

FQL01

**Portable 808 nm Diode Laser Hair Removal
System**
User&Training Manual



Model: FQL01

Welcome to use FQL01 diode laser hair removal system. The system is a revolutionary 808nm diode laser platform offering Pain-Free, Hair-Free permanent hair reduction for all skin types.

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1. Attention:

1. FQL01 Diode Laser Hair Removal Machine could emit the high intensity infrared laser beam. There are some operation regulation need to be follow:

- According to the standard of NOHD, please wear the suitable protection glasses for operator and patient In order to protect the eyes,
- Please do not point the laser at the eyes directly.

2. Please make sure to be familiar with the structure and manual before operation.

3. Diode Laser Hair Removal Machine is only allowed to be used by people who had enough safety and operation training.

Please turn off the cooling function, when the machine is under the condition of standby, otherwise the probe will be easily damaged.

4. If this is the first time you use Diode Laser Hair Removal Machine, please read the User Manual carefully before operation.

5. Please do not use the Hair Removal Machine in the environments which contain flammable an aesthetic and Oxidizing gas, such as N₂O and O₂. Some material, such as cotton or wool textile, will be ignited in the environment which is rich in oxygen during Hair Removal machine running.

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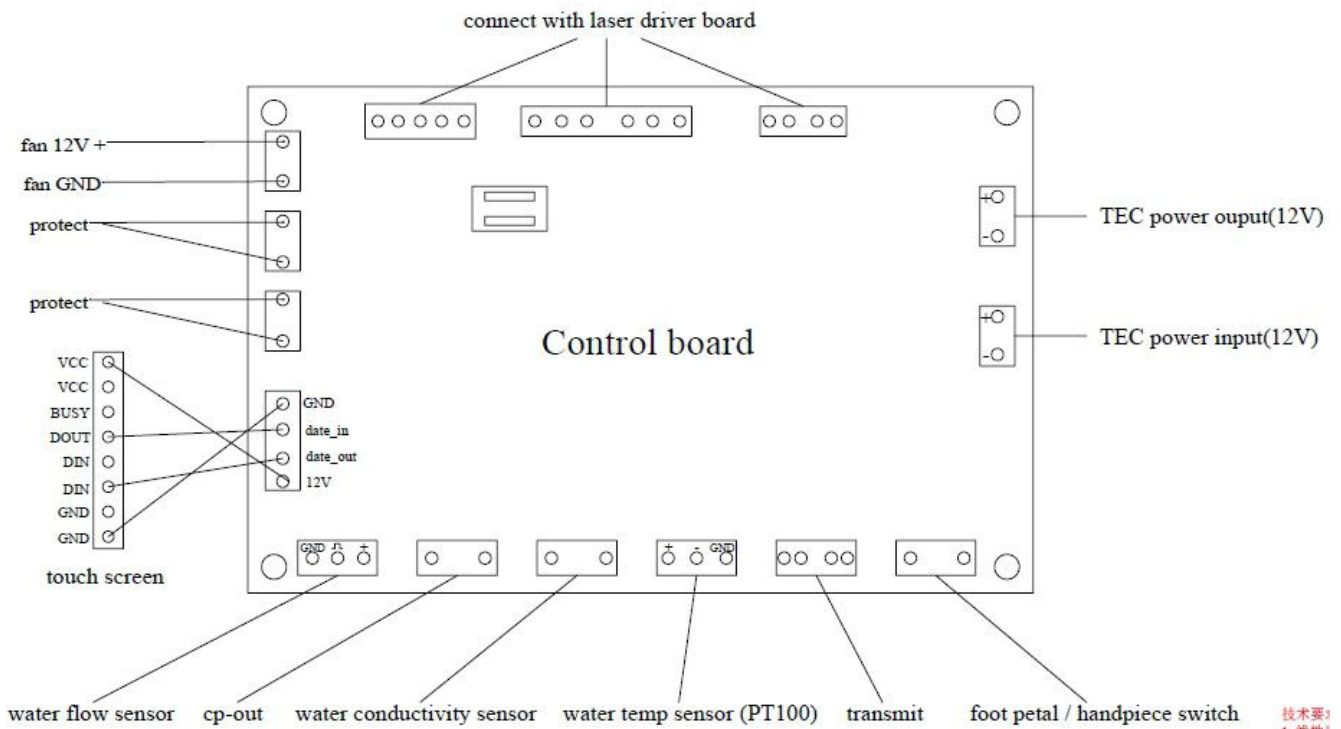
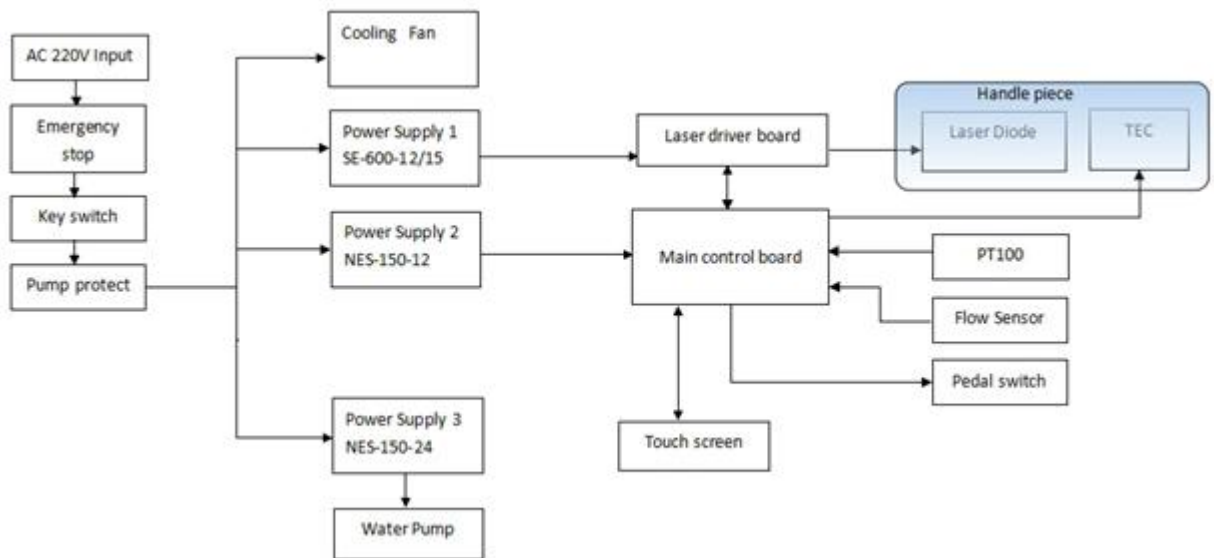
2. Packing List

Part	Quantity	Note
Laser Machine	1 SET	Laser machine with case
Handle Piece	1 PC	
Pedal Switch	1 PC	
User Manual	1 PC	
VAC Plug Wire	1 PC	Not attached for Frame machines
Water Tube	1 PC	Not attached for Frame machines
Plastic Funnel	1 PC	Not attached for Frame machines

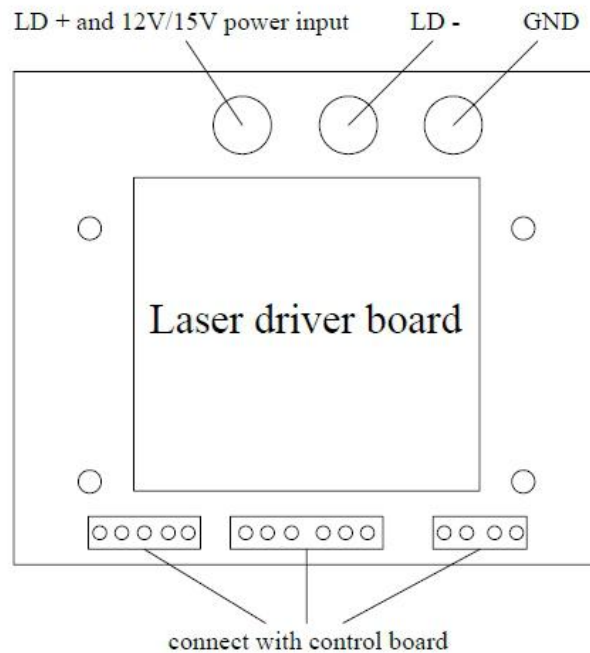
3. Technical Specifications

Model	FQL01
Energy Fluence	0~120J/cm ²
Wavelength	808nm
Pulse Width	0ms~600ms
Repetition Rate	1Hz~10Hz
Skin Cooling temperature	-5°C~-5°C by cooled Sapphire
Spot size	11x11mm
Interface language	English, Spanish, Italian, Portuguese, as you need
LCD Screen	10.4'
System Cooling method	Freon compressor
Input VAC	220VAC / 50-60Hz
Shell Dimension	61x62x68cm
Weight of machine without case	35KG

4. System Basic Structures and Electric Diagrams



技术要
1. 线性
2. 未注



5. Machine Installation

Do not power up the system before you checked this manual!

1. Please check all the part in packing list to confirm all the part are received.
2. Add water to water tank. First install CPC water connector to water inlet and water split. **Make sure water inlet and water split are connected with CPC connector at same time.** Please confirm your machine model. Please add distilled water to water tank. For distilled water, just change water every month. Filling the water till water split have water leakage.
3. Connect the handle piece to main machine. Check the handle piece if it is in good conditions. Make sure the water tube is well connected. You will hear “kink” when the water connector are well locked. Otherwise, there will be water leakage or water jam which may cause water pump broken or laser burning out.
 - 1) Please confirm if your wall-plug is 200-240VAC. If it is 90-120VAC, please use voltage transformer.
 - 2) Find a 10A 220-250V VAC plug wire (you may need an European Model for the wire), connect to the back panel.
 - 3) Turn on the earth leakage circuit breaker at the back panel.
 - 4) Check if the emergency button is pressed down. If pressed down, please release it.
 - 5) Use the key to start the system and you will enter the welcome interface of the system as below:

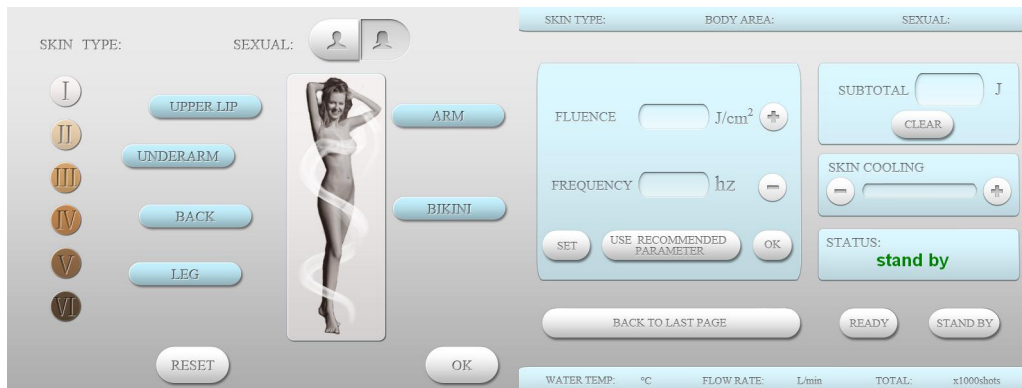


Interface 1

Interface 2

- 6) Press the welcome bottom, you will enter the second page as the right picture above. Till now, you are successfully enter the hair removal system. Please follow the “6. OPERATION” chapter to start the treatment.
- 7) For any emergency situation, please press the emergency button (Red Mushroom) to shut down the laser immediately.
- 8) After treatment if you want to turn off the system, you can use the key to shut it down directly. And turn off the air switch at the back panel. You can remove the VAC plug if necessary.

6. Operation



Body Page

HR Treatment Page

1. Interface 1

Here is a welcome page. Just press screen, you will enter the second page.

2. Interface 2

At this page, you have 3 model choice. There are HR(Hair removal), FHR(Fast Hair Removal) and SR(Skin Rejuvenation).

HR-Hair removal

It is a professional model. In this model, you first choose patient skin color, sexual and treatment body part in Body Page(left picture above). Press “OK” to enter next page. Or press “reset” to rechoose.

Our smart system will give you recommended parameter of laser power, pulse width and frequency depending on

your choice of sexual, skin color type and treatment body part. Those default will display in the corresponding column. If you want to follow those default, just press "OK". If want to adjust your favourite parameter, press"SET", then you can adjust laser power and frequency by "+" and "-". Bottom "use recommended parameter" will reset those three parameter to default.

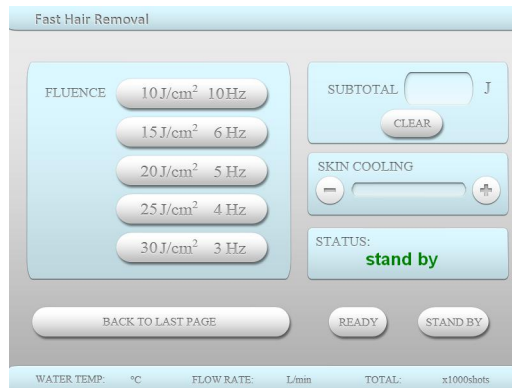
There are totally 3 parameters to be set, including: Laser Power, Frequency and Skin Cooling Level.

- 1) The **Fluence** shows the energy density of one laser shot. Laser Power fluence can be variable from 1J~120J. The step width is 1J. You can adjust it by press "+" and "-".
- 2) The **Frequency** shows the pulses per second of the laser. A higher repetition rate leads to higher pulse energy fluence. The frequency can be variable from 1Hz~10Hz with a step width of 1Hz.
- 3) **Subtotal** at the top-right of the LCD screen shows the total laser energy of this treatment. It is easy for doctor to calculate how much power used in one treatment. Press button "clear" can clear the number. Or the subtotal number will clear automatically when machine shut down.
- 4) The **Skin Cooling Level** shows cooling efficiency of the Sapphire Window and Aluminum Tip of the handle piece. The green block is longer, the cooling is better. It depends on the feeling of the patents. The default cooling level is minimum output, which can be adjust by pressing "+" and "-" button. When the laser is working, you can not adjust skin cooling level. You may need to wait for several minutes before the skin cooling tip becomes cold.
- 5) The column below skin cooling shows the system status.
 - A. **Status: Setting.** This means you are setting parameters.
 - B. **Status: Ready.** When parameters have been set, press "READY" button, the system will enter 'Ready' status. In this status, the laser is ready to use.
 - C. **Status: Working.** When the handle piece shots laser pulses, the system will enter to 'Working' status.
 - D. **Status: Water temperature high.** The cooling water temperature range should be between 15~28°C. If it higher than 34°C, the laser will stop. Please wait till water temperature going down. The warning will disappear, and system can be set again.
 - E. **Status: Water flow rate low.** It means the cooling water flow rate lower than minimum requirement. If the water flow rate which show at the bottom of the screen is just low, not "0 L/min". Please first check along the water tube to confirm whether there are any jam in it and handle piece water connector are well locked. Secondly, open the water inlet at the back of machine to make the air pressure balance between the inside and outside of water circle system. If the water flow rate show "0 L/min". Please first check whether the water pump are working. Or contact our company to ask for help..
 - F. **Status: Operation wrong.** Press switch on the handle piece without enter ready status.
 - G. **Status: Please check Diode laser or diode driver.** It means the laser handle piece or laser power supply broken. Please ask factory or seller to solve this problem.
 - H. **Status:Error 2.** It means the control board have cooling problem. Please ask factory or seller to solve this problem.
- 6) Set the parameters (Fluence, Frequency, Cooling) and press 'READY' button to enable the handle piece. For the typical treatment parameters, you can refer to the recommended default or experienced doctor's advice.
- 7) During 'Ready' status, you also can adjust the skin cooling depending on skin feeling. You may need to wait for several minutes before the skin cooling tip becomes cold.
- 8) Take the handle piece. Pressure the pedal switch or the switch on the handle piece to shot the

laser pulses. Keep pressing the button and the laser output will continue. **Do not press & release for single pulse.**

- 9) You can stop the machine anytime by turn off the key in the front panel or press emergency button.

FHR-Fast Hair Removal



You can choose FHR button to enter the fast hair removal mode. There are five units parameters which are used frequently. Just choose one of them and adjust skin cooling level. You can start treatment directly.

SR-Skin Rejuvenation



808nm diode laser is also good for skin rejuvenation. Our system offer “soft”, “comfortable” and “effective” modes to match customer needs. Adjust skin cooling to let customer feel well.

Please follow those parameter during operating the machine:

Model No.	FQL01
Laser Cooling Liquid	Distilled-water
Water Tank Volume	~3.3L
Handle Piece Flow Rate	4.5L/min+-10%
Cooling water temperature	23~28°C
Working Environment Temperature	15~25°C
Environment Moisture	<70%

7. Treatment Notice

1. The treatment of the hair removal needs experienced professionals. Do not use it if you have no experience for such kind of laser device.
2. Operators and patients must wear laser goggles to protect eyes from any laser damage threat.
3. Please notice that this is a high power laser device and if the patients feel very painful, please stop the laser and check if there is anything happens to the patients' skin. Adjust it as a proper power that the patients can stand to do the treatment.
4. Skin color is very important. For white to light color, you can adjust the laser power up to 25~40J/cm². For light color to light brown, you need a lower laser power (10~15J/cm² for example), Also you need to use lower than 10J/cm² and extend the treatment time for the dark skin to inject enough energy to the skin and follicles.
5. The skin must be shaved before treatment.
6. The handle piece is better to be operated at SCANNING mode. It is faster for treatment.
7. Skin contact gel is no necessary for treatment. It won't make the treatment better or improve the skin feeling.
8. You need to wait for several minutes before the cooling tip becomes cold.
9. Keep contact the cooled Sapphire with skin. And you can also use the edge of the Aluminum
10. head of the handle piece to cool down the skin during treatment.
11. Never shot the laser pulses to eyes, or watch the laser directly.

8. Maintenance

1. For cooling water, please change every month.
2. The machine must be operated in a room with air-conditioner. **The room temperature should be <25°C.** High room temperature will cause water cooling difficultly. Machine will get water temperature warning after working very short time.
3. The environment temperature can not go below ZERO, or the ice may damage the water tanks and water channels inside the machine and the handle piece.
4. Clear the gel on the handle piece and make sure there is no dust around the Sapphire.
5. Do not bend the tube of the handle piece too hard, or this may cause water flow rate low warning.
6. Do not plug in & out the handle piece connectors frequently. This may cause water leakage or water jam or bad electrical connections.
7. Do not shot the laser at random targets, or it may cause burning or fire.
8. Always keep the handle piece with the holder on the main machine when you don't use it. Otherwise, the condensing water may flow back to the laser stack in handle piece, so that cause laser failed.

8. Warranty Notice

Please take necessary protections for the operation of the machine and handle piece, and notice that following situations can **not be warranted**:

1. Operation the system without water.

2. Power up the system without connecting the handle piece.
3. Regular drops of the handle piece.
4. Wrong input VAC.
5. Other manual operating mistakes.

9. Exception Handles

After starting the hair removal machine by key switch, the system will enter self-check program, if some parts of machine has problem, there will be a warning show in the "Status" column" on the screen, and warning sound can be heard at the same time.

1. Status: Water temperature high. The cooling water temperature range should be between 15~28°C. If it higher than 34°C, the laser will stop. Please wait till water temperature going down. The warning will disappear, and system can be set again. The environment temperature should be <25°C.
2. Status: Water flow rate low. It means the cooling water flow rate lower than minimum requirement. If the water flow rate which show at the bottom of the screen is just low, not "0 L/min". Please first check along the water tube to confirm whether there are any jam in it and handle piece water connector are well locked. Secondly, open the water inlet at the back of machine to make the air pressure balance between the inside and outside of water circle system. If the water flow rate show "0 L/min". Please first check whether the water pump are working. Secondly, take down the water flow sensor to check whether there are jam in it. Or contact our company to ask for help.
3. Status: Operation wrong. Start treatment without enter ready status.
4. Water pump shut off. There is a thermal overload protected motor. The motor will automatically shut off as temperature rises due to an overload condition. If the motor shuts off in this manner, close all nozzles, faucets or valves. After a cooling period, the pump will automatically re-start. To avoid this problem, please first make sure all the water connector are well connected. Secondly, open the water inlet to make the balance of air pressure between inside and outside of the water circle system, then let the water pump working for a while, the water flow rate should rise up.