
CO2 Fractional Laser System



Special Notice:

Before starting up this system, please read this manual carefully, and operate according to specification requirements.

Instrument should be placed in a room temperature stable at $5\text{ }^{\circ}\text{C} \sim 35\text{ }^{\circ}\text{C}$, relative humidity $\leq 80\%$, clean, low dust interior to ensure that the machine cooling water does not freeze, to avoid the laser tube burst. Please choose a well-ventilated location place the instrument, good air quality (no corrosive particles, conductive dust, etc.), avoid strong magnetic interference, cannot be placed near heat source such as radiators, hot air ducts, or in direct sunlight, easy occurrence of mechanical vibrations and ensure safe ventilation vent distance $\geq 30\text{ cm}$. Because of built-in precision, fragile optical device, during installation, placement and handling avoid damage caused by fall or impact.

Before starting up this system, the power supply must be checked to meet the requirements of the machine specifications according to the instrument parameters prior, each cable should be well connected, and pay attention to put the right interface and well contacted. In the non-working state, the laser arm outlet should be in a safe place, avoid laser harm the eyes and other parts in starting procedure.

In the working state, laser beam should avoided to the smooth reflecting surface, such as stainless steel appliances, mirror, etc., in order to avoid laser beam through reflection and damage of contact with eyes or skin, it is forbidden to pulling on the laser arm, otherwise may cause damage.

In operating process, safety protection and ground wire should be well prepared, operators should wear protective glasses and operate at high voltage insulation mat, it is strictly prohibited to tinkering with safety protection device, and it is forbidden to aim the output port at human eyes.

A long time without the use of instrument (e.g., a month or so), before use should be switched on 5 ~ 10 minutes to check whether the instrument work normally. If in an emergency when operation (abnormal sound or smell), please press the emergency stop switch to cut off the power supply in time, stop the instrument and check, maintenance and demolition machine parts is prohibited when the instrument is working. To open the instrument to repair, be sure to shut down more than 5 minutes in the instrument, the instrument pressure drop to zero before opening. when replace the laser tube, should distinguish between cathode and anode, and the connection is firm, so as not to affect the cooling effect. After check, if the instrument is right to work, turn in the direction arrow on the emergency stop switch lightly, make the emergency stop switch bounce.

Content

Chapter 1 Product Introduction.....	4
1. Principle of Clinical Application.....	4
2. Clinical Applications.....	5
3. The scope of taboo and caution.....	5
4. Technical Parameters.....	6
5. Product system advantage.....	6
6. Related Knowledge Point.....	7
Chapter 2 Machine installation and commissioning.....	10
1. The machine contour structure shown.....	10
2. Machine installation.....	13
Chapter 3 Operating instructions	18
1. Starting-up Operations Guide	18
2. Setting Guide.....	19
3. Clinical Operations Guide.....	25
Chapter 4 Transportation and storage.....	27
Chapter 5 Common breakdown maintenance.....	28
Chapter 6 Technical support and After-sales Service	29
1. Technical service scope	29
2. Technical support and Contact information.....	29
3. After-sales Service Promise	29
4. Free warranty scope and requirements.....	29
5. Warranty	29
6. After-sales Service and Contact information.....	30
Chapter 7 Contact Us	31

Chapter 1 Product Introduction

1. Principle of Clinical Application

Fractional laser is a revolutionary progress based on fractional photothermolysis theory and shows the unique advantages in a short time. Small beam array produced by fractional laser applied to the skin, after that, the form multiple 3-D cylindrical structure of small thermal damage zone, called micro treatment area (microscopic treatment zones, MTZ) of 50 ~ 150 microns in diameter, as deep as 500 to 500 microns. Different with lamellar thermal damage caused by traditional peeling laser, around every MTZ there is normal tissue not damaged cutin cell can crawl quickly, make MTZ heal quickly, without day off, without peeling treatment risks.

The machine adopts CO2 laser technology and precise control technology of galvanometer scanning, using CO2 laser heat penetration effect, under the guide of accurate scanning galvanometer, formed with uniform lattice minimally smaller holes diameter of 0.12mm, Under the effect of laser energy and heat, the skin wrinkles or scar organization is instantaneous evenly distributed vaporization and formed in a micro-heating zone center on minimally invasive hole, to stimulate the skin compound of new collagen tissue, and then start the tissue repair, collagen rearrangement etc. series of the body's natural healing mechanism. Random breeding fresh collagen make regeneration treatment area becomes smooth, compact, flexible, shrink pores, reduce wrinkles and shallow, reduce bags under the eyes, the stain lighten or disappear, superficial scars heal, skin texture and complexion gradually improved significantly. Because fractional laser treatment will only cover part of the skin tissue, the left part of the normal skin tissue between the dots (called micro-bridge or skin bridge), a new marked hole do not overlap each other, so part of the normal skin is preserved, accelerate recovery. When treating, the skin tissue absorb the laser energy, Vaporize form multiple cylindrical structure small damage area, minimal damage zone collagen contract and hyperplasia , and no effect skin tissue can serve as a thermal diffusion region to avoid possible side effects of thermal injury, and can promote faster of skin healing, firming, rejuvenation and improvement of scars, shrink pores.

Fractional laser target tissue is water, so treatment of skin is not selective, another advantage of fractional laser is: the original energy-intensive large spot dispersed into tens to hundreds of small focal spot, spread the heat evenly, Only for minimally invasive treatment for skin lesions area, does not affect other normal skin tissue, so that the patient's pain is greatly reduced, also reduces the side effects of laser treatment, treatment and care of patients is more intimate, more secure safety.

2. Clinical Applications

CO₂ laser has efficacy of cut skin, polished skin, tissue vaporization, homeostasis, fusion, melting and sterilization, promote skin healing faster. You can also promote skin renewal, collagen remodeling or regenerated by indirect heat conduction.

- ① Laser resurfacing surgery
 - ② Laser wrinkle surgery
 - ③ Laser recuperation scar (grinding)
 - ④ Laser blepharoplasty
 - ⑤ Other applications: pigmented nevus, chloasma, freckles, age spots, warts, seborrheic keratosis, vulvar syringomas, acne, millet papules, gravid grain, pore bulky, tighten and improve skin, laser hair transplant surgery, breast augmentation, laser hair removal, etc.
- Fractional laser treatment device with multiple heads, by replacing the treatment head can produce a variety of purposes in clinical applications in many aspects, such as: moles, warts, removal of small skin tumors; hemangioma lesions closed; for blepharoplasty, face lift surgery and other cosmetic surgery, can also be used photoaging, skin laxity, treatment wrinkles, wrinkles, etc., various types of scar treatment, including acne scars, traumatic scars, burn scars, scarring after surgery, hypertrophic scars and so on.

3. The scope of taboo and caution

- 1) National notifiable diseases patient in the active period (eg: AIDS, tuberculosis, hepatitis) disabled.
- 2) Blood disease, bleeding disorders, and various bleeding tendencies (such as: cerebral hemorrhage, stomach bleeding, uterine bleeding) disabled.
- 3) Serious heart disease (such as: heart failure, myocardial infarction, congenital heart disease, acute myocarditis recovery period, WPW syndrome, atrial fibrillation, ventricular fibrillation) disabled.
- 4) Variety of neurological patients with serious mental illness (such as: mental illness, epilepsy, hysteria) disabled.
- 5) Advanced cirrhosis, hepatic necrosis, renal failure, lung failure, bronchiectasis patients disabled.
- 6) Pregnant and extreme physical weakness disabled.
- 7) Light allergy disabled.
- 8) Physical scars disabled.
- 9) Variety of serious patient (eg: variety of severe hypotension, hypertension, hypoglycemia, anemia and thrombocytopenia disease) disabled.
- 10) Menstrual period, breast-feeding women disabled.
- 11) skin sensory disorders or abnormal skin disabled.
- 12) skin sensory disorders or abnormal skin disabled.

4. Technical Parameters

Laser type	RF(radio frequency) Co2 laser
Laser mode	TEM ₀₀
Power	60W
Wavelength	10600nm
Laser Work mode	Ultra pulse ,fractional CW
Output way	Fractional beam& scan beam
Cooling system	Wind cooling
Dot number	at most 3000 dots
Scan mode	Random, sequence, convergence , diagonal even/odd etc
Scan Graphics	Square ,circle ,rectangular ,triangle ,line, customized graphics
Spot distance(pitch)	0.1-2.6mm(adjustable)
Spot size	0.2mm standard (0.1MM, 1.0MM for your option)
power	100mj
Penetrate depth	0.1---2mm (non-ablative fractinoal head with 1mm spot size)
Display	10.4 inch big color touch screen
Pulse duration	0.1-20ms for optional
overlay	1 to 20 times
Transmission system Beam delivery	Articulated arm with 7 mirrors
Dimension	131cm(L)*60cm(W)*53cm(H) main machine 75cm(L)*15cm(W)*23cm(H) accessories
Gross Weight	75KG
Power supply	220V 50HZ , 110V 60HZ

5. Product system advantage

- 1) national invention patent, technology reliability and safety performance is higher (national security certification, through the research and design of hardware and software with multiple security protection function, can prevent out light the in fault state error; high pressure interference condition and no light under water protect, etc).
- 2) Fractional laser maximum width can reach 30 mm, through precise control of the system, graphics without any distortion deformation.
- 3) Mature fractional laser technology , Can regulate lattice density, and lattice regulation of penetration depth, pulse width and energy, more accurate and reliable positioning.

-
- 4) Adjustable pulse width, adjustable spot size and shape, according to patients' skin condition and treatment purpose do personalized design parameters and treatment.
 - 5) Increase in two scanning techniques: non-sequential and maximum spacing, so that the heat can be spread in the adjacent tissue, does not form a heat buildup, reducing thermal damage and reduce the possibility of complications.
 - 6) Super high power pulse stable laser, with higher energy, fast treatment, short healing time, make the skin damage around smaller, photo chemical effect is better.
 - 7) With a variety of hand tools, at the same time, with the functions of system upgrade, wider application range.

Compared other company, the advantage of our Co2 LASER machine:

- 1)100% USA Coherent Laser RF Tube.
- 2)Seven scan shapes with free graphic application (write any shape) and six scan modes.
- 3)3 different spot size available (0.1MM , 0.2MM , 1.0MM) non-ablative(1540nm) and ablative fractinoal head.
- 4)Multifunctional 4 in 1 system: Cutting, Fractional and Vaginal (gynae & vulva)

6. Related Knowledge Point

Clinical research and application effect of fractional laser

At present, fractional laser clinical experiments on Asians have been completed in a wide range of places including Thailand, Malaysia, South Korea and Taiwan and Hong Kong, etc. After the strict tests on clinical applications, fractional laser technology can be fully applied to Asians. In China, many hospitals do clinical experiments and the result is the same as that of multicenter study. The CO2 fractional laser equipment made in China gets a broad recognition by customers and doctors.

From the point of the present treatment effects, fractional laser treatment has little relation to race that means the curative effects are almost the same but different skins have different reactions towards laser.

Fractional laser auxiliary medical treatment

At least 2 weeks before laser treatment, the daily use of vitamin A acid ointment as pre-treatment can prevent pigmentation. On the day before laser treatment, the patients should begin to take oral antibiotics for the period of 12 days. People with darker skin should have topical application of hydroquinone at least one month before laser treatment to avoid pigmentation. During the therapeutic process, after the first pass of grinding, it should use saline gauze to remove the abraded epidermal tissues so as to see the grinding layers clearly. During the second course of grinding, it should reduce the energy. The derma shrinks obviously and it should be 3 times at most. During the last course of laser treatment, the surface should be covered with Flexzan dressing for 4 days. After 4 days, patients should use soaked gauze to wet Flexzan dressing and then uncover Flexzan dressing. During the ten days subsequently, use Vaseline 4 to 5 times every day.

After the fractional laser therapy, patients should use MEBO or antibiotic ointment. For the large surface of wounds, patients can use Vaseline gauze to cover them and make sure of the dryness. After 7 to 10 days, the wounds will scab and heal. The use of decolorizer (hydroquinone drugs) for 2 weeks is to prevent pigmentation.

Within 24 hours after the fractional laser therapy, patients should avoid touching water and use sun-screening agents after the scabs drop. After the treatment, patients need to take some antibiotics and Vitamin C and E, or Vitamin C 2-3g intravenous drip once a day to prevent infection and pigmentation.. Three months after fractional laser therapy, people should avoid using excitant cosmetics and the time interval between two treatments should be no less than

one month.

The treatment period of fractional laser

Generally speaking, the fractional laser treatment period of blain holes, pitting scars is 3 to 5 times and the time interval is 1 ~ 3 months. Laser directly through the site to form a matrix-like white spots, and the surrounding skin activates lateral repair mechanism immediately, so in 8 hours, the epidermis will heal completely. After 3 to 6 days, the decrustation of small white spots makes the skin recover to its normal appearance and the inner collagen can regenerate for 6 months even for 3 years.

The safety of fractional laser

Fractional laser technology gained national security certificate many years ago. Treatment is relatively safe and suitable for comprehensive treatment, also can treat any part of the body..

Indications include acne scars (surgical scars, traumatic scars, scalding scars), all kinds of pigment spots (chloasma, poikiloderma), wrinkles, chalodermia, light ageing skin, etc. At present, these clinical practices are applied to many areas home and abroad with explicit and affirmative effects.

The differences between fractional laser and pixel laser

Fractional laser and pixel laser are totally different in emission principles. There is a cribriform graphics generator installed at the front of the emitter of pixel laser. In the emission of laser, the graphics generator separates the laser beam into multiple tiny beams. The energy of laser beam is separated by distance but the heat reaches the skin at the same time. Pixel laser doesn't possess the software operating functions of intellectualization and multiple graphics. However, each laser beam of fractional laser is a brand-new laser beam, and these laser beams are extremely tiny and emitted fast with the state of time interval. So the design of fractional laser makes the heat reach skin in different time which gives skin a cushioning period to endure heat. Fractional laser has the advantage of relieving pains and reducing side-effects.

Optical properties of skin

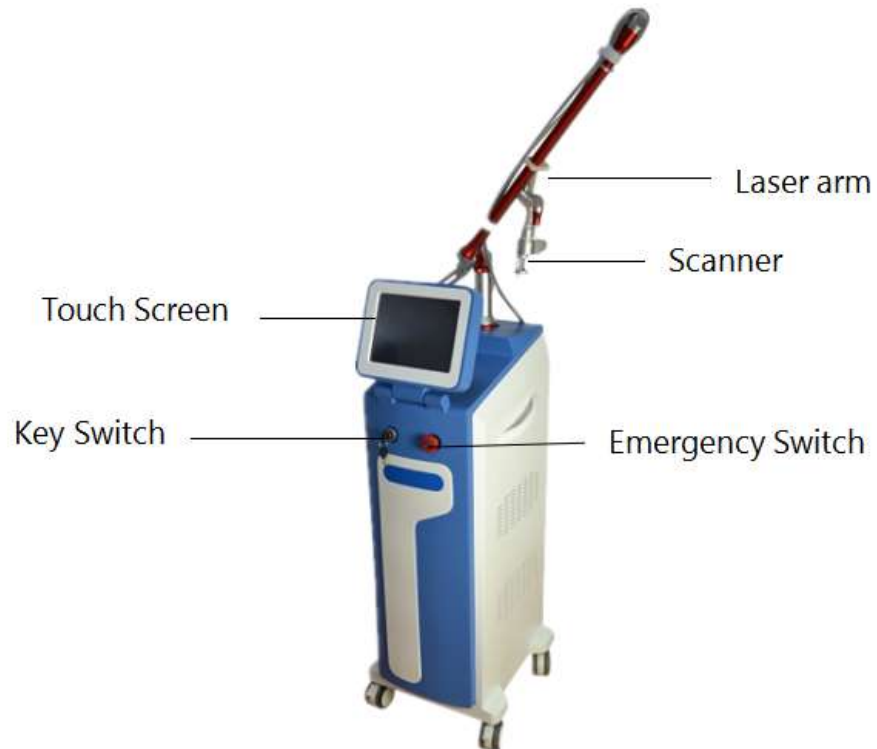
The skin is structured by epidermis and dermis. Because dermatology treatment involves subcutaneous tissue, it is thought as the third layer of skin. Epidermis includes thick layer without hair (palm, sole), thin layer with hair. Thick epidermis includes cornified layer, hyaline layer, granular layer, pricle cell layer, basal cell layer (pricle cell layer and basal cell layer together named as germinal layer). The refresh time of the whole epidermis is 59 to 75days. The melanin mainly gathers at basal cell layer, and reduces upward. There is little melanin at cornified layer. There are no blood vessels in the whole epidermis. Epidermis is gray semitransparent thin film with the thickness of 66~178um. Dermis is white opaque thick-layer with the thickness of 400~4000um. Subcutaneous tissue is mainly made up of fat, biggish blood vessels leading to dermis, hair, lymphatic vessels, nervus, etc.

When the skin suffers traumatic injuries, it can heal and repair by itself. If the traumatic area is large, scars will occur. If the traumatic area is small, the skin can fully heal. Each tiny light beam of fractional laser is a micro trauma for skin tissues. But kin tissues have the ability to self-repair with the result of perfect skin resurfacing. Except for direct

desquamation function, CO2 laser can promote skin reconstruction, collagen remodeling and regeneration via indirect heat conduction.

Chapter 2 Machine installation and commissioning

1. The machine contour structure shown



Fractional treatment heads for skin

1) 3 different spot sizes available (0.1MM , 0.2MM , 1.0MM)

2) non-ablative(1540nm) and ablative fractional head.

Application:

- Fractional CO2 laser for skin hardening, fractional skin rejuvenation,
- Renewal of the skin, elimination of wrinkles, whitening, minimization of pores;
- Elimination of acne scar surgery, smooth burned scars and scars from surgery, dermabrasion, Removes intractable chloasmas and pigmentation, etc.



Vaginal treatment head

vaginal and vulva treatment

vaginal treatment includes 360 degree and 90 degree treatment

Application:

- Shrink vagina: rapid tightening, constriction, lasting firmness.
- Beautify vagina: dilute pigment, pink labia.
- Moist vagina: increase secretion, eliminate dryness.
- Maintenance vagina: deep rejuvenation, prevent aging.
- To improve sensitivity.
- Private health, balance PH, improve the internal environment





Cutting treatment head

Diameter: 100mm, 50mm

Application:

In cosmetic surgery. It is mainly used to cut blepharoplasty, skin marks and ingrown nails, compound nevus and intrapermal nevus, etc.



2. Machine installation

1) Open the machine box

Check whether the package is well before your open. When there is no abnormal, you can open the machine box. It is prohibited banging on and collision, when you open the package, as the machine equipped with laser tubes and precision optical system.

Take out the packing list after your open-package and then the host and accessories in turn. Check whether inventory and inside machine parts is good, whether the attachment is fixed or loose firm. You can install after it is confirmed no abnormal or trouble-shooting. If there are any complications, please promptly contact with manufacturer for timely negotiation processing.

2) Installation of the light guiding joint arm as follows:

Guiding light system is made of conducting laser arms, balance hammer and connecting block composition. The balance arm is used to adjust the balance of the laser arm, which makes it easier to operate. The connecting block composition is fixed the laser arm on top of the machine.

These are the accessories to be used.

1) Conducting laser arms:



2) Connecting strip with screws:



3) Screwdriver



4) Balance hammer



5) Connecting block composition



Firstly, balance hammer installation.

1) Secure the connecting strip to the conducting laser arm with screws. The installation direction must be consistent with the picture, otherwise the balance hammer will be out of balance, which will cause the laser arm to be polarized.



2) Fix the balance hammer to the bottom end of the connecting strip.



Secondly, laser arm installation.

1) Rotate clockwise to secure connecting block composition to the machine. Rotate the laser wall red nut clockwise, connect the laser arm with connecting block composition.



Thirdly, Treatment head installation.

1) Rotate the red part and attach the lens unit to the laser arm. The fractional treatment head and the vaginal treatment head require a lens unit, but the cutting head is not required. After installing the fractional treatment head and cutting treatment head, need to insert the exhaust hose into the vent hole of the treatment head. as the pictures:



Fractional treatment head installation. (Note: After the installation of the fractional treatment head, insert the exhaust hose into the exhaust vent of the treatment head, which is the part I marked. The air from the exhaust vent can blow away the skin debris generated during treatment)



Vaginal head treatment installation



Cutting treatment head installation.(Note: After the installation of the cutting treatment head, insert the exhaust hose into the exhaust vent of the treatment head, which is the part I marked. The air from the exhaust vent can blow away the smoke generated during treatment.)



Fourthly, foot switch and power supply installation. The pedal plug has a recessed portion that is aligned directly

above the jack, then install it.



Chapter 3 Operating instructions

1. Starting-up Operations Guide

Revolve the emergency stop switch in clockwise direction (according to the direction indicated by an arrow) to the pop-up state. Insert the key into the key switch with a clockwise rotation of 90 ° to starting up state. When you want to turn off the machine, after turn the key switch in counter direction, please press the emergency stop.

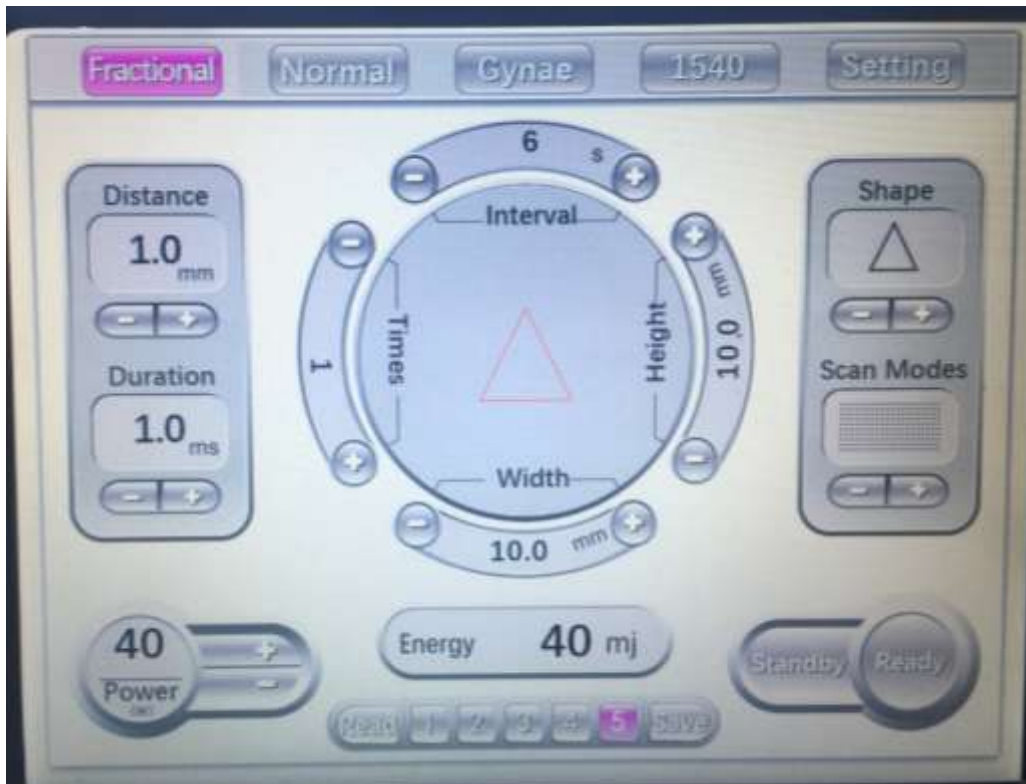


2. Setting Guide

When the key switch is turned on, the display appears as follows standby screen, then touch it and enter the treatment interface.

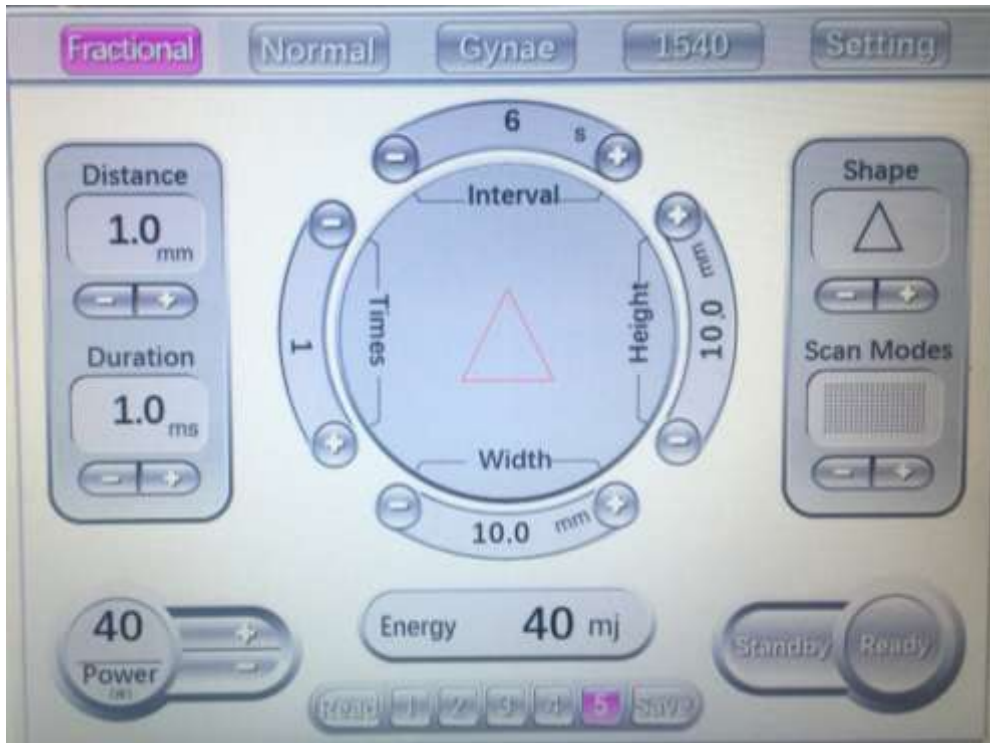


The system enters the boot screen automatically after 3 seconds to enter the main interface. The main interface includes the fractional function, Normal, Gynae, 1540 and Setting. As shown below.



Fractional function

Fractional function includes Distance; Duration; Power; Interval; Times; Height; Width; Shape; Scan Modes; Energy; Read; Standby; Ready. As shown



Distance used to adjust the density of the points in the current graph. The longer the distance, the lower the density.

Duration used to adjust the time of the laser action at each point. The longer is the duration, the more energy the laser will exert at each point. The adjustment range is 1-10ms and the step is 0.2ms.

Power :The power of the machine is 40W.

Interval used to adjust the time between two consecutive full-point processes. The adjustment range is 0.5S-5S,

Times used to adjust the number of dot pattern points, graphs, all points for a complete RBI. Adjust the range of 1-10 times, when choosing 10 times the system of an unlimited number of RBI, that is, if you do not raise the pedal after the pedal has been RBI.

Height / Width: They are used to adjust the basic size of the graphics, the adjustment range is from 5 mm to 20 mm, the step is 1 mm.

Shape: You can choose the graphics in the system, and also design your own graphics

Scan mode: The selection includes the sequential mode, random mode and inward mode.

Energy is the average energy of each point in the fractional mode.

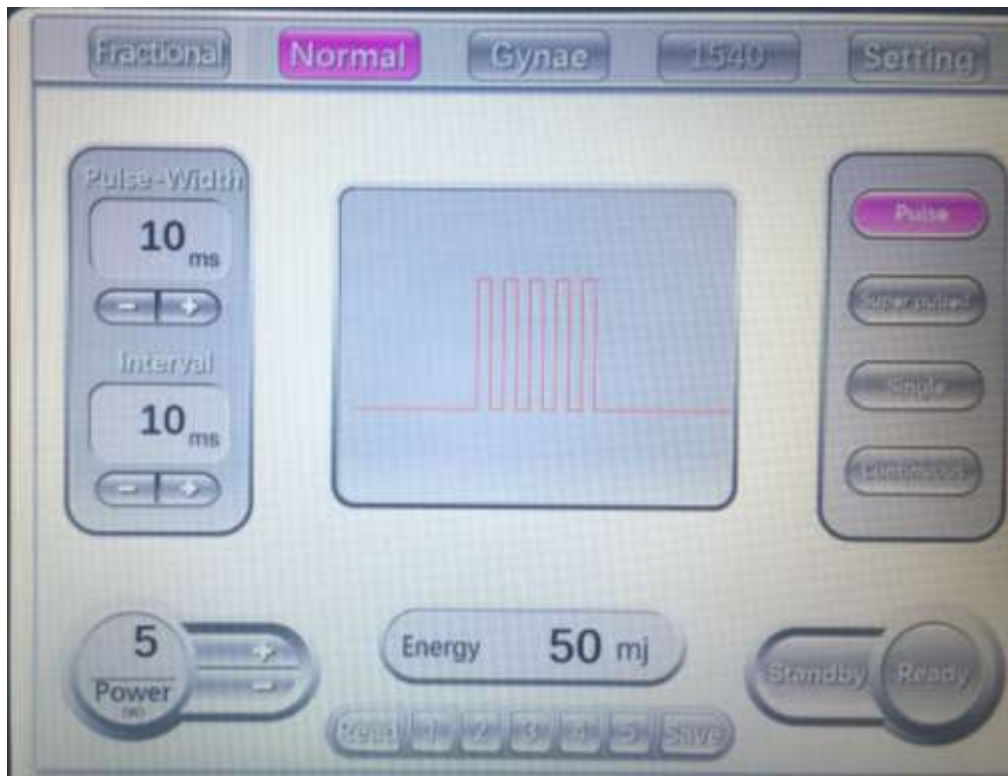
Ready: start working

Standby: stop working

Read: recognize and save the date on the interface.

Normal function

They include Pulse-Width; Interval; Power; Energy; Read; Press; Super pulsed; Single; Continuous; Ready and Standby. As shown:



Pulse-width :It is the action time of each group of lasers, and many individual laser periods are included in this time of action. This pulse width is 0.1S-2S, the user can distinguish the pulse width of time, and a single laser cycle is millisecond time, the user can not distinguish.Interval Used to adjust the time between two consecutive full-point processes when the number of scans is greater than one. The adjustment range is 0.5S-5S, the adjustment range is 0.5S.

Laser output mode: Single and continuous mode

Single mode is that after pressing the pedal, the light guide arm only emits light once.

Continuous mode is that the light guide arm emits continuously light.

Pulse mode: Pulse and super pulse are the two modes of operation of the laser. In pulse mode, the laser emits a laser in the form of a pulse. The pulse width is longer and the operating frequency is less than the super-pulse mode. It is the most common mode of laser operation. Super pulse mode is a faster and narrower pulse-width laser mode, because the frequency is faster and the pulse width is narrower, the Super pulse pulse is shorter and more powerful, more penetrating .

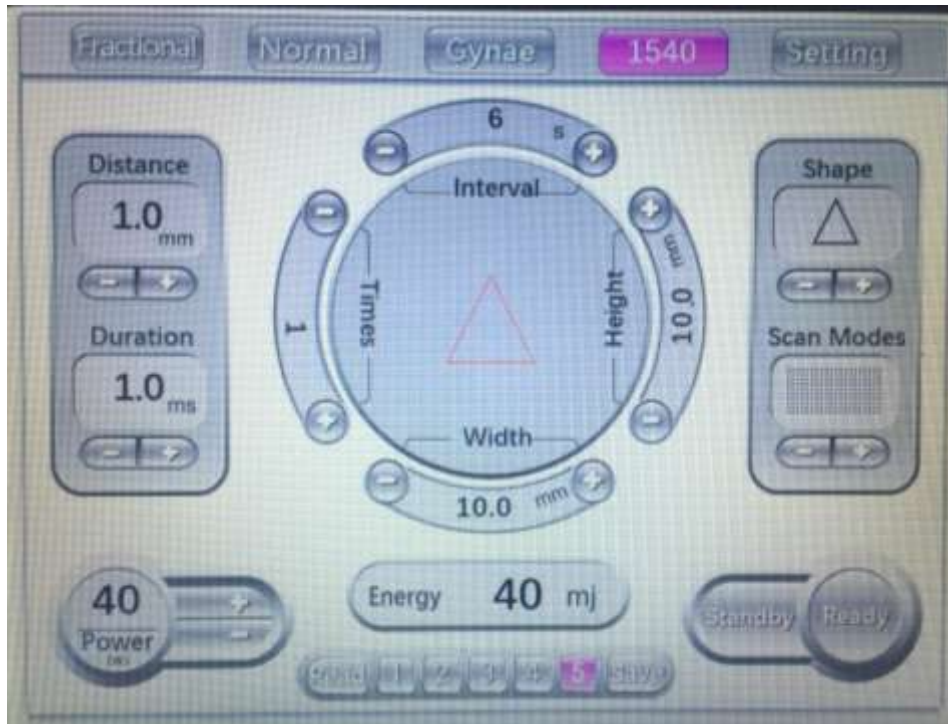
Gynae function

Gynae's functions include Distance; Duration; Scan Rows; Power; Shape; Rest; Energy; Interval; Shot Times; Standby and Ready. As shown below



Function of 1540

Function 1540 includes Distance; Duration; Power; Interval; Times; Height; Width; Shape; Scan Modes; Energy; Read; Standby; Ready. As shown below



3. Clinical Operations Guide

1) Clinical Operating procedures

Consulting→Observing→Establish treatment files→Cleaning→Preserved skin→Starting-up→ Wipe disinfection→Wear protective glasses and eyeshades→Observe and try→Treatment operation→Postoperative treatment→Record shutdown→Booking visit

Consulting: First, the therapists should communicate with the patients to get full understanding of their skins, their present circumstances, and their tolerance of pains, whether they will have important social activities recently, their expectant effects of the treatment, and etc. The therapists need to know the skins and psychology of the patients well, judge the intended effect, inquire whether they have contraindications.

Observing: According to what patients have said, the therapists should observe the skinnatures, the characteristics, the distribution, and the degree of skin lesions carefully. Then the therapists communicate with patients to determine a therapeutic schedule combining a facial three-dimensional structure analysis.

Establish treatment files : After relevant consultation, therapists should fill in patient registration forms and invite patients to confirm and sign. At the same time, therapists should establish treatment files and take photos as record files for the convenience of tracking treatment and further adjustments.

Cleaning: Use warm water and facial cleanser to wash the therapeutic part.

Preserved skin: Before the treatment, hair around the therapeutic part should be completely removed with the length of 1-3mm as the best.

Starting-up : Staring up and select mode, set parameters.

Wipe disinfection : Use proper iodine to disinfect, and then use cotton cloth with immersed disinfectant to disinfect for the second time.

Wear protective glasses and eyeshades : Operators wear protective glasses, Put on the protective eyeshades for the patients.

Observe and try : Check the scars on skin and then decide the therapeutic energy and scanning density. Make sure of the types and spot size of graphics according to the area of therapeutic skin. Try to scan the therapeutic skin first, if the energy is inappropriate, turn down or turn up the energy according to practical situations. When the shallow bleeding or redness appears on large-area scanning, there will be curative effects.

Treatment operation : Adjust the scan area to scan again according to the first scanning situation and the scar features. Don't repeat scanning and avoid inflammation of the skin. Fractional laser can be combined with resurfacing in scar removal. The first step can either be fractional laser treatment or resurfacing treatment.

Postoperative treatment :After the completion of treatment, the therapists should disinfect a second time with disinfectant (non alcohol) and check up whether there is remaining skin without treatment. If the patients feel scorching hot, icing can ease pains. Smear anti-inflammatory medicine and burn creams

Record shutdown : Keep clear records of the operating parameters and post-operation reactions. Return to standby mode. Rotate the key in counter clockwise to cut off the power supply. Clean the residues on the treatment head and lay the equipment to its place..

Booking visit : Ask the patients to pay attention to postoperative cares and arrange treatments for the next time. Pay return visits and make the followings.

Inquiry: Ask about the feelings of patients at all times during the treatment course. Adjust

the parameters timely according to patients' responses.

Observation: Observe if there is redness or swollen area in facial treatment area during the treatment.

2) Clinical operation and attention points

The operation environment of the instrument should be without disturbance of high-intensity magnetic fields and far away from heat sources and with appropriate temperature.

Select the corresponding graphics according to treatment needs.

Parameters and energy should be adjusted from low to high with small span range within 2 energy units. Observe while operating and adjust according to patients' feelings.

Wipe disinfection whenever necessary according to treatment needs and don't reuse it.

Don't repeat treatments on the lesions.

Adjust the parameters to a lower state according to patients' pain tolerance while treating the parts of obvious bone tissues (forehead, nose, eyes).

The circle ring on the treatment scanning head should press on skin tightly to make sure of full contact. Keep the treatment handpiece press on skin perpendicularly.

Turn off the treatment switch before taking away the scanning head from skin.

If the long-time operation makes the treatment handpiece getting hot, the operation must be stopped under the standby mode.

Pay attention to the use of the emergency stop switch. When the emergency occurs, you can press the stop switch directly.

People must use three-core electrical socket outlet with ground connection wire to supply power. Electric supply installation should fit the rated output requirements of the instrument.

Clinical Cases

1, Epidermis pigmentation

Black spots, senile plaques, etc. Parameters: the point spacing is about 0.2, the point residence time is 0.3 MS 0.5, the power is 20 W, (the point energy is 6-10 MJ), and the random point is played. Get rid of it once.

2, Nevus of dermis

Birthmark, taizhi Tian, etc. Parameters: the point spacing is about 0.4, the point residence time is 0.6 MS 0.8, the power is 25 W, (the point energy is 15-20 mJ), and the random point is played. One to two months, three to six times.

3. Refresh, skin peeling

Shrinkage pores, skin change, etc., parameters: point spacing of 0.5-0.3, point residence time of 0.5 MS 0.7, power of 20 W, (point energy 10-14 MJ), random point. One to two months, two to four.

4, tender skin, wrinkle, light pit acne, shallow scar

Parameters: point spacing of 0.6-0.4, point residence time of 0.7 1.0 MS, power of 25 W, (point energy 17-25 MJ), random point. One to two months, two to four.

5. Tattoo Removal

Parameters: point spacing of 0.7-0.4, point residence time of 0.8 1.2 MS, power of 25 W, (point energy of 20-30 MJ), random point. One to two months, three to five.

6, scars, deep wrinkles, deep pit acne, stretch marks

Parameters: point spacing of 1.0-0.6, point residence time of 1.2 2.0 MS, power of 25 W, (point energy of 30-50 mJ), random point. One and a half months to three months, four to six times.

7, hypertrophic scar

Parameters: point spacing of 1.2-0.8, point residence time of 0.7 1.0 MS, power of 25 W, (point energy 17-25 MJ), random point. One to two months, four to six times.

Or another parameter: point spacing 0.2, point residence time 0.3-MS, power 20 W, (point

3) The nursing care and notes after the operation

Avoid exposure in the blazing sun 2 weeks before the treatment.

The immediate reaction is the infected part getting white or gray. There will be scorching hot pains after the operation. The skin will be red and swollen or have mild blisters. The scorching hot pains will disappear several hours after the operation. After 2-3 days, the scabs appear. After 1-2 weeks, the scabs fall off naturally.

Don't scratch the therapeutic parts during the healing process. Let the scabs fall off naturally.

Pay attention to avoiding sunshine.

Two weeks after treatment, the patients are prohibited to eat spicy excitant foods and beef, mutton, seafood etc.

If patients feel any discomfort after the treatment, they need to consult the instrument operator. Don't make self-assertions or act on your own

4) Routing maintenance

Instrument installation and use of the environment require clean, low dust, temperature of 5 °c - 35 degrees Celsius, more than 80% of relative humidity, noncorrosive particles and conductive dust, which avoid strong magnetic field interference.

Choose good ventilation and do not put in the radiator, heating ventilation pipe and near the heat source or somewhere easily occur mechanical vibration.

To ensure the accuracy of the output energy, please keep the treatment with hand export of each place clean.

Wait for 5 minutes after using the instruments then shut off the power, clean the treatment head and keep them.

When clean the therapeutic room, you should avoid to the dust, especially the room with the carpet and ensure vents smoothly.

Clean the treatment head thoroughly and regularly to keep spotless, avoiding to weakening the output of laser or e light. You can use lens paper or a cotton swab dipped in anhydrous alcohol (95% alcohol) or special lens cleaner wipe gently.

When operating, the treatment head and therapeutic part should strictly prohibit using inflammable to clean and disinfection.

Do not use gas, ethanol, and thinner and other chemical processing dishcloth clean chassis surface.

Instrument structure is complex and strictly prohibit disassembling voluntarily when malfunction please be sure to promptly contact with the company's customer operations.

In order to ensure the normal use of the instrument, please directly contact with the manufacturer or agent when you need to purchase or replace the equipment accessories.

Attention : Customers just need to make daily cleaning maintenance or process simple maintenance repairs under the guide of technical personnel while the others should take by the technical personnel authorized by the company. Shut down and pull out the power cord before the maintenance, as it is harmful for the body and electric equipment.

Chapter 4 Transportation and storage

Instrument maintenance and transportation require the environmental temperature of -20 °C--55 °C, relative humidity of less than 75% and good air quality.

This machine is precision instruments should avoid vibration and impact during the mobile and transport, forbidden and prevent damage to the inversion of the system in the machine and electronic devices

Do not move or transport in the dust without dustproof packaging.

If this instrument do not use long-term, cut off the electricity supply and remove the treatment tool to keep independently.

When come into reuse, you should reinstall as the first time.

Chapter 5 Common breakdown maintenance

Serial number	Fault phenomena	malfunction analysis	Solution	Remarks
1)	Machine without electricity	Whether the power plug insert or damage	Reconnect or exchange the power line.	Over length continuous working period and high humidity tank.
2)		The emergency stop switch, key switch or the leakage protector are not open.	Open the appropriate switch, make it is in closed state.	
3)		The emergency stop switch or the key switch break down	Change the emergency stop switch or the key switch	
4)		The fuse burnout.	Change the fuse	
5)	foot switch malfunction	Attachment unit interface connecting with host is not inserted	For checking with the matters need attention or contacting connector again	
6)		Foot switch or part of power control components are damaged	Contact the company for service	
7)	Significantly reduced the output energy	Treatment head has been polluted.	Cleaning the treatment head	

Chapter 6 Technical support and After-sales Service

1. Technical service scope

- 1) After the transaction, we will first send technician to support free on-site training services. (the contract shall prevail)
- 2) We will provide the telephone-technical support at any time to help you solve the technical problems encountered

2. Technical support and Contact information

If you meet problems and cannot settle by yourself in the process of operation, please contact with us immediately. Our professional technical supervisor will give you the perfect reply to solve your worries.

3. After-sales Service Promise

Our company guarantees the equipment can express its advantages under the situation of normal usage and maintenance and we offer free maintenance for one year and life-long maintenance services (except the promissory)

4. Free warranty scope and requirements

- 1) After the company confirms that the faults caused by the technology or material indication under the normal service condition in one year, they can get free warranty services.
- 2) The user must hold "warranty card" or effective shopping vouchers.
- 3) The warranty card must be attached with OUR sales invoice or receipt of the same effective.
- 4) The accessories maintained or exchanged can be offered 3- month free warranty service from the day on.(Special regulations strictly according to contract)

5. Non warranty

- 1) During free warranty period, the damage caused by installation, use, maintenance or

improper safekeeping, such as, severe impact and vibration, drop, wrong operation and etc.

- 2) The damage caused by the maintenance department without authorized or the consumers disassemble themselves.
- 3) No warranty card or effective shopping certificate and cannot prove it belongs to free repair
- 4) The warranty card of incomplete or altered.
- 5) Due to irresistible factors (such as fire, earthquake damage of natural disasters).
- 6) Over warranty period.
- 7) Special machine, promotional products or gifts.

6. After-sales Service and Contact information

When the instrument cannot operate normally, you can make some simple process as "Instrument Troubleshooting Guide". If it still cannot work normally, please promptly contact with the company customer operations.

- 1) For repaired, use the original packaging as much as possible back to the parts or equipment:
- 2) Please issued on the date of your instrument repair parts, promptly contact and delivery notes faxed to our Customer Operations Department, the company sent someone to pick up for us to ensure timely maintenance of equipment;
- 3) Before delivery please contact our Customer Operations department to determine telephone, pick up location, the consignee. When you enter my phone repair company when the right to learn to listen to people's work phone number, name, such as your company's operations or customer service attitude of the staff is not satisfied, you can call our telephone complaints in a timely manner in order to carry out our services supervision and guidance. **Tips**

Due to winter temperatures reasons, please you store the instrument case at room temperature 20 degrees for 4 to 8 hours before use, to prevent freezing of water in waterways affect the use or cause unnecessary losses; due to higher summer temperatures, Please feel suspended in the heat treatment of the hair, do not work for a long time; Please do not change when the water temperature is high, please use room temperature cold water instead of ice water.

Chapter 7 Contact Us



Add: NO 3#, Tian Gui Street, Biomedical Base, Daxing District, Beijing



Tel: 86-010-89249884 , whatsapp: +86-13161280838



Website: www.hopelasers.com

**Thanks for using our machine,
Any advice or suggestions are welcomed!!**