

Q-Switched Nd : YAG 1064/532nm Laser Treatment System

User's Manual



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Manufacturer

VIVA Concept Technology Co., Ltd.

Room 702 Bulding C Plaza Haibo Road 9th Fengcheng District Weiyang,
Xi'an, China,710016

Tel:008602986524408

Fax: +008602986524408

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Using this User's Manual

This User's Manual is divided into the following sections:

Section	Contents
Preface	Brief technical overview and Medical use
Safety	General safety precautions when operating the device
Description	Description of the components and controls
Installation	Introduction of the installation and transport procedure
Operation	Operation of the device
Maintenance	Maintenance information
Clinical Application	including application range、 treatment process and side effect
Parameters selection	Basis of parameter selection and treatment evaluation
Specifications	Brief overview of the specifications

Pay Attention to Warnings, Cautions and Notes

WARNING	Warning means that not following instructions properly or ignoring them completely can endanger patients and/or operators.
CAUTION	Attention means that not following instructions properly or ignoring them completely can damage the unit.
NOTE	Notes provide additional information.



NOTE

Read the user's manual prior to operation!

Chapter 1 Preface

1.1 Overview

Q-Switched Nd: YAG adopts the latest Q-switched model, makes the cure time of laser to be smallest, avoiding damage to the skin. And the skin tissue absorbs the high energy of the certain laser wavelength in instant, then expands and explodes to tiny thing easily. Then licked up by the cell and be got out of the body.

1.2 Device Brief Introduction

Model name: VA-400

Product name: Q-Switched Nd: YAG Laser System

Figure 1.1 shows the device.



Figure1.1 VA-400 Nd: YAG Laser System

1.3 Device Structure

This device is composed of three parts: (1) main unit, (2) control panel, (3) the Nd: YAG Laser treatment hand piece.

The control panel includes the color 8" LCD screen, the power switch and emergency shut off switch. The LCD screen shows the work mode and the parameters of the system.

1.3.1 Parts and Control

Nd: YAG Laser Treatment System structure consists of the following units: Power Supply, Laser Handpiece, Control Panel and Cooling System.

The power supply is assembled in the main unit.

Laser Handpiece: Laser handpiece treatment with 1064nm and 1x KTP for 532nm.

The Control Panel is composed of (1) LCD screen, (2) Pedal control switch, (3) the

power on/off key switch and (4) emergency button switch.

Cooling system, which can secure the water temperature by water circulation, is assembled in the main unit.

1.3.2 System Overview

Front view: (see picture1)

- ①. Laser treatment handpiece
- ②. Emergency button
- ③. Main host shell
- ④. Key switch
- ⑤. LCD control panel
- ⑥. Plug of Handpiece



Front View of Nd: YAG Laser Treatment System

Figure 1.1



Notice

It is recommended that only the engineer who is authorized by the manufacturer may tear the seal of the back case for inspection and after maintenance. The customer is not allowed to take apart of system by himself.

1.3.3 Power Control

The Key switch: Use the key to turn power on or off.

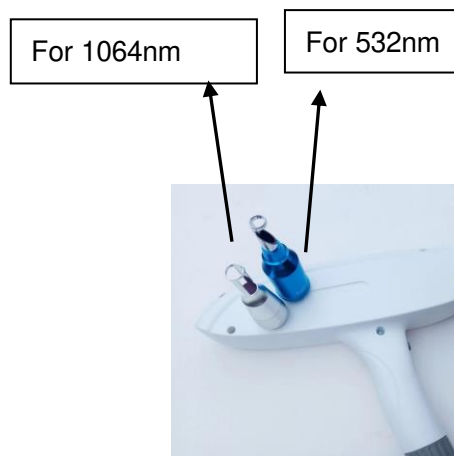
Emergency button: The red mushroom switch can terminate power supply under urgent situation immediately.

1.3.4 Wavelengths

The laser has two wavelengths: 1064 nm & 532nm. The 1064nm is for treatment of the color in blue or black pigmentation of the skin; the 532nm is for treatment of the color in red and brown pigmentation of the skin.

The front-end of laser handpiece for the 1064 nm wavelength is the round one, while for the 532nm wavelength is the square one.

Please check the following photos (Figure 1.2)



1.3.5 Technology Parameters

Laser Type : Q switched Nd: YAG Laser

Laser wavelength : 1064nm & 532nm

Max energy : 1064nm: 800MJ; 532nm: 400MJ

Pulse width : < 10ns

Repeat frequency : 1-10HZ

Lead light method: directly output laser

The light spot diameter : 2~5mm

Power supply : 90-130V, 50Hz/60Hz or 200-260v, 50Hz

Environment temperature : 5°C~40°C

Relative humidity : $\leq 80\%$

Cooling system: the water-cooling & the air cooling inside.

1.4 Medical Use-Application Areas

1. Tattoo removal
2. Birth mark removal
3. Red and brown pigment
4. Eliminate Coffee spot and Taitian naevus
5. eyebrow-cleaning and eyeline-cleaning

Chapter 2 Safety

2.1 Introduction

This chapter describes the proper use of the Laser tattoo removal systems. Each operator must read and understand the User's Manual completely prior to starting the Device.

2.2 Responsibilities of the User



WARNING

This device may cause thermal injury if used improperly. Medical personnel must familiarize themselves with the device's safety instructions and operational procedures prior to use.

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.

2.2.1 Safety Measures

The laser is designed to prioritize the safety of the patient and medical personnel. The following are its parts of safety measures:

A. Upon switching on the system, the processor first undergoes a self-diagnostic test. The processor will then examine the system automatically and continuously during the entire treatment process.

B. Use the Emergency Cut Off Switch (red button) to turn the power off in case of an emergency.

C. Remove the Key when not in use so as to prevent unauthorized access to the device.

2.2.2 Safety Warning

Only personnel trained by the distributor are authorized to maintain the inner workings of this device. Any manipulation to the system may cause damage to the device and will void its warranty.

2.3 User Training



WARNING

The intense light delivered by this device may cause serious injury if handled improperly. All personnel using this device must remain vigilant and utilize safety protocols.

The laser treatment systems require special expertise and care in its handling and use. Only persons who have received the required training, taking into consideration operating instructions, and who are familiar with its therapeutic effect and possible risks are permitted to use the laser unit.

Untrained or unqualified operating persons are not permitted to operate the laser treatment systems under any circumstances whatsoever. VIVA Concept .,Ltd offers comprehensive training courses for the Laser treatment systems.

Each user must have read and understood the User's Manual completely prior to starting the Laser treatment systems.

Patient's safety mainly depends upon a well-trained operators and a suitable treatment room. The attending operators must inform the patient all the risks with the use of this device. The success of the treatment depends largely on the user's experience and knowledge of the biophysical connections.

2.4 Explanation to Patients

The treatment process must be explained to the patient. The patient must give written-consent to the treatment.

2.5 Optical Safety

All persons using the equipment (including the patient) must wear the protective glasses; the eye shield for the patient and filtered 200 - 1200nm for the operators. The goggles / glasses provided with this unit are manufactured specifically for the 200 nm to 1080 nm wavelength produced by the laser unit. Do not substitute treatment / safety glasses with other types of tinted eyewear which may not meet the specific safety requirements of the unit.

Strictly prohibit look at the perpendicular to incidence laser and the reflected light even you are wearing protection glasses.

Moist gauze is more useful for eye protection, but the treatment part should be absolutely dry.

If the laser treatment head is leaking the system cannot switch on. If it has been switched on already, you must switch off the power immediately.

You should turn off the system to prevent fire when you are debugging the laser or cleaning the mirror of the laser.

Note: Gauze, eye-shield and tarsi are all effective in the protecting for the eyes.]

2.5.1 Laser Light Warning

The Nd: YAG laser is invisible infrared light, Among them, The laser of 532nm wavelength is green glare, and the operator should wear the appropriate protection glasses with the wavelength scope is 430—1200nm;

The laser window way locates at the end of the revolver head sight device which should avoid being subjected to the laser radiation that window way send out;

Do not look directly into the sight device port and the laser beam that glitter;

Metallic apparatus can reflect laser, the operator should avoid radiation directly on these apparatuses, don't use the reflect ional apparatus as much as possible;

Keep the sparkling objects from laser light, such as jewelry, watch, the surgical apparatus and mirror...etc;

Away from laser light. Provide the appropriate eye protection facility for the patient (covering with gauze and wearing eyeshade (goggle) etc.) The operator should have clinical experience of ophthalmology, and disinfect all the named instruments strictly before using them. Improper protection of the eye can cause the patient fall ill. The light could cause the cornea to become inflamed, damaged completely or even lead to blindness.

2.5.2 Treatment Room

The treatment room should be clearly marked to prevent others from entering the room at the time of operation of the equipment.

Do not allow the light to rays to fall on other locations of the skin than where the treatment is required.

The entrance of laser treatment room should be labeled with warning signal of laser radiation, to prevent the entry in and exit out of the treatment room during treatment time.

Suggestion: Provide special-purpose laser operation room with air-conditioning, dehumidifier and so on. The operator and patient have their separate regions. The caution label should be pasted in the room before the surgical operation.

2.6 Electrical and Machine Safety

Laser treatment instrument belongs to the category 1 and type B common equipment.

When the laser treatment instrument is used by 220V or 110V, the power supply capacity is not less than the 1000 W.

The net power source that connects with laser instrument must match international single-phase three line AC outlets with good connection with the ground; the specification is above 10A, connecting the ground well is very important.

When the laser treatment stops, the high-pressured component still remains high voltage. Opening the protection cover of machine can result in electrical shock by high

pressure.

Ensure the stability of the electric voltage.

Seal up all panels and the rear cover. Opening the rear cover could be dangerous as well.

2.7 Fire Prevention

The laser light device generates thermal energy. Avoid using combustible material such as acetone or alcohol near the device. If alcohol based products are used to disinfect the laser device, ensure that the alcohol has completely evaporated prior to operation.

Flammable and explosive objects, anesthesia, drugs, liquid, air (such as alcohol, giggle gas, oxygen. etc.) should be avoided in the laser radiation area;

2.8 System Safety

The key switch is used to turn the unit on and off. Please remove the key when the unit is not in use to prevent unauthorized access. The emergency cut off switch is used to shut down the device in case of any emergency. After engaging the emergency shut off button, turn the device off by rotating the key in a counterclockwise direction. Rotating the emergency cut off switch in the direction indicated by the white arrows will release the button.

A 10-ampere circuit breaker is installed behind the device adjacent to the power cord. Loads in excess of 10 amperes will trip this switch. Simply moving the switch upward will restore power to the system. A self-diagnostic program then initializes the system and will continuously monitor the circuitry during operation.

2.9 Transport Safety

Although the system is robust, you have to handle with care if you need to move it.

This machine laser hull inside has nice optical system. The packing should be provided by the original factory in order to reduce the quiver in transportation, otherwise excessive shaking may cause the maladjustment of the laser system and influence output of the energy.

2.10 Safe Marking



The laser treatment machine uses the marking as follows. The marking sticks to the upper part of the machine box and the laser hull, Please keep in mind.



Warning

Any inappropriate usage of laser electropult will cause injury to the human body. The operator should keep alert every moment, and adopt the protection measures necessary.

Safety Procedure

The laser treatment equipment contains some safety devices and all persons who use the equipment must be familiar with their position and the opera, otherwise the equipment will keep break. For insuring the safety, press this switch only under the protection method.

Key switch: The key switch is used shut off power. This key is only provided by the manufacturer. Please pull out the key after operation. Please confirm that the system has been locked.

Emergency button: This red mushroom switch can stop the whole machine urgently. When it is pressed the power supply will cut off. Turn it clockwise to restore power.

Automatic break switch: The break switch is installed in the left lower part of rear plank. When the work electric current equipment is over the 6A, this switch will cut power to protect the system. Pulling up this switch can immediately restore the power supply.

NAME PLATE (Model) LABEL: Position: back side

Model Name: VA-400

Product Name: Q-Switched Nd: YAG 1064/532nm Laser Treatment System Power

Supply: 220V, 50/60Hz, 10A

SN



VIVA Concept technology Co., Ltd.

Room 702, Bulding C, Plaza Haibo, Road 9th Fengcheng District
Weiyang, Xi'an City, Shaanxi Province, China,710016



TEL: +86-10-61227272

FAX: +86-10-61227575



CE



Before operating and maintaining the Laser Treatment System, please read user's manual in detail

Chapter 3 Installation

The process of installation includes: (Performed by an authorized technician only)

1. Unpacking the device.
2. Staying the device for one day, in order to avoid destruction by high humidity during long distant transportation.
3. Assembly of its components and ensure that all connections are firmly in place.
4. Fill the water tank with distilled water only.
5. Installation treatment handpiece and connect the power supply.
6. Switch on the device and test all functions / parameters of the system.

3.1 Equipment Detailed List

The following is the detailed list of equipment of this device:

- Main host
- The laser treatment handpiece 2pcs (1064nm & 532nm)
- Handpiece support(assembled in device)
- Protective glasses
- Protective goggles
- Power cable
- Funnel
- Plastics hose
- User's manual

3.2 Installation Requirements

Before unpacking the Laser treatment systems, ensure that working environment conforms to the requirements of this section.

Before assembly of the device's components, ensure that high humidity is cleared away by opening the packing and staying the device for one day.

3.2.1 Location Requirements

The device should be positioned in an area with adequate ventilation away from devices that produce heat (i.e. refrigerator).

3.2.2 Electrical Requirements

Before the Laser leaves the factory, it has already been marked the local rated voltage according to the customers' request. It corresponds to the electricity requirement as follows:

AC230V±10 %, 10A, 50/60Hz. or AC115V±10 %, 20A, 50/60Hz

Input electric current can't have momentary change, electric voltage or electric current peak、sink.

It is recommended that this device use a dedicated power supply with its own circuit breaker.



CAUTION

Ensure that the electric voltage rating of this instrument (AC230V or AC115V refer to system labeling) matches the electric voltage of the outlet.

3.2.3 Environment Requirements

Air quality: No caustic particle (such as acid) in the air, which can damage the electric wire, the electric component and optical component surfaces. The dust in the air should be as little as possible, or it can absorb the energy of light and be heated up. When the dust falls on the surface of the filter, it may damage the filter. Metal particles also could damage the electric component.

Temperature: The Laser system has an optimal working temperature between 15°C~30°C. Relative humidity should not be over 80%. The working power of this device is about 2 KW. It would be best that the Laser unit be installed in an air-conditioned room where the relative humidity and temperature can be maintained at optimal levels.

3.3 Installation

1.The device should be placed in a room with an indoor temperature of 15~30 C; the humidity should not be higher than 80%. Operating or treatment rooms must be kept clean of all times.

2.Connection of handpiece with machine

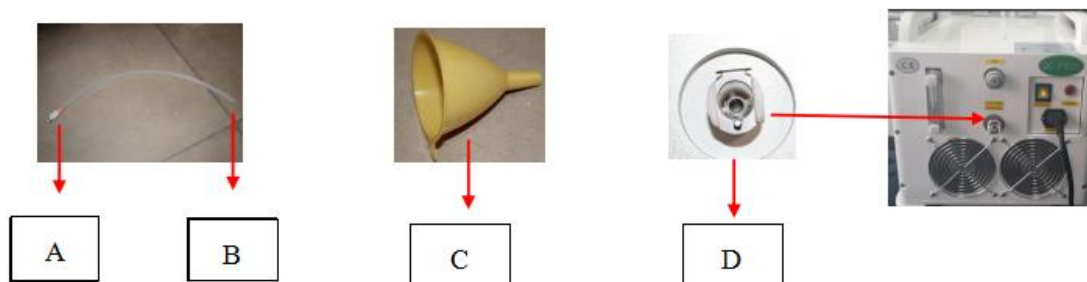


First: press the two gray buttons at the both sides of the handle.

Second: make sure the contact pins are aiming at corresponding position.

Third: plug the upper pin directly to the upper socket, then insert the lower one.

3. Fill Water



Installation:

- 1 Insert B into C
- 2 Insert A into D
- 3 Fill water

At the same time, observe water gauge, when water reaches the water gauge of 80%--90% ,
Stop filling water.

Attention:

1. Use purified water or water without hydrogen, strictly prohibited mineral water
2. Replace water every 2-3 month.

▲ CAUTION

- a. Only distilled water is to be used in the cooling system.
- b. When using the system for the first time, rinse the cooling system with distilled water.
- c. Ensure that the water level is adequate before treatment to prevent over heating.
- d. Distilled water is added periodically specially when working in warmer climates and when the treatment handpiece are changed often.
- e. Make sure that the treatment head is firmly secured and the screw caps are firmly screwed into place prior to operation.

3. Ensure that the key is in the off position and that the emergency cut off button is not engaged.
If it is engaged, release it by rotating the button towards the direction of the arrow indicator.
4. Attach the power cord and attach the foot switch cord.
5. Switch the circuit breaker to the "On" position
6. Switch the device on by turning it in a clockwise direction. At this time water circulation and the cooling system starts automatically.
7. Observe whether water circulation runs well or not. After cooling system runs for at least 5 minute, the water has slid into the cooling system and then turn the device off.

If the system sounds beep and show "water current error", then you need to move out the

bubble air from the system. In the stage: switch off the power, take off the protection plug for water conduit, then switch on the power, meanwhile the water will spout out from the front of water conduit .

Moreover, If a leak is observed, turn the unit off , then take off the protection plug of water conduit and check whether the O-Ring for faucet is likely to be lost. If the O-Ring is lost , user should take out the O-Ring from accessories and push into water conduit.

8. After cooling system runs for at least 1 minute, the water slide into the cooling system and then turn off the power.

9. If the water circulation run well. Then switch off the system. It means you can fully assemble system with handpiece, screw on the infusion cap and ventilation caps.

10. When installing a new treatment handpiece or switching between treatment handpiece, place the treatment head lower than the main host in order to remove bubbles from the treatment head, Then turn the device on. Let the water circulate for at least 1 minute before proceeding with the treatment.



NOTICE

Those contact pins are easy to bend if you don't find the accurate position

Press the two gray buttons simultaneously, then unplug the handpiece.



Replace the treatment head or replace water

1. When replacing the treatment head, drain the remaining water in the previous handle. Pay particular attention as not to spill any water on the electronic terminals. Wipe off any spilled water with a soft absorbent cloth.
2. Replace water every 2-3 months, please carry on according to the following steps strictly. Disconnect handpiece. But you need to keep the above part on the water conduit of handpiece.

Turn on the infusion/drain tap and **unscrew** the ventilation screw caps.

To drain excess water from the cooling tank. Turn on the drain tap, insert the drainage hose supplied then open the ventilation screw cap. Fasten all screw caps firmly.



CAUTION

1. Only distilled water is to be used in the cooling system.
2. When using the system for the first time, rinse the cooling system with distilled water.
3. Ensure that the water level is adequate before treatment to prevent over heating.
4. Distilled water is added periodically specially when working in warmer climates and when the treatment handpiece are changed often.
5. Make sure that the treatment head is firmly secured and the screw caps are firmly screwed into place prior to operation.

3.4 Move

If the device is to be moved within the general area,

1. Turn the device off
2. Put the treatment head on the support
3. Pull out the power cable
4. Relocate the unit (Avoid tilting the device)



CAUTION

If the instrument is to be moved outside the hospital, please contact your dealer.

3.5 Transport and Storage Procedure

3.5.1 Procedure

1. The cooling water in the instrument should be let out and cleaned during storage and transport.
2. The device should vertically be installed in the outer packing box during transport. The instrument is fixed on the base >550mm×490mm×430mm so that the wheels of the instrument will not glide.
3. There are waterproof and soft gasket material in the outer packing box of the instrument and handle with care which the instrument should be supported by natural damage. The markings such as “Handle with care”, “No wetness”, “up” should be on the box.

3.5.2 Environment

1. Environment temperature range: +5 °C~ +55 °C;
2. Relative humidity range: 30%~80%;
3. Atmospheric pressure Range: 86kpa -106kpa.

Chapter 4 Operation

This section describes the operational steps of the laser treatment system.









Warning

1. There is high electric voltage in the laser treatment system, please must ensure that all front panels have been covered properly
2. When the laser treatment system starts, please keep the laser treatment head under control.
3. All personnel should be wearing the protection glasses in the treatment room.
4. Do not face the laser emission directly even with protective glasses on.
5. The laser treatment head must point directly at the target district.

4.1 The main menu interface

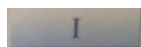






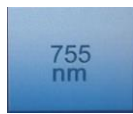









The main function interface description

	Icon	name	Function
The main power icon		Super hair removal function icon	Switch to rapid laser treatment interface
Date setting		The icon of the time display	Shows the time and set time and date
Sound setting		The icon of tone instruction	Shows the situation of the tone of the device
Language setting		The icon of language setting	Select your local language.
Update		No useful	Not open (OEM)
Setting icon		Factory setting	Contact factory

4.2 Laser therapy interface



Icon	Name	Function	Remark
	Pre-store parameter select button	Choose pre-store therapy parameter	Up to pre-store 5 groups parameters
	Power	Display setting power	The range of power is 1-26J/cm ²
	Frequency	Displays frequency	The range of frequency is 1-10(HZ)
	Adjustment button	Setting parameter+	—
	Adjustment button	Setting parameter-	—
	Save button	Save setting parameter	—
	Return button	Enter main function interface	—
	1064/532/755/1320 interface switch	Touch to switch Different interface	
	standby/Ready button	Standby/Ready situation	—
	Max shoots	Shoots decrease by shooting	
	Counter	Record one time shoots using	
	The icon of the water flow alarm	Shows the current water level	The icon of the water flow alarm
	The icon of the temperature alarm	Shows the water temperature	The icon of the temperature alarm
	The icon of simmering instructions	Shows the current situation of simmering of the device	The icon of simmering instructions

	The icon of charging	Shows the need to charge the device	The icon of charging
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4.3 Treatment Mode

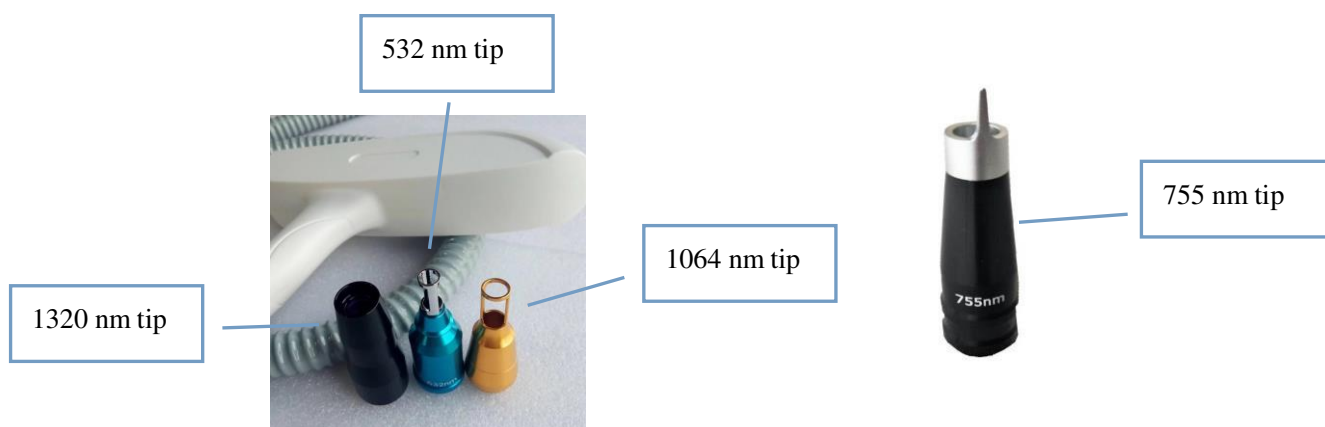
Change the tips of 1064nm and 532nm of the hand piece to do the different treatment. For example:

The **1064 nm** is mainly used for treating the black and blue pigmentation,

The **532 nm** is mainly used for treating the red and brown pigmentation

The **1320 nm** is mainly used for carbon peeling skin rejuvenation.

The **755 nm** is fractional laser for pigmentation and skin rejuvenation (Optional).



Temperature Display and Protection

The system has the temperature display function, which can monitor the temperature of the circulating water. When the temperature of the circulation water exceeds the required protection temperature, the water temperature goes high it will show on the screen, at the same time the buzzer will give an alarm and the instrument will cease to work. When the temperature of the circulating water declines under the required temperature, the instrument can work normally.

4.4 Other Function Requirements



Danger

1. While entering the work mode, the laser head must not point at person; the laser head must aim at the target for treatment, and then press the pedal controller.
2. In spite of having the laser exportation or not, the laser treatment head cannot aim at operator and other non- sufferer.
3. The laser treatment head must not point at the eye.

Chapter 5 Maintenance and Support

This section describes daily maintenance work of the Laser treatment system. It includes cleaning the equipment and leads the laser treatment head, replacing the laser treatment head and increasing distilled water etc. It also describes some familiar malfunctioning and solution.

The customer can carry out the listed maintenance measure in the chapter. Others are only can be maintained by authorized technical personnel of the dealer.

Warning

1. Before supporting this machine, the power supply must be cut off to avoid causing harm.
2. The customer is responsible for the damage caused by the following reasons:
 - ①. The customer dismantles the outer shell and accessories of the system without authorization.
 - ②. The contrived breakage, operation failure and the damage by maintenance for exceeding one's authority.
3. The damage of system caused by fire, the electric power system breaking down, lightning, flood disaster, blast.

5.1 Clean Equipment

Clean the outer part of the equipment weekly with soft wet tissue. You may also use a neutral detergent, but do not let the liquid sip into the machine.

5.2 Clean Exploration Lens of Laser Treatment Head

After a period of using, check the cleanness of lens surface periodically. During the treatment pigment grains splash into the lens and affects output of light, causing blariness of light. Use lens paper or cotton with absolute alcohols to wipe the lens lightly.

5.3 Obviate Equipments Malfunction

This section enumerated some malfunction phenomenon and obviating method :

Malfunction phenomenon	Method
No display	Check power cable whether the connection is good

	<p>Check whether the urgent switch is down, loosen the urgent switch clockwise.</p> <p>If the air switch drops down, push up the switch, re-switch on. If the air switch drops down again, please contact the dealer.</p> <p>If the problem cannot be solved, please contact the maintain engineer.</p>
While pressing the pedal controller , the system has no laser exportation	<p>Try to increase the work voltage to check whether the laser is emits or not.</p> <p>Check whether the system enters preparation mode or not.</p> <p>Check whether the feet step switch is normal or not, if it is damaged, replace it immediately.</p> <p>Check whether the "work" key is pressed or not.</p> <p>Please contact the dealer.</p>
The system cannot start	Revolve the key to proper position.
The laser outputs to becomes obviously weak or have" empty gun", not a laser	<p>The voltage might be too low and the equipment cannot work normally.</p> <p>The laser exportation lens is not clean; please wipe the lens</p> <p>The laser light inside the machine is destroyed by fire, replace the laser gun;</p> <p>The instrument is too hot, shut down the laser for 30 minutes.</p> <p>Screw the treatment head down, check the front mirror, if it is damaged, replace immediately.</p> <p>Examine the handle or a part of the treatment head whether water leaks in, replace immediately if it leaks.</p>
The laser treatment head is leaks	If the laser treatment head is damaged, please change the laser treatment head or contact the dealer.
There is a 'cheep' sound in the instrument operation process when pressing preignition.	<p>The instrument does not be used over a long period, preignition is difficulty.</p> <p>The indoor temperature is too low, adjust to rise the indoor temperature properly, we suggest installing the air condition.</p> <p>Check the circuit immediately.</p> <p>The indoor humidity is too high, keep the room dry.</p> <p>The light is damaged, replace the light.</p>
The temperature of cooling system is higher	Close the system; cool the system slightly, Re- start. Contact the dealer.
The energy lowers gradually when using	<p>Check whether there are impurities on the mirror surface or not. If there is dust clean it.</p> <p>Whether the temperature of the handle is too hot or not, Leave the machine to cool for 30 minutes or replace circulating water.</p> <p>Check if the front mirror is intact or not, if the mirror is</p>

	broken, please contact the seller.
The power of The laser treatment head goes down	The life of laser treatment head is not long.
The laser breaks down	The light in the laser machine must be replaced. The treatment head probably is damaged, please contact the dealer.

Chapter 6 Other Contents

6.1 Operation Skill of Cosmetology

Attention

1. Please find out whether the customer has scar constitution, peeling skin or allergic skin first. Ask customers if they have artificial eyebrow, or purified of embroider, eyebrow and tattooed with other methods before. Observe if the scar had existed already. Explain to the patient that the pigmentation trace will remain for a period. The treatment must be repeated after 45 days
2. When treating black or blue color pigmentation with the 1064nm laser, the operator must explain briefly to the patient about the principle of treatment and the possible reaction during and after surgical (as follows). Because the patient does not understand the surgical operation circumstance, the surgical response and recovering process, there may be dispute. Before undo the artificial eyebrow, shave the eyebrow first for the observation in the surgery.
3. You may use the 1064nm Laser which was stabbed pigment in the skin deeply. Don't be afraid of the high loudness from the Laser during the treatment. Because the laser energy which crack the melanin of the pigment. The shallow tissue of pigment will be left because of absorbing strong laser energy from epidermis. Only a minority thinner cuticle person who is easy to infiltrates of the blood spot. The pigment tissue will be shallow after the first treatment. The pigment will be restored after at least ten minutes. It is a normal reaction by tissue. The macro-phage will swallow the function and the transportation function continues long tome. The stabbed pigment tissue will became gradually shallow in this period time. We suggest the treatment interval of 6 weeks between two treatments.
4. When treats black and blue pigment with 1064nm laser, the hair color will be takes off and fall off after surgical probably. But it will afresh new hair after two weeks, and may thicker compare the original hair in temporarily. It will be able to tend to normal gradually. The treatment spot has infiltrates the blood, or /and the slight dropsy. You might feel itches and tissue hardens after swollen areas lessen. These are the normal response of the organization. All bad feelings will disappear within 2 to 4 weeks. But it will depend on different person.
5. When treats brown and red pigment with 532nm laser, because the body tissue's hemoglobin has the certain absorption to the 532nm wave length, so the skin surface will vaporized white after the laser irradiation. The epidermis necrosis and produces the pigment to fall off and pigmentation.

6. When treats brown and red pigment with 532nm laser, hypodermic capillary absorbs the 532nm laser to busts and cause the hypodermic bloody, purple skin and even may cause to tie with scab. The recovering time will be depends on different person, it will take about 20-60 days normally.
7. It is forbade to black eyebrow, washing, touches of the bloody affected part after surgical within one to three days to avoid causing the infection. You should notice prevent suntan to avoid pigmentation. The patient that bleed profusely and swelling seriously should obey the doctor's advice to take Acetylspiramycin Tablets and antibiotic medicine. 72 hours after surgical external use erythromycin ointment, also wipe the repair fluid or the eyebrow fluid to the trouble place and help to deal. In a week avoid massive diets pungent foods the patient color stabbed deeply also cannot drink wine.
8. The beautician should build up the treatment file for the customer.
9. When the treatment head touch on the skin, the energy will be in weakest. When the treatment head is apart from the skin around 4~6cm, the energy will be in strongest.

6.2 Purify of Embroider Eyebrow

1. First finds out if the customer has scar physique, or change skin or allergic skin. If they are covered eyebrow, or purify of embroider eyebrow, tattoo with other methods before, then use the weak (low) energy big facular to remove, but cannot remove to get a bleed.
2. Before purify of embroider the stabbed eyebrow, should scrape off the eyebrow first. Set optical frequency at 3-5Hz, the treatment head is apart from the skin from 0-3 cm.
3. The 1064nm laser is used to purify the black and blue-stabbed eyebrow. If the color present out after 5-10 minutes, we can purify for the second. Select the stronger energy to crush the pigment and promotes the organism absorption. Reexamines after 6 weeks, if the pigment or the light pigment trace is not shed, carry on treat once more.
4. Purify of embroider pink color tabbed eyebrow may use 532nm wavelength directly.
5. Purify the scarlet red and brown color eyebrow can use 1064nm wavelength first, then use the 532nm wavelength again. After 6 weeks, use the 532nm wavelength to carry on the second treatment.
6. The treatment interval of 6 weeks between two treatments. Treat periodically until clean up.
7. Suggestive number of treatment need: 1-3 times

6.3 Purify of Eyeliner

1. Must insure strict protection for the eyeball; the damage of eyeball created by laser is irreversible.
2. Set light frequency at 3-5Hz, and select low energy, small light spot, the treatment head is apart from the skin 0-3cm. The operator can use 1cm thick gauze to protect the eyeball of the patient.
3. Purify the lower eyeliner request the patient to close eye tightly, and the eyeball see upwards. The operator suppress the gauze with the index finger, suppress and push the upper eyelids upwardly, the middle finger pokes the lower eyelid to reveal the eyeliner, carry on the fast treatment with speed of light 3Hz. Advise the patient if feeling painful, do not move and tell the doctor to pause.
4. Purify the upper eyeliner requests the patient to close eye tightly, and the eyeball see downwards. The operators suppress the gauze with the middle finger, suppress the eyelid to underneath, the index finger push the upper eyelid upwards to reveals the eyeliner, and carry on the treatment with speed of light 3Hz.
5. Do not use the anesthetic as far as possible. After 6 weeks, carry on treats once more to deep part.
6. The treatment interval of 6 weeks between two treatments. Treat periodically until clean up.
7. Suggestive number of treatment need: 1-3 times

6.4 Purify Soak Lip and Lips Line

1. While purify the red lips line and red lips, choose corners of the mouth first for experiment. If the test spot change immediately to black after the laser strike, cannot purify again.
2. 2, Set light frequency at 3~5Hz, the treatment head should apart from the skin 0-3cm.
3. While purify black, scarlet red and the deep coffee color lips, purify with the 1064nm wavelength first, follows closely with the 532nm wavelength. After 6 weeks, carry on the second treatment with the 532nm wavelength.
4. Purify the pink red and red lips with the 532nm wavelength directly.
5. Notice: All the lip line and soak lips should carry on treatment after 6 months, otherwise the surgical will fail.
6. The treatment interval of 6 weeks between two treatments. Treat periodically until clean up.
7. Suggestive number of treatment need: 1-3 times

6.5 Purify Tattoo and Wound Tattoo

1. Set a light frequency at 3Hz or 5Hz, the treatment head is apart from the skin 0-3 cm, use the small light spot and high energy possibly.
2. The operation skill is as same as purify soak eyebrow.
3. The bigger area only purify once time then, do not purify again as far as

- possible. Avoid the energy gathering to create the skin swelling or the blister.
4. The treatment interval of 6 weeks between two treatments. Treat periodically until clean up
 5. Suggestive number of treatment need: 1-4 times

6.6 Purify Old-age Spot and Nevus

1. Set a light frequency at 3~5Hz and the treatment head is apart from skin 0-6 cm. Choose small light spot and high energy.
2. Purify the old-age spot should use the 1064nm wavelength at first until the spot of bleeding appears. Change to 532nm wavelength to purify if no reaction.
3. Adopt the 1064nm wavelength to purify nevus generally, change to 532nm wavelength to purify if have no reaction.
4. The treatment interval of 6 weeks between two treatments. Treat periodically until clean up.
5. Suggestive number of treatment need : 1-2 times

6.7 Purify Birthmark and Nevus of OTA

1. Set a light frequency at 3Hz or 5Hz, the treatment head is apart from the skin 0-4 cm. Choose the small light spot and high energy.
2. Strike the trouble place until it seep the blood.
3. Best carry on the treatment with the 1064nm wavelength.
4. The treatment interval of 6 weeks between two treatments. Treat periodically until clean up.
5. Suggestive number of treatment need: 3-5 times

6.8 Purify Coffee-spots, Freckles and Yellow Brown Spot

1. Set a light frequency at 3Hz or 5Hz, the treatment head is apart from the skin 0-4 cm. Choose the small light spot and high energy.
2. Continuously strike the trouble place with the 1064nm wavelength about 15 minutes.
3. The treatment time avoids June, July, August and September every year.
4. The yellow brown spot can be cured by this machine. Suggest using carefully because of responding phenomenon.
5. The treatment interval of 6 weeks between two treatments. Treat periodically until clean up.
6. Suggestive number of treatment need: 2-5 times

Annotations:

- 1 the technical items in the manual may be improved, please contact our company as request.
2. Electric principle diagram and part list will be provided as request.