



Catalogue

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1. Structure of laser removal machine:

laser tattoo removal machine is made by light route system, power supply system, computer controlling system, cooling system, etc. And the light route system is installed into the hand piece, but power supply, controlling and cooling system are installed into the machine box of power supply.

Main technical parameters:

Laser model: Q-switched Nd: YAG Laser

Laser wavelength: 1064/532 nm

Pulse energy: $\leq 800\text{mj}/\leq 400\text{mj}$

Pulse width: 10ns

Repetition frequency: 1, 2, 3,4,5,6 Hz

Cooling method: inner circulation water cooling

Power supply: 220V

Main physics parameters:

Each part's name and function:

1. Emergency switch: Something happened suddenly, press the red knob swiftly, and the machine is out of power; screw this knob upwards, the knob springs and has the power supply again.
2. Key switch: This is chief power supply switch, the screen displays a long across line, and press key "down" you can turn off the clew sound.
3. Repeated frequency: Set repeated frequency 1 ~6Hz.
4. Energy adjusting : It can adjust big and small of energy, in the working course, "up" when press every time its energy will increase 10V, "down"

when press every time its energy will decrease 10V.

2. Working condition

Normal working condition:

- 1、 Temperature: 5°C—30°C
- 2、 Relative humidity: ≤70%
- 3、 Pressure: 860—1060amps
- 4、 Power supply: AC220V

Working mode: interval and continuous working mode.10 minutes interval rest for the best after each continuous outputting 5000 pulses.

Cooling: Circulation cooling with inside distilled water

Power supply configure

- **power supply:** AC220V 50Hz

- **Relative specification to configure:**

- 1、 Safety tube socket: The safety tube is installed into the power supply socket, using safety tube (6A/ ϕ 5 x20) which is used for over loading protection that system tube controls power and simmer power.
- 2、 Power output socket: Together with machine configured power line plugs the socket and the other head connects power supply 220V.

【 notice 】 laser tattoo removal machine (Nd: YAG Laser) we manufactured is configured standard trio plugs, so confirm that your power plug have the protective grounding line and assure its safe grounding.

【 notice 】 laser tattoo removal machine (Nd: Yag Laser) we manufactured is suitable for power supply 220V, so the power of manostat of electrical web you are using should be higher than 2KVA.

3. Installation

- a) laser tattoo removal machine should be installed into operating room or therapy room according to the following requirements:
Temperature: 5—30°C,
Humidity: ≤70%
- b) Power supply is installed as above requirements, please specialized electrician checks and installs it.
- c) Installing navigated spin plugs: Plug navigated spin plugs into interlock of the back of machine trunk. It will stop laser outputting after pull out the interlock.
- d) Installing pedal switch: Plug the pedal switch into the **FOOTS** of the back of machine and then screw tightly.
- e) Screwing off the stopper on water tank, then screwing on it tightly after adding full purified water.

Warning

Installed precious and fragile laser apparatus in the hand piece (gun), when you use it please don't fall off!

Warning

If you install it out of instruction, its performance will be influenced, meantime, it is possible for you to be radiated by laser and hit by electricity.

3. Operating method:

- **electrifying:**

Connecting power line and getting through power supply.

- **power on:**

1. Confirm that the button of emergency shut-off is in the state of uplift.
2. Put the key into lock switch and screw it to the state of power on, at the moment, water pump starts to run and the system enter into the state of standby.

Parameter setting:

Pressing the repeated frequency can set the frequency 1~ 6 Hz.

- **Laser output:**

- 1、 Softly press “start” , the prepared indicator light(yellow) will turn to light, and the system enter into the state of standby.
- 2、 Adjust key “up” or “down” to the suitable energy.
- 3、 Hand piece aims at the needed therapy part of skin, then tramples pedal till it outputs laser with the continuous sounds of hum, whereas, when you loosen pedal laser will stop outputting.

【notice】When system is working, please avoid hand piece aiming at dangerous parts(such as eyes), so you must loosen pedal after each treatment, but you can loosen hand piece when laser stop outputting.

Power off

1. Press “Stop” on the screen, then system turn to the state of standby.
2. Screw lock to the power off location, then fetch out key and specially give it to the keeper.
3. If there is emergency happened when system is working, swiftly press emergency shut-off as to power off.

Warning

Operate the system out off instruction manual, it will appear dangerous laser radiation.

- **disinfection:**

Each before treatment and after treatment, you must use gauze or cotton lot dipping high purified alcohol to wipe the head of hand piece one or twice times.

- **Discharge smoke:**

In the treatment course, the pigment grains in the tissue are able to splash as well as produce soot, so advise you use the discharged smoke equipment to absorb smoke. After examination, then press repeated frequency key to back.

- **The use of converter V532:**

Screw off the aiming device on hand piece, then screw on the converter V532, when you are going to screw on tightly, please adjust the marked line on converter V532 right for the middle of shell on hand piece where is the best location for green laser output. The other operating methods are the same.

【notice】 It is strictly prohibited to replace treatment head when system is working.

Maintenance

一、 Brief maintenance

- **Cleansing output lens:**

There is equipped with a output lens behind aiming device, suggest that examine whether there are some splashed substance attached on lens after each therapy, if has, please take off the lens and then dip waterless ethanol with cotton to softly scrub it.

- Suggest that replace water for the machine after using one to two months in order to extend the life-span of machine.

Warning

Strictly forbid to examine and cleanse output lens when the system is on power.

- **Supply cooling water:**

Usually, after using two-three months, pay attention to observe the cooling water level, if the cooling water level is lower than waterline (the system is in the state of power off), please inject water into the water tank from the hole with injector till up to the waterline.

【notice】 cooling water must be distilled water. It is best to use preparation distilled water supplied by hospital, please keep in mind that must not use the tap water or other unqualified water.

- **Specially indicate**

1. The system has set up an anti-jamming procedure on software. when the system is turning on, the computer is able to restore automatically and also the system will restart if the pause state transforms the prepared state or excessive exoteric interference appears.

3. Abruptly power off, the system has set a software protective

Accessory 1

Notice when you treat black and blue pigmentations with Qs laser at 1064nm

1. What you should do before treatment:

First, Know that whether the patient is the constitution of scar: Previously, whether you washed eyebrow or tattoos with other way? Observe whether the scar has existed? Account for patient that it is possible to remain marks of pigmentations after removing imprinted color, which the pigmentations you previously tattooed is caused by sun-baking; as well as account for patient that the tattooed material is possible complex color, when removing blue and black colors, it is likely to remain coffee or red color material, you can have a treatment with blue light after interval two months.

Account for patient that it is possible to appear things as follows in operation and after operation. Meantime, avoid the unnecessary dissension with patients for the reasons that patients have a little understanding for the operation as well as recovering course after operation in the treatment course.

Before purifying eyebrow, it's better to shave the eyebrow in order to observe it well in operation.

2. Occurrence in operation:

When treat the deep tissue, it will produce stronger pigment explosion together with stronger noise because black pigment is intensely absorbed by laser power: the structure of human body can appear turgidity owing to the smashed pigment; but the shallower pigment will explode out from scarfskin and form the seeping blood spot.

After the first treatment with laser, the tissue color will turn shallower, but after a period of time(ten minutes or several ten minutes), the tattooed color

will partly restore, which is also the normal feedback. Meantime, the gulping function and transport function of huge cell will last rather long time (two-three weeks), during this period, the tattooed color of tissue will gradually turn shallow, advise that the second treatment should be going after the first treatment (it is about two-three months late).

3. Possible phenomena after operation:

Hair will fade color and fall off possibly, but about four weeks new hair will grow again even stronger and closer than ever, but all the symptom will gradually recover normality.

The treatment part will occur blood seeping and turgidity, but its degree is decided by different people.

After detumescence, the treatment part you will feel itchiness as well as be able to touch a hard tissue, to all which are belong normal feedback, and the bad reflection will disappear after two weeks or one month.

3. Doctor's advice after operation

It is forbidden to do infectious action, including drawing eyebrow and washing eyebrow with water from three to seven days, and guarding against sun-baking. For the patients who bleed more and swell seriously can take antibiotic medicine according to doctor's advice.

Accessory 2: Notice when you treat brown & red pigmentations with laser at 532nm

Laser at 532nm is called blue laser, which has a big difference to biologic tissue compared with laser at 1064nm.

The hemoglobin in human body and the tattooed brown as well as red pigmentations by man-made have a certain absorption to laser at 532nm, so after being sun-baked by laser, the scarfskin tissue is possible to appear epidermis boiloff, and the capillary vessel tissue below scarfskin which absorbed laser at 532nm would occur to outburst and produce gore, the

symptom is called “*zidian sickness*”. The brown and red pigmentations absorbing laser at 532nm will blow up, spring out from body or be smashed by laser so that pigmentations are metabolized and discharged by huge swallowed cell.

The possible side effect when remove brown and red pigmentations with laser at 532nm:

1.The surface of skin boils away and blanches, and scarfskin is also putrefied. The over-pigments possibly fade away or pigmentations become darkness.

2.The treatment part will produce redness and turgescence, if excessively damaged it will lead to scab and the recovering time is about from twenty to sixty days according to different human figure.

When remove brown& red pigmentations with laser at 532nm, you should use the small energy densities (also big spot size) to have a near treatment, while the deeper pigmentated layer you should treat many times but each treatment interval is less than two months.

Before treatment, you should explain to patient the possible side effect and the possible iron hydronium which is contained in individual pigment can transform into iron oxide after absorbing laser so as to blacken and aggravate the tattooed color as well as lead to treatment failure.

After treatment, the patient should keep away from water and shouldn't touch the treatment part in case of infection, meantime, should avoid sun-baking so as not to arouse pigmentated darkness.

Human's eyes are very sensitive to laser at 532 which can make eyes lead to eye-twinkle or permanent blindness. So the operator must wear the laser protective glasses as well as keep the patient's eyes safe when treating. And the other irrelevant people must be off the treatment room.

【 notice 】 : The color material which contains iron hydronium can not be washed.

Accessory 3: The skill and methods to remove the tattooed colors (as for reference)

1、 Eyebrow purifying

Purifying normal blue、 black eyebrows:

Set out the frequency of light (three or five times each second), the head of hand piece should keep one finger distance from skin. After the first purifying eyebrows, there is a returned color within ten to twenty minutes, then go to the second purifying for further breaking the tattooed color while the head of hand piece should keep two、three fingers distance more or less from the treatment part in order to increase the absorption of body. After one month and half, recheck whether the tattooed color is faded away, if not, purify again.

The eyebrows you used other way to wash it before and the skin has been existed defectiveness:

Set out the frequency of light (three times each second), the head of hand piece should cling to skin tightly and increase its angle to skin, only one purifying time is okay, after one month and half, recheck whether the tattooed color is faded away, if not, purify again.

Purifying brown eyebrows:

Set out the frequency of light(two-three times each second), the head of hand piece should keep three fingers distance from skin, after the first purifying, if still remain deeper color on skin, purify once again. After one month and half, recheck it again, if only remain the red color on skin purify it with green light, when treat with green light, the head of

hand piece should keep one to two fingers from skin.

2、 Purifying eyelid

Set out the frequency of light (three times each second), the head of hand piece should keep about one finger distance from skin, and yet it is difficult to purify eyelid which needs two or three times treatments and each treatment interval should be two months for the best.

3、 Purifying tattoos

It is the same method to remove tattoos together with eyelid, if the tattoo is a big area, one time purifying is okay in order to avoid great damage.

4、 Purifying lip-line

If tattooed the red lip-line, choose one spot on mouth for testing, if the spot is going to turn black at once after using laser, the tattooed color must contain the iron ion, at the moment, you will never purify it with laser any more.

If tattooed the poppy、rose lip-line and lip, choose white light used for purifying blue and black color for the first purifying. Set out the frequency of light(three or four times each second), and the head of hand piece keeps two to three fingers distance from skin, after one month and half, recheck it.

The white light used for purifying blue and black color is the least damage to skin, so when you purify any tattooed color you can use white light firstly to remove the deeper color of them, but the green light is harmful to skin when wash red material of color, so must be caution to use green light.

Nursing and attention when treating with laser

- 1、 After being treated with laser within twenty-four to forty-eight hours, the skin will possibly appear rube faction feedback like burnt by sun-bake, even appear blain、 turgidity、 bleeding together with light ache, all which belong to the normal response of tissue. If need, you can take anodyne pills or put some ices on the treatment part at intervals.
- 2、 The treatment part irradiated by laser will be scabbed within one to three days and the scab will be fell off within five to fourteen days, the patient must keep in mind that can not denude the scab on your initiative, but fall off automatically in order to decrease scars remained on skin.
- 3、 Keep the treatment part dryness and cleanness, before the scab falling off, the patient can wash it with clear water, then coat some ointment of bacteriophage on it. In other way, you can use the boracic acid.
- 4、 When the scab is falling off automatically, the treatment part is possible to take on shallow red or pink or slightly hollow, but the phenomena will gradually reduce and disappear after several weeks or several months.
- 5、 The treatment part with laser should be avoided shooting by sun within three to six months, while the patient should use SPF(anti-sun index) —fifteen multiple or above anti-sun cream, meantime, should wear broad-edge cap and dress in long sleeve and trousers when patient is going out.
- 6、 The treatment part which has not protected properly but insolate will take on brown spot or uneven pigment, and the phenomenon will fade away

after several months, but also will not fade away for a long time in infrequent case.

7、 The patient should have the persistence and confidence in treatment course. Generally, after one to three months, it can be judged whether the treatment effect is ideal for patient.

8、 After treated by laser, if you find that the treatment part appear abnormality, for example, the wound effuse yellow liquid or fell great ache, you should go to make a treatment in hospital at once.

Special attention

Inside installed precious、 breakable、 costly laser apparatus in hand piece, so it is forbidden to fall down and bump when you operate and use.

Before using, you must screw off the stopper on water tank to check whether it has water in tank, if hasn't you must inject full with distilled water. It is seriously forbidden to power on without water, the aftereffect caused by the reason will be out of guarantee.

When use laser at 532nm, the operator must wear protective glasses to avoid radiation to surrounding people. If don't wear, it will produce radiation, even lead to blindness.

Taboo scope

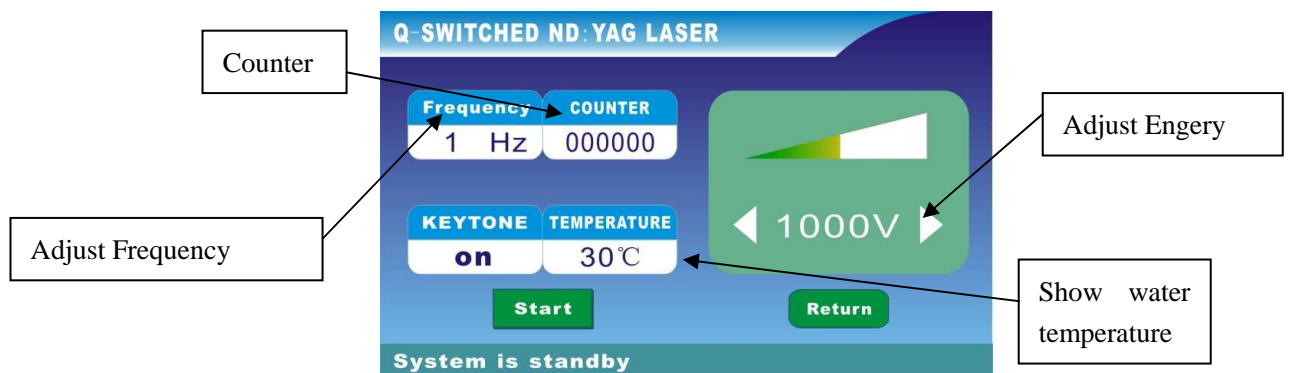
If the pigment dye that contains iron ion is irradiated by laser, it will produce uneasily washed-out black particle of ferric oxide to result in operation failure. At the moment, you ought to stop removing pigments with laser.

Instruction of software operational control interface

Show the welcome menu when turn on the power as picture 1.

(picture 1)

Press “therapy” option for entering into therapy menu as picture 2



(Picture 2)

Screen instruction(Picture 2):

work voltage: 500V~1000V adjustable;

working frequency: 1~6Hz adjustable;

temperature: showing the water temperature of the inside machine.;

Counter: the count range is 0~999999;



Picture 3

Using instruction (picture 2 and Picture 3):

Entering the therapy interface, press the frequency and voltage to adjust the working frequency and the working voltage. Press “**START**” pre-ignition the xenon .When you see “**System is standby**” and “**Stop**”, the machine allows to work state. When you come to this mode, please press the foot-switch, the machine can work immediately. The pulse counter will add times for each pulse. When you power off machine, press the “**Stop**” key first to stop working and then press “ **Return**” and then turn off power supply.

Temperature direction and protection:

This system has the function to show the temperature and can monitor the temperature of the circulation water. Screen will show “temperature too high” when the water temperature exceeds the machines’ protective temperature, meantime, the buzzer will warn. In this case, the machines won’t work anymore. When the water temperature decrease to the normal state and the machine can work normally again.

When the water temperature is so high, the OK sign will change to Excess water temperature.