

Tuning Q laser operation instruction



T-Q1

Please read before use

●Controller:

Output voltage regulation: 16 Stage, Linear adjustment

Output frequency: 1, 2, 3, 4, 5 Times/SEC.

Maximum number of total: 999999 脉冲

Panel size: 101mm*49mm*2mm

Installation dimensions: 90mm*42mm

PC board sizes: 100mm*70mm*21mm

Installation dimensions: 93mm*55mm

Crystal size: 80*36*16mm

Installation dimensions: 90mm*42mm

Display window: 64mm*14mm

Display character: 16 words * 2 lines

Control shows aggregate thickness: 24mm

Control buttons: 4, "READY, +, —, F"

●Each part of the explanation:

- 1、**lock switch:** the power switch, clockwise whole machine electricity, Conversely, the whole machine electricity for shutdown.
- 2、**Emergency stop switch:** when the accident occur, press the red button to stop the machine, electricity. According to switch on the direction of arrow clockwise, restored.
- 3、**READY:** press this button, burning, burning after the success of xenon lamp, shows STANDBY to READY to enter the system state。
- 4、**Frequency (+) :** press this button, can install repeat frequently 1, 2, 3, 4, 5Hz.

- 5、 **Energy regulation (-) : press this button, can adjust the power output pressure, 650V ~850V, the laser energy output change with it.**
- 6、 **Function keys (F) : press this button, can show machine state, in order to eliminate errors.**

Press this button 1S ~ 1.5 S into parameter adjusting interface, interface has four features:

1. first entering energy regulatory function
2. beforehand burning test
3. energy testing
4. switches prompt tone

Through these functions can adjust the internal parameter in the machine, The users does not need to change.

- 7、 **Power (Power):the indicator system has electrify.**
- 8、 **Screen: the parameter display system, working and energy statement (STANDBY, READY, WORK)the laser output repeat frequency 1, 2, 3, 4, 5Hz, each pulse output for treatment.**
- 9、 **switch foot switch interface: insert the mouth, control the laser output.**
- 10、 **The power input socket: communication 220V voltage input socket, equipped with infixing random power and insurance.**

●**The normal working conditions:**

1. Environmental temperature: 15°C~25°C
2. Relative humidity: 70%
3. Use of power single-phase 220V±20 % , 5A , 50HZ ; single-phase 110V±10% , 10A , 60HZ。

●**Operation: continuous operation mode, intermittent loading with each successive output 5,000 pulse intermission 10 minutes advisable.**

●**Cooling: Mandatory wind loop cooling.**

Attention: T-Q series of three core power plugs equipped with standard gb and confirm your power outlet with protection and ensure reliable grounding, grounding.

Attention WJ series can work normally in the power range 200V ~240V,90V~110V. If you use the low voltage and low voltage,

could cause such phenomenon. High may be damaged. Now please choose stabilizer. The power should be greater than 2KVA.

Install:

1. Installation key switch, stop switch
2. Install the control panel
3. Installing LCD
4. Installation computer board
5. Install pipe socket, insurance, foot switch seats, fans
6. Installation power plate
7. Connecting parts wires

The controller operating instructions

1. starting up

Open the key switch, the display shows "Please wait", for three to five seconds later, the system self-check and into the next interface.

In this process, press the "+" button can adjust the background of light, the default mode for "0" mode, means the background light automatically transform. ss the "+" button can be increased circulation, "1" for the green backlight, "2" for the blue backlight, "3" for the cyan backlight, "4" for no backlighting.

2. Work and parameters adjustment

The first row shows six points, the laser marking behind the points, will shine when the light be out, suggesting when laser output, pay attention to safety.

The second row shows working frequency, the default for the working frequency display 1Hz.

The third row is energy, the default value is level 20, the highest level is 50. The next icons shows the energy. The last icons shows the temperature of water.

The fourth row shows the operation of the system and the prompt message.

(1) Operation

In the interface, press the fuel key into the preparation condition.

In this condition, close handle or pedal switch the system will be into working state, the laser output and accumulative total output according to the parameters,.

(2) Energy adjustment

Press the "-" key in three minutes, press the "+" key can adjust the highlow of energy.

(3) Frequency adjustment

Press the "+" key in three minutes, press the "-" key can adjust the light frequency.

3. Prompt message and test programs

1) Prompt 1

Work switch (handle or pedal), means that the work switch is in close condition then pressed the fuel key. It is not allowed to security system, so please disconnect the work switch then press the fuel key.

2) Prompt 2

Prompt high temperature, then the temperature of the water is too high.

3) Prompt 3

Current protection means no water or water uncirculation.

4) Prompt 4

Fuel burning error, gets no success.

5) Prompt 5

Adjust the background light mode. Press the “+” key to switch over.

Interface Settings

Press the function key for a long time into test condition.

1) Test 0: Total points, and clear

Press the confirm button to return to work interface.

2) Test 1: Fuel test

Press the confirmation button to force out beforehand.

3) Test 2: Prompt tone switch

Press the “+” “-” keys can choose circularly, then the screen shows the speaker’s tip.

Press the confirm button to return to work interface.

4) Test 3: Energy testing

After choosing test 3, press “+” key to the highest energy, the light will be out after long pressing confirm key; press the “-” key to the lowest energy, the light will be out after long pressing confirm key. Using a multimeter between the positive and negative of the capacitance can test the light voltage.

5) Test 4: Temperature protection value setting

Press “+”, “-” key adjustment protection value and press the confirm button to return to work interface.

6) Test 5: Save and then exit test function

Press the confirm button to save and exit test function.

Note: Each parameter in the factory has adjusted, if not necessary please don't use this function. This function will save visible and invisible parameters. And the machine will not recover without power supply.

4. Backlighting switch

This controller has four kinds of backlight model. In the boot can press the "+" key switch four modes. This model will be used on the next.

5. debugging

(1) Water protection regulation: Adjust current protection sensitivity。

(2) Temperature protection regulation

After temperature protection resistance, after light once, then adjust W203 to room temperature

Notice: Install and stored on controller problems

- 1 the controller should be used and put in the temperature between -10°C and 35°C .
- 2 Strictly avoided to be used in extreme temperature/humidity conditions.
- 3 Please ensure that force uniform in the installation and using process.
- 4 Prohibit remove controller, nor tighten the screws or loose controller without the permission of our company.

●Fault diagnosis and treatment

Phenomenon	Check
The whole machine without electricity	1、 Emergency switch (red key) whether lift. 2、 The plug is inserted or not. 3、 The main circuit breaker is in open position (up) or not. 4、 Check the fuse (10A) is good or not. 5、 Whether there is electric power or not.
Cannot enter the preparation condition	1、 Check the pump running or not. 2、 Check the cooling water is too low or not.
Step down the foot switch, there is no laser output or hum	1、 Check the system is into preparing state or not. 2、 Check the foot switch is normal or not.
The laser output pronounced weakening or "empty", no laser output	1、 Whether the electric power network is too low. 2、 Whether the output lens is clean; 3、 Whether the energy regulation is too low.

Abnormality, you can turn off the key switch, and wait one minute later then turn on the machine. The screen will display error reason or guild error code in the first and the second line.

● The common mistakes:



The

Display	Details	Reason
PLEASE CHECK FOOTSW	请检查脚踏开关	The foot switch is in closed state before pre-burning
NO FLOW	没有水流	No water or water no cycle
PLEASE CHANGE WATER	请换水	The water is dirty
TEMPERATURE OVERFLOW	温度过高	Used for a long time
ERROR NO. **H	错误号 **H	Check the code table

manual

Q-SWITCH LASER TREATMENT

- 1 .Keep it away from water in 72 hours after the surgery.
- 2 . Be well preparation of sun protection. No infection
- 3 . No smoking, alcohol and spicy food in 3 to 7 days.
- 4 . If the skin bleeds and swells in a extreme status, taking anti-inflammatory drugs will be suggested and use erythromycin on the affected part. Or go to hospital.

Notes and upkeep of Q-Switch Laser Machine

Safety

1. Make sure to learn the details about whether the customer is of scars constitution or irritability skin, or has skin peeled before; whether the customer' s eyebrow is simulated and washed and whether the customer has tattoos or any scars.
2. No operation on parts with long hair, mole and red birthmarks(hemangioma)
3. The laser is invisible infared light, while laser of 532mm wavelength is a visible green and harsh light. Operators shall wear a wavelength in the range of 200 - 1080nm special goggles!
4. Never EVER look directly into a laser. Flammable and explosive and narcotic drugs, liquid, gas

(such as alcohol, ether, carbon monoxide, oxygen etc.) should be away from the laser radiation region, and some protective measures should be taken!

5. Metal instrument could cause laser reflection. Therefore, use reflective equipment as less as possible. And jewelry and watch could cause laser reflection as well when operating!
6. Patient should be provided with strict and effective eye protection, such as gauze cover or eyelid plate cover! The operator must be trained by our company and be skilled with washing eyebrows when protecting with gauze mask. If eyelid board and goggles are used for eye protection in operation, then the operator should have Department of ophthalmology clinical experience. All the equipments must be strictly disinfected, or it could cause considerable discomfort to the patients. And it could result in keratitis, retinal detachment and blindness in a serious case.
7. Shooting anywhere else besides affected part is prohibited. Make sure that you are shooting at a safe area when moving the laser pistol and finishing the treatment.
8. Keep the machine off when testing the laser or cleaning the laser lenses.

2. The upkeep of the equipment

1. Clean the output lens: Clean the lens surface periodically. Pigment particles splash will splash into the lens during the treatment, which affecting lights going out from the laser head. Unscrew the focusing lens and clean it and gently wipe it with lens paper or cotton swab. Absolute alcohol will be needed. After the cleaning, put the lens back with the convex side toward the inside (towards the direction of front mirror). It might cause the rupture of the laser lens if you put the lens in a wrong way.

Knowledge about laser

2. Q&A

1. What is laser eyebrow washing and tattoo removal?

Laser produces absolutely accurate and monochromatic light that can generate high energy. It has certain (strong) penetrating power and targeting, produce high heat acting on the lesions on body without damaging the surrounding normal tissues.

Laser eyebrow washing is using the principle of selective laser photo-thermal therapy. A high-energy laser effectively penetrates epidermis to the pigment groups of dermal layer in a short period of time and selectively absorbed by pigment group. The idea is that with being heating up the pigment group expand and fragment into small particles which can be phagocytized by macrophage and eventually excreted from the human body. The pigment gradually fades away and disappears, dispelling thoroughly the facial pigmentation. The safe and painless laser cosmetology much welcomed by the people.

2. What are the cons of laser eyebrow washing and laser tattoo removal?

Compared to traditional therapies, there several advantages about laser therapy as following:

1. Less bleeding. Laser beam is very slender, which only acts on the lesion without

harming or harming much the surrounding tissue; while the laser could simultaneously seal the blood vessels during the treatment, therefore it could lead to less bleeding even no bleeding.

2. Less pain. On the one hand, it causes the loss of pain due to the damage of the nerve endings by thermal coagulation; on the other, at the same time little surrounding normal tissue is affected. Therefore, patients will suffer little pain during the operation, in which no anesthesia is required.

3. High quality operation. Because it never bleeds in this operation, the operator has a clear vision, so that it's easy to handle. Of course, it also requires literacy and responsibility to ensure the operation.

4. Fast. It only costs a few nanoseconds and milliseconds to dispel one spot of pigment.

5. No scars. According to the advanced "selective absorption principle", it will not cause any irreversible damage to normal tissue.

6. Less relapse. As the laser can thoroughly treat the lesion and no harm to the surrounding normal tissue, relapse rate is much smaller than those traditional therapies.

A. Following is the reference of dosage in actual operation:

Depending on different skin color, thickness, roughness, and different parts of human body, the energy of the laser should be different as well. During the operation the energy should be adjusted gradually from weak to strong, then go to a suitable number.

B. Pay close attention to the changes skin color on the normal parts. When treating some vascular lesions, generally the epidermis is normal as usual. And lesions are in the dermis or deeper. While the laser should keep shooting at the target area until it bleeds. If the lesion is not completely dispelled, further consultation would be needed. Over stronger energy will lead to blisters and escharosis, which might leave a scar.

C. No matter it is an endogenous pigment, or an exogenous pigment, the laser should depends on the color shades to change the energy - weaker energy with light color, vice versa. And if the colors of pigment varies from light to dark, treatment should be started from the light color.

D. If the lesion area is large and deep, the treatment should be divided into more than one time with multi-layers. Otherwise it might cause local edema, blisters, exudate and pain in patients and even fever.

E. One thing must be noted that the laser beam must always be vertically shooting at the epidermis. All treatment doses are under the parameters of the laser beam at normal incidence. An amount of deviation from the vertical position, the laser flow will be reduced, and the laser energy can not be sufficiently utilized.

Notes about utilizing 1064nm and 532nm Q-switched laser to eliminate the pigment:

a) According to the principle of selective absorption of laser, 1064nm fixed wavelength is

used to dispel blue, black, green pigmentation treatments, while 532nm fixed wavelength is used to eliminate the red, coffee, brown, brown ones. Therefore, we should choose the right wave when preparing the pigmentation surgery.

- b) 1064nm laser head is commonly used for testing appropriate instrument energy value, while dazzling green laser of 532nm could easily lead to "purpura" phenomenon of the subcutaneous tissue of the body's hemoglobin. Therefore, it is only used for the base of the fixed color (such as red direct treatment).
- c) Regardless of the circumstances, it is important to ensure that the safety of laser using and keep the 1064nm and 532nm laser far away from eyes, or they will bring irreparable damage.
- d) To avoid leaving pigmentation during the laser treatment, the 1064nm wavelength laser should be the first choice when treating mixed pigment formation of pigmentation (such as brown color), and then use 532nm wavelength laser. You could use 532nm directly when dispelling red pigment.
- e) Use 1064nm wavelength laser to dispel eyeliner. The operator must strictly follow the company's training process. Strict protection to patients' eyes is extremely required. (the damage to eyes by laser is irreversible)
- f) 532nm laser might have side effects when dispelling brown-red pigment: the skin surface vaporizes and turns white and cause epidermal necrolysis and purpura; it might produce some depigmentation or hyper pigmentation. Antibiotics drugs can ease the discomfort. It may take about more than 60 days, or six months for patient to recover.
- g) Interval between two laser treatments shall not be less than 60 days and 100 days for the best.
- h) Keep the treated part away from water if blood oozes. Touching is not allowed neither. No spicy food and alcohol in a week.

Problems and solution

(1) Lasers works but no focus

- REASON:
- 1. Low energy
 - 2. The front lens has been broken. Focusing lens of Pipette tips have been put upside down.
 - 3. Gun burned out
 - 4. Laser rods burned out

- solution:
- 1. **Turn up the energy**
 - 2. **Replace** the front lens. Adjust the focusing lens to a right position
 - 3. **Replace** guns
 - 4. **Replace** rods

(2) NO laser

- reason:
- 1. No counting, no laser
 - 2. Counts but no laser

- solution:
- 1. Replace the foot brake
 - 2. Return it to the manufacturer to replace the power or LCD screen

(3) No light

reason: 1. Light is not working

2. LCD control pedal is not working

solution: 1. when lighting, If you hear the popping sound of ignition, that means the light is broken. Then replace the light; if not, the power supply is broken.

2. Replace the LCD control pedal.

(4) The machine is off

reason: 1. power wire is not working

2. The emergency stop switch doesn't bounce

3. Emergency stop switch or key switch is not working

4. Power supply is not working

5. Bad fuse

6. Bad motherboard

solution: 1. Replace power wire

2. Switch on the emergency stop switch

3. Replace Emergency stop switch or key switch

4. Replace power supply

5. Replace fuse

6. Replace motherboard

(5) The boot no sign after booting, but the pump still works

reason: 1. bad fuse of power supply

2. Bad LCD

3. Loosen plug

4. Bad power supply

solution: 1. replace fuse of power supply

2. Replace LCD control board

3. Check the plug

4. Fix the power supply

(6) Boots, but the water does not flow

reason: 1. gas in the pipe

2. Bad pump

solution: 1. hold the laser gun highly (higher than the machine), and lower it(lower than the machine); reboot the machine;

2. Replace the pump

(7) Water leaks from the head of the laser gun

reason: 1. over time working

2. The bulb or the rod breaks

3. Black rubbers inside the laser gun have perished

solution: 1. shorten the working time

2. Replace the bulb or the rod

3. Replace rubbers

(8) Laser shoots without controlling after lighting up

reason: 1. bad foot brake (caused by shorted foot brake lines)

2. Bad LCD control board

3. Bad power supply

solution: 1. Replace the foot brake
2. Replace LCD control board
3. Replace power supply

(9) The relay trips when lighting or operating

reason: 1. reversed positive and negative
2. Virtual access in the connection line of the light
3. Bad light
4. Bad power supply

solution: 1. Exchange positive and negative pole
2. Check the connection of the light
3. Replace the light
4. Fix the power supply

(10) Precombustion hissing sound in the machine when warming up

reason: 1. Bad connection of the light
2. Bad light
3. Bad power supply

solution 1. Check the connection or exchange the positive and negative pole
2. Replace the light
3. Fix the power supply

(11) Laser turns on and off after lighting up

reason: 1. Bad capacitance
2. Bad power supply

solution: 1. Change capacitance
2. Fix the power supply