

## 810nm Semiconductor Laser Hair Removal Instrument

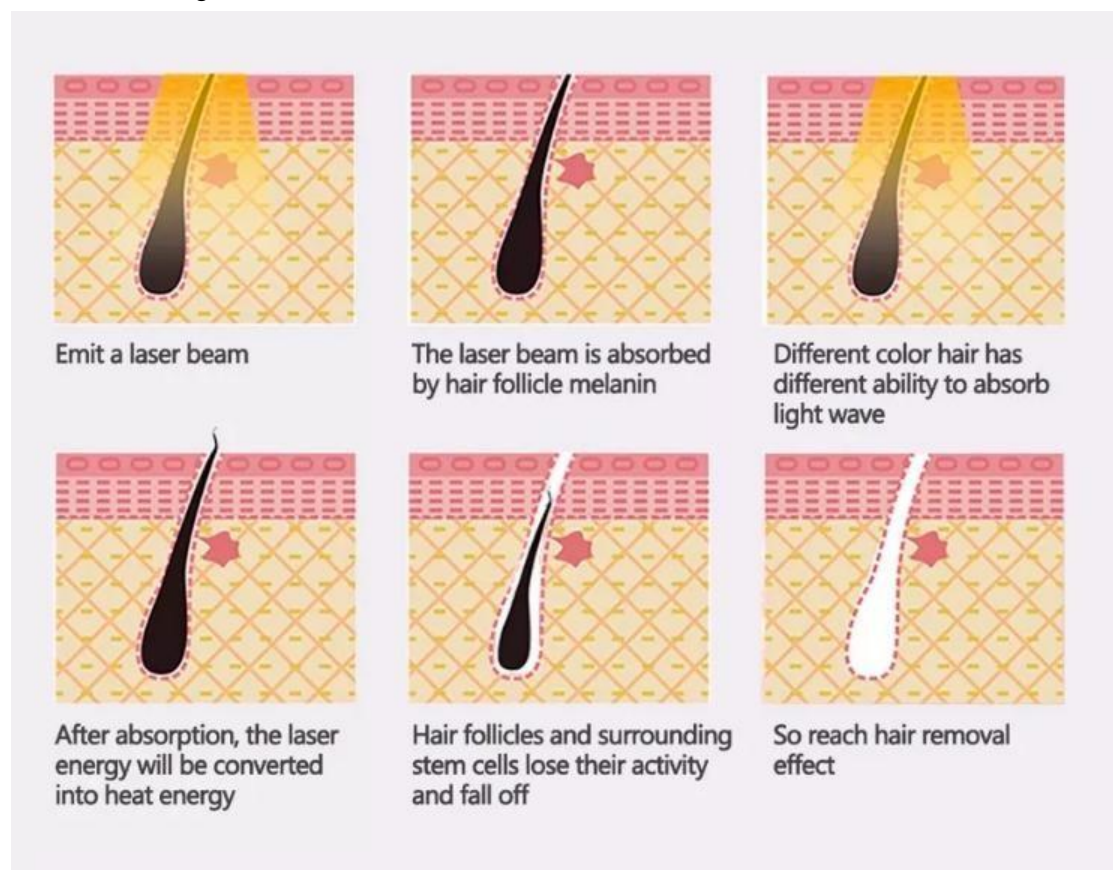


Before operating ,Please carefully read and strictly operate the machine according to guidelines in Manuel .

# Product Description

The origin of Diode laser hair removal: at 1993, The Wellman Medical Optics Laboratory at Harvard University begins research into ruby laser hair removal, at 1997, The birth of photon also has a certain effect in clinical hair removal, but because the photon penetration is shallow, the treatment times are more, the hair removal ability is limited.. Finally , Israel's high-tech city CAESAREE Research Center began using a new generation of laser hair removal machine——MYTHOS 500 Alma diode(Semiconductor) laser hair removal equipment for clinical treatment, has achieved a clear effect, and then there are a variety of professional hair removal laser equipment such as: long pulse 1064nm, Alexandrite 755nm, etc. have emerged, so that the effect of laser hair removal into a perfect era.

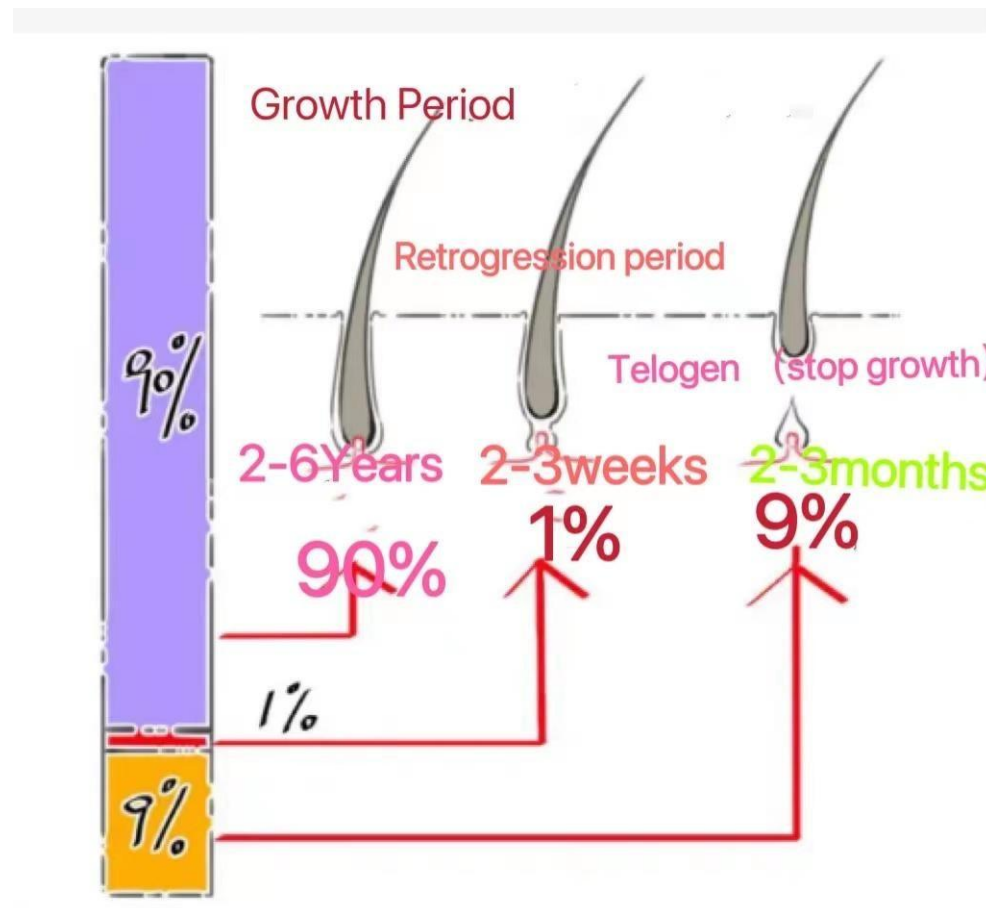
The Principle : (Semiconductor) Diode laser hair removal is a non-invasive modern hair removal technology, which can destroy hair follicle structure and permanently remove hair without scalding the skin.



Skin Types : According to Fitzpatrick classification, the skin color was divided into 6 types: white skin in Europe and America were I, II; Southeast Asian yellow skin type III, IV; African brown black skin type V, VI. Type I II skin has less melanin in the basal layer. It is safe to use 810 nm diode laser or 755 or 940 nm laser. The content of melanin in the basal layer of V-VI type brown and black skin is very high and 1064 nm laser is more suitable. Type III-IV yellow skin race, skin basal layer melanin content is medium, 810 nm Diode laser is

the safest.

The growth of hair goes through three stages: growth phase, recession phase and telogen phase. There is melanin in the hair follicle in the growth phase, less in the retrogressive phase, and no melanin is in the telogen phase. The laser mainly damages the growth follicle. Skin telogen follicles will continue to change into growing hair follicles, so the necessary treatment of laser hair removal 3 to 5 times can be completely hair. Discontinuous 30days.



## Different wavelength characteristic:

### 755nm :

1. 755nm Wavelength is the best absorption wavelength of melanin, also using the laser selective photo thermal principle, can directly affect the melanomas in the hair follicle, Thus effective destruction of the hair follicles, with a strong ability to eliminate hair, especially small light hair still has outstanding performance, such as: lip hair, face hair, hair hair after repeated d epilation.
2. But in the case of patients with darker skin, the target tissue and the epidermis have the same color base and compete with each other to absorb the laser, so there may be a risk of heat retention in the skin for dark skin; However, better curative effect can be obtained for patients with lighter skin color.
3. When depilating under the specially adjusted parameter mode, it can form a large area physiological heat effect on the melanin basal cells of the skin, thus inhibiting melanin production of basal cells for a long time, and achieving skin whitening.

## 810nm :

◆ .810nm Diode laser , Has good uniformity, has better penetration, It is also a relatively good wavelength for melanocytes, which is applied to the principle of selective photothermal effect. The melanin of hair follicle is the target color base, which effectively destroys hair follicles and achieves a better hair removal effect.

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## 940nm:

1. **Microvessel Coagulation:** The 940nm wavelength laser coagulates the microvessels around the hair follicle, effectively cutting off the blood supply to the hair follicle. This helps to sharply reduce hair regeneration power

2. **Deep Penetration:** The 940nm laser penetrates deeper into the skin, reaching the dermis and subcutaneous fat layers. This deeper penetration enhances the effectiveness of hair removal by targeting hair follicles at various depths

3. **Improved Hair Removal Effect:** By effectively targeting the hair follicle's blood supply and reaching deeper follicular structures, the 940nm laser improves the overall hair removal effect, providing longer-lasting and more efficient results

## 1064nm :

wavelength features: It has the advantages of deep penetration, long pulse width, large energy density range, etc. It is suitable for hair removal of various skin types (especially type IV ~ VI skin) and color hair except white.

Two concepts: pulse width and thermal relaxation time : The pulse width of the laser, which is the time it takes to hit the laser.

Thermal relaxation time : The time required to reduce the target temperature by half can be interpreted as "cooling time." If damage to specific tissues is to be reduced, the pulse duration should be greater than the thermal relaxation time; If specific tissue needs to be damaged, the pulse duration should be less than or equal to the thermal relaxation time.

The thermal relaxation time of human skin is about 3-10ms, and that of hair follicle is about 40-100ms, so the optimal pulse width for hair removal is 10-100ms. For people with darker skin, the thermal relaxation time of human skin is relatively long, and the pulse width is more than 30ms.

## Operation instructions

### ◆ Instrument assembly

(Remarks: It is required to change the water once every 30 days. Clean the water tank when changing water, and ask to replace Watson's distilled water. , The seriously consumption caused by water quality and changing the water not frequently)

1. Handle installation: Align the joints first by the wire column, Then press the **button**

buttons on the both sides to insert the connector, when connected well the handle can hear a sound.




**2. Add distilled water:** Add distilled water from the Water hole, put the plastic piece into the overflow hole, until there is water flowing out from the overflow port.



**3. Power Wire Installation:** connect it well with the machine power port.

◆ **Screen introduction**

connect well the power supply, turn on the air switch, , then turn on the front button

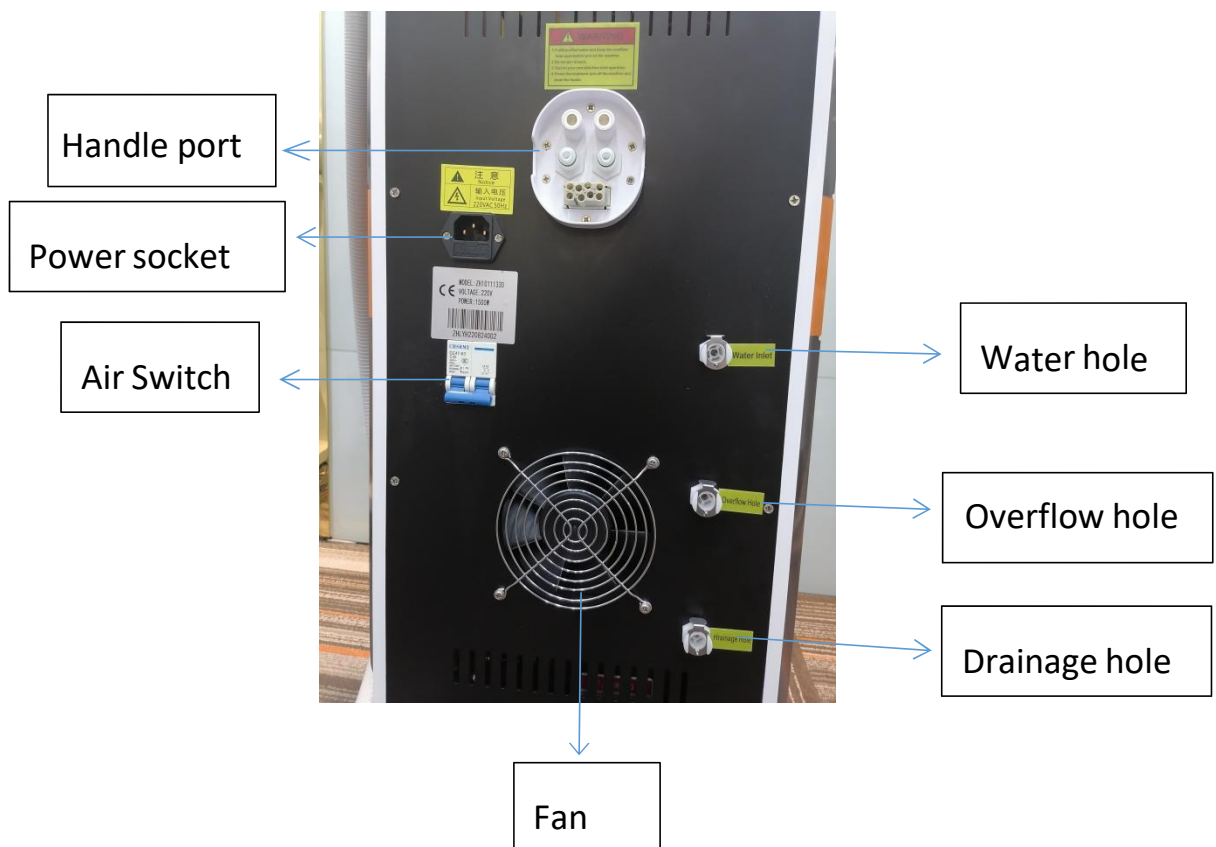


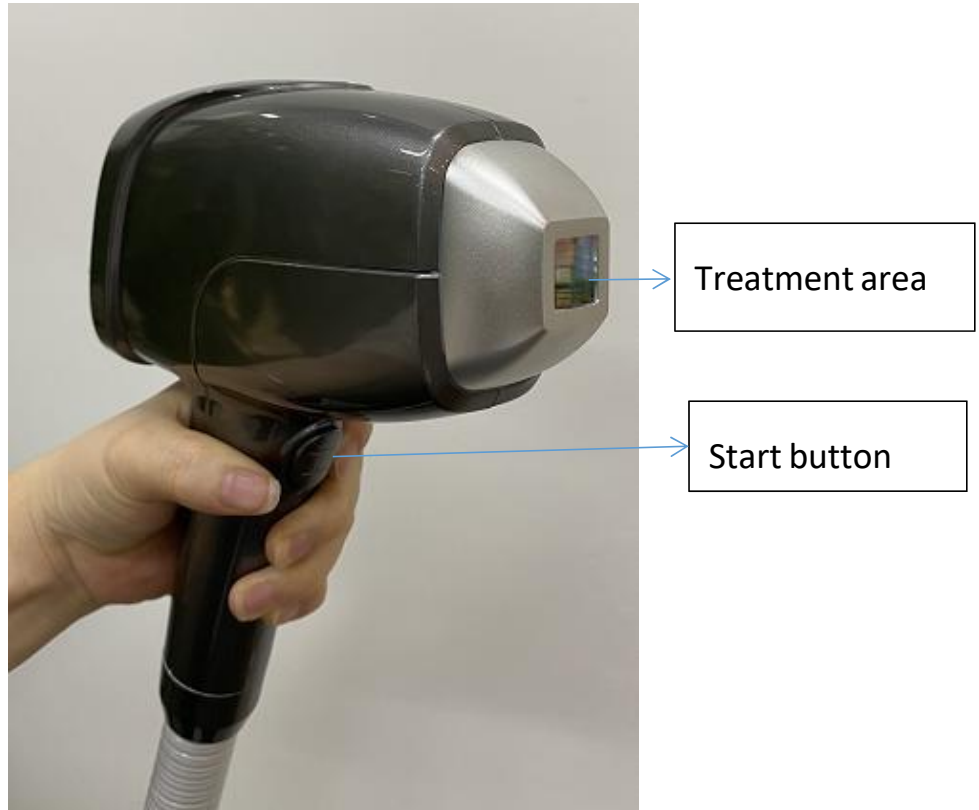
, to turn on the machine.

**Front**



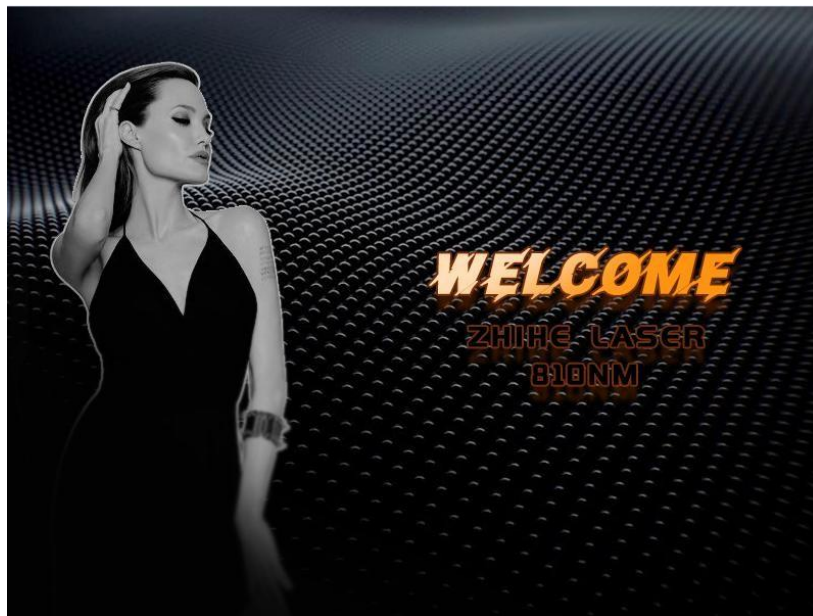
**Back**



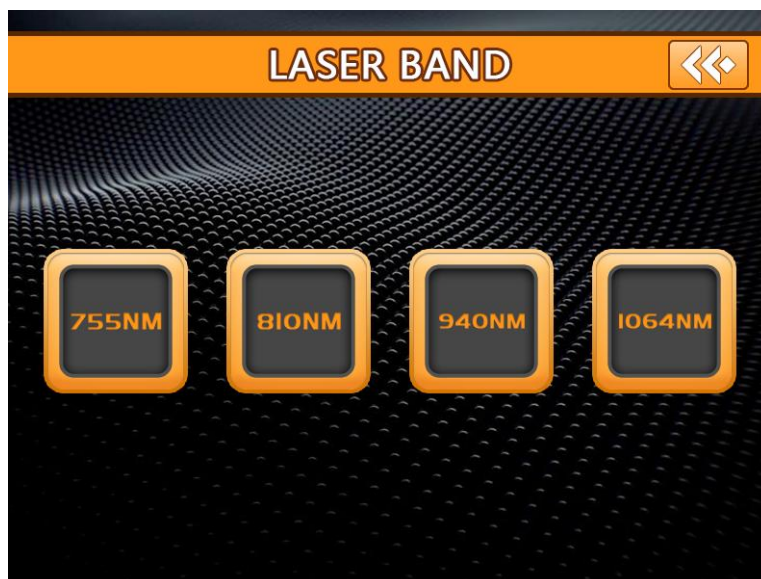


Handle

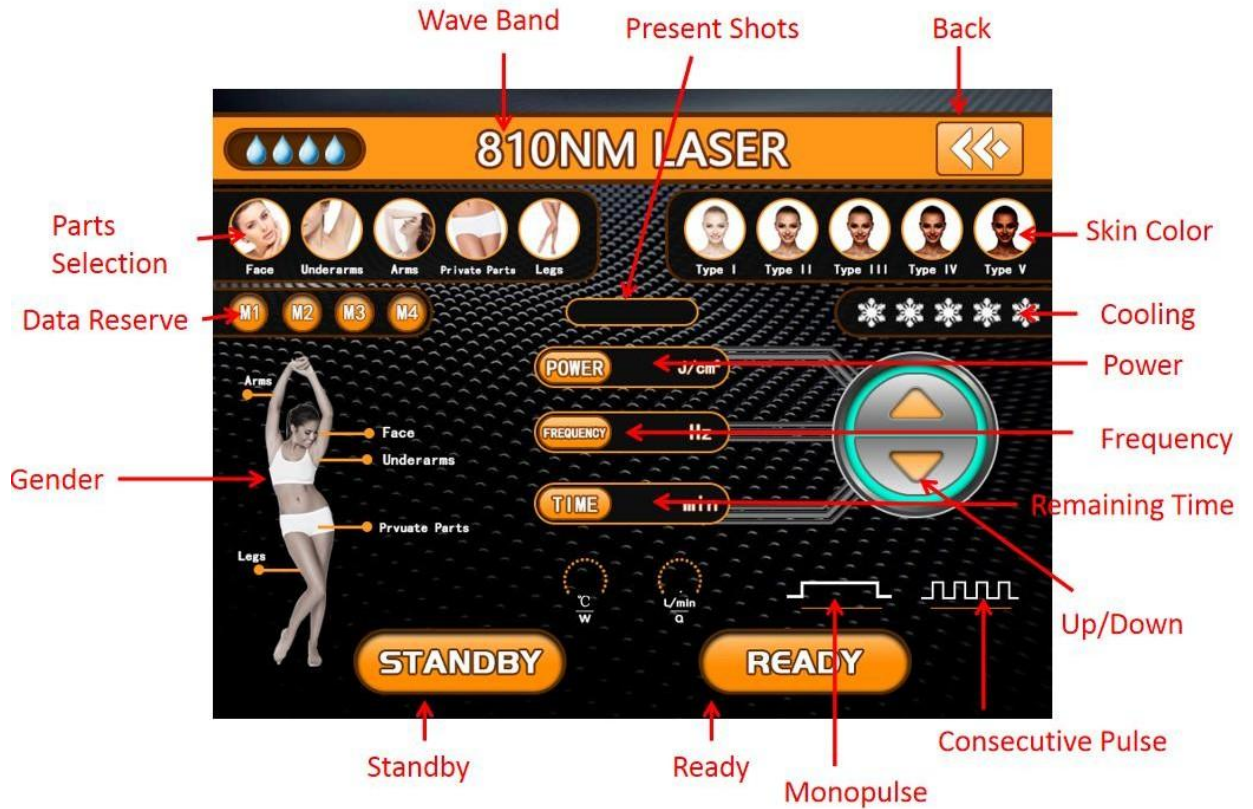
Opening page



Treatment data set up page



1. Enter the correct password 000000 and choose male or female, 755nm 810nm or 1064nm then enter the operation interface.
- 2.



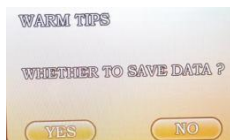
Treatment part choice



Skin type choice, from white to black



M1 M2 M3 M4 parameter saving, If you set the parameter then click any mode, with warm tips, whether to save the data, choose yes, next time you turn on to select one of the modes is the previously set parameter.



Shots used



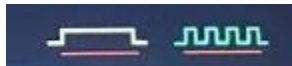
Cooling level



Power, frequency setting, power set from low to high according to client's feeling, frequency set 1-3, Time for one part about 15-20 minutes



temperature and water flow speed



working mode, single mode and continuous mode



standby button



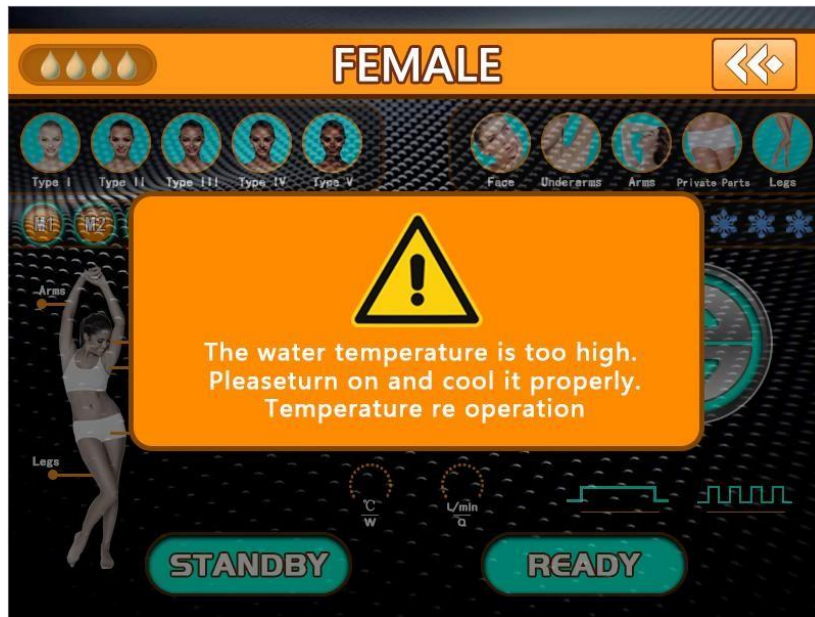
Ready button

### HOW TO USE THE MACHINE :

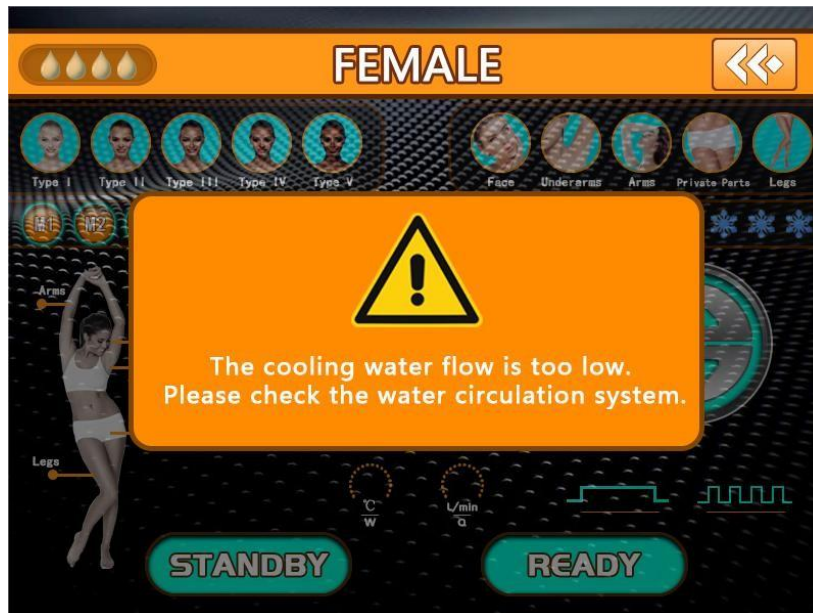
1. Install the holder, connect the handle, put the handle on the handle holder correctly
2. Add water (distilled or pure water) from the water hole, ( when add water, pls put the small plastic piece into the overflow hole, until the machine machine from the overflow hole. Water full, pls keep the plastic piece in the overflow hole, this is very important.
3. Plug in the power cord, turn the instrument on.
4. Enter the operation interface to determine the instrument water temperature and water flow is normal after the motor preparation (not alarm is normal)
5. After 1 minute, confirm that the handle head can be used normally after cooling

## Alarm

### Water temperature Alarm



### Water flow Alarm





## Equipment maintenance

- ✧ must insert the handle before adding water
- ✧ add water must add deionized water or distilled water
- ✧ change the water every 30 days
- ✧ handle internal for precision fragile components, can not fall bump
- ✧ Keep the control screen clean, clean up need to wipe with a damp cloth
- ✧ Keep the rear air inlet and the bottom air outlet of the instrument unblocked during use

## Why choose our 810 Diode laser ?

### Competitive advantages of similar products in the market

1. **The best cooling system** :the refrigeration system adopts air cooling + water cooling + TEC semiconductor refrigeration, can be used for 24 hours a day, the use of high efficiency, cooling in the market is generally copper heat dissipation or even aluminum heat dissipation;
2. Heat stable and constant between 22-28 degrees Celsius can effectively extend the life of the laser, laser life can reach more than 20 million; Other manufacturers can only do a maximum of 5-10 million;
3. **The 810 laser hair removal meter pulse width between 10-200ms contains the best pulse width for hair removal**, Can do the real super-freezing painless hair removal, comfort super, other manufacturers of similar equipment pulse width can not do so narrow, generally between 10ms-400ms, some even reached 600 ms;
4. **Multi-language selection**,support Chinese, English, Russian, Spanish, French, German, Korean, Japanese one-on switch;
5. **The handle configuration is rich**, three kinds of spot size, 300W-1200W laser combination, the handle can also be upgraded to a handle with control screen, later there are dual handle combination model launched;
6. **Circuit and waterway layering partition design**, safer, easier maintenance;
7. **Support custom development for agents**

### Technical parameter

Laser power	Input based on actual tile number
Laser heat dissipation form	semiconductor refrigeration + water + TEC cooling constant temperature cooling

Laser type	810nm semiconductor laser
Laser wavelength	810nm 755nm 940nm 1064nm
Pulse width	10ms-200ms
Frequency	1Hz-10Hz
Max power	100J/ cm <sup>2</sup>
Light outlet	15mm*15mm
Temperature	22-28°C
Water flow	5L/min
LCD screen	10.4' Touch LCD
water tank	Built-in water tank
Input voltage	100-120V/ 60hz; 220V-240V 50Hz
Packing Size	58*58*124/ 84kg

### **Safety considerations**

- ◆ According to the air transportation regulations, the water in the instrument must be emptied, and the user should add water after receiving the instrument;
- ◆ Make sure the tank is filled with distilled water. It is forbidden to turn on the machine without water, so the damaged bald head should be borne by the user.
- ◆ Mineral water or tap water is prohibited and deionized water (distilled water) is required.
- ◆ Regular replacement of cooling water every week (According to the quality of water quality, the water exchange period can be extended or shortened as appropriate.) ;
- ◆ Check that the handle is good and check the protective sleeve of the handle to make sure the sleeve is not bent or pressed. If the casing is seriously compressed, it will cause water blockage or insufficient water flow, which is not conducive to the cooling

of the instrument, and may cause problems.

- ◆ Before using, first check if the line is connected correctly;
- ◆ Make sure rated voltage conform to the voltage in your country
- ◆ Treatment bald head should be placed on bald fixture when not in use. Hand-held operation should pay attention to protection, so as to avoid bald head falling.
- ◆ After the machine starts, the water system will be circulated for one minute before operation, so that the water system can be completely circulated.
- ◆ Treatment of the bald head is strictly prohibited to directly illuminate eyes
- ◆ Cold gel must be added during operation. The treatment head must be lightly applied to the skin. Do not leave the skin during treatment to avoid burning the skin.

[Warning instructions]

- ◆ The strong light hazard prompt refers to the treatment of strong light emitted from the front of the bald head to illuminate the eyes, which is prone to danger; the operator is required to wear a protective goggle during operation and protect the operator from direct exposure to the human eye.
- ◆ The instrument water tank must be filled with water before use.
- ◆ When different functions need to be replaced or different parameter options need to be adjusted, the machine should be in standby state, and the function or parameter options can not be replaced in the ready state.

[Declaration]: Low temperature area below 0°C

- ◆ If the instrument is not used for a long time or needs to change the site, the water in the interior (handle and main engine) must be emptied.
- ◆ Try not to place the instrument for more than 3 hours in an environment below 0°C. It has been found that water below 0°C will appear to be tumbling up when moving. It is realized that the liquid water is below 0°C, and there will be rapid freezing during the movement. After the liquid water turns into solid ice, the volume increases rapidly, causing certain damage to components such as water pipes, cooling water pipes, and laser waterways.
- ◆ After the customer receives the instrument, it needs to be stationary for 24 hours in the room temperature of 23-26°C before it can be used. If the equipment is not operated as required, and it is damaged due to the customer's own reasons, the company will only provide paid maintenance services. Because of the influence of temperature, we hope that customers will pay attention to it. And follow the requirements for routine maintenance.

## **Treatment parts and results**

# WORK HEAD DISPLAY

DIODE LASER HAIR REMOVAL

810 nm

810 nm



## PICTURE OF BEFORE & AFTER



**Before:** Affect appearance, skin color is dark, show sloppy unsanitary, easy to breed bacteria.

**After:** Clean and beautiful, smooth and delicate, neat and hygienic, not easy to breed bacteria.



**Before:** Affect appearance, skin color is dark, show sloppy unsanitary, easy to breed bacteria.

**After:** Clean and beautiful, smooth and delicate, neat and hygienic, not easy to breed bacteria.



**Before:** Thick hair, dark skin, showing sloppy unsanitary, easy to breed bacteria.

**After:** The skin color is natural bright white, smooth and delicate, clean and tidy, not easy to breed bacteria.



**Before:** Thick hair, dark skin, showing sloppy unsanitary, easy to breed bacteria.

**After:** The skin color is natural bright white, smooth and delicate, clean and tidy, not easy to breed bacteria.

**Treatment Notice and Contraindications to operation:**

#### Treatment Notice:

1. The treatment of the hair removal needs experienced professionals. Don't 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 laser damage threat.
3. Please note that this is a high-energy laser device. If the patient feels very painful, stop and check whether the patient's skin has changed. Adjust to the energy that a patient can tolerate.
4. Skin color is very important. For white to light color, The power can be adjusted to 80%~100% to achieve good results. For light color to light brown, power can be lowered (e.g. 30%~60%).
5. Before treatment, the skin hair must be shaved off. Pulse width can be raised to protect the skin from burns. For dark skin, extend the treatment time to inject enough energy into the skin and hair follicles.
6. The handle pieces better to use SCANNING mode. It's faster.
7. Need to wait for several minutes before the cooling tip becomes cold.
8. The handle should be kept stuck to the skin. During treatment, the aluminum head at the edge of the handle can be used to reduce the temperature of the skin.
9. Never shot the laser pulses to eyes, or look at the light directly.

#### **Contraindications to operation:**

1. there is a history of keloid, allergies or scarring of the physique of the person does not recommend treatment;
2. suffering from hepatitis, syphilis, skin infection is not recommended for treatment;
3. blood diseases and coagulation mechanism disorders, menstrual period women do not recommend treatment;
4. preoperative administration of vascular dilatation drugs, anti-joint pain drugs are not recommended for treatment;
5. The use of 13-shun retinoic acid history within 6 months is not recommended for treatment;
6. During 6 weeks, treatment was not recommended for those who had used other methods (such as wax removal);
7. There is a heart disease, the device has the cardiac rhythm regulator and the pregnant woman does not recommend the treatment;
8. Those who have recently received sun exposure are not recommended for treatment;
9. Those with open wounds are not recommended for treatment;
10. Those with infected wounds are not recommended for treatment;
11. Patients with skin diseases and epilepsy are not recommended for treatment.

#### **Postoperative nursing care of**

1. after hair removal do not use scrub, alcohol, antiperspirant, bath should use warm water, hair removal area do not hot water hot wash and hard scrub;

2. Don't do sauna or swim in the swimming pool or beach within one week after hair removal.
3. Do not use cosmetics and skin care products containing fruit acid and A acid after depilation.
4. The depilated area may produce slight redness and swelling, sensitive skin, hot or itchy sensation. Ice compress can alleviate the pain if you feel pain.
5. Avoid sunshine as much as possible and use sunscreen when you go out.
6. Pay attention to the cleanliness and dryness of the depilation area. Do not wear clothes that are not clean or too tight to ensure that they are dry and breathable.
7. Pay attention to diet, prohibit smoking and alcohol, do not eat spicy stimulating foods, to supplement more vitamin C;

### **Instrument Maintenance and Maintenance:**

#### **I. Maintenance and Maintenance**

1. Check and change water every week.
2. Instruments must be operated in an air-conditioning room. The indoor temperature should be lower than 28 degrees C.
3. Indoor temperature should not be lower than 0 degree C. Otherwise, ice will destroy the water pipe and handle of the instrument.
4. Clean the cold gel on the handle to ensure that there is no dust on the light spot of the handle.
5. Don't bend the protective sleeve of the handle by force, otherwise it may lead to wrong flow switch.
6. Do not insert and pull out the handle frequently. This may lead to leakage or poor power connection.
7. Don't shoot at will, or you may catch fire.

#### **II. Warranty Requirements**

Instruments and handles should be protected during use. Note that the following conditions are not included in the warranty:

1. No water added during operation
2. Turn on without inserting a handle
3. Wrestling handle
4. Input Voltage Error
5. Other operational errors

### **Many people who doubt. Below are some FAQ.**

#### **● Is it effective to take off once?**

Laser hair removal usually takes three to six times to get rid of hair.

#### **There are two reasons:**

1. The hair follicles are mostly bundled together in three groups and open to the same pore. One hair in the pore is the hair growing from one of the three follicles under it.

Therefore, one treatment can only destroy one hair follicle in one group.

2. Hair growth needs to go through growth period, regression period and rest period. Laser hair removal is effective in 75% of the growing hair, 25% of the regression period, and the rest period is almost ineffective.

- **Does it affect perspiration after depilation?**

Perspiration is mainly caused by small sweat glands, while small sweat glands are not in the hair follicles. At the same time, laser hair removal is to remove hair follicles and not harm sweat glands, so it does not affect human metabolism and perspiration.

- **Does the hair removal effect permanent?**

The current laser or glare therapy device has the function of permanent hair removal, so many people will misunderstand that the hair is not long after treatment, in fact, this permanent is not truly permanent.

The US Food and Drug Administration's understanding of permanent hair removal is that hair does not grow during a hair growth cycle after laser or intense light treatment. In general, hair clearance after treatment with multiple lasers or intense light can reach 90%, of course, its efficacy is affected by many factors.

- **Is there any damage to the skin caused by depilation?**

The skin of the human body is a relatively light-transmissive structure. The clinical experts of the beauty experts found that in the face of a powerful laser, the skin is simply a transparent cellophane, so the laser can penetrate the skin very smoothly through the skin, because there are many hair follicles. Melanin, so it can preferentially absorb a large amount of laser energy and eventually convert it into heat energy, so that the temperature of the hair follicle rises, and the function of destroying the hair follicle is achieved.

In this process, since the skin does not absorb laser energy relatively, or absorbs a small amount of laser energy, the skin itself will not be damaged.

- **Will the hair get blacker and darker?**

The hair remaining after treatment with laser or intense light becomes finer and the color becomes lighter. While shaving, plucking, hair removal cream removal, wax paper hair removal, etc., people who use these methods for a long time will gradually become thicker, harder and darker.

- **Does the hair removal effect the same for everyone and all parts?**

The number of hair removals depends on the location, the color and thickness of the hair, and the type of skin. Generally, the whiter the skin color, the darker and stronger the hair, the better the reaction, and the better the hair removal effect.

- **Can you sunbathe immediately after hair removal?**

After the hair removal, the skin surface protection function will be reduced, and it is easy to be sensitive. It should avoid further irritating the skin, so it is not suitable to take the sun immediately.