

Bomebeauty Medical Equipment Co.,LIMITED

Bomebeauty Medical Equipment Co.,LIMITED

Nd:YAG Laser Treatment System BM19 User's Manual



Please read this manual carefully before operating this machine
and retain it for future reference

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Bomebeauty Medical Equipment Co.,LIMITED

【Product name】

Nd:YAG Laser Treatment System

【Type】

BM19

【Manufacturer】

Bomebeauty Medical Equipment Co.,LIMITED

【The Way of contact】

Web site: www.bomebeauty.com TEL: 0086-319-8217251

【After-sales service organization】

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【Product function structure】

Parts and control

Nd:YAG Laser Treatment System is composed of the following parts(see Figure 1):

The power supply; laser device of double wavelength; control equipment and cooling system.

The part of power supply is installed in the host box; the control equipment is composed of the LCD, the Foot Switch, the Key Switch and Emergency Switch. The LCD is used for controlling laser and showing work parameters, and hinting functions of the keys generally used. The laser machine is operated manually by the user.

The host box

The host box is the heart of this machine, which includes the following parts:

The power supply and the control module: To provide electricity to other modules, and cut off the power supply as soon as the system breaks down.

The control module: To control the coordinated work between the other modules in the system.

The LCD controller: To display the information from the equipments and take the instructions of the users.

The power supply of laser: To recharge the capacitor.

The capacitor: To store energy for laser.

The power supply for simmering: To turn on the Xenon light, and keep it in the simmering state;

The cooling system: To cool down the laser machine.



Figure 1 Nd:YAG Laser Treatment System



Notice

Only the engineers authorized by Wellzone Company can open the back cover, check and repair the modules inside the machine. The customers are not allowed to open this machine by themselves.

The control panel

The customer operates this machine by controlling the panel, which includes the following parts:

The Key Switch (the power switch): To be used to switch on and off the machine.

Emergency switch: The red mushroom-like switch is used to cut off power supply urgently. The power supply of the system will be cut off immediately when this switch is pushed. Instructions of this switch will be performed by the system ahead of that from the Key Switch. Turn the Emergency Switch in the direction of the arrowhead and loosen it, otherwise the machine will be kept in closed state.

The LCD: The user exchanges with the system by the LCD and the keys on it. The state of the system, the operation interface, the instructions and hints to the user will be shown on the LCD.

Laser

The laser device contains three treatment heads: 1064nm, 532nm & 1320nm. The 1064nm head is used for curing the blue or black pigmentations and the 532nm head is for the red and brown pigmentations, 1320nm probe used for skin rejuvenation with medical carbon mask.

When replacing the treatment head, screw off the treatment head first, and then screw on another treatment head.

There is a water cooling system in the laser device for cooling down the light.

System software

The soft ware in the machine mainly has two functions: Allow the doctor to select the best individualized parameters according to the concrete diagnosis results of each patient; Control the working process of the system to avoid accidents.

Technical parameters

Laser Type: Q switched Nd:YAG Laser
Laser wavelength: 1064nm & 532nm,1320nm (optional)
Max energy: 800mj&1000mj
Pulse width: <15ns
Repeat frequency: 1、2、3、4、5 HZ
Light conducting method: conducted directly from the laser outlet;
The light spot diameter of the laser output: 3mm-8mm
Power supply: (220V-240)110V, 10A
Environment temperature: 5℃~40℃
Relative humidity: ≤70%
Cooling system: the inside installed circulating water cooling+ air cooling.

【Treatment Range】

Suitable for the treatment of pathological pigmentation and pigmentation (dark or blue & black) formed by external mixed colors.

【taboo diseases】

Pregnant woman;
Patients of the scar constitution;
Patients of liver disease, diabetes and mental disease or patient with a bleeding tendency.

【Notices, warnings and suggestive elucidations】



Warning

It might be harmful if you don't adjust and use this machine by the requirements in the manual. So the medical and technical personnel should know well about the safety requirements and operative steps before starting this machine.

Laser safety

According to the ray radiation classification, Laser belongs to class-4 laser products;
The Nd:YAG laser is invisible infrared, among which the laser of 532nm wavelength is a visible green glare. The operator should wear protective glasses with wavelengths between 200—1080nm;

The laser window is located at the end of the **pistol sight**. The user should avoid the radiation from the window.

It is not allowed to watch the end of the **pistol sight** and any laser beam thrown back;

Flammable and explosive drugs, liquid and gas (such as alcohol, aether, giggle gas, oxygen, etc.) should be kept away from the laser radiating area; and relative protective measures should be stipulated.

Metal apparatus can reflect laser, so the operators should avoid letting laser project

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directly on these apparatuses and do their best not to use the reflection apparatus;

When operating this machine, please don't wear ornaments that can reflect laser, such as watch and jewelry, etc.

Strict and effective eye protection must be provided for the patient, such as gauze covering, eyelids plank, eyeshade protection etc. The operator must cover the patient's eyeballs with gauze or use eyelids plank or eyeshade to protect the patient's eyeballs when removing the eye lines tattoo. The operator should have ophthalmologic clinical experience, must disinfect all the above-mentioned instruments strictly before using them, otherwise, the patient will feel terribly uncomfortable, have cornea inflammation that results in falling of the cornea and even make the patient lose sight.

It is strictly forbidden to project the laser upon other places except the affected part to be treated and the target area to be used for adjusting laser. When moving the treatment head in the course of treatment and placing it after treatment, the operator should let the end of the head point at the safe place.

The laser radiation warning sign should be put on at the entrance to the laser treatment room. Any people are strictly forbidden to get in at will in the laser operating process.

The absorption of pigments of different pathological changes tissue to laser varies, so dosages required in treatment should be chosen from little to large.

Users should provide a special-purpose laser operation room, in which air-conditioning, dehumidifier, etc., should be equipped with, but light-reflecting devices not allowed. Special areas for the operator and patient should be kept in the room and notices before operation should be stuck on the walls of the room too.

The eye protection

The operator in the laser room must wear protective glasses and give the patient strict and effective eye protection, too.

The operator in the area should wear laser protective glasses specially made, of suitable wavelength between 200 - 1080nm.

The laser protective glasses cannot block completely the direct laser or laser reflected by glass, reflector and smooth metal surface. Therefore it is strictly prohibited wearing protective glasses to watch point-blank the above-mentioned laser and the reflected light.

It is effective to protect the eyes of the patients by wearing gauze cover, protective eyeshade and eyelid board and so on.

It is more effective to protect the eyes of the patient with wet gauze, but the area to be treated must be kept absolutely dry.

The instrument must be switched off when adjusting the laser or cleaning the lens of the laser.

Electricity and instrument safety

Classified by protection against electric stroke, laser treatment instrument belongs to common equipment of Type B under Category 1,

When the 220 V power supply is adopted for the laser treatment instrument, the power capacity is no smaller than the 1320 W.

The net power source connecting with the laser instrument must be equipped with single-phase, three-line AC socket well grounded and in accordance with the international standard, and its specification should be above 10A. Well grounding is very important for

the operational safety.

Some remained voltage may still exist in the high-tension parts inside. It may lead to electric shock to open the cover of the machine at will.

It is a must to keep the stability of voltage in use.

Keep all panels and the back cover sealed up. It would be dangerous if the back cover is opened. When maintaining the equipment, do not open the back cover of the power source or leave the equipment in a state out of attention.

The transportation safety

The balance of this machine is very good and it is movable, but should be moved carefully;

Nice optical system is installed in the laser machine, so shock absorption packing supplied by the manufacturer must be used in transportation. Otherwise, it may cause maladjustment of the laser system, and affect the output of laser energy.

Safety warning

In addition to the technical personnel authorized by JS Company, nobody can check and repair the laser treatment instrument, especially the inner part, including the adjustments to the power supply, the cooling system, the optical component and the laser treatment head. Careful attention should be paid to the high voltage in the instrument, it's dangerous!

Please confirm that the rated electric voltage for this machine is in accordance with that in the country you are in;

The customer must switch off the machine and pull out the wire plug before maintaining this machine. Working with the power supply on may result in injury to the body or damage to the equipment;

When water is found leaking from the treatment head, the machine can't be switched on; If it has been switched on, shut it off immediately.

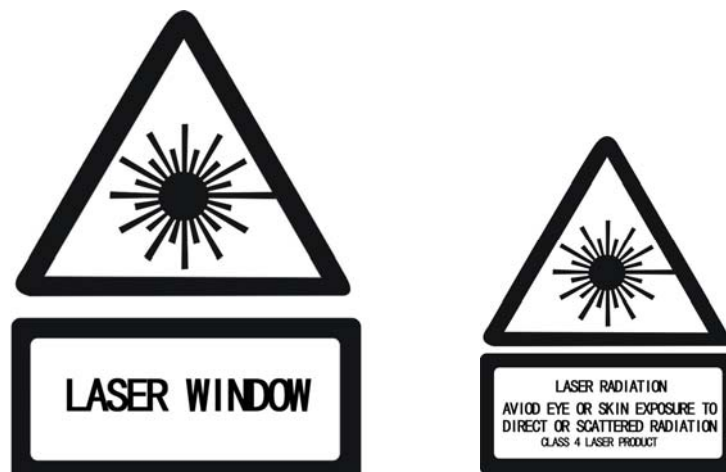
Prevent from fire

Temperature of object will rise after absorbing light energy. Preventive measures should be adopted to decrease the danger of igniting the combustible articles in the treatment area and nearby;

When cleaning the skin before operation, please do not use the combustibles, such as alcohol and acetone, etc. If it is necessary, please use soap or water;

If you have cleaned the treatment head or disinfected its any part of with alcohol, please don't start the machine until it gets dry completely.

Safe marking



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Please notice that marks for the laser treatment machine are stuck on the upper place of the machine box and the laser window.



Warning

Any laser electropult can do harm to the body if it is not operated properly. The operator should be careful and adopt necessary protective measures all the time.

Safety devices of the system

There are some safety devices installed in the laser treatment instrument, all people in the operation room must know very well about their positions and their operation methods.

Key Switch: The Key Switch is used to switch on and off the machine. Only the key provided by JS Company can start this switch. It can be used to prevent the machine from being used illegally. Please pull out the key from the switch after shutting off the machine and please confirm that the machine can't be switched on without the key.

Emergency Switch: This red mushroom-like switch can shut off the whole system urgently. The power supply of the machine will be cut off when pressing it, no matter what condition the machine is in. This Emergency Switch can be loosened by turning it in the direction of the hour hand. Otherwise, the equipment will be kept shut off. In order to guarantee safety, this switch can be pushed down only in the state of emergency.

Semiautomatic Air Switch: The Air Switch of this machine is installed at the lower left side of the back panel. When the working electric current exceeds 6A, this switch will cut off the power supply to protect the system. The power supply will be recovered when this switch is pulled up.

【installation and adjusting】

The laser treatment system can be installed in hospitals and beauty salons, and the installation needs a very little bit of preparation work.

The installation content includes:

Open the packing of the machine and set it in the place chosen in advance.

Check the equipment and the integrity of its parts.

Infuse distilled water into the water tank of the equipment.

Connect the power supply.

Test all the functions of the laser equipment.

Install and use the equipment.

Detailed list of the Equipment

List of the equipment:

Host	1
The laser treatment head	2
Protective glasses	1
User's Manual	1
Funnel	1
Pipe	1
Power wire	1

The Installation requirement

Check if the installation position is in accordance with that stipulated in this paragraph before opening the packing of the laser treatment equipment.

The space requirement

This machine should be kept away from place where there is a hot draught, and a distance of 60 cm. should be kept between the machine and other things.

The electricity requirement

The rated electric voltage adopted in the installment place has been preset according to the customer's requirement before the machine leaves the factory. The relative requirements of the equipment to electric supply are as follows:

AC220V \pm 10%, 10A, 50Hz。

The equipment is grounded by the wall wire through the yellow and green wires in the power line. Well grounding is very important for the safe operation.

No sudden changes, peaks of voltage and current, fall and surge are allowed in the electric current input

So this machine can't use the same power line with other heavy-load machines, such as elevator, air conditioning, big-power motor, etc. Wellzone Company suggests that the machine use separate power line and air switches.

The main safety protector in the machine is the 6 A chopper (i.e. the Air Switch), which spring up and cut off the power supply. When it is pulled up, the power supply will be reconnected.



Notice

Please confirm that the rated electric voltage of this instrument is in accordance with yours (AC220V).

Environment requirement

Air quality: There should be no caustic particles (such as acid) in the air, for which can damage the wire, electric component and optical surface. The less the dust in the air is, the better for the machine, for they can absorb light and be heated up. When the dust grains on the lens surface of the filter are heated up, they may damage the lens of the filter. Metal particles may damage the electric components.

Temperature: In order to guarantee the instrument in best working state, the indoor temperature should be kept between 20°C~25°C and the relative humidity can't exceed 80%. So, air conditioning is the best choice for the treatment room.

Installation

Place: The indoor temperatures for the instrument should be kept between 10°C~28°C, the humidity not beyond 80% and the operation or treatment rooms should be kept clean all the time.

How to put water into the water tank:

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1. When receive the machine, put it on the ground, showing as photo A:



2. insert the two white tubes “the water-in “ hole and “water -spill” hole, showing as photo (B)



3. fill water in the water tank until water run out from the “water spill” hole
4. press the metal part to pull out the white tube which connects with “water-in “ , **the water tube on “water-spill” should not be pulled out**, show as photo D & E



1. Take away the pipe.
2. Plug the connector.
3. Start the machine.;

NOTICE: Keep the hole for water in/out closed when the machine is during transportation; Keep it open, when the machine is working.

Connect the Power Supply

Install the Foot Switch: Install the Foot switch contacted to the step interface.

Switch on: After above-mentioned installation has been completed, insert the key and turn it left, then the whole machine is switched on; meantime, water inside begin to circulate, and the cooling system gets started automatically.

Check: Observe whether the instrument is leaking. If it is, please close power supply or contact the dealer.



Notice

In order to guarantee the safe operation of the system, please infuse distilled water into the cooling system in time;

When infusing distilled water for the first time, please do it according to the above-mentioned steps, and then start the system;

Only distilled water can be used in the system, and the water temperature can not get below 5 degrees Centigrade;

In order to guarantee the safety of water circulation in the tank, please open the Water In/Out, letting out 200 ml of water, and close it.

Move

When moving the laser treatment system in hospital, beauty salon, or clinic, please do it according to the following steps:

Pull out the power supply plug;

Put the treatment head on the stand;

Loosen the truckle brake;

Push or pull the equipment by its handle slowly.

【Usage explanation】

This chapter will give a description of the operation steps of the laser treatment system.



Warning

There is high electric voltage in the laser treatment system, please make sure that all panels have already been fixed well;

When starting the laser treatment system, please put the laser treatment head on the stand and let its head point down;

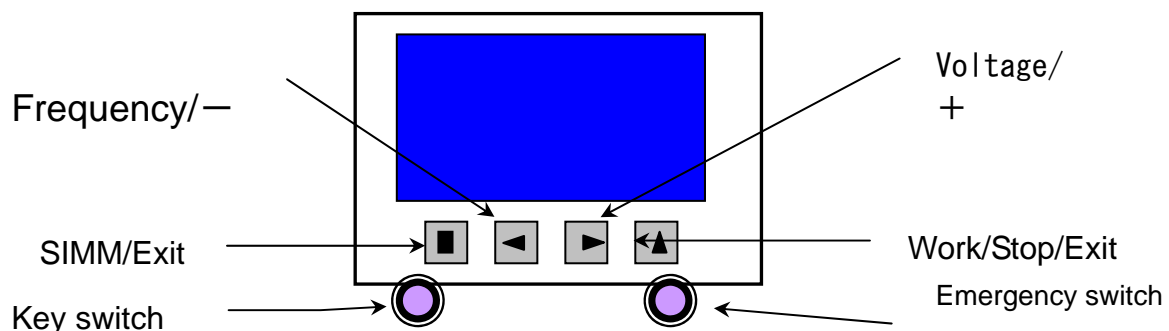
All the personnel in the treatment room should wear the protective glasses.

Even with the protective glasses on, you can't watch the laser from the treatment head;

You can't point the laser treatment head at any place except the target area;

Excess laser projected on the treatment area can harm the skin.

The manifestation hold and function key



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Emergency switch: When something urgent occurs, press this switch hard, the power supply will be cut off immediately. Turn the switch in the direction of arrow and the switch will spring up and the power supply will be recovered.

Key switch: It is the power switch. When it is turned to ON, the power supply will be connected; if turned to OFF, power supply will be cut off.

“SIMM/EXIT” key: When pressing this key, the instrument will stay in the simmer state and the xenon light will be turned on; When pressing it again, the light will be turned off and the system will be in a waiting state.

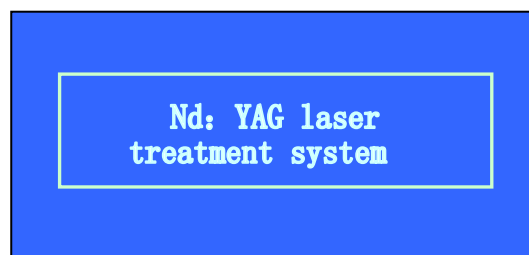
“Volt/+” key: When pressing this key, the system will be switched to the voltage adjustment interface; when pressing it again, the voltage in the system will be increased.

“Freq/—” key: When pressing this key, the system will be switched to the frequency adjustment interface; when pressing it again, the frequency of the machine will be increased.

“Work/Stop/Exit” key: When pressing this key, the machine will get into working state; when stepping on the Foot Switch, the laser will be sent out, and the operator can give treatment to the patient; when pushing this key once again, the machine will exit from the working state; meanwhile when pressing the Foot Switch, no laser will be sent out.

Laser treatment system software operating instructions

1. When the machine is switched on, the word WELCOME will be shown on the interface.



2. Press any key and enter the operation interface.

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C		000018
[SIMM][FREQ] [VOLT][FUNC]		

3. On the operation interface, press SIMM, the light flashes, and switch to the following operation interface.

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C		000018
[SIMM] [FREQ] [VOLT] [WORK]		

On this operation interface, press WORK to get the system ready and switch to the following operation interface.

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C	[OK]	000018
[SIMM] [FREQ] [VOLT] [WORK]		

Ready for work

The capacitor inside the machine gets recovered, and switches to the following operation interface. At this time, let the laser treatment head aim at the target area, and press the Foot Switch, then the laser comes out and treatment can be started.

You can adjust the energy output of laser according to your treatment requirements. The working voltage is adjustable, you can adjust it between 650~1000 V. Press VOLT to switch to the voltage adjustment interface, and then press “-” and “+” on this interface to decrease and increase working voltage. When the adjustment is finished, just press EXIT to switch to the next operation interface.

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C		000018
[VOLT] [-] [+] [EXIT]		

The working frequency of laser is adjustable. You can adjust frequency between 1-5 Hz according to the treatment requirements. Press FREQ to switch to the working frequency adjustment interface, and press “-” and “+” on this interface to decrease and increase the frequency. When the adjustment is finished, just press EXIT to return to the operation interface.

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C		000018
[FREQ] [-] [+] [EXIT]		

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When the treatment is completed, before shutting down the laser treatment system, first press WORK to recover the capacitor and get the system to the ready state,

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C		000018
[SIMM][FREQ] [VOLT][WORK]		

Then again press SIMM to withdraw from the simmer state, shown as on picture below. Put the laser treatment head on the stand and screw the Key Switch to turn off the machine.

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C		000018
[SIMM][FREQ] [VOLT][FUNC]		

The temperature display and protection:

电压	650V	计数器
频率	3Hz	25
62 °C	水温过高	006913
触发[频率][电压]工作		

The
temperature
display and

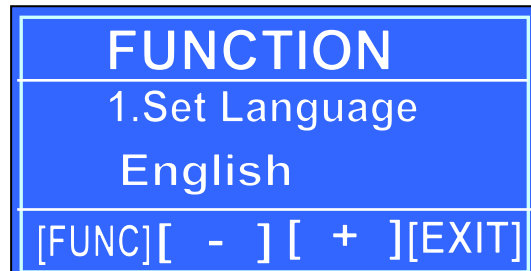
With the temperature display function, the system can monitor the temperatures of the circulating water all the time. When the temperature of the circulating water exceeds the preset protective temperature of the instrument, "the water temperature lead high" will be displayed on the screen, and at the same time, the buzzer will give an alarm and the instrument will stop working. When the temperature of circulating water declines below the protective temperature, the instrument will work normally.

Other function enactment:

VOLT	710V	Counter
FREQ	2 HZ	0
25 °C		000018
[SIMM][FREQ] [VOLT][FUNC]		

On the operation interface, press FUNC and switch to the system program menu. The customer can set the special function of the instrument, press "+", "-" to choose the menu,

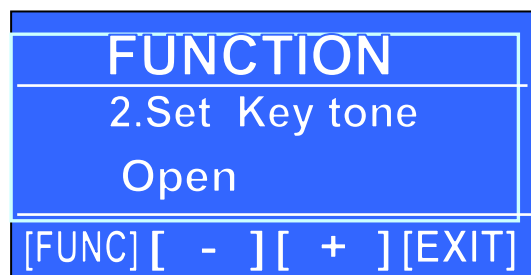
and press FUNC to carry out the function choice.



1. The system language

This system has several languages for your choice. You can make your choice at clause 1 below FUNCTION menu. Press FUNC to switch in the simplified Chinese character, English and the traditional Chinese character, and press EXIT to return to the operation interface.

2. Set tone of the key



Set the key tone of the system by setting OPEN or CLOSE.

3. Set the direction light



The direction light can be controlled by OPEN or CLOSE.



Notice

When the customer uses Q532nm (green light), in order to avoid damage from the direction light, it is better to be set by CLOSE.



Danger

When the system enters the working state by pressing WORK, the laser head can't shoot at persons; The laser head must aim at the treatment area before the Foot Switch is pressed.

When the treatment must be broken or stopped, press STOP to switch to the waiting state to avoid pressing the Foot Switch by mistake. For laser can cause permanent damage to the eyes

No matter weather there is laser output or not from the treatment head, it is not allowed to aim at the operator or the patient.

When the laser comes out, the laser treatment head is absolutely forbidden to aim at these places, such as eyes, etc, and it is not allowed to watch the opening of the treatment head for laser.

Switch off the laser treatment system in strict accordance with the operation requirements.

【The Method of maintaining】

This chapter gives a description of the maintaining of the laser treatment system including cleaning of the equipment, cleaning and replacing of the laser treatment head and adding of distilled water, etc. It also lists some usual failures and resolutions.

The customer can only carry out the maintenance measures listed in this chapter, any other maintaining measures can only be performed by the personnel authorized by JS Company.



Warning

You should switch off the machine and disconnect the power supply before maintaining it, for it may lead to injury to the body or damage to the equipment when performing the maintenance with the machine on.

The customer should be responsible for the damages caused by the following reasons:

Dismantles the outer covering or the accessories without authorization; sabotage; system failures caused by operation failure or maintenance exceeding JS Company's authorization; other system failures caused by natural disasters, such as fire, electric power system failures, thundering, lightning, flood, explosion, etc.

Cleaning the equipments

You should clean the surface of the machine with wet towel for at least one time a week. Neutral detergent can be used, but be careful not to let the liquid leak into the machine.

Cleaning lens of the laser treatment head

In a period of time you should give a periodical check to the lens and see if it is clean. In the process of the treatment, the pigment grain from the skin may get to the lens and affect or even weaken the output of laser, so please clean the lens gently with soft clean cotton cloth or cotton on stick dipped in absolute alcohol before starting this machine.

Obviate the equipments malfunction

Some malfunction phenomena and obviating methods are enumerated as follows:

Malfunction phenomenon	Method
No display	Check power supply if it is well connected.
	Check the Emergency Switch and confirm if it has been pushed down. If it has, please loosen it in the direction of the hour hand.
	Check the Air Switch and confirm if it has sprung up, if it has, push it on and restart the machine. If the Air Switch spring up again, please contact the after-sale service department of JS Company.
	If you can't solve the problem, please contact the engineer in charge of the maintenance.
No laser output when pressing the Foot switch.	Increasing the working voltage gradually to check if there is laser out. Check if system is in the ready state; Check if the Foot Switch is normal. If it has been damaged, please replace it immediately; Check if you have pressed the WORK key; Please contact JS Company.
The system can't be started up.	Check if the Key switch has been turned to its position. If it has not, please turn it to its position in the direction of the hour hand.
The laser output obviously is getting less or no laser out of the treatment head.	The voltage used is too low, so the instrument can't work normally; The lens of the laser treatment head is not clean, please clean it according to the normal process; The Xenon light inside the machine has burned, so replace the light ; The instrument is too hot, please shut down the laser to let the machine take a rest .Turn on the laser again in 30 minutes; Unscrew the treatment head, check if the lens has been damaged. If it has, replace it immediately; Observe carefully if there is water leaking from the handle or the treatment head. If there is, replace them immediately.
The laser treatment head failure	The Xenon light in the laser machine has exceeded the expiry date already, please change the light and check it again;

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	The treatment head probably has been damaged, please replace it or contact the dealer.
Water is leaking from the laser treatment head.	The laser treatment head probably has been damaged, please replace it or contact the dealer.
A cheep can be heard when the SIMM is pressed in the operation process of the machine.	The instrument has been left unused for a long time, so it is not easy to simmer; The indoor temperature is too low, so try to raise the temperature. It is the best choice to install air conditioning; The line circuit of the instrument light may have not been connected well. So check the circuit immediately; If the indoor humidity is too large, please keep the room a bit drier. The Xenon light has burned, please replace the light.
The temperature in the cooling system is too high.	Close the system; let system cool down slightly and then restart it. Or just contact the dealer.
The energy in the instrument is decreasing gradually during functioning,	Check if the lens of the treatment has been blocked by something; If there is pigmentation, please use absolute alcohol to clean it; If the handle is a bit hot, let the machine take a rest of 30 minutes or replace cooling water; Check if the lens is intact. If it has been broken, please contact JS Company.
The power of the laser treatment head is dying down.	It shows that the laser treatment head is reaching the expiry date.

【The condition and method of storage】

When storing the equipment, please pull out power supply plug, drain the water in the equipment, cover it with the pure cotton cloth and put it in a place away from light where the following conditions should be met:

Humidity: Not exceeding 70%.

Atmospheric pressure: 86 kpa ~ 106 kpa

Environment temperature: 5℃~40℃.

【Service life】

The service life of the Xenon light: 500,000 times. Please replace it till that time.

【Other contents】

COSMETOLOGY OPERATION SKILL

ATTENTION:

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1. First, please find out if the customer is of a scar constitution, or has his or her skin changed, or is of allergic skin, or is of covered eyebrow, or has his or her tattooed eyebrow removed and observe if there is scars on the skin. Explain to the customer that pigmentation may be caused by solarization and may exist for a period of time after the tattoo has been got rid of, further treatment will be carried on in one month and a half. If it was compound or chemical pigment that the tattooist used at that time, treatment will be carried on in one month and a half. Light-colored mark may be left after the blue and black pigment being wiped off, for pigment includes the iron and lead ion
2. When treating the black and blue pigmentations with the 1064nm laser, the operator must explain briefly to the patient about the treatment principle and the operation circumstances that may appear in and after the treatment (described as follows). Do your best to avoid unwanted disputes caused by the fact that patients don't understand the operation circumstances in and after the treatment and the recovering course. Before removing the eyebrow tattoo, the operator may shave off the eyebrow first for the observation in the treatment. For the large-area tattoos and Nervus of Ota, we suggest treating them part after part separately in times in order to avoid the patient's discomfort caused by severe reactions. Meantime, you can help the patients build up confidence in further treatment by contrast between the treatment effects in and after the operation.
3. When treating the tissue of very dark and deep-layer tattoo with the 1064nm laser, a sudden pigment crack with a sound may occur, for melanin can absorb the energy of laser strongly. The pigment regiment in the shallow layer of the skin absorbs the energy and makes the epidermis crack. The blood-oozing point can be found on the thinner cuticles of only a few people. It is a very formal reaction of the skin that the color of the tissue becomes very shallow when given the first treatment, but it will get recovered a bit in about over ten minutes. The swallowing and transporting functions of the macrophages can endure a long time and the color of the tissue will become light, so we suggest carrying on further treatment in one month and a half after the first treatment. When removing the eye lines tattooed, please do it twice, for more water in the eyes.
4. When treating black and blue pigmentations with 1064nm laser, the hair is faded and may fall off after operation. But in about two weeks new hair will grow on the skin and will even grow thicker temporarily than before and then will get normal later. Slight dropsy appears on the treated area, from where blood is oozing. It is normal that the treated area gets itchy or even hard when touched after the treatment. All the bad reactions will disappear in two weeks or about one month, and that depends largely on the concrete conditions of the patients.
5. When treating brown and red pigmentations with 532nm laser, the surface of skin gets vaporized and white, the epidermis gets putrescent, faded or colored after the radiation, for the tissue's hemoglobin can absorb some energy of the 532nm laser.
6. When treating brown and red pigmentations with 532nm laser, the hypodermic tissues, such as the capillary vessels crack and form a gore, purpura, even a scab after absorbing the 532nm laser. The time of recovering depends on different conditions of the patients, generally for about 20-60 days.
7. Within 1-3 days after the treatment it is forbidden to paint eyebrow, wash with water etc. in order to prevent the treated area from inspection. Solarization should also be forbidden in order to avoid pigmentation. As for the patients with much bleeding or serious swelling, they can also use erythromycin ointment, repair fluid, and eyebrow fluid on the troubled

areas to help heal up in 72 hours after the operation. The patients can't have hot food, especially drinks of alcohol within a week.

8. The beautician should keep treatment files for customers.

OPERATION SKILL

REMOVE THE EYEBROW TATTOO

1. Firstly, find out if the customers are of scar constitution, or have had their skin changed or are of allergic skin, or are of covered eyebrow or have removed their tattooed eyebrows in other methods before. If the answer is yes, big light spot can be used for removing the eyebrow tattoo, but it is not allowed to find blood and the blood-oozing point can be reached.
2. When removing eyebrow tattoo, scrape off the eyebrow first. The optical frequency to be set is 5Hz and the distance to be kept between the treatment head and the skin is 4-5 cm.
3. The 1064nm laser is used to remove the black and blue eyebrow tattooed. If the color appears again in 5-10 minutes, wash it again. Choose the larger energy to smashes the pigment further and promotes the absorption of the tissue. Have another check-up in one month and a half and see if there are patients with faded pigment or light pigment. If the answer is yes, please carry on a treatment further.
4. The pink eyebrow tattoo can be removed with 532nm laser directly.
5. Remove the scarlet red or brown eyebrow tattoo with 1064nm laser first, and do it again with the 532nm laser. Carry on another treatment in one month and a half with the 532nm laser.
6. When remove the eyebrows tattoo, or removed with medical liquids, or with flaws on the skin, let the treatment head close to the skin and enlarge the angle between treatment head and the skin. One treatment is okay, in a month and a half carry on treats once more.
7. If the tattooed eyebrow has existed for a long time, and for in which the pigment contains iron ion, a light-colored mark may be left after the blue and black pigment is get rid of. Treatment may be carried on in one month and a half.
8. Don't stop treatment until the pigment is get rid of completely. We suggest treatment in a one-month-and-a-half cycle.
9. Treatment times suggested: 1-3 times.

REMOVE THE EYE LINE TATTOO

1. Strict protection must be given to the eyeball, for any damage to it is not permanent.
2. Set the light frequency at 5Hz, select low energy and small light spot and keep a distance of 4-5 cm between the treatment head and the skin. The operator can use one-centimeter-thick gauze to cover the patient's eyeball
3. When removing the lower line, ask the patient to close eyes tightly, and let the eyeball move upwards. Press the gauze with the forefinger, press and push the upper eyelids upwardly; push the lower eyelid downwardly to reveal the lower line with the middle finger and carry on prompt treatment with light frequency of 5Hz. Please tell the patient that when he or she can't endure, don't move and ask the doctor for a temporary stop.
4. When removing the upper line, ask the patient to close eyes tightly, and let the eyeball move downwards. Press the gauze with the middle finger, press and push the lower eyelids downwardly; push the upper eyelid upwardly to reveal the upper line with the

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forefinger and carry on prompt treatment with light of 5Hz.

5. Do your best to avoid anesthetic. Carry on the treatment on the darker area in one month and a half.

6. Don't stop treatment until the pigment is get rid of completely. We suggest treatment in a one-month-and-a-half cycle.

7. Treatment times suggested: 1-3 times.

REMOVE LIPS of RED TATTOO AND LIP LINE TATTOO

1. When removing the red lips and red lip lines, choose one corner of the mouth first for experiment. With the laser on, the spot in experiment will get black immediately because of the iron in the pigment. Further treatment is not allowed.

2. Light frequency is to be set at 5Hz and a distance of 4-5 cm is kept between the treatment head and the skin.

3. For black, scarlet red and the deep coffee lips, please remove them with laser of 1064nm and do it again with laser of 532nm. In one month and a half, carry on another treatment with laser of 532nm.

4. For pink and red lips, remove them directly with laser of 532nm.

5. Notice: Further treatments to the lips and lip line tattoo should be carried on in half a year, otherwise the treatments will fail.

6. Don't stop treatment until the pigment is get rid of completely. We suggest treatment in a one-month-and-a-half cycle.

7. Treatment times suggested: 1-3 times.

REMOVE TATTOO AND INVASIVE TATTOO

1. The light frequency to be set is 3Hz or 5Hz; Distance to be kept between the treatment head and the skin is 4-5 cm, and try your best to choose the small light spot and high energy.

2. The operation skill same as "Remove Eyebrow Tattoo".

3. For large-area tattoo, it is okay to remove them for one time in order to avoid skin swelling and blister.

4. Don't stop treatment until the pigment is get rid of completely. We suggest treatment in a one-month-and-a-half cycle.

5. Treatment times suggested: 1-4 times.

REMOVE THE AGE SPOT AND THE NAEVUS

1. The light frequency to be set is 5Hz and the distance between the treatment head and the skin is 4-5 cm. Choose small light spot and high energy.

2. Remove the age spot with laser of 1064nm at first. When the blood-oozing point is reached, stop treating. If it is not effective, please use laser of 532nm for a change.

3. Remove the naevus with laser of 1064nm generally. If it is not effective, use laser of 532 nm for a change and carry on the treatment till the blood-oozing point is reached.

4. Don't stop treatment until the pigment is get rid of completely. We suggest treatment in a one-month-and-a-half cycle.

5. Treatment times suggested: 1-2 times.

REMOVE THE BIRTHMARK AND NAEVUS OF OTA

1. The light frequency to be set is 3Hz or 5Hz, the distance between the treatment head and the skin is 4-5 cm. Choose the small light spot and high energy.

2. Remove with the focus till the blood-oozing point is reached.
3. It is the best choice to carry on the treatment with laser of 1064nm.
4. Don't stop treatment until the pigment is get rid of completely. We suggest treatment in a one-month-and-a-half cycle.
5. Treatment times suggested: 3-5 times.

REMOVE THE CAFÉ-AU-LAIT-SPOTS, FRECKLES AND YELLOW BROWN SPOT

1. The light frequency to be set is 3Hz or 5Hz, the distance between the treatment head and skin is 4-5 cm. Choose the small light spot and high energy.
2. Remove the spot part by part continuously for about 15 minutes with the laser of 1064nm.
3. For the treatment time, June, July, August and September should be avoided.
4. This machine can be used for the yellow brown spot, but carefully, for there may be a rebounding.
5. Don't stop treatment until the pigment is get rid of completely. We suggest treatment in a one-month-and-a-half cycle.
6. Treatment times suggested: 2-5 times.

Laser machine Treatment with medical Carbon

----Laser tattoo removal&Laser black moppet

Introduction

• Treatment Theory

Eliminate spots,remove tattoos:The specific laser wavelength will effect on and melanin of epidermis and dermis.The pigments will begin to swell and explode to tiny particles after absorbed this high energy laser.One part of them will be shot out of the body,the other parts will be gradually removed by metabolism.

Tighten skin,contract big pores:Spread specific fine carbon on face,after absolutely infiltrated in pores,then to shoot,it's easily burst the carbon particles to break out the spots and cutin of epidermis.The heat will stimulate regrowth of collagen,to tighten skin and shrink pores.

• Application

- 1.To contract large pores,whiten skin,lighten spots & pigmentation;
- 2.To wipe out tattoos,to eliminate eyebrow cleaning,eyeline cleaning, age spots,birthmark,ect.

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Technical Parameters

Laser type	Q-switched ND:YAG laser
Laser wavelength	532nm,1064nm,professional black moppet head
Frequency	1-5Hz
Cooling system	Wind cooling+Water cooling+Semiconductor
Light source	220V/110V 50Hz/60Hz

• Features

Moderate treatment,no risk of scars and wound.It's the most moderate laser treat.No side effect,no recovery time,back to work at once.

• Pre-operation

- 1.Clean skin
- 2.Spread even Carbon on treatment area.

• Operation Steps

- 1.Filling water.

2.Choose Treatment head:1064nm,532nm,professional black moppet big head.Then fix it in the laser gun. Treatment process as the following photos:

Pay attention:for black moppet treatment,the operation steps are as follows:

①Spread professional black moppet carbon powder on face,after 30-40 minutes,then begin to treat.From spread powder to finishing the treat,the whole operation is about 50-60 minutes.Each treatment do not need too long time.

② The laser treatment is very moderate,it's a step by step operation.Every 2-4 weeks as one treatment.



3.Turn on the key switch and the laser control switch.Adjust the parameters,Point the laser output to the treatment area. Step on foot pedal making treatment.

4.After finishing the operation,you have to release foot pedal when the machine cooling down,then turn off the key switch and laser control switch.

Pay attention:During the operation,tell the patients do not move,do not never open eyes.

Skin care after treatment

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• Uncomfortable Symptoms in 3-5 days after treatment

- 1.The face will be redness or become swollen,which is a role of heat that will promote collagen regrowth.Pay attention:do not never make ice cooling at this time,just wait for 20-60 minutes,they will be gradually disappeared.
- 2.The skin is very dry,so you have to pay more attention to keep moisture of skin.
- 3.some people will have a little allergic to carbon powder,you can rub some external medicine.

• Cosmetic and skin care products

- 1.Do not clean face with too hot water and irritant clean products;
- 2.Choose some moisture lotion and sun protection lotion for skin care;
- 3.Use some moisture essence,such as Hyaluronic Acid,B5 for skin repair

• Daily Life

- 1.Do to go to High temperature places in 3-5 days after treatment,such as sauna,Hot spring,sunbathing
- 2.Do not smoke,drinking,stay up all night
- 3.Pay more attention when make-up remover.

Maintenance of machine

- 1.Keep the treatment head clean with cotton bud.
- 2.Change the water after 10-15 days.
- 3.If there's no laser emit from the treatment head,to check if the system come into [Ready],or check if the foot switch connect well or not.
- 4.If the emit laser become very weak or no laser ,to check if the treatment head clean or not,or the water circulation is good or not.
- 5.If do not enter into [Ready],to check if cooling water enough,or water circulation is good or not.
- 6.If do not open the machine,to check if the power line connect well,fuse is good or not,emergency switch is open or not.