

# IPL Therapy

## *System*

(Type SMQ-NK)

### USER MANUAL

**Beijing Sincoheren Science & Technology Development Co., Ltd.**

(Version A/0)


## **Warranty information**


This is to certify that IPL therapy Systems are guaranteed by Sincoheren Company to be free of all defects in materials and workmanship for a period of one year from the date of purchase. This warranty does not apply to any defect caused by negligence, misuse (including environmental factors), accident, alteration, or improper maintenance.


During the guarantee period, our company will provide visiting maintenance services (only for Chinese customers)

The system provides lifetime maintenance. Only charge the cost price by replaced the component.

## Contact information




 **IPL Therapy System**  
Model SMQ-NK    Input 230V~ 50Hz 1200VA

**SN** 

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**NOTE:**



: Symbol for “MANUFACTURER”



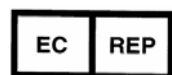
: Symbol for “DATE OF MANUFACTURE”



: Symbol for ‘CAUTION, CONSULT ACCOMPANYING DOCUMENTS’

**SN**

: Symbol for “SERIAL NUMBER”



: Symbol for “AUTHORISED REPRESENTATIVE IN THE EUROPEAN COMMUNITY”

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# Chapter *1*

# Safety

- ✧ **1-1 Hazard information**
- ✧ **1-2 Agency compliance**
- ✧ **1-3 Electrical safety**
- ✧ **1-4 Movement and Transportation safety**
- ✧ **1-5 Optical safety**

## 1-1 Hazard information

Hazard information includes terms and symbols used in the manual or on the equipment to alert operating personnel to recommend precautions in the use.

 **Warning:** Potential hazards which, if not avoided, could result in serious injury.

 **Caution:** unsafe practices which, if not avoided, may result in injury.

**Caution:** unsafe practices which, if not avoided, may result in product damage.

**Note:** additional information or explanation about the equipment

### General hazards:

Following are the descriptions of general hazards and unsafe practices that could result in severe injury or product damage.

#### Warnings

- Only the professional allow access to the treatment room
- Make sure that all treatment room staffs are familiar with the system's control and know how to turn off the system instantly.
- Do not use the system in the flammable and explosive place or other unsafe place hidden danger
- Make sure the caution signs are posted in a prominent place of the treatment room.

#### Caution:

- Portable and mobile RF communications equipment can affect IPL therapy System.
- The use of ACCESSORIES, transducers and cables other than those specified, with the exception of transducers and cables sold by the manufacturer of the IPL therapy System as replacement parts for internal components, may result in increased EMISSIONS or decreased IMMUNITY of the IPL therapy System. ◦
- The IPL therapy System should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the IPL therapy System should be observed to verify normal operation in the configuration in which it will be used.

## 1-2 Agency compliance

Guidance and manufacturer's declaration – electromagnetic emissions		
The IPL therapy System is intended for use in the electromagnetic environment specified below. The customer or the user of the IPL therapy System should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment

		– guidance
RF emissions CISPR 11	Group 1, Class B	The IPL therapy System uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	compliance	The IPL therapy System is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Electrostatic discharge (ESD) IEC 61000-4-2 6 kV contact 8 kV air	2 kV, 4 kV, 6 kV contact 2 kV, 4 kV, 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4 $\pm 2$ kV for power supply lines	$\pm 2$ kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5 $\pm 1$ kV Line to line $\pm 2$ kV Line to earth	$\pm 1$ kV Line to line $\pm 2$ kV Line to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % UT(>95 % dip in UT) for 0,5 cycle 40 % UT(60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the IPL therapy System requires continued operation during power mains interruptions, it is recommended that the IPL therapy System be powered from an uninterruptible power supply or a battery.

<p>Conducted RF IEC 61000-4-6 3 Vrms 150 kHz to 80 MHz</p>	<p>3 Vrms 150 kHz to 80 MHz</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the IPL therapy System, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p>
<p>Radiated RF IEC 61000-4-3</p>	<p>3 V/m 80 MHz to 2,5 GHz</p>	<p>Recommended separation distance</p> $d = \left[ \frac{3,5}{V_1} \right] \sqrt{P}$ $d = \left[ \frac{3,5}{E_1} \right] \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = \left[ \frac{7}{E_1} \right] \sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range. b</p>
<p>NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>		
<p>a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the [EQUIPMENT or SYSTEM] is used exceeds the applicable RF compliance level above, the [EQUIPMENT or SYSTEM] should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the [EQUIPMENT or SYSTEM].</p> <p>b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [3]</p>		



V/m.
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The IPL therapy System is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the IPL therapy System can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the IPL therapy System as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	$d = \left[\frac{3,5}{V_1}\right]\sqrt{P}$	$d = \left[\frac{3,5}{E_1}\right]\sqrt{P}$ 80 MHz to 800 MHz	$d = \left[\frac{7}{E_1}\right]\sqrt{P}$ 800 MHz to 2,5 GHz
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.70	3.70	7.37
100	11.70	11.70	23.30

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

## 1-3 Electrical safety

Security types: class II a

The operating system uses the single-phase 230 V Power and the largest input current is not more than 8 A.

The use of Voltage-regulator (its power is 1000W) can reduce the influence of network fluctuation to strengthen the system's life.

 **Warning :**

Dangerous voltage presents inside the console during course of the treatment. After turning off the

system, dangerous voltage still left about half a minute. Removing the covers creates a safety hazard.

**Note:**

The power of the operating system requires European standard the three-core power plug, which ensures the machine safe grounding.

## 1-4 Movement and Transportation safety

The machine contains delicate components and no allowance of long transportation after first installation and adjustment.

**Caution**

During the movement, the shock-absorbing package originated from the manufacturer must be used. Otherwise, it might lead to optical system disorders and affect the energy output.

## 1-5 Optical safety

 **Warning:**

Intense pulse light with wavelength of 560nm—1200nm, sourced from the system, can create safety hazard. All personnel including patients in the treatment room must wear protective glasses whenever the unit is in use

To be alert that intense pulse light emission presents an eye hazard.

 **Caution:**

- Never permit reflective objects such as jewelry, mirrors and watches to reflect the intense pulse light.
- Never look directly at the intense pulse light emitted from the treatment handle.
- Never direct the intense pulse light at any skin except the test patch and the target area.

# Chapter 2

## Getting started

- ✧ **2-1 Inventory to the equipment**
- ✧ **2-2 Introduction to the equipment**
- ✧ **2-3 List of system components**
- ✧ **2-4 System components description**
- ✧ **2-5 Installation**

## 2-1 Inventory to the equipment

<b>Components</b>	<b>Qty</b>
Main console.....	1
Intense pulse light treatment handle.....	2
Keys of switch.....	1
Protective glasses.....	2
IPL coupling gel.....	2
Operator's manual.....	1
Power cord.....	1
Filler .....	1
Lock ring.....	8
Service guarantee card.....	1
Shock-absorbing case.....	1

## 2-2 Introduction to the equipment

The SMQ-NK IPL therapy System is a high-intensity pulsed light treatment system.

The unit controlled by computer is composed of main console, operating Interface and treatment head.

The embedded microprocessor monitors can control the system continually.

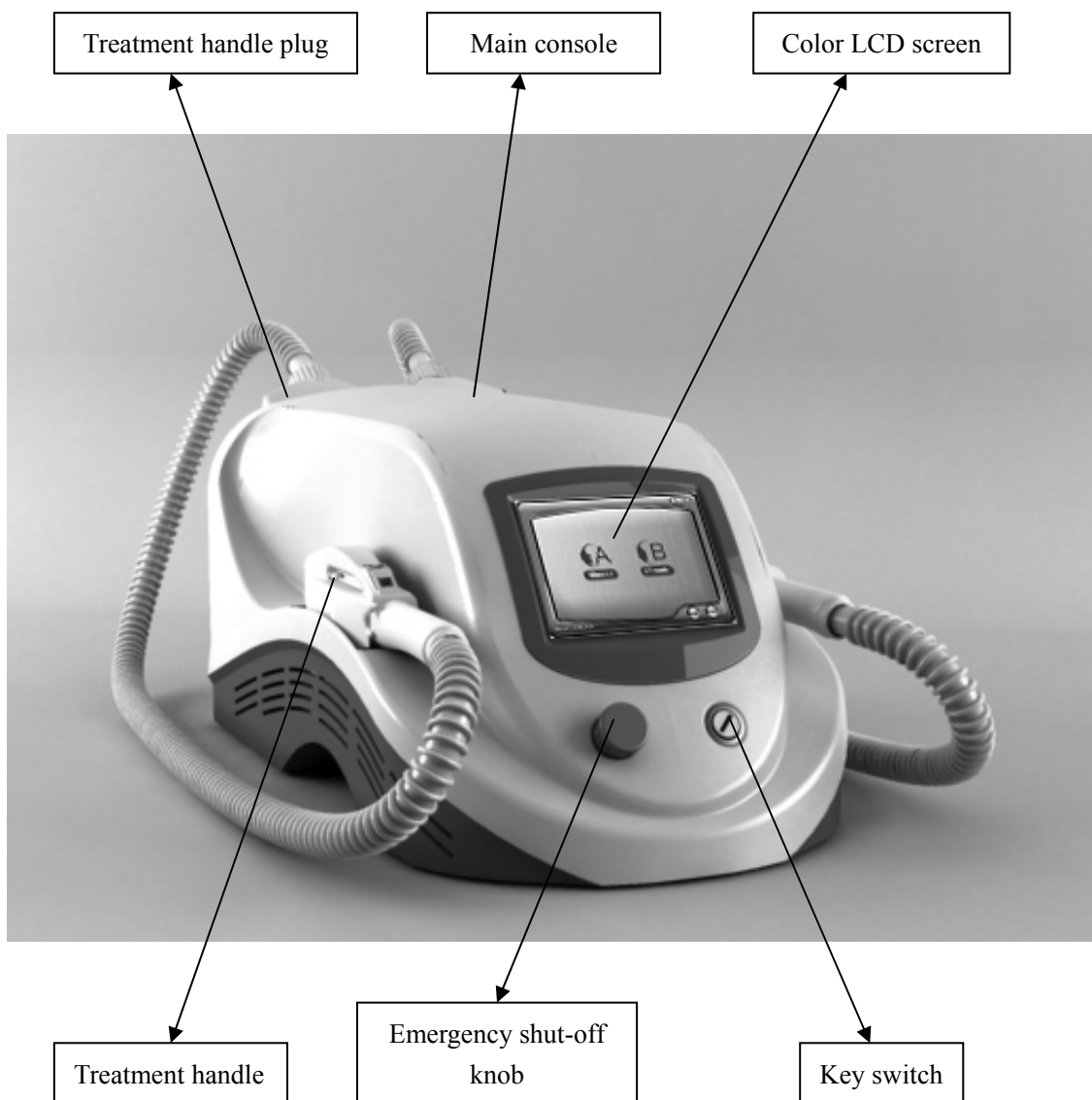
The operating Interface includes a full-LCD screen (8.4 inch), the key switch and emergency shut-off knob.

LCD screen both shows the system work program, treatment parameters and number of light emitting.

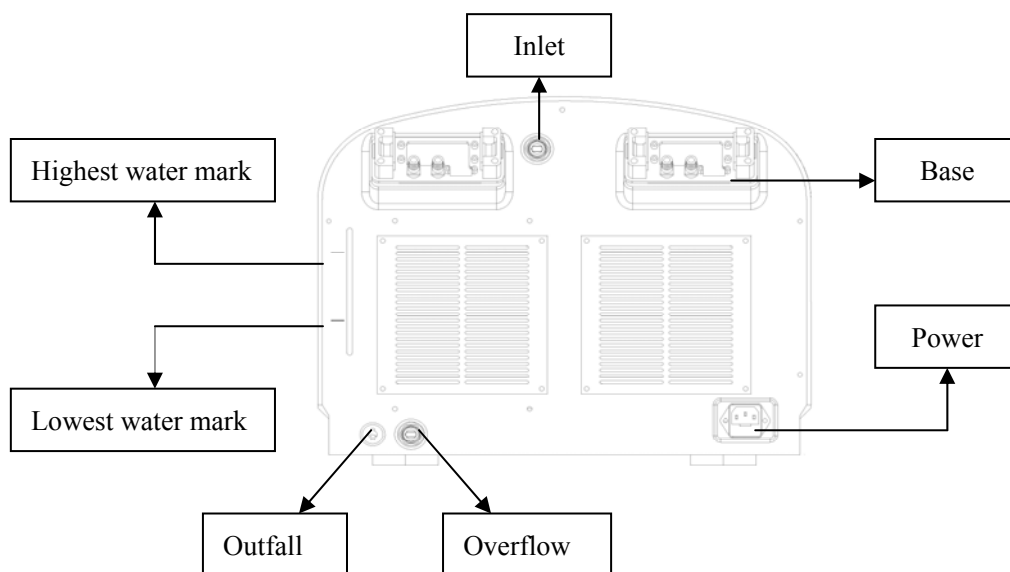
The treatment head operated by hand comprises the intensive emitter and transmission system.

The system is designed by standard EN60601-1-2:2001 and EN60601-1:1990+ A1:1993+ A2:1995+ A13:1996.

## 2-3 List of system components

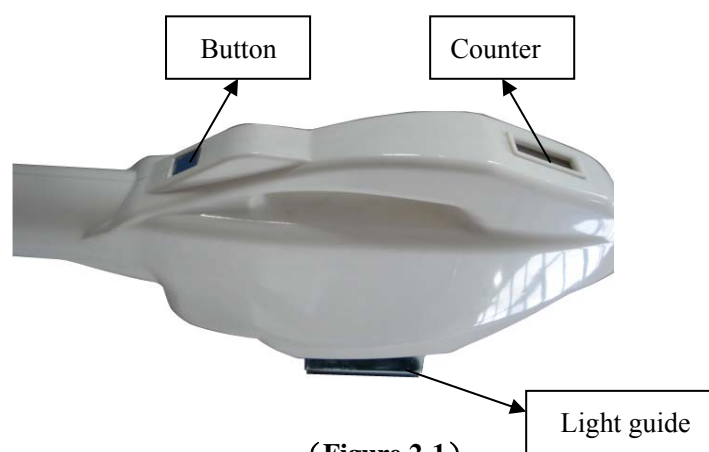


Construction of the system shows above: color LCD screen, emergency shut-off knob, key switch, main console, treatment handle plug, treatment handle etc.



## 2-4 System components description

<b>Color LCD screen:</b>	uses in demonstrating operating system's concrete information
<b>Emergency shut-off knob:</b>	uses in the emergency case to turn off complete machine
<b>Key switch:</b>	for turn on/off the machine
<b>Main console:</b>	have the cooling systems, power systems, control systems, integrated circuit
<b>Treatment handle plug:</b>	connect the treatment handle and the main console.
<b>Treatment handle:</b>	uses in irradiating the treatment target. It can divide into HR treatment handle and SR treatment handle by function. <i>HR treatment handle</i> is used for hair removal. <i>SR treatment handle</i> can cure pigmented spots on the superficial of skin



### Note:

The treatment handle is mounted a temperature controlled switch to protect the system. The treatment handle will stop working automatically if works too long. After several minutes, press the button on the treatment, it can work normally.

## 2-5 Installation

### 2-5-1 Installation requirements

Before removing the package, you should examine the treatment area conforms to the requirements described in this chapter or not.

The system should be installed away from hot wind-gap and keep enough distance from blocks.

The electrical requirements of the system shows as following:

- Single-phase 230V, 10A, 50Hz
- The system is grounded through the grounding conductor in the power cable. This protective grounding is essential for safe operation.
- For the best operation, you should keep the temperature of the treatment room at about 20°C,

and the relative humidity should be below 70%.

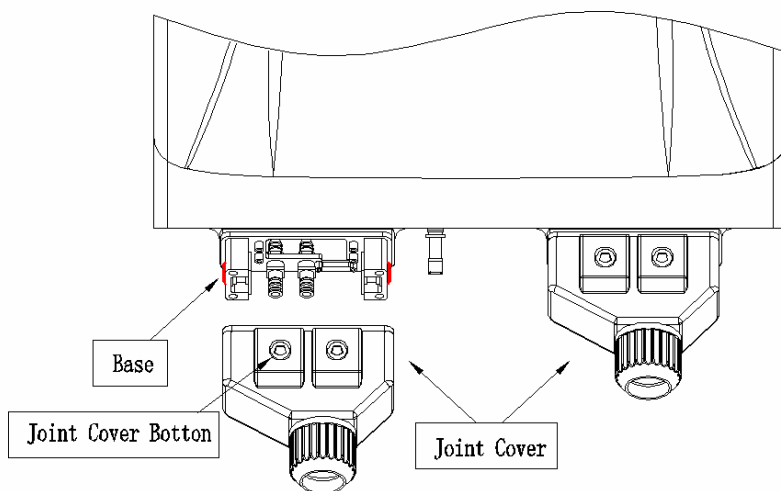
**2-5-2 Installation**

- 1) Remove the package of the system and place the machine at expected place.
- 2) Remove the package of the treatment handle and insert the handle into the main's interface
- 3) Insert the power cord.
- 4) **Insert treatment head:**

Press down the two joint cover buttons, then hold joint cover with hands and aim it at the site corresponded the base, press the two buttons on two sides of the base with forefinger, insert the joint cover to the base until the buttons slowly eject from the base and the joint cover buttons will eject automatically.

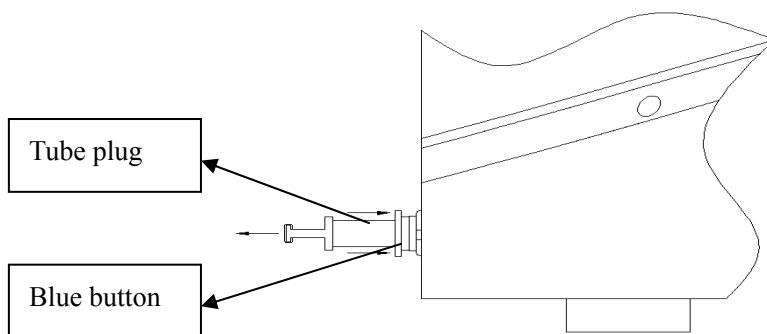
**Pull out the treatment head:**

Press down the two joint cover button firstly, then hold the joint cover with hands and press the two buttons on two sides of the base with forefinger, pull the joint cover out slowly at the same time. (See figure 2-2)



(Figure 2-2)

- 5) The tube plug push & pull instruction of the method: A hand presses down the blue button , at the same time, another hand to draw out of the tube plug, it forbids to pull out the tube plug directly. (See figure 2-3)



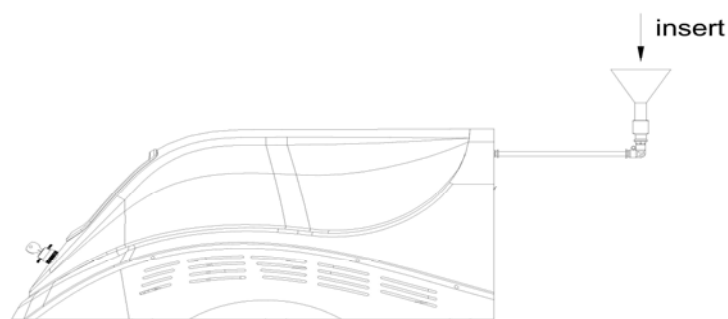
(Figure 2-3)

### 2-5-3 Fill the water tank

Before the power is connected, you need to pull out the tube plug in the outflow and fill the tank with distilled water or pure water (see figure 2-4). You can see the water level by the observation window. Do not fill water below the lowest water mark. Water will flow from the overflow port if adding water too much. Suggest that mount the tube plug to avoid leakage after adding water if you move the equipment frequently. Must pull out the tube plug when draining water from the overflow port. Connect power and let the waterway run about 1 minute.

#### Caution:

- Do not forget fill water! If not fill water or the water circulating abnormal, the unit will not work well.
- The cooling water need to change one time per month.



(Figure 2-4)



# Chapter 3

## Operation

- ✧ **3-1 Start the machine**
- ✧ **3-2 Skin-test (Essential)**
- ✧ **3-3 Treatment procedure**
- ✧ **3-4 Setting energy and parameters**
- ✧ **3-5 Turn off the machine**

## 3-1 Start the machine

**Note:**

Before the operation, please confirm the following information:

- 1) Ensure that the water level accord with the description (see 2-5-3).
- 2) Check all the connection of the system
- 3) Ensure that all personnel in the area are wearing protective glasses
- 4) Make sure the emergency shut-off knob is loosed

After these steps, turns the key clockwise, the waterway and screen begin to work, the system get start. (In normal situation, you can hear the cycling of the inner waterway.)

## 3-2 Skin test (Essential)

Skin test is essential before the optional treatment. The details are as following:

- 1) If do treatment for all face, the test patch should be selected under the ears where not influencing the facial beauty. If for chest, neck or other skin, it should be selected the site where not influencing the beauty.
- 2) Clean the test patch and apply a layer of coupling gel at the test patch. Take out of the treatment handle and aim the light guide at the test patch. Trigger 2-3 shots (1/3 area of the spot size overlapping the treatment site is permitted.), and wait for 2-3 minutes to examine the test patch:
  - If lightly swelling and/ or reddening at the test patch appears several minutes later, continue the treatment with the same settings of energy level and pulse type.
  - If no visible changes at the patch appear, continue the test with 1-2j/cm<sup>2</sup> higher energy level.
  - If the skin show adverse effect or excessive reddening and/or swelling at the test patch just after shot, continue the test with lower energy level.

**Note:**

1. Must protect patient's eyes when the system is in use
2. Start the treatment from the ear-root, and spread to all around
3. Place the treatment handle to the skin about 1-3mm, but not apply pressure.
4. Leave no blank site and overlapping 1/3 of the spot size is allowed.
5. Do not shoot the light at upper eyelid
6. Change the direction of the treatment head so that it can treat more evenly and roundly.
7. Lengthen D1, D2 for darker skin
8. Shorten D1, D2 for light skin

## 3-3 Treatment procedure

Make sure the emergency shut-off knob loosed, turns the key clockwise, the waterway and screen begin to work, the system get start.

The welcome interface shows as follow:



Hand-touch “MONALIZA”, the system will into the choice menu:



**HR mode** is used for hair removal.

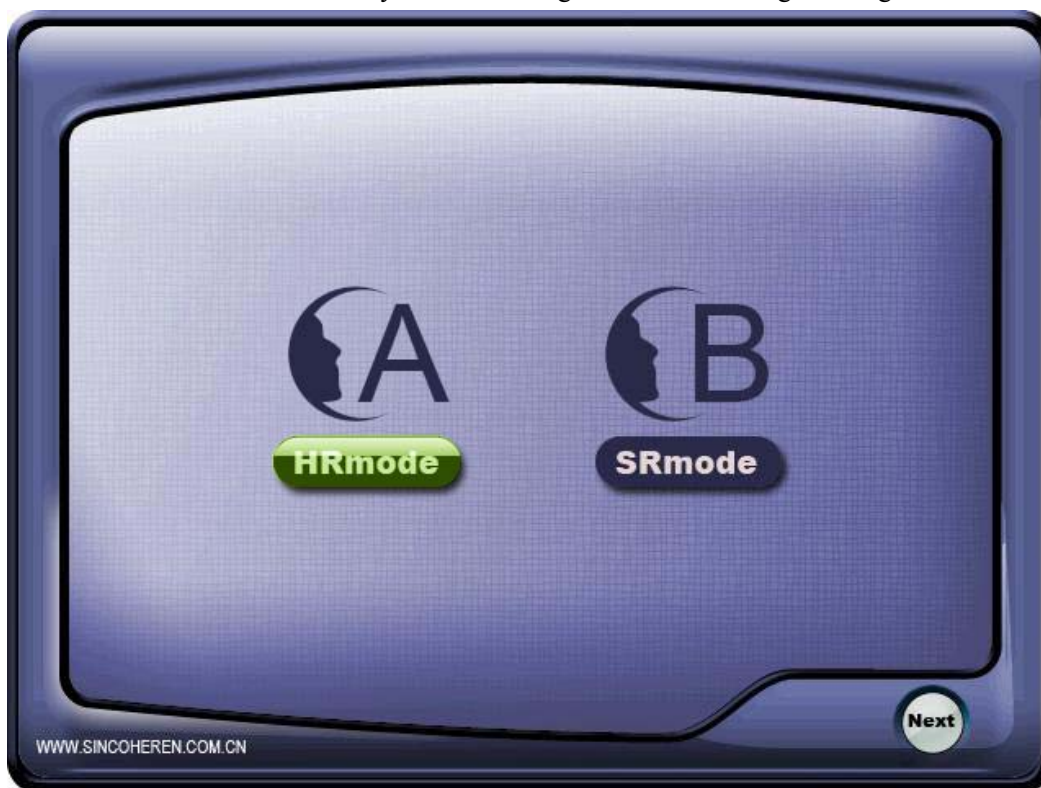
**SR mode** can cure pigmented spots on the superficial of skin

The operator can select suitable treatment mode according to client's requirements.

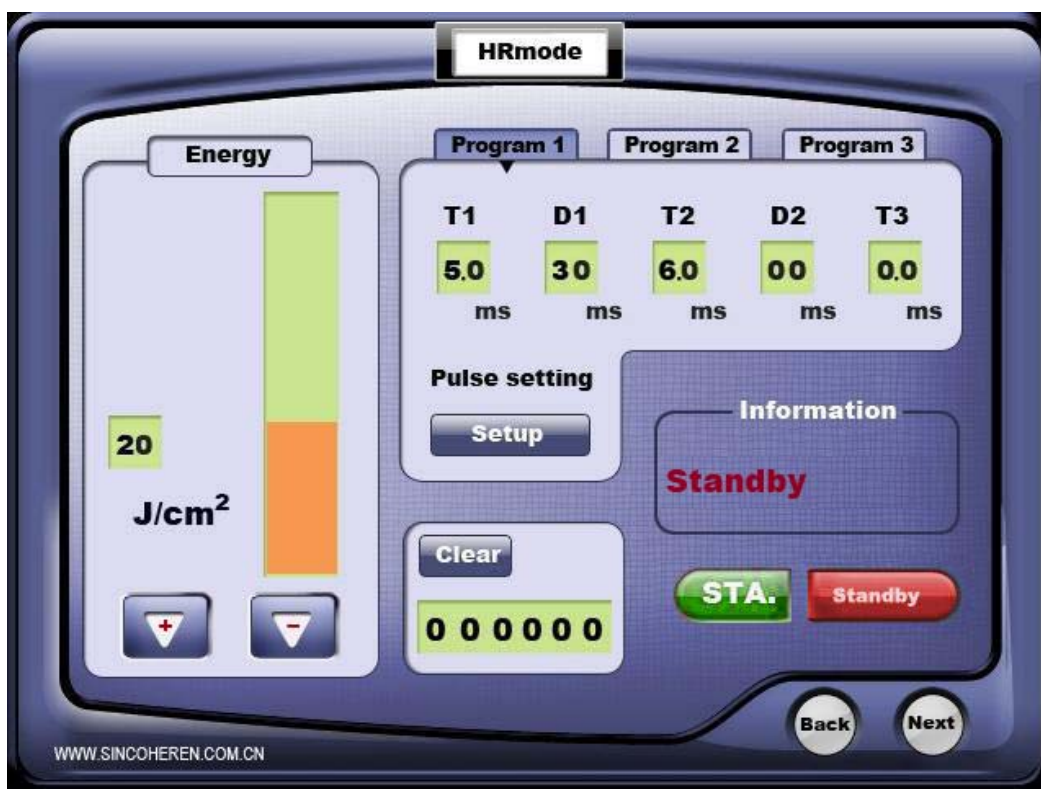
**Note:**

Here take HRmode as example; both of these operations are same.

Hand-touch “HRmode”, the system will change into the following working interface:



Hand-touch “Next”, the system will into the following working interface:



The system have three programs, each of them has respective parameters. User can touch Program 1, 2, 3 and” – “,”+” to select suitable energy and parameters.

**Note:**

**Clear:** cancel the number recorded in this operation

**Standby :** off the lamp in the treatment head

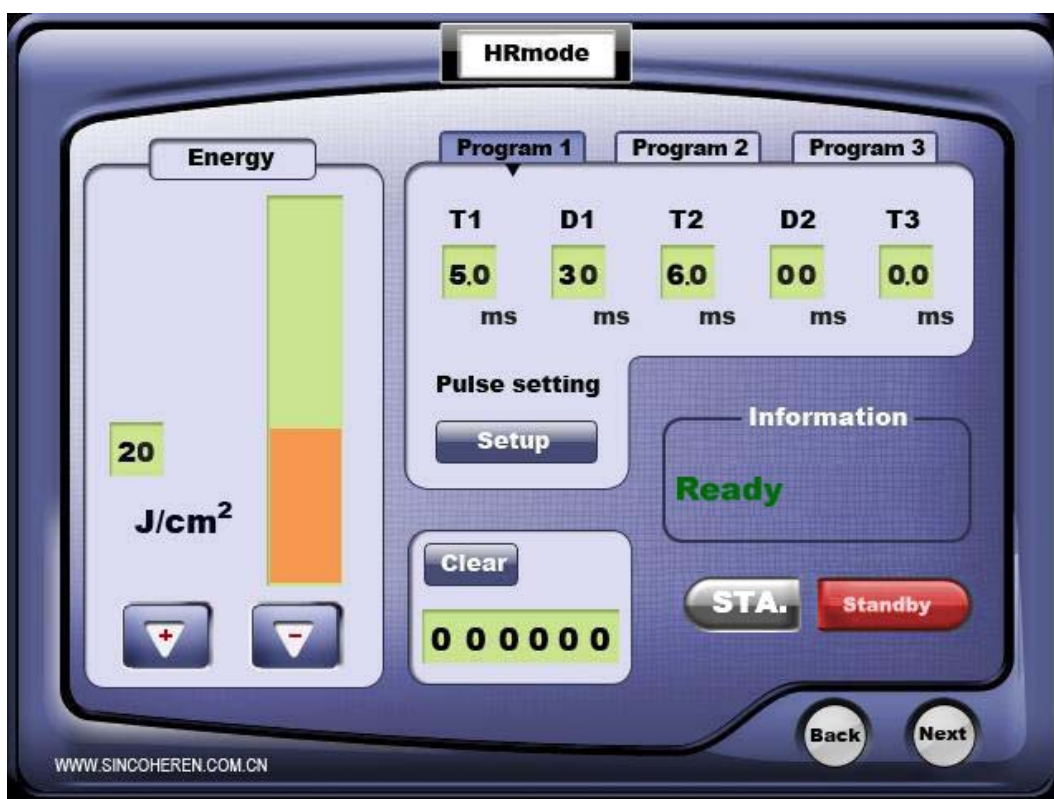
**STA. :** simmer

**Setup:** adjust the parameters

**⚠Caution:**

- You must do the skin test (see chapter 3-2) before the treatment. The energy should be adjusted from low to high. During the adjustment, you should constantly take skin test to find the suitable energy, then to get treatment
- User can touch “Setup” into an interface to adjust parameters. But this operation just adapt to experienced user.
- The energy designs to the Program 3, i.e. if the screen shows 20J/cm<sup>2</sup>, the energy of program 3 is 20J/cm<sup>2</sup>;meanwhile,the energies of Program 1 and Program 2 is lower than 20J/cm<sup>2</sup>. The Program1’s energy is lower than program2’s.

After selected a suitable program and energy, press “STA.”, the system will into the following working interface:



**(Simmer successful)**

After simmering successful, spreads a thin layer of coupling gel on the treatment area, places the light guide on treatment handle directly aim at the site of the treatment about 1-3mm, then presses the handle button to treatment. Each light-emitting time, the machine will issue a "Di"

sound .Meanwhile, the handle counter and screen are counting one time, repeat it like this.  
Every client should have a treatment file for next reference of treatment parameter to ensure the best effect.

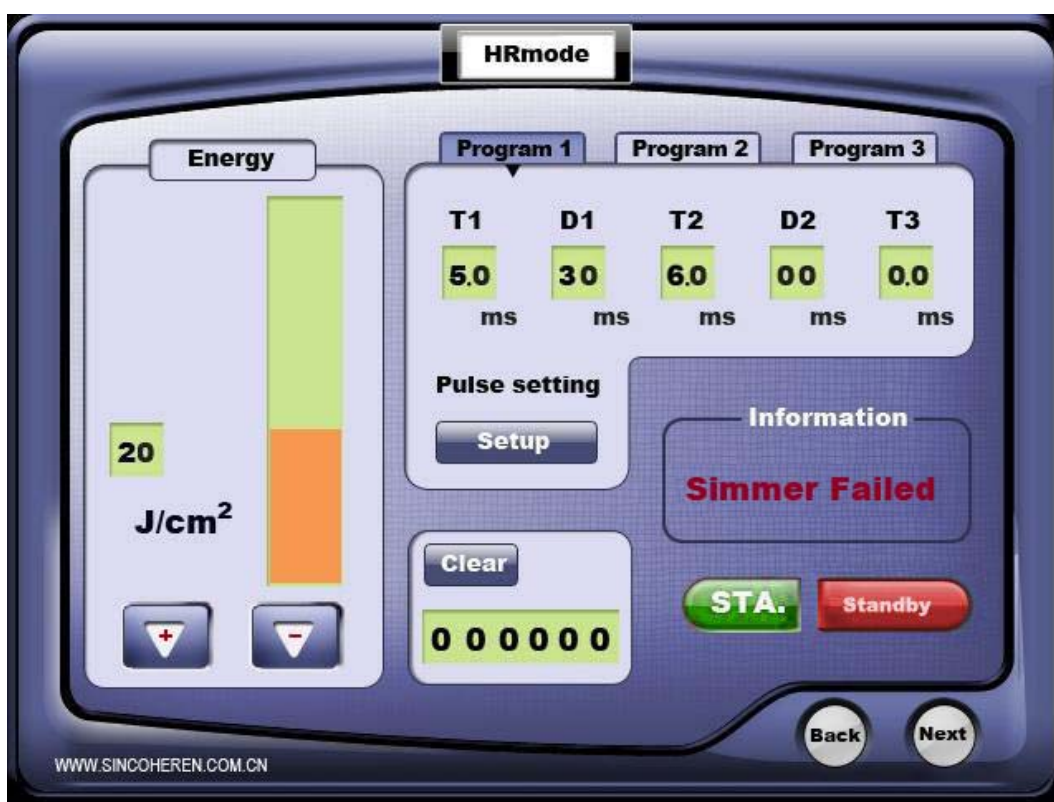
**Note:**

After simmering successful, the energy will not be adjusted. If you want to adjust the energy parameter again, just touch “Standby”

**Caution:**

The lifespan of the treatment handle: every treatment handle can shot 20,000 times.  
After shooting 20,000 times, the effect of the pulse light might reduce. The treatment handle getting 20,000 times is out of the service guarantee and need change new treatment handle.

Because treatment handle’s connection or environment’s effect, the lamp may simmer failed. The interface is as follows:

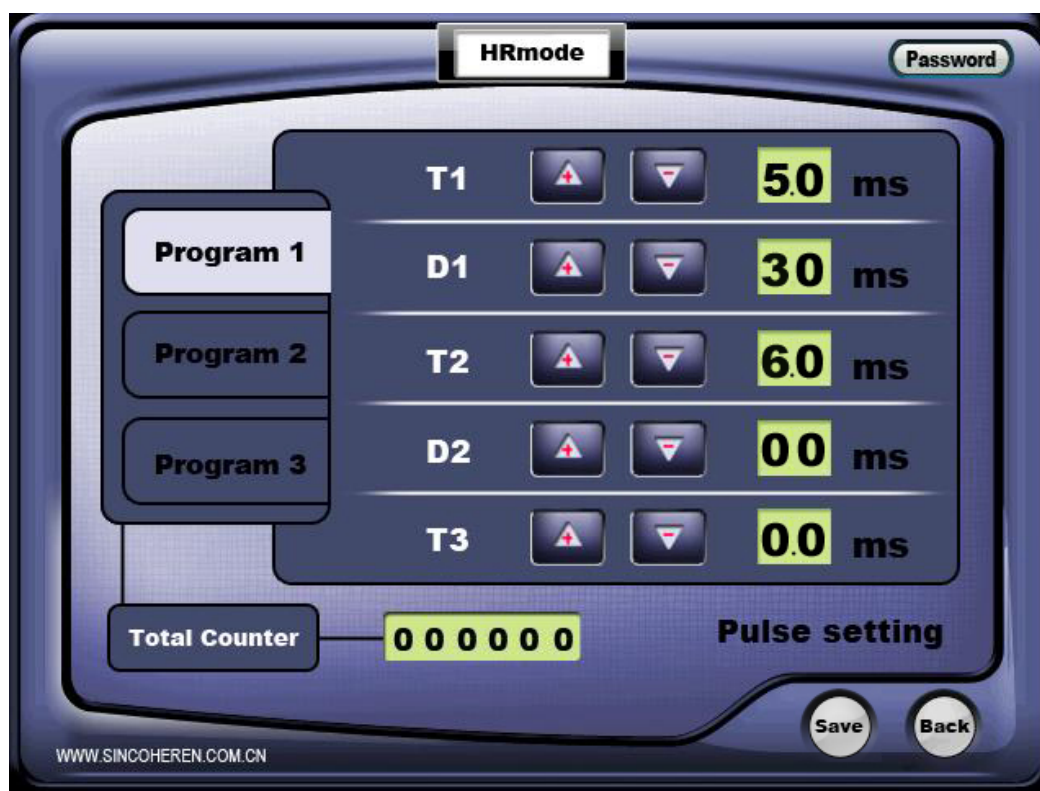


**(Simmer failed)**

If the system simmer failed, just touch “Standby” and simmer again.  
If the system still simmers failed, please contact to service department.

### 3-4 Setting energy and parameters

Hand-touch “Setup”, the system will into the following working interface:



T1, T2, T3 is the treatment pulse duration. D1, D2 is the treatment parameter of the pulse delay. Adjust these five parameters to make the treatment scope more widely.

**Total counter** uses in recording times of machine

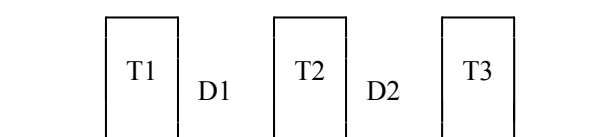
The user can select the different energy, mode and parameter by different patients. The adjustment scope of T1,D1,T2,D2,T3 is shown as the table 3-1. After selects the suitable parameter and energy, press “Save”, the parameter will be saved until next adjustment. Press “Back” will return to the previous menu, the parameters will be save automatically when starts the system next time.

Handle	PROGRAME	Time parameter (ms)									
		T1		D1		T2		D2		T3	
		Default	Range	Default	range	Default	range	Default	range	Default	range
SR	P1	3.0	2.0-4.0	20	5-60	4.0	4.0-6.0				
	P2	3.0	2.0-4.0	25	5-60	4.0	4.0-6.0	20	5-60	4.5	4.0-6.0
	P3	4.0	2.0-5.0	30	5-60	4.5	4.0-7.0	25	5-60	5.0	4.0-6.0
HR	P1	5.0	5.0-7.0	30	5-60	6.0	5.0-7.0				
	P2	5.0	5.0-7.0	35	5-60	6.0	5.0-7.0	30	5-60	7.0	5.0-8.0
	P3	7.0	5.0-9.9	40	5-60	7.0	5.0-9.9	35	5-60	8.0	5.0-9.9

(Table 3-1)

The parameter in detail sees as below:

Pulse number



1 <sup>st</sup> Pulse width	(T1)
1 <sup>st</sup> Pulse duration	(D1)
2 <sup>nd</sup> Pulse width	(T2)
2 <sup>nd</sup> Pulse duration	(D2)
3 <sup>rd</sup> Pulse width	(T3)

### **3-5 Turn off the system**

Touch “Standby” on the screen ,then turn the key switch to “Off”.

Clean the treatment light guide with alcoholic cotton ball.



# Chapter 4

## Technical parameters

- ✧ 4-1 Technical parameters
- ✧ 4-2 Relevant requirements

## 4-1 Technical parameters

Technology indicators are as follows:

light source	Intense Pulsed light
Wavelength	SR: 560-1200nm/HR: 690-1200nm
Transfer system	Crystal light guide
Safety Category	Class II a
Pulse width	See 3-5
Charging time	≤3S
The light mouth dimension	8mm × 34mm/16mm × 57mm,error ± 0.2mm
Surface temperature of the crystal	≤37℃
Cooling system	Semiconductor refrigerator, wind cooling, water cooling
Dimensions (L × W × H)	840mm × 600mm × 500mm
Weight (NW)	30kg
Fuse specifications	Ø5 × 20 8A
Input power	1200VA
Power	AC230V, 50HZ

## 4-2 Relevant requirements

### Environmental requirements:

The ambient temperature: 10 °C ~ 30 °C;

Relative humidity: not more than 30% ~ 70%

### Storage requirements:

Transport & storage temperature: -20 °C ~ +55 °C

Relative Humidity: ≤ 93%

Atmospheric pressure range: 500hPa ~ 1060hPa

# Chapter 5

## Treatment

- ✧ **5-1 Principle of the treatment**
- ✧ **5-2 Curative scope**
- ✧ **5-3 Contraindication**
- ✧ **5-3 Post-treatment care**

## 5-1 Principle of the treatment

➤ **HR treatment handle:**

IPL light sources gently remove unwanted hair based on the principal of 'Selective Photothermolysis'. This refers to the process whereby the characteristics of the light energy including wavelength and pulse duration are optimized to selectively cause thermal injury to the hair follicle without injuring the surrounding tissue. The light penetrates through the skin and is absorbed in the target pigment (melanin) found in the hair shaft. This causes the temperature to reach a sufficiently high level in the hair follicle so that the targeted hair structures are destroyed and regrowth is inhibited.

➤ **SR treatment handle:**

The System emits multi-wavelength, intense pulse, and broad-spectrum photon-current. It can permeate the cuticle to the derma and take effect on the abnormal pigment and vessel such target tissues to break the abnormal pigment cells, close the abnormal blood vessels, stimulate the proliferation of collagen and improving the rearrangement of elastic fibers, finally achieving the purpose of pigment removal, skin rejuvenation.

## 5-2 Curative scope

The SMQ-NK IPL therapy System is used in hospitals, clinics and beauty salons.

This system is mainly for the treatment of superficial pigment, dark sore, acne and dense hair on skin surface.

## 5-3 Contraindication

- Pregnant woman
- Using photosensitive medicine
- Recently tanned skin (within the last month)
- Recently took sunbathe
- Patients with serious heart, liver, kidney ,other internal organs diseases and with malignant tumors
- Epilepsy patients
- Intensive patients of Diabetic
- History of keloid scarring
- Treated area infected person
- Other causes by doctors' advice

## 5-4 Post-treatment care

### 5-4-1 No exposure to sunlight

Clients should use high factor (above SPE15) sunscreen and opacifiler to protect the treated area from exposure of sunlight. Make the good sunscreen measures, such as taking an umbrella, wearing

sunhat. Tanning after treatment sessions may enhance melanin regeneration, which may result in hyper-pigmentation

#### 5-4-2 Attention to protect the treated area

Clients must do not press and scratch the treated area against infection.

#### 5-4-3 Makeup

Makeup immediately after the treatment is not allowed for better curative-effect. The cosmetics following treatment should not use the chemical pharmaceuticals, but use the biological skin appliances, and also not use the powder archery target cosmetics. The skin is sensitive during this period. Remove the makeup when swelling and reddening appearing at the treated site against infection and pigmentation. Meanwhile advise client taking some medicine such as VitC, VitE.

5-4-4 Advising diet specializes in insipid food. Do not eat the hot and spicy food.

5-4-5 Advise that improve other causes of disease, such as adjusting the endocrine situation by taking Chinese herb of medicine, taking few medicines that include VitC .

#### **Caution:**

Due to physical difference between individuals, a few of clients may have temporary discomfort such as blister, deposit of pigment, swelling and so on. Advise using ice bag to cover the treated area for 15-20 minutes when appears to over fever. Do not makeup within 7 days after the treatment.

# Chapter 6

## Maintenance/

## Troubleshooting

- ✧ **6-1 Maintenance**
- ✧ **6-2 Troubleshooting**

## 6-1 Maintenance

### 6-1-1 Cleaning the unit

Clean the system exterior at least once a week. Wipe all surfaces with soft and damp cotton ball. Not spill liquids in the machine.

### 6-1-2 Cleaning the light guide

The light guide should keep clean at all times and should be cleaned after each patient.

To clean the light guide, first dry it with a lint-free cloth. Then clean it with a cloth moistened with water-free alcohol and let it dry thoroughly.

## 6-2 Troubleshooting

6-2-1 The following table lists the probable errors of users and the solution taken:

Symptom	Probable cause	Solution
The LCD screen are not display	Power disconnected	Check the power cable
	Emergency shut-off knob is depressed	Loose the emergency shut-off knob by turning it clockwise
	Other cause	Call service department
No reaction when pressing the function keys on the LCD screen		Call service department. Do not take the screen off without authority of our company
System does not start	Key switch is not engaged	Turn the key fully clockwise
	Other cause	Call service department. Do not disassemble by yourself.

### 6-2-2 Faults information

If the system malfunctions during start-up or normal operation, turn the system off immediately and contact with our service department. Only the technician authorized by our company can service the system. Otherwise, we bear no responsibility.

### 6-2-3 Scrapped disposal

Get the safe disposal according to the principles of the nearest spot.