



Better blood flow
less risk of disease

SEMICONDUCTOR
LASER
TREATMENT INSTRUMENT
User Introduction

HV30-0



Wuhan HNC Technology Co., Ltd.

Welcome to use our semiconductor laser treatment instrument

Thank you for choosing us. Users are required to read the instruction carefully before use this instrument to ensure the efficient and safe use of all the functions of the product.

Cautions:

1. Do not make direct view or observation via optical instrument of the light beam.

2. Keep out of reach of children to prevent injuries to eyes.

3. It's forbidden for pacemaker users since it may interfere with the operation of pacemaker.

4. The aged patients and sensitive patients should adopt the low-power and short-time treatment at the beginning. Then increasing the power gradually after body adapting. Twice a day, 30 mins for one time.

5. During the treatment period, the diet structure should be improved and proper exercises are necessary to enhance the metabolism.

6. Please only use the charger and fittings provided by manufacturer.

7. Nasal cavity dirt should be cleaned by water or saline water before the laser irradiation in nasal cavity. Meanwhile, please keep the lightning port clean, or the optical loss may increase, which will affect the remedial result severely.

8. If any of the following phenomena occurred after the laser irradiation, such as thirst, dry eyes, rise of pulse rate or dizziness, which are all normal phenomena.

9. Patients with cerebrovascular diseases should not reduce or stop the dosages at the initial stage of using this product, which should only be done according to the doctor's advice as the condition is obviously improved.

10. Using this treatment instrument at beginning, please don't reduce the drug dosage or stop drug treatment in private, only when the condition was obviously improved, the patient can reduce the drug dosage or stop drug treatment gradually under the doctor's guidance.

Contents

Overview	1
Treatment theory	2
Application Scope	5
Main Technical Indexes	5
Main Structure and Functional Characteristics	5
Part Name	7
Operating Instructions	7
Description of Signs	11
Contraindications	12
Trouble-shooting instructions	12
Maintenance and preservation	13
Produce Assurance	13
Product List	14

Overview

Along with the improvement of people's living standard and the change of dietary pattern, hyperlipoidemia, hyperlipaemia and hyperglycaemia have become a universal phenomenon, and the incidence rate of the caused coronary heart disease, myocardial infarction, cerebral thrombosis, cerebral infarction and other cardiovascular and cerebrovascular diseases has been increasing year by year. So far, cardiovascular and cerebrovascular diseases have been one of the most serious diseases threatening human health in the modern world, and the morbidity and mortality is beyond tumor and it has been the leading killer.

The semiconductor laser treatment instrument combines the painstaking efforts of domestic well-known cardiovascular and cerebrovascular disease medical authorities and many laser medical experts and draws the essence of Chinese and western medicines. It creatively achieves the simultaneous irradiation of wrist radial arteries, neiguan acupoint and nasal cavity and it is more convenient and humanistic. It is proved by the clinical test of many domestic authorized hospitals that with good treatment effect of treating hyperviscosemia, hyperlipaemia, ischemic cardiovascular and cerebrovascular diseases and various of rhinitis. It has been certified and registered by State Food and Drug Administration and won the national patent. and especially have got CE and ROHS certification for medical device in Europe.

Treatment Theory

Traditional Chinese Medical Science

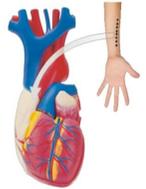
Radial Artery: one of the surface superficial arteries. The reason to choose surface irradiation for the radial artery is the following:

1.Position of radial arteries is much superficial compared with other parts of the body.

2.It is closer to the heart and the blood flow volume is larger, and with blood going through the radial arteries at per eight minutes (whole blood volume).

3.It's easy to touch and locate and runs along the vein.

So the laser energy can be easily absorbed by blood cells, to ensure the good effect.



Ulnar Artery:

Ulnar artery and superficial palmar branch of the radial artery fit into deep palmar arch, through the meridians of ulnar artery heart, for treatment of chest, consciousness disorders and this meridian site of the lesion.

Neiguan Acupoint: is at the two cross fingers inwards the first cross grain on the inner side of the wrist, shown as below. In the inner side doctrine of traditional Chinese medicine, the neiguan acupoint belongs to the pericardium meridian and is one of the eight confluence points. Large quantity of experiments and clinical practices have certified that the neiguan acupoint has the Following adjustment function to the heart:



1. It can adjust the abnormal heart rate in a bidirectional way. The high heart rate can be slowed down and the low heart rate can be accelerated;
2. It can increase the blood flow volume of the coronary artery in acute myocardial ischemia;
3. It can strengthen the myocardial contractility and improve the cardiac function. To choose low level laser irradiation at the NEIGUAN acupoint is considered by experts as "one of the most outstanding and effective methods to treat cardiovascular and cerebrovascular diseases".

Daling Acupoint:

In the center of the wrist lines, between tendon and radial side of the wrist flexor tendon, for treatment of heartache, heart palpitations, stomach pain, vomiting, palpitations, insomnia, wrist pain.

Nasal Cavity:

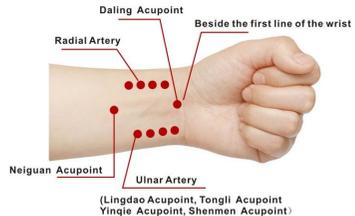
is located in a special place which near to the brain. The brain is the nerve centre of the human body. Under the nasal cavity, distributing abundant vessels and nerve systems. 60% of nasal mucosa blood flow going through the arteries and vein, and the blood circulation is going through nasal cavity at per three minutes. It is certified by the clinical experiments that laser irradiation



at this position can not only treat cardiovascular and cerebrovascular diseases, but also has an ideal effect on the rhinitis pathological changes .

The semiconductor laser treatment instrument adopts 650-nm-wavelength low-intensity laser to irradiate radial arteries, neiguan acupoint and nasal cavity, so that the hemodynamic and the blood

fat and blood sugar metabolism are improved through photochemical effects, thereby improving the oxygen carrying capacity and the deformability of red blood cells, reducing the blood viscosity, reducing the blood fat, reducing the blood pressure and improving the blood sugar, and finally achieving the purpose of treating hypertension, hyperlipaemia and cardiovascular and cerebrovascular diseases. In a similar manner, it also has good effect of treating acute rhinitis, chronic rhinitis and nasal sinusitis simultaneously.



Improving blood viscosity through laser blood irradiation

Because adopting the wavelength is 650nm laser to irradiate the blood, the laser respectively and intensively absorbed by oxidized hemoglobin and regenerated hemoglobin which in the blood. Because the red cells in the blood occupies 95 percent, their specific volume is the most important factor in influencing the blood viscosity, in particular to the apparent viscosity under the low shear rate, and their deformability and directionality in the flow are the most important factor in influencing the blood viscosity under the high shear rate. Therefore, when the blood absorbs the laser energies, the apparent lipid layers of the red blood cells are leached, so that the electrical property of the red blood cells is recovered,

the specific volume, the deformability and the aggregation of the red blood cells are improved, the blood rheological property is improved, and the blood viscosity is reduced, thereby improving the blood supply for the whole human body, in particular to improving the tail-end microcirculation. In addition, it also can change the thromboxane A2 (TXA2) and the prostaglandin I2 (PGI2), restrain the platelet aggregation, adjust the blood vessel function and prevent the occurrence of thromboembolic diseases.

Improving blood cells oxygen carrying capacity through laser blood irradiation

Improve the permeability of the red blood cells after laser blood irradiation as the apparent lipid layers of the red blood cells are leached, so that the blood oxygen carrying capacity is remarkably improved, and the capacity of the red blood cells in utilizing the oxygen and the oxidation process are enhanced, thereby changing the oxygen supply for the whole human body.

Reducing blood-fat and total cholesterol through laser blood irradiation

Quickly and effectively correct the abnormality of lipid metabolism and maintain the equilibrium level of the lipid metabolism in the human body through laser blood irradiation. Normalize the proportion of cell membranes and cholesterine/phosphatide, and improve the lip stability and the membrane fluidity. Meanwhile, resist the free radical lipid peroxidation and accelerate to clear the free radicals.

Quickly repairing the damaged nasal mucosa tissues through laser irradiation, and improving the rhinitis pathological changes

Quickly repairing the wounded surface through surface irradiation to the damaged mucous membrane; and improve partial of blood circulation around the nasal cavities and the immunological competence of the nasal mucosa membranes through irradiating the nasal mucosa, thereby playing a good role in treating acute rhinitis, chronic rhinitis, allergic rhinitis, nasal sinusitis and the like.

Application Scope

Decreasing of hyperviscosity and hyperlipemia, and treatment of rhinitis.

Main Technical Indexes

Laser medium: GaAlAs semiconductor
Laser wavelength: 650 nm
Number of terminal lasers: 11 pcs
Maximum power output of single terminal laser: 5mW \pm 20%
Terminal laser output control: 3 grades for adjustment
Treatment time range: 10' 60mins, 6 grades for adjustment
Lithium battery voltage: direct current of 3.7-4.2 V
Output voltage of charger: 5V
Consumed power of instrument: < 1 w
Ambient temperature: 5-40 °C
Relative humidity: \leq 80 %

Main Structure and Functional Characteristics

Main Structure

The treatment instrument is mainly composed of a mainframe, a liquid crystal display screen, wrist band, lasers, a battery, charger and a jacket.

Functional Characteristics

- The instrument creatively combines the irradiation of radial ulnar artery ,neiguan acupoint ,daling acupoint and nasal cavities and achieves the simultaneous irradiation of many key parts,thereby having remarkable treatment effect.
- The instrument has the functions of automatic fixed time and fixed quantity Irradiation, thereby ensuring more convenient and more humanistic.
- The nasal clip, the wrist band and the wrist laser are completely positioned according to the design of human skeleton curves and human engineering, thereby ensuring more comfortable, reliable and safer.
- The operation programme has simplified, intelligent and energy-saving operation process.
- The instrument has small size and portable thus can be used for treatment at anytime and anywhere.
- The treatment instrument has automatic power-off and backlight energy saving modes, which consumes less power and is more environmentally friendly.
- The charger jack and the external laser jack can be applied at the same time. The fail-safe function of the jack avoids mis-operation which may damage the treatment instrument.
- After starting instrument , if there is no operation within one minute, the instrument turns off automatically for energy-saving and safety..

Part Name



Operating Instructions

Wearing instructions

1. Putting laser wire end A in the host jack;

2. Made the laser wire end B wear the nasal cap before use.

3. Wear instrument on the inner side of the left wrist, and keep the key surface of the host top parallel to the first cross grain, to ensure that the laser energy irradiate radial artery, daling acupoint, ulnar artery and neiguan acupoint precisely. Fasten the wrist belt subject to comfortableness without slide. (see Figure 1)

4. If the nasal cavity irradiation is required in the meantime, clip laser line End B should wear the nasal cap set at the nostrils. (see Figure 2)



the first cross grain
see Figure 1



see Figure 2



see Figure 3.1



see Figure 3.2



see Figure 3.3

3.1 After "Switch" key is pressed, if " " is shining indicate that the instrument is switched over to the external laser output, the internal laser output, and the nasal cavity irradiation of radial artery and neiguan acupoint can be conducted. (see Figure 3.1)

3.2 After "Switch" key is pressed again, if " " is shining indicate that the instrument is switched over to the internal laser output, and the combination mode and irradiation of nasal cavity, radial arteries and neiguan acupoint can be conducted meanwhile. (see Figure 3.3)

4. When the operation of "Switch" key is finished, press "Power" key again to adjust the irradiation strength among the low-strength, medium-strength and high-strength for the internal laser and external laser respectively:

Note:

• When operating "Switch" key, the high-strength is default for the irradiation strength.

• The corresponding laser output modes of irradiation strength are respectively: low-strength (pulse) → medium-strength (pulse) → high-strength (continuous).

4.1 For example, choose three positions for irradiation in the meantime, and set the external laser, i. e., nasal cavity irradiation to medium-strength, and set the internal laser, i. e., irradiation of radial artery and neiguan acupoint to the high-strength.

After operating the above three steps, set the nasal cavity irradiation strength to conduct Steps 3.1 and 4. (see Figure 4.1)

Set the internal laser, i. e., the irradiation of radial artery and neiguan acupoint to conduct the two Steps 3.2 and 4. (see Figure 4.2)

After setting the irradiation position, conduct Step 3.3 (see Figure 4.3), which means the treatment modes and strength for the three positions are set:



see Figure 4.1



see Figure 4.2



see Figure 4.3

4.2 If either the internal laser output or the external laser output is separately chosen, please set the strength according to Figure 11 or Figure 12.

5. After all the above steps, temporarily press "On-off" key to start the treatment.

Note:

* Other treatment strength can be set in the same manner as Steps 4.1 and 4.2.

* During the treatment, temporarily press "On-off" key to pause and temporarily press it again to continue.

Operating Instructions

Detailed operating instructions as follows:

1. Continuously press "On-off" key, and the LCD backlight after "bee" sound indicate that the power is on. Default setting: 30 minutes for treatment time, the internal laser output and the high-strength treatment power
Attention: short press "On-off" key to directly start the laser for treatment if suitable.



2. Press "Time" key to set the treatment duration. Press once to add 10 minutes and the adjusting scope is range from 10 to 60 minutes. The treatment duration is in countdown after the treatment starts.
Attention: "Time" is locked and can't be adjusted during the treatment.



3. Press "Switch" key to switch for three modes, internal laser irradiation, external laser irradiation and the combined use both;

6. After treatment, the device will sound "bee" prompting the end of treatment. Continuously press "On-off" key to turn off.

Note:

* The treatment instrument has functions of environmental protection and power conservation. Level 2 is the default for the backlight system. After operation, the backlight is the brightest in the first 10 seconds, less bright in the later 20 seconds, and then goes out automatically. The backlight will be lit up again for another operation. In one minute after the end of treatment, the treatment instrument will turn off automatically.

* Prompt tone instruction: There will be prompt tones for confirmation if the operation in the proper operation. Otherwise, there will be no prompt tones. In such a situation, pressing by force is prohibited since it can easily damage keys.

Description of Charging

1. The instrument is suggest to be charged under the condition that the power of the battery is nearly exhausted, so that the normal service life of the battery can be ensured.

2. The charging time of the instrument should be above 10 hours during the first three charging.

3. When the instrument is charged, the indicator lamp of the charger is red, and the battery symbols in the liquid crystal display screen will be jumped grid by grid; after the completion of charging, the indicator lamp of the charger is turned green, and the battery symbols in the liquid crystal display screen will be completely displayed and stop jumping.

4. It's forbidden to be used during charging while charging. Though there are no danger to the users, this behavior will shorten the service life of the battery.

5. Should only use the charger provided by manufacturer or authorized agent to avoid the damage of the instrument.

6. If the instrument is not used for a long time, it should be charged once every 4-6 months, so as to prolong the service life of the battery.

Course of Treatment Description

As for general patients, once-twice daily, 30 minutes for each time, 10-15days for one treatment session, 5-7 days intervals for each treatment course, and no side effects under the long-term use.

During the treatment, drink more, eat more vegetables but less greasy and fried food.

Description of Signs

1. Declarative and warning signs

According to regulation in EN60825-1 standard, each 3R laser product must be accompanied by a radiation warning sign and a radiation declarative sign.



Radiation warning sign



Radiation declaration sign

2. Classifying label

According to the classification regulation in EN60601-1 standard, this product is a class II instrument requires external power supply. It is classified as BF instrument in terms of the voltage reducing degree. It adopts the continuous operation method.

External power supply
Intermittent loading
and continuous operation
Class II equipment
EN60601-1

3. Nameplate



Contraindications

Pregnance/ cancer/ hemorrhagic diseases

Trouble - shooting instructions

During using instrument, if any errors happen, please check as followings. If they are still unresolved, please contact the nearest authorized service provider. Please do not dismantle and repair privately, in order to avoid unnecessary losses.

Faults	Causes	Solutions
Can not turn on the instrument	Insufficient time of pressing "on/off" button	Long pressing "on/off" button
	Battery is low.	Plug in the charger.
Non-luminance of the internal laser	"On/off" button is not pressed or the inner laser has not been chosen.	Choose the inner laser and press "on/off" or "Switch" button
Non-luminance of the external laser	Failure in inserting the plug or choosing the external laser	Insert the plug and choose the external laser
Weak or no laser output power	Damaged laser	Return it to the factory for replacement or maintenance

Maintenance and preservation

1. Please using cottons soaked in neutral solution to clean the instrument surface. Do not use organic solution or gasoline.
2. Please using cotton balls soaked in alcohol to clean the optic part and the treatment probe. Do not soak the instrument in liquid or clean it with something hard.
3. Please keep away from humidity, heat source and direct exposure to sunlight, in order to avoid the degradation of components which may shorten the service life of the instrument.
4. Please do not place the instrument with hard objects in order to avoid scratches on its surface or damage of the laser.
5. Please use and protect battery according to the description of charging.

Product Assurance

Dear Honor Customers:

Thank you for your purchase of the company's products. Customer's satisfaction is our only service philosophy and to protect your legal rights and remove your future worries, we hereby make the following commitments and will provide you with satisfied warranty services:

1 Exchange or warranty:

(1) It can be exchanged with the warranty bill or card in the case of quality problems under normal usage; valid for one year since the purchase date.

(2) The Company will provide free service guarantee after one year; however, material costs will be charged.

2. The Company will charge repair fees for the followings excluded in the scope of repair guarantees:

(1) No warranty bill or card.

(2) Damages caused by improper operation or mistakes.

(3) Breakdowns caused by self-disassembling.

(4) Damages caused by natural disasters.

(5) Material costs should be charged for products over the warranty period.

(6) Breakdowns or damages caused by accidents or human activities (scratches, soaking or self-replacement of parts).

- (1) No warranty bill or card.
- (2) Damages caused by improper operation or mistakes.
- (3) Breakdowns caused by self-disassembling.
- (4) Damages caused by natural disasters.
- (5) Material costs should be charged for products over the warranty period.
- (6) Breakdowns or damages caused by accidents or human activities (scratches, soaking or self-replacement of parts).
- (7) Accessories such as shell, instruction, package, warranty card, etc.

Product List

1. Laser Therapy Watch	1 pc
2. External laser lead	1 pc
3. Charger	1 pc
4. Nasal cap	10 pcs(1 bag)
5. User Manual	1 pc
6. Warranty card	1 pc

Certificate of Quality

The Company produces semiconductor laser treatment instrument according to the corporate product standard EN 60601-1 EN 60601-1-2 EN 60601-1-11 EN 60825-1.

Product No.: _____

The entire products have passed the quality inspection in the following aspects:

Terminal laser output power	<input checked="" type="checkbox"/>
Instability degree of laser output power	<input checked="" type="checkbox"/>
Timing range and precision:	<input checked="" type="checkbox"/>
The controllable functions of therapeutic manipulation	<input checked="" type="checkbox"/>
Appearance	<input checked="" type="checkbox"/>
Security requirements	<input checked="" type="checkbox"/>
Special charger	<input checked="" type="checkbox"/>
Inspector: _____	
Inspection Date: _____	

