. It will be normal if part of the skin becomes red, swelling, blisters and even blood oozing because the black pigment absorbs the energy strongly when you treat the deep tattoo. The degree is different according to different people, and you can feel a little itch and hard tissue. Generally speaking, the discomfort will disappear in 3-7days, but it may take 1-3 months for some special constitution.

You will not be allowed to draw an eyebrow, take a shower and get sunshine after getting treatment. You also should change the bad dietary habit followed by the doctor.

You can't take alcohol in 3-7days. We suggest that you should take antibiotics if blood is too much and serious swelling after treatment.

You can daub erythromycin ointment to help to heal in the recovery period.

### **13.4 the determinants for which pigment is different to dispel**

①The quality of the texture of the pigment, the pigment divided into plants pigment, mixture pigment, and chemical pigment. The plant's pigment is dispelled easiest while the chemical pigment is most difficult to dispel. Generally, there is iron and lead in the mixture and chemical pigment, so it is different to remove.

②The depth of the pigment. Generally speaking, the deeper the pigment, the more difficult it is to remove. And it also takes many times to dispel. It will be easy to dispel if the depth of the pigment is thin. The effects will not be good if the pigment is chemical even if the depth of the pigment is thin.

③The different physique of people. The factors include age, skin, body immunity and so on.

### **13.5 The knowledge collection of tattoo removal**

(1) The differences between the first and the second eyebrow removal:

You should use the energy which near the focus energy. It is farther than the first time and the energy is bigger than the first time.

(2) The reason that the coffee turns to blue and black:

It is normal reaction if the coffee turns to blue and black because the coffee is a mixture pigment which includes iron, lead ion, iron ion. And all these ions can produce pigmentation, so we advise you remove the pigment with 1064nm for the first time and then use 532nm. You can examine the effect half one month later. You can use 1064nm to remove if the color turns to blue, and use 532nm if it turns to red.

(3) Why does some red eyebrow have no reaction after removing?

The pigment does not belong to plant pigment but the chemical pigment, and the iron ion has reached into derma, so it is difficult to remove. You should use the focus energy of 1064nm to break up the pigment until the oozing blood, and then you remove it with 532nm.

(4) How to remove the speckle of the face?

There are good effects on removing drought spots and butterfly speckles which are caused by climate. The deep and hereditary speckles are difficult to remove while shallow and formed by acquired factors. You can use the focus energy to remove the senile plaque until it appears oozing blood. There are three treatment courses with 45 days as an interval period.

(5) The treatment ways to remove naevi.

Using the focus energy to remove the naevi until it appears oozing blood.

(6) Can the scar constitution be removed?

A few people can be removed but the effect is not good. You should not use the focus energy, but to use the big facula and little energy.

(7) Can the pregnant woman be removed the eyebrow?

It is not allowed to accept eyebrow removal.

(8) how to remove the red blood streak and what degree will be ok?

We don't suggest that you remove the red blood streak, because the 532nm can absorb the hemoglobin in the blood. It can form the purpura to cause the operation to fail.

(9) What is the reason for bleeding after eyebrow washing?

The 1064nm light of the YAG laser does not damage the epidermis, but because some people puncture the skin too deeply, melanin is deposited below the capillaries. During the explosion, the capillaries are scratched and cause bleeding.

How to prevent scarring after YAG laser treatment and excessive bleeding during eyebrow washing?

It is necessary to reduce the energy of the laser output, use a large spot and low density, and adopt the method of multiple removals. The time interval between each eyebrow washing should be controlled to more than 1-2 months to reduce the damage to the basal cells, so that the basal cells can be washed during washing. The eyebrows can be repaired and the chance of scar formation can be reduced.

(10) Why does the 532nm laser aggravate the brown color after removing it?

The function of the 532 nm wavelength laser (green light) is to destroy brown and red pigments, but the effect of the 532 nm wavelength laser is not as obvious as the 1064nm wavelength laser in removing black pigments. At the same time, the water and red blood cells in the skin will also be destroyed due to the absorption of this light, thus causing certain damage to the epidermis. When the light destroys the brown pigment, the epidermis will also be slightly damaged, such as exudation of fluid, The brown color becomes darker after scab formation. The deepening of the brown color after scab removal is not caused by the brown color not being removed, but by traumatic pigmentation caused by damage to the epidermis. This kind of pigmentation will disappear on its own in about 1-2 months, or even longer, without treatment. Note: 532nm laser has no effect on pigmentation, so after pigmentation occurs, it is strictly prohibited to use it during the skin recovery cycle (1- Within 2 months), use 532nm laser treatment repeatedly.

How to reduce the pigmentation formed after using a 532nm laser. Will a 532nm laser cause traumatic pigmentation on the epidermis?

Therefore, you should pay attention to the following points during use:

1. Use large light spots and low energy: try not to use small light spots and high energy;



2. The density of light spots should be relatively sparse, and try not to treat the same area repeatedly;
3. Because the effect of removing brown pigment is not good. It is very obvious, so you should not rush for success, but adopt a phased approach (with an interval of more than three months) to eliminate it;

(11) What is the solution to the presence of multElighe pigments in the same skin area?

In addition to black and blue, eyebrow pigments also contain red and brown pigments. The 1064nm wavelength laser can only remove black and blue. If there are remaining red and brown pigments, they can be removed with the 532 nm wavelength laser after three months. .

(12) How does a YAG laser remove the nevus of Ota?

Nevus of Ota is a pigmented nevus formed by melanin. Its pigment is deeply embedded in all levels of the epidermis, reaching the superficial level of the dermis, and its density is high. When using 1064nm wavelength laser to remove nevus of Ota, one treatment will not produce obvious effects due to the limited ability of the laser to target melanin. Therefore, it needs to be removed multElighe times in stages. Generally speaking, it takes more than five times to see significant results, and each time needs to be separated by 1-2 months. (Each treatment requires multElighe shots at the same site. Pay attention to clients with scarring constitution and try not to bleed);

## Chaptor 14 The Reference of Laser (Eyebrow) Beauty

### **14.1 Advantage**

Laser treatment has many advantages as below for eyebrow and eye line removal, compared to the traditional surgery such as dispelling, frozen, electrocautery, chemical (medicine) +dispelling.

**1. Less bleeding.** the laser beam is very narrow and easy to target only exposure lesions. It doesn't hurt or injure the surrounding systems: at the same time the laser has the effect of "hot welding" to the vessel. It can close the vessel. Therefore it will be less likely to bleed.

**2. It has less pain.** On the one hand because of the thermal coagulation, the nerve ending is damaged and reduces the feeling of pain. On the other hand the treatment area is small and the treatment time is short. Therefore, patients feel less pain. This treatment doesn't need anesthesia, although some patients may prefer to apply a topical anaesthetic or numbing cream to the skin surface before any treatment.

**3. The quality of surgery is high.** Because there is minimal bleeding during treatment, it leaves a clear view to remove the target. Of course it also needs the quality assurance and responsibility of the operator.

**4. The time of surgery is short.** The energy of a laser is large and centralized. Completing the point of the treatment only needs a few nanoseconds and a few milliseconds.

**5. less scar:** As following the advanced "the princElighte of selective absorption" to finish laser beauty, it won't cause normal tissue irreversible damage, so there is no scar.

**6. Fewer recruitment:** as the laser treatment to the lesions is complete, the injury to the surrounding normal tissue is minimal. Therefore, the rate of the recruitment is much smaller than traditional therapy.

### **14.2 The knowledge of laser beauty**

#### **(1) What is laser eyebrow?**

Lasers can produce high-energy and gather accurate single color light. It has a (strong) penetration and target. It will produce high-calorie at the local area while

working on human disease tissue but it doesn't damage the surrounding normal tissue. Laser eyebrow uses the laser light "selective absorption of light" principle. That is to say, the laser fires the high-energy instantly and penetrates the dermis layer of skin pigment effectively and finally reaches the mission. It is absorbed by the corresponding pigment mission. After heating the pigment mission expands immediately, Then chips into the small particles which can be swallowed up by the macrophages. After being digested by macrophages, it will be released. The pigment will get light and finally disappear. The transmitted disease of the pigment in the face will be completely dispelled. The laser beauty is safe and reliable, it doesn't have pain, and it is welcomed by all the people.

## (2)What is the advantages of laser eyebrow?

Apart from the mistaken eyebrow and eye line, Compared to the tradition surgery such as dispelling、 frozen、 electrocute、 chemical(medicine)+dispelling , laser eyebrow has following advantages:

A: Less bleeding, the laser beam is very thin and easy to do only exposure lesions. It doesn't hurt or injure the surrounding systems: at the same time the laser has the effect of "hot welding" to the vessel. It can close the vessel. Therefore it will bleed less or even not bleed.

B: It has less pain. On the one hand because of thermal coagulation, the nerve endings are damaged and lose the feeling of pain. On the other hand the operation of the surrounding normal tissue is less or even lacking, at the same time it adopts a sub-sub-point rapid treatment. Therefore, patients feel less pain. This treatment doesn't need anaesthesia. Some of them even only need the application to the skin surface.

C: The quality of surgery is high. Because the surgery doesn't need blood, the vision is clear, it is easy to decide to stay or not. Of course it also needs the quality assurance and responsibility of the operator.

D: The time of surgery is short. The energy of a laser is big and centralized. Completing the point of the treatment only needs a few nanoseconds and a few milliseconds.

E: less scar: As following the advanced "the principle of selective absorption" to finish laser beauty, it won't cause normal tissue irreversible damage, so there is no scar.

F: Fewer recrudescence: as the laser treatment to the lesions is complete, the injury to the surrounding normal tissue is minor. Therefore, the rate of the recruitment is much smaller than traditional therapy.

### (3) How to master the dose of laser treatment?

In the early stage of the use of laser treatment, you can consider the experience of others. The parameters of the treatment of a certain disease are: laser energy Q, pulse frequency Y and spot size D(direct) . The first two can be gained directly through the machines and the select button. The spot size can be achieved by adjusting skinheads and the treatment of parts of the pitch.

Energy density =laser energy/ $\pi \cdot D$     namely:  $E=Q/0.787 \cdot D$

A: In the actual operation, the dose also needs following points to notice:  
The skin color, thickness, and rough conditions vary from person to person and due to different sites. Therefore, the dose is different. When you operate the instrument, the dose should be gradually debugging from small to large. You can find a suitable parameter at this moment. For instance, first use some spot to experiment, the spot becomes smaller gradually (that is closing to the scheduling and to lift the treatment head gradually, finally to find the focus position), at the moment energy density (flow) changes from small to large.

B: Please pay more attention to the changes of the skin color in the normal part. While treating the vascular disease, the epidermis is normal. Pathologic lesions exist in leather or deeper, at the moment laser radiate to the affected area until the appearance of bleeding. If it doesn't dispel completely, Please get further consultation with a doctor. If we continue to irradiate, the color of the face will get dark because of the heavy dose and it will appear blister and scab. This will cause light and heat damage, we should avoid it.

C: Whether it is skin pigment or vascular skin diseases, we change the dose according to the color depth. If the color of the same lesion changes from deep to shallow gradient, the damage should begin at the dark in light spot. While moving to the light-colored, we should raise the skinhead position. It will make the spot get larger, the flow get smaller. (Notice: because of the increase of focus the color will get light, it is an additional matter.)

D: If lesions are larger and location is deep, at the same time the treatment is too deep and wide, it will lead to local edema, blisters, and exudates. The Sufferer will feel aching and get a fever. Therefore, we should spend more time on treatment. The treatment should be layered, slicing.

E: Notice this point in all the laser treatment: the light beams should be vertical all the time. All the treatment doses are the parameters referring to the vertical laser beam. If it deviates from the vertical position, the laser flow will be reduced and the laser energy can not be completely utilized.

### **14.3 Attention of application of 1064 nm and 532 nm Q-switched laser to get rid of pigment**

(1)According to the principle of laser selective absorption, 1064nm wavelength is used for getting rid of blue, black, cyan pigmentation, 532nm wavelength is fixed for removing red, coffee, brown treatment. Therefore, while dispelling the pigmentation in the surgery, we select the skinhead in the treatment of wavelength based on the examples.

(2)1064nm skinhead is usually used for debugging apparatus coincided with the energy. The dazzling green light given off by 532nm can absorb the human's hemoglobin, which will cause the "purpura" phenomenon in the subcutaneous tissue. Therefore, it is only used for treatment of the fixed-base (such as red).

(3)No matter what conditions it is, please keep the use of laser is safe. Make sure that laser wavelengths of 1064nm and 532nm don't directly rip into eyes, or it will bring about irreparable damage.

In order to avoid the remain of the pigment in laser treatment, when we treat the mixed and fixed pigment (such as coffee, brown), we should choose 1064nm wavelength first. Meanwhile, based on the case we choose 532nm to treat, such as we use 532nm to get rid of red pigment directly.

We use 532nm wavelength to get rid of eye line. The operator is supposed to operate according to the training in the company. The operator should protect the patient's eyeball strictly and effectively, otherwise, the treatment is forbidden (the injury to the eyeball is not reversible).

The side-effects that comes from using 532nm wavelength to dispel brown-red are: skin surface getting white after vaporization, epidermal necrosis, a certain loss of pigment or pigmentation. Compared to the 1064nm wavelength, the red swelling phenomenon is serious. There is purpura in the subcutaneous. After the operation we can take antibiotics drugs to alleviate discomfort, after 72 hours of care we can use the repair liquid for nursing. Due to personal system differences the restoration period is about more than 60 days or six months.

For several times of eyebrow the dispelling interval is no less than 60 days. The best time for the next treatment is 100 days after the last treatment. It is forbidden to treat again within 20 days after the last treatment. If there is a violation operation, it will bring about the malignant consequence of tissue hyperplasia.

If the operation needs oozing of blood in the treated areas, we should pay attention to avoid to touch the affected area, collision of water, solar sunscreen apart from the infection. Please notice self-conditioning and eating habits. Avoid having spicy foods. Don't drink if the color is deep.

#### **14.4 Eyebrow notes ( sample )**

(1)Our hospital use multi-function laser of Radium beauty instrument for the treatment of eyebrow, eye line, tattoo. It is a high-tech and intelligent precision instrument that doesn't injure the skin, hair follicle and completely eliminates the pigment. It eliminates all the methods of washing eyebrows, such as using drugs, biological methods, magnetization methods, and freezing process (all of these methods have some injury to the skin and hair follicle and they can't completely clear the pigment). The use of eyebrow-washing is one of the biggest dedications to beauty and the fruits of the latest technology. At the same time it is the gospel of the lady.

(2)Many similar treatment instruments take three to four times. The introduction of the instrument in our hospital uses an import core. After continuous efforts and study, we can make sure that the cure rate of washing eyebrows reaches about 85 percent. Some people even feel better. As the precision instrument is more expensive, in order to make it convenient for all the customers, in the apparatus of the warranty period, we use the outstanding price at present. If you use this instrument to wash your eyebrows, you should pay. The second charge for the second according to the effect of the last treatment.