

Newest Picosecond Laser 1064+532+755nm Korea Arm Manual



Theory of picosecond laser machine

The PicoSecond Laser uses ultra-short pulses (one trillionth of a second in length) to hit the melanin with a great pressure, the melanin shatters into tiny dust-like particles. Because the particles are so small, they are more readily absorbed and eliminated by the body. This can mean better clearance of the melanin and less treatments overall.

PicoSecond Laser is a quick and easy non-surgical, non-invasive laser skin treatment for the body including chest or decollete, face, hands, legs, and more.

Treatment Area of picosecond laser machine

Tattoo Removal (All color tattoo, eyeliner and lip line removal)

Epidermis and dermis pigment (Removal of Pigmented lesions, coffee spots, Senile plaques, freckles, sunburn spots and chloasma)

Acne Scar Treatment, Nevus of Ota, blue naevus, black nevus

Skin whitening and wrinkle removal etc

Specification:

Laser type	Picosecond laser
Wavelength	532nm\1064nm\755nm
light source transmission	7 articular-arm of light guide transmitting ,made in Korea(C10)
Indicator light	650nm infrared light
Voltage	220V/110V
Maximum Energy	2000MJ
Spot diameter	2 -10mm
Working Frequency	1 - 10HZ
Pulse width	550-750ps
Power	2000w

Cooling system	Wind and Air Cooling
Net weight	120kg pico laser

Advantages of pico laser machine

1 High-Tech

Picosecond laser machine used unique Honeycomb Focused technology to form a skin effect vacuolization, which can protect skin from damage during treatment.

2 Fast Effective

Picosecond laser machine make tattoo & pigment removal treatment process from 5 to 10 times reduced to 2 to 4 times, greatly reduce the treatment and recovery time, with fast and obvious effective.

3 Comfortable & Safe

It can remove all kinds of pigment and tattoo effectively and safely, because picosecond laser use precise positioning of the target tissue therapy to reduce damage to the skin to achieve the freckle effect

4 No melanin precipitate

The Picosecond laser uses ultra-short pulses (one trillionth of a second in length) to hit the melanin with a great pressure, the melanin shatters into tiny dust-like particles. Because the particles are so small, they are more readily absorbed and eliminated by the body. It will significantly reduce postoperative swelling, melanin precipitate phenomenon.

More Advantages :

1. Easy to operation, 1064nm and 532nm, 755nm can switch automatically by press different button on the screen.
2. Big power supply, so the machine is powerful.
3. Can adjust the spot size when switch the head.
4. Big water tank, so the cooling system is very good.
5. Metal shell, safe during the transport.

Before and After picture

(1)



(2)



(3)



(4)



Korea arm parts



Machine treatment scheme

parameter

Treat area	Energy adjust	frequency	Probes use
Dark color tattoo removal like black, cyan and blue	200-500MJ	1HZ(Unskilled to operate) 3-5HZ (skilled to operate)	1064nm
Eyeliner tattoo removal	100-200MJ	1 HZ	1064nm
lip line tattoo removal	100-200MJ	1 HZ	1064nm
eyebrow tattoo removal	200-500MJ	1HZ	1064nm
All kinds of pigmentations	200-500MJ	3HZ	1064nm
sun spot	200-500MJ	3HZ	1064nm
age spot	200-500MJ	3HZ	1064nm
freckles	200-500MJ	3HZ	1064nm
cyasma	200-500MJ	3HZ	1064nm
chloasma	200-600MJ	3HZ	1064nm
Melasma removal	200-500MJ	3HZ	1064nm
Ota removal	200-500MJ	4HZ	1064nm
red light coffee,brown,green,multic olour Tattoo	200-500MJ	3HZ	532nm
Birthmark	300-500MJ	3HZ	532nm
Skin tightening, skin whitening and skin rejuvenation.	400-600MJ	3HZ	755nm

Ps: These parameter only for reference, it must to set lowest energy and frequency for start and ask customers feeling ,if they feel no heat, adjust a little higher, if they feel hurt to reduce energy one by one.

Catalogue

1. security matters

- (1), lasersafety-----
- (2), eye protection -----
- (3), safety classification and electrical safety -----
- (4), handling safety -----
- (5), the system security settings -----
- (6), safety mark and label -----

2. product description

- (A),constitute-----
- (B), appearance and parts name -----
- First, the treatment principle
- Second, the main technical parameters, performance indicators
- (A),workingconditions -----
- (B), the basic parameters -----
- Third, the use of procedures, the use of methods
- (A), the use of environmental requirements -----
- (B), the transport of equipment -----
- (C), the installation of the instrument -----
- (D), the operation of the instrument -----
- Fourth, indications
- (A), indications -----
- (B), treatment interval -----
- Five, side effects, taboo -----
- Sixth, note and description -----
- Seven, maintenance, maintenance -----

Safety Precautions

This chapter describes the safety precautions that should be taken into account when operating the integrated pigment dispenser. In order to use the safety, the machine in the design and manufacture are strictly enforced and according to the relevant national standard requirements as far as possible to eliminate the laser on the staff and the surrounding environment.

Note: This system can only be operated by a doctor who specializes in our company or an individual who holds an operation license.

Operation or maintenance of the system personnel must read this manual carefully

before operating the system.

In spite of this, if the operation is improper, the laser beam will cause serious injury to the operator, the patient and the surrounding environment, which may cause: burning, blindness, fire, explosion and so on.

In order to ensure safety please note the following security matters:

(A) laser safety

The machine is classified according to laser radiation safety class 4 laser products.


Warn

Nd: YAG laser is not visible Infrared light wavelength 1064nm, and 532nm visible light
All laser operation area of the personnel (including the patient) must wear protective glasses!


Warn

The laser window is located at the end of the knuckle arm!

To avoid the laser radiation emitted by this window!

Equipment safety

- 1, can not look directly at the end of the joint arm and any reflected laser beam.
- 2, the instrument works when the laser window should not face the case or monitor, to avoid laser damage to the case and display.
- 3, in addition to the treatment of the affected area and adjust the light target surface, the use of laser irradiation is strictly prohibited elsewhere; the process of moving the joint arm and treatment after the placement of joint arm, the articular arm of the end of the export must point to a safe place.
- 4, to keep the laser output window focus mirror clean, after each treatment of patients should be shut down after the clean, to avoid damage to the lens when the energy.

Treatment room and its fire safety

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- 1, the treatment of indoor flammable, explosive narcotic drugs, liquids, gases (such as alcohol, ether, oxygen or nitrous oxide
 - 2, mixed gas, etc.) should be away from the laser radiation area, and protective measures.
 - 3, alcohol clean up the window after focusing lens must be completely dry before starting work.
 - 4, the treatment process to prohibit the laser window toward the site of the site and non-treatment outside the place, but can not look directly at the laser window.
 - 5, laser labels must be affixed to the treatment room at the entrance of the obvious location
 - 6, the laser room should be kept adequate lighting and lighting, in order to facilitate the operator's observation of the patient's treatment area and reduce the operator's visual fatigue during treatment.
 - 7, in order to prevent accidental laser damage to the eyes, therapists must wear laser goggles during treatment, the patient must wear protective goggles during treatment
- Note: large light spot corresponding to a smaller energy density, small light when the corresponding large energy density, the laser window to take a focal length of the convergence of the head.

(B) the protection of the eyes

The laser pulse energy of the laser can reach 1500mJ and its pulse width is $10\text{ns} \pm 3\text{ns}$. The laser light emitted from the laser window (the end of the joint arm) is converged within 70mm from the outlet. The focal length of the focusing lens is 170mm. , The laser output divergence angle of about 2mrad.

Infrared laser damage to the eye most of the cornea is absorbed, part of the eye into the crystal. To the treatment room of any one, direct into the eye of the laser enough to make the eyes of the vitreous and retinal damage, resulting in a long blind!


Warn

All personnel in the laser operating area must wear protective glasses!

Must provide patients with strict and effective eye protection!

1, the operation area of the personnel must wear a laser goggles, the applicable wavelength of 200-1100nm.

2, laser goggles can not be safe to protect the laser or by the glass, mirrors, smooth metal surface reflection of the laser, it is strictly prohibited wearing a protective mirror look directly at the direct light and reflected light.

3, covered with gauze, wearing protective goggles, tarsal shelter, etc. to protect the patient's eyes are effective.

4, the operation is prohibited with reflective objects, such as: watches and necklaces, bracelets, mirrors and other reflective laser jewelry

Eye protection

1, metal equipment can cause laser reflection, surgery should avoid direct laser irradiation in these devices, and the use of non-reflective equipment.

2, the operation should be avoided with watches and necklaces, bracelets and other reflective laser jewelry.

3, must provide patients with strict, effective eye protection, such as covered with gauze, wearing protective goggles, tarsal shelter and so on.

4, laser treatment room entrance should be affixed with a laser radiation warning signs, laser use of the process is strictly prohibited personnel access, it is recommended to install the door interlock device.

Body tissue pigment absorption of different laser, the choice of dose required for treatment should be small to large, the output energy is too large may burn the skin.

(3) Equipment classification and electrical safety

1, the machine according to the type of anti-electric shock is divided into Class I;

according to the degree of anti-shock is divided into B type; according to the degree of protection against harmful infusion of ordinary equipment; can not have flammable anesthesia and air mixture or oxygen or Nitrous oxide mixed gas in the case of the use of equipment; according to the work system is divided into intermittent loading continuous work.

2, the machine uses 220V power supply, the maximum input current is not greater than 10A.

3, with the machine connected to the network power must be in line with the national standard, well-grounded single-phase three-wire power outlet, specifications for the 10A.

4, the machine running time there is high voltage - energy storage capacitor charging voltage up to 1.5KV.

5, the equipment chassis with circuit system, cooling system and control system. Prevent unauthorized personnel from adjusting the internal system of the equipment.

6, equipment maintenance, maintenance work must be carried out to ensure that the shutdown state.

7, to ensure that the access power supply voltage and equipment requirements.

8, to keep the equipment running well, found that there should be cut off the power supply immediately.

9, the equipment after the water weight of about 80Kg or so, to be careful when moving, so as not to hurt.

Note: When the device is running, there is a high voltage in the chassis. After the power is turned off, the high voltage device may still have the residual voltage, and it may be dangerous to open the chassis cover.

Note: The power cord of the unit is equipped with standard three-core GB plug, make sure your network power outlet has a protective grounding wire and ensure reliable

grounding.

(4) handling safety

The machine is optoelectronic integrated precision instruments, the machine does not allow users to use long-distance mobile. As the machine for the modular design, the transport should be the whole machine decomposition, the host, the joint arm to be packaged and transported, the transport process must use the original shock absorber package, or it may lead to laser system disorders, affecting the laser output energy The

This device is part of the optical part of the precision components and design, the transfer must be carried out by the professional staff of the optical path calibration, without my professional staff demolition machine and optical path calibration, equipment problems my company does not assume responsibility.

(5) System safety devices

This product is designed with the following safety protection devices:

Safety measures:

1. Circuit - independent of the safety circuit system, if necessary, will automatically cut off the laser output, to avoid the machine in the overheating is not normal operation
2. Leakage switch - equipment chassis or power leakage phenomenon can automatically cut off the power to avoid danger.
3. Water switch - equipment in the absence of water or water can automatically cut off the laser output, to avoid the machine is not working properly.
4. Key switch - This device is the power switch of the device. After the shutdown, remove the key and save it by hand to prevent unauthorized operation. To avoid other people mistakenly caused by laser radiation damage!
5. Emergency stop switch - This switch can cut off the circuit power if necessary

6. Status indication - The device is ready to emit a laser, and when the laser is emitted, a status change is displayed in the display.

Note: Emergency stop button should be used with caution, if frequently used will lead to damage to the device software.

(6) safety signs and labels

The key switch mark is attached to the instrument key switch just above;

Emergency stop switch mark attached to the instrument emergency stop switch is just above;

High pressure hazard signs are affixed to the high voltage generation and output locations inside the instrument power supply;

Second, the product description

(A), constitute

This type of skin laser treatment device host by the laser, joint arm, laser power, cooling system, display control system composed of several modules.

(A), working conditions:

- 1, ambient temperature: 10 ~ 30 °C;
- 2, relative humidity: ≤ 75%;
- 3, atmospheric pressure: 860 ~ 1060hpa;
- 4, the use of power: AC220V ± 10%, 50Hz ± 2%;
- 5, cooling water: the use of deionized water or pure distilled water, the lowest standard pure water.

(B) the basic parameters:

- 1, geometric size (without joint arm, length × width × height, mm): 90 × 44 × 96cm;
- 2, net machine: 68kg; light guide wall 4kg; gross weight 117kg
- 3, power: 1000W;
- 4, over-current protection Model: 220V, 10A
- 5, working laser wavelength: 1064nm; 755nm; 532nm
- 6, laser output frequency: 1-10hz;
- 7, laser: emerald laser
- 8, single pulse maximum output energy: 1064nm (50-1600mj); 755nm (40-1200mj); 532nm (20-600mj);
- 9, eye damage distance: NOHD is 100m, in the sealed operating room are harmful to the eyes, you must wear a protective mirror!
- 10, cooling: air-cooled

Fifth, the use of procedures, the use of methods

(A), installation and use of environmental requirements

- 1, the instrument should be installed in a separate studio. Must be greater than twice the volume space of the device!
- 2, the instrument components have sophisticated optical accessories, vulnerable to dust damage, while dust can also cause the controller circuit system short circuit, the studio should be clean, dustproof.
- 3, the use of the environment temperature equipment, humidity should be relatively stable, if not meet the requirements, the user should be equipped with air conditioners, dehumidifiers, regulators.

(B), the transport of equipment

Transport requirements: according to the correct symbol on the box marked, and should prevent the weight, collision, severe vibration and so on.

Storage temperature range -40 ~ 55 °C, relative humidity: ≤ 75%; no corrosive gases and strong vibration, clean and well-ventilated indoor environment.

(C), the installation of the instrument

Please check the list of random accessories before loading, according to the inventory inventory and random accessories are complete or damaged. If the user and manufacturers have special agreement, please install the treatment machine before the call customer service phone, in order to obtain good technical support. When installing, users and engineers should refer to and note the following:

Carefully open the package, place the instrument in the preselection position, select the appropriate equipment to install the local installation host. Remove the other supporting components, and the parts placed in the installation room to be the same temperature, to avoid the temperature too much mirror from the water mist.

laser transmission part (light guide arm) installed at the laser output port, insert the jack and then tighten the nut can be.

add water, into the tank into the 15 liters of distilled water or pure water, prohibit the use of tap water or mineral water, recycled water must use distilled water, because the distilled water without impurities, one can maximize the radiator to avoid rust, corrosion Affect the life of the water cycle system. The machine on the back of the water inlet position quick connector then water injection, the water when the machine after the overflow of the overflow water plug until the water overflow to the overflow water can be.

After completing the above installation, please check the installation steps again, if it is wrong, you can start the machine.

(4) the operation of the instrument

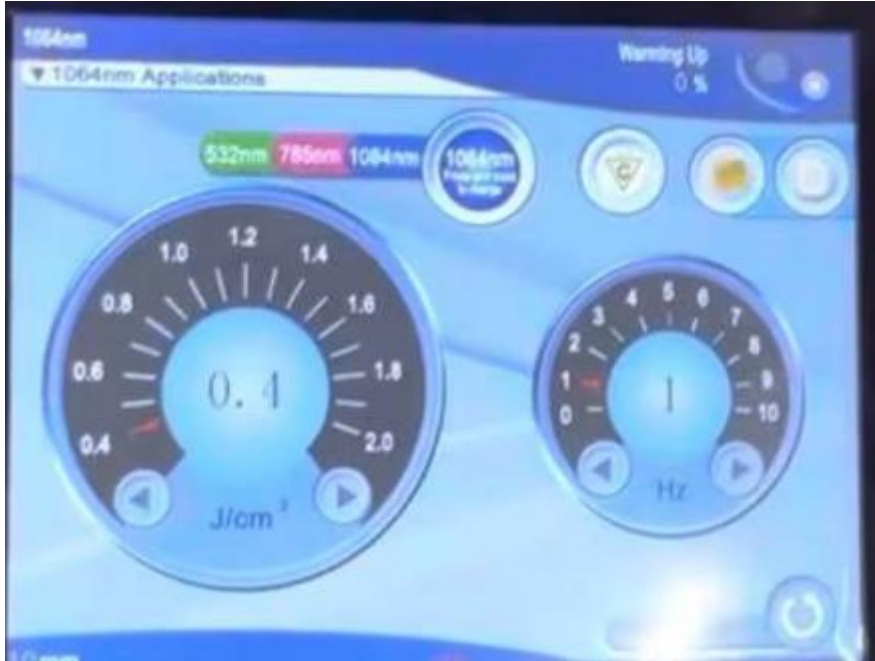
A), the requirements of the operator:

The operator of the instrument should be familiar with the knowledge of medical

laser, by the training of qualified professional medical staff to use.

Two), display control panel and key functions

LCD display shows the following:



Press the cursor keys to move the cursor to the function you want to adjust

1, the wavelength keys for wavelength conversion (click to select the need to operate the wavelength,)

2, the energy button ENERGY for pulse laser energy adjustment

3, the frequency key FREQUENCY used to adjust the pulse laser output frequency

4, pulse count TIME is used to record the number of pulse output

5, work / prepared key (pre-combustion) for switching standby and ready to work

Three), the steps:

1), boot

- ① Turn on the power
- ② in the emergency stop switch connected to the case, the right key switch;
- ③ display interface shows 755 and 1064 and 532 three wavelengths of the interface; button to select the wavelength to use
- ④ Tap the Select button (cursor) button on the display to select the function adjustment
- ⑤ tap the energy adjustment button on the display; adjust the appropriate energy

required for treatment, depress the foot switch, the instrument began to light,

Note: The laser window should be pointed to a safe place before and after the machine is turned on

2), treatment

The joint arm output port to be treated to treat the site, control the articular arm output port and the treatment site distance that controls the size of the spot diameter, depress the foot switch for treatment.

3), shut down

- ① release the foot switch;
- ② return the joint arm;
- ③ Press the work key to change the status from work (R) to (STANDBY);
- ④ turn off the key switch;
- ⑤ turn off the total power;
- ⑥ the power key by the person to keep good

CAUTION: Do not operate in accordance with the manual guidelines, resulting in dangerous laser radiation!

Six, indications

1, indications

The instrument is mainly used for clinical removal of some of the skin exogenous and endogenous blue, black, brown pigment lesions, such as: tattoos, tattoo, freckles Ota nevus and so on.

2, the treatment interval

The two treatments should be about two months apart so that the crushed pigment particles have sufficient absorption time.

3, the number of treatment

General cases are required to be treated several times to get the desired effect, the specific number of patients treated by the affected area of pigment Degree, depth, the composition of the pigment, the amount of laser used in each treatment, the absorption of pigment particles in the body of macrophages and other factors. General exogenous pigment to be more than 3 times treatment, endogenous pigment to be more than 5 times treatment can get more satisfactory results, a small number of patients after repeated treatment effect is still not ideal.

4, preoperative attention

(1) treatment area vascular rich three days before treatment and two weeks after treatment should avoid drinking and the use of aspirin drugs to prevent bleeding.

(2) women during menstruation should not be treated, there are coagulation defects, epilepsy, heart disease and scar physical fitness patients should be treated with caution.

(3) patients should be cleaned in the treatment of local skin, eliminate local cosmetics and other drugs

(4) repeated pattern, embroidery, eyebrows and nearly four weeks and within the local surgery patients should be treated with caution.

(5) According to the nature of the lesion and the depth of the pigment and the location, individual differences and the previous treatment needs to be treated the number of differences, and gradually achieve a satisfactory treatment effect, each treatment interval to be 1 - 3 month.

5, postoperative attention

(1) treatment and treatment may be mild pain, skin whitening, epidermal oozing, short redness, anti-black and even purple purine can be self-absorption do not have too nervous.

(2) if the scab 7-14 days will fall off their own, avoid people to get rid of, so as not to delay the healing of the skin and the formation of pigmentation.

(3) due to individual differences or changes in climate within a few days after treatment, in order to prevent infection in the treatment area shall not be directly in contact with water or other solutions. Try to eat spicy food and excessive

drinking, smoking.

(4) very few individuals in the skin after treatment may be normal pigmentation, usually after 1 - 3 months will gradually subsided.

(5) should be avoided after the sun activity and exposure, so as to avoid and increase pigmentation.

(6) after surgery if any abnormalities, please promptly to the door Jane consultation treatment.

Seven, side effects taboo

1, the deeper skin care of patients, the use of the instrument treatment, due to the skin of patients with shallow pigment absorption of the laser, the skin will be slightly damaged, it is recommended to whiten the skin and then use the instrument treatment.

2, after laser irradiation surgery, the skin will appear redness, subcutaneous oozing and inflammatory response, after the treatment of frozen parts, and use to prevent scald and scars after the ointment.

3, on the part of the metal ions (such as iron ions) of the pigment, after laser irradiation will appear difficult to be absorbed black chemical substances (such as ferrous oxide) so that the treatment site color deepening, which is due to different pigment composition, and The quality of the instrument itself.

4, postoperative treatment should be kept clean and dry parts, to avoid infection.

5, after the emergence of tuberculosis, should make its own off, to prevent the artificial decline in the emergence of scar.

6, the treatment of the same part of the repeated repetitive exposure, otherwise the accumulation of heat will cause damage to the organization.

8, notes and instructions

1, the actual use of the components of the product parameters have been adjusted to lock, there are special requirements of the parts in the product factory to be sealed. Users are not allowed to open, disassemble, adjust and modify the locked parameters, otherwise, the consequences caused by the user is responsible for their own.

2, the body shield, remote interlock device, key switch, laser radiation warning, beam termination device, is based on the provisions of GB7247-2001, laser radiation for the protection of the set, the user shall not arbitrarily dismantle these devices, So as not to affect the protection of security.

3, this laser skin treatment instrument is set light, machine, electricity in one of the precision instruments. Therefore, the operator must be trained. Non-trained personnel shall not operate the machine.

4, the use of the instrument should be read in detail this manual, because not read the instructions or violation of the procedures used by the instrument caused by medical accidents and disputes the Company irresponsible.

5, the treatment process must pay attention to the laser away from non-treatment site.

Nine, maintenance, maintenance

1, the product mainly by the precision laser generator and micro-electronic equipment. Its maintenance and repair should meet the general requirements of precision optical instruments and microelectronic devices. Storage and use to prevent bumps, bumps, squeeze, vibration. After each use to be reset, the daily use of a special packaging to cover, dust storage.

2, clean output lens: joint arm end

The end of the joint arm with the output lens, it is recommended that each treatment is completed, check the lens surface whether there is splash attached; if any, please straighten the joint arm, remove the handle, with a cotton swab dipped in anhydrous ethanol gently wipe the lens.

Do not check and clean the output lens in the power on!