

RWD

RWD Life Science Co.,Ltd



RLT-24 Veterinary Laser Therapy

User Manual

B


Intellectual property

The intellectual property of the product and its user manual belongs to Shenzhen RWD Life Science Co., Ltd. (hereinafter referred to as RWD), including but not limited patent, trademark and copyright, etc.

RWD reserves the right of final interpretation of this User Manual.

RWD reserves the right to keep this User Manual as confidential information. No individual or organization may disclose all or part of the User Manual by any means without the written permission of RWD, nor should it allow others or organizations to obtain all or part of the User Manual by any means.

No part of the User Manual may be, including but not limited to, published, modified, reproduced, distributed, rented, adapted, and translated into other languages without the written permission of RWD.

 is the registered trademark or brand of RWD, and these trademarks and related security marks are intangible property of RWD. The use of the trademarks or marks of RWD in this User Manual is for editorial purpose only and for no other purpose; and the rights thereof belong to their respective rights holders.

Statement

RWD reserves the right to amend this User Manual without prior notice.

RWD reserves the right to change technology without prior notice.

RWD reserves the right to amend the product specifications without prior notice.

RWD makes no warranties of any kind for this material, including, but not limited to, warranties of merchantability and compatibility implied for a particular purpose.

RWD is only responsible for the safety, reliability and performance of device only if:

Assembly operation, extensions, rearrangements, improvements and repairs are carried out by personnel authorized by RWD;

Related electrical device comply with national standards;

The device is used in accordance with operating instructions.

RWD is not responsible for the safety, reliability or performance of the product if:

Components are disassembled, stretched and re-debugged;

The device is repaired or modified by Non-RWD authorized personnel;

The product is not used correctly in accordance with the *User Manual*.

Contents

1-Introduction.....	1
1.1 Overview.....	1
1.2 Safety.....	1
1.3 Product introduction	1
1.4 Product features.....	2
1.5 Product parameters.....	2
1.6 Product list.....	3
1.7 Device environmental requirements.....	3
2- Important information and safety	4
2.1 Product identification and safety symbols.....	4
2.2 Safety precautions.....	5
2.2.1 General safety.....	5
2.2.2 Therapy room safety	6
2.2.3 Animal / personnel safety	6
2.3 Safety classification	7
2.4 Safety functions.....	8
3- Product structure and interface introduction.....	9
4- Product installation.....	10
5-Operation Instruction	14
5.1 Initial start	14
5.2 Selection of treatment	15
5.3 Treatment preparation.....	16
5.4 Start treatment.....	18
5.5 Pause treatment.....	20
5.6 Complete treatment.....	20
5.7 Custom treatment	21
5.8 Patient list.....	22
5.9 System settings.....	23
6- Alarm/Fault	24

7-Maintenance	25
7.1 Overview.....	25
7.2 Daily maintenance.....	25
7.3 Routine inspection on device	25
7.4 Annual inspection	26
8-Waste disposal.....	26
9-Electromagnetic compatibility.....	27
9.1 Radio-frequency (RF) emission.....	27
9.2 Electromagnetic immunity	28
10-Product warranty.....	29

1-Introduction

1.1 Overview

First of all, thank you for choosing RWD RLT-24 Veterinary Laser Therapy!

Before the installation and application of this product for the first time, please read all attached materials to help you use this product in a better way.

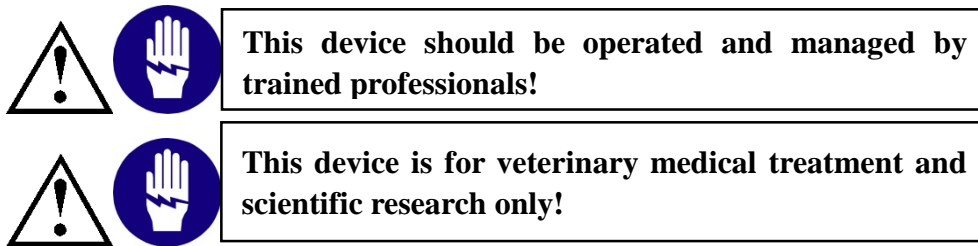
RWD Life Science Co., Ltd. is committed to continually improving product features and service quality, and reserves the right to make changes to the User Manual and any product mentioned herein without prior notice.

For the latest product information, please call or write us or visit our website (www.rwdstco.com). For any inconsistency between the actual condition of the product and this Manual during the use of the device, and for any questions or suggestions, please contact RWD.

1.2 Safety

When operating the system, please read the “2- Important information and safety” section carefully to avoid damages to operators and the system during application.

For any doubts or suggestions on safety, please contact the After-sales Service Department of the Company.



1.3 Product introduction

Laser therapy, also known as "photobiomodulation (PBM)", uses laser of specific wavelengths to reach therapeutic effects. These therapeutic effects include shortening the healing time, reducing pain, promoting microcirculation and reducing swelling and postoperative exudation. Laser therapy is a treatment without the needs of drugs and surgery.

Veterinary Laser Therapy are mainly used by veterinary hospitals, agricultural and forestry colleges and scientific research institutions, responsible for the diagnosis, treatment, and surgery of pet diseases, research on animal diseases, animal surgery, and for development of relevant veterinary clinical technology and clinical basic research. The product is designed to provide convenient, safe, cost-effective and portable veterinary laser theory device for domestic and foreign veterinarians, meeting the treatment needs of most veterinarian users in the market.

1.4 Product features

- Intelligence solution: more than 1,300 recommended treatment built in, featured by easy operation and easy control by veterinarians;
- Multiple modes: support three laser emission modes: CW mode, Pulse mode and ISP mode. The combination of multiple modes can improve the treatment efficiency, reduce thermal burns, and intensify laser treatment;
- High power: the laser power is up to 24W, with remarkable treatment effect, stable light, safe and fast;
- Four wavelengths: arbitrary combination of four wavelength lasers of 650nm, 810nm, 915nm and 980nm, superior lasers of different wavelengths available for different cases, and wider clinical application scope;
- User-friendly design: LCD touch screen; the rear-mounted large optical fibre winding disk, which is convenient for storage and protects the optical fibre and prolongs its service life;
- Features: built-in video tutorial board, "hands-on" teaching, and no difficulty in operation; automatic storage of treatment records for easy information traceability.

1.5 Product parameters

Parameter	Description
Casing Color	White+black
Laser Source	High powered laser diode module
Screen Size	7-inch LCD touch screen
Screen Pixels	1024×600px
Device Size	290×242×270mm
Package Size	570×420×500mm
Gross Weight	12.9KG
Net Weight	Not more than 4.5KG
Battery Capacity	2600mAh
Aiming Beam Wavelength	650nm
Aiming Beam Power	< 25mW
Transmission System	Laser cable: 600-micron fibre with rugged protective layers
Insulation Grade	Grade II, Class B
Frequency	1~20000Hz
Wavelength Combinations	650nm, 810nm, 915nm, 980nm
Output Power	CW mode, max average power 24W Pulse mode, max average power 12W ISP mode, peak power 28W

1.6 Product list

Configuration	Name	Quantity	Description
Standard configuration	Veterinary Laser Therapy	1	Laser therapy
Standard configuration	Optical fibre handpiece	1	Laser transmission and control
Standard configuration	Lens	5	Change the beam size to realize optimal treatment and diversity
Standard configuration	Protective goggles	6	3 for staff and 3 for animals for eyes protection
Standard configuration	Interlock	1	The interlock should be connected to the device to prevent any personnel entering the room and being exposed to the laser irradiation
Standard configuration	Power adaptor	1	Device power input
Standard configuration	Toolkit	1	Store lens and optical fibre handpiece

1.7 Device environmental requirements






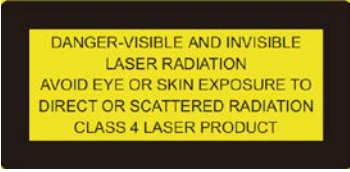
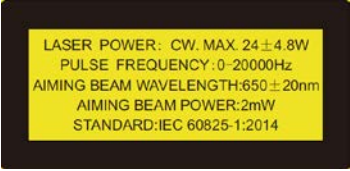
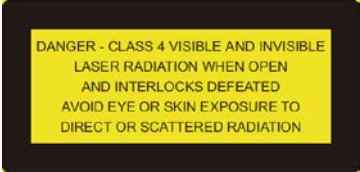
The device operating environment is prepared according to the conditions listed below to ensure the operability and safety of the system.

Environment type	Description
Operating environment	Temperature: 18~30°C
	Humidity: 30~75%RH
	Atmospheric pressure: 800~1060hPa
Storage environment	Temperature: -10~60°C (package included)
	Humidity: \leq 80%RH (package included)
	Atmospheric pressure: 800~1060hPa
Operating power	AC power: 100~240VAC, 50/60Hz, 2A DC power: 20V, 7.5A

2- Important information and safety

2.1 Product identification and safety symbols

The identifications and safety symbols of the Veterinary Laser Therapy are as follows. If you have any questions or suggestions on safety, please contact us for after-sales service support.

Symbol	Description
	Safety warning: laser hazard; optical fibre
	Safety warning
	Laser hazard
	Emergency stop button
	Optical fibre winding direction
	Safety warning: class 4 laser product description
	Safety warning: laser output and standard information recognition
	Safety warning: interlock

2.2 Safety precautions



It is forbidden to emit laser directly through the handpiece before the lens is installed! Exposure to direct laser emission through the handpiece may lead to serious damage, and may even cause scorched skin and flesh. Irradiating the cotton, wool or other flammable materials will cause smoke and scorch in a short time, or directly cause fire in a long time.

Please read the safety instructions carefully. For the sake of safety, be sure to note the following requirements:

- **Connect the cable properly**

Ensure that all connecting cables are connected to the device safely and securely.

- **Ensure no exposed electrical cables**

Do not touch any electronic units or circuits in the device!

- **Shut down the device in case of suspected fault**

Please contact authorized technical support personnel in case of safety problems or device failure.

- **Connect the device correctly**

Please refer to the user manual for correct installation of device and connection of cables.

2.2.1 General safety

- 1) The device should be placed and operated in a stable, safe and well ventilated conditions, and should be protected from excessive dust, vibration, strong magnetic field, direct sunlight, ventilation, excessive humidity or huge temperature fluctuations. The device should be kept at least 20 cm away from the wall to ensure unblocked ventilation during operation.
- 2) Please follow the instructions of all safety warning and instruction labels on the device and in the manual.
- 3) Only trained professionals are allowed to use the device. We shall not be responsible for any device damage caused by any non-conforming operation, including the damage to a third party.
- 4) Do not use any unauthorized parts or accessories to operate the device except for those specially designed for the product, such as interlock, finger switch, optical fibre and internal battery.
- 5) If the device fails to work properly, please contact the after-sales personnel of RWD immediately. Do not open the shell of the device without authorization. Unauthorized disassembly of the device may result in electric shock, serious personal injury or device damage.
- 6) Do not use the device in strong electromagnetic environment, otherwise it may cause harmful interference and prevent the device from fulfilling its intended purpose.

- 7) To prevent the risk of electric shock, the power adapter must be properly grounded.

2.2.2 Therapy room safety

- 1) Laser radiation warning signs meeting the requirements must be provided at obvious position at the entrance of the laser therapy room.
- 2) Indoor walls and ceiling shall be made of incombustible diffuse reflective materials, and the window glass shall be covered with black curtains to prevent indoor appliances producing specular reflection of laser, so as to reduce the danger of specular laser reflection to personnel.
- 3) Anesthetics or gases used for treatment should be incombustible. Use of some materials such as cotton and wool that are flammable in oxygen enriched environment shall be also avoided. The laser device shall not be started before solvents and flammable solutions (such as alcohol) used for cleaning and disinfection volatilize completely.
- 4) An interlocking safety system shall be arranged at each entrance of the laser therapy room and connected with the interlock on the rear panel of the device, so that when the door of the therapy room is opened, the device will discontinue laser emission, so as to ensure that personnel are protected from radiation exposure during treatment.

2.2.3 Animal / personnel safety

- 1) It is required to prevent any strangers from getting into the treatment area during the laser treatment.
- 2) Visible or invisible laser will be produced during the use of the device. Direct contact with the eyes or skin of animals or people with laser radiation or scattered radiation should be avoided, as direct contact may cause irreversible damage to the eyes.
- 3) All personnel and animals on the site must wear protective goggles specified by RWD during the operation of the Veterinary Laser Therapy. Protective goggles other than those specified may cause injury to eyes. Do not look directly at the light outlet even though wearing protective eyes.
- 4) Check your goggles regularly for wear and tear. In case of any wear or tear, please replace them in time. If you need to purchase protective goggles, please contact the aftersales staff of RWD.
- 5) The operator can adjust the handpiece, optical fibre and other components only when the device is powered off or in standby mode.
- 6) Operators shall not remove protective goggles on themselves or animals before the device is switched back to standby mode.
- 7) Operators are advised not to wear accessories such as watches and reflective jewelry during laser treatment to avoid injury by laser reflection.

- 8) Please power off the device and disconnect the cable to keep the device properly when the device is not in use or there is no person on the site.
- 9) The device is provided with a four-digit login password (see the user manual), which can be customized by users and can only be saved by designated and authorized personnel. Don't disclose the password to others to prevent unexpected damage.
- 10) If you need to carry or move the device, be sure to power off the device and disconnect the cable, and handle it with care.
- 11) The optical fibre shall be covered with a dust cap when it is not needed, to prevent it from contamination. Do not bend the optical fibre.

2.3 Safety classification

Laser radiation: Class-4 high-power laser and laser system

Electric shock protection type: Type B

Electric shock protection grade: Level 1

Waterproof and dustproof grade: IPX0

2.4 Safety functions

Veterinary Laser Therapy have a series of safety monitoring and safety functions for monitoring the system operating status and the emergency stop of laser output. When using the device, users should know the function and operation of these safety configurations.

Safety configuration	Function and operation
Power switch	Used to separate the device from the power, "I"=on, "O"=off
Enter password	After the device is turned on, the login interface will be prompted, and a 4-digit security password is required for permission identification
Emergency stop button	Used to stop laser emission output immediately. For any abnormality during the normal treatment (such as no display on the screen, abnormal optical fibre, etc.), press the emergency stop button immediately to stop the laser output; and users are allowed to release the emergency stop button
Interlock	Under normal circumstances, the interlock (normally-closed switch) is connected to the interlock interface of the device. When the treatment room is opened, the signal of the interlock is reversed, and the laser is immediately interrupted or prohibited from emission after recognition by the device, and the screen will synchronously prompt that the interlock is not provided with an alarm.
Start Treatment (Standby/Ready) button	The power setting or program selection is allowed only when the device is in the standby state. When the device works well, press the Start Treatment button to switch the device from 'standby' mode to the 'ready' mode. Then, press the finger switch once to start emitting laser, press again to pause the laser emission. Repeat this operation twice at most, or otherwise the device will automatically return to the 'standby' state.
Monitoring system	Real-time monitoring of laser temperature, emergency stop button, interlock, finger switch and optical fibre status. If the device detects any related abnormalities or errors, the laser will stop output and provide warnings through prompt and optical graphic texts on the screen to remind users that of such device abnormality.
Prompt and Aiming beam	When the device is normally turned on and standby, the aiming beam turns green; when the device emits laser, the aiming beam turns yellow, and the laser emission is accompanied by a prompt; for device malfunction and alarm, the aiming beam turns red and alarms.
Optical fibre detection system	The device is capable of automatically identifying whether the optical fibre is inserted. When it is not, the display screen will remind users to insert the fibre through a warning text. Only when the device detects that the fibre is inserted normally, can the laser be emitted

3- Product structure and interface introduction



Figure 3-1



Figure 3-2

S/N	Part name	Function
1	USB port	Software update
2	Finger switch	During normal operation, start/pause laser emission
3	Optical fibre handpiece	Laser transmission and control
4	Lens	Change the size of the laser beam
5	Laser aperture	Connect optical fibre
6	Finger switch interface	Connect the finger switch signal to the device
7	Interlock interface	Connect the interlock to the device
8	Power switch	Turn on/off the device
9	Power interface	Connect the power adaptor
10	Emergency stop button	Stop laser emission in emergency

4- Product installation

Before unpacking, please check the outer packaging carefully. For any damage or bumps found, please contact RWD as soon as possible. After confirmation, you can proceed to the next step;

Take all items out of the shipping box and properly keep the original packaging for future transportation;

Please check whether the delivered materials and quantity are in line with the order, and carefully check the materials. For any damage or bumps found, please contact RWD as soon as possible. Using non-designated accessories may cause laser radiation and device damage. If any accessories are damaged or lost during use, please contact RWD.

Please choose a well-ventilated space for installation and placement of the device. The placement platform must be hard and not hinder the airflow at the bottom of the device. Enough space between the device and the wall is required to allow users to operate the power switch.

- Accessories

There are 1 optical fibre handpiece, 1 interlock, and 5 lenses in the toolkit.




Our protective goggles include goggles for humans and animals respectively. The protective goggles for humans are shown in the figure below (left), and those for animals are shown in the figure below (right).



- Optical fibre handpiece and lens connection
Select the required lens and insert it into the bottom of the optical fibre handpiece.

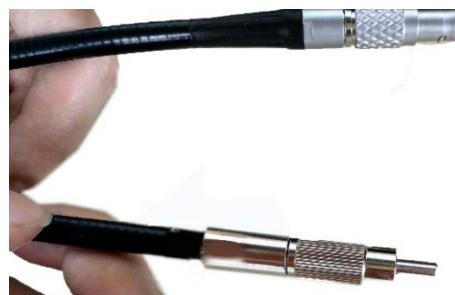


- Optical fibre and laser aperture connection
The laser aperture is used to connect the optical fibre and is located on the rear panel of the device. Remove the dust cover and insert the optical fibre port horizontally into the laser aperture. Do not tighten it up, or otherwise the device will not emit laser.

 Warning:

when connecting the optical fibre and laser aperture, please do not touch the laser aperture and optical fibre port by hand to avoid dust pollution. After removing the dust cover of the laser aperture, pay attention to protect the laser aperture from such materials as dust and debris. Do not bend the optical fibre.

Do not touch it!
Do avoid dust or debris entering this interface!




Do not touch the optical fibre when inserting or removing it!

Note: Do tighten it up!



- Finger switch and finger switch interface connection

Use the finger switch interface to connect the finger switch to the device. Align the red dot on the finger switch with that on the finger switch interface, and then insert it into the interface. Do not insert forcibly. Align the red dots, or otherwise the finger switch will be damaged.

 Do not twist when removing, just pull it out.



- Interlock connection

Use the interlock interface to connect the interlock. Align the red dot on the interlock with that on the interlock interface, and then insert it into the interface. Do not insert forcibly. Align the red dots, or otherwise the interlock will be damaged.

 Do not twist when removing, just pull it out.



- Power adaptor connection

This product has two power: external power adaptor and internal battery. When the internal battery is low, insert the power adaptor horizontally into the power interface.

Internal battery: When users use the internal battery, the device can be started directly. When the battery capacity is below 20% and 5%, users will receive a prompt to connect the power adaptor.

- Device start

Before starting the device, check whether the emergency stop button is released. If it is, press the power switch to the "I" position to start the device.

5-Operation Instruction

5.1 Initial start

After device startup, the system first enters the enter password interface. The default password for the first boot is 0000. Please refer to 5.9 *System settings* for the password change.

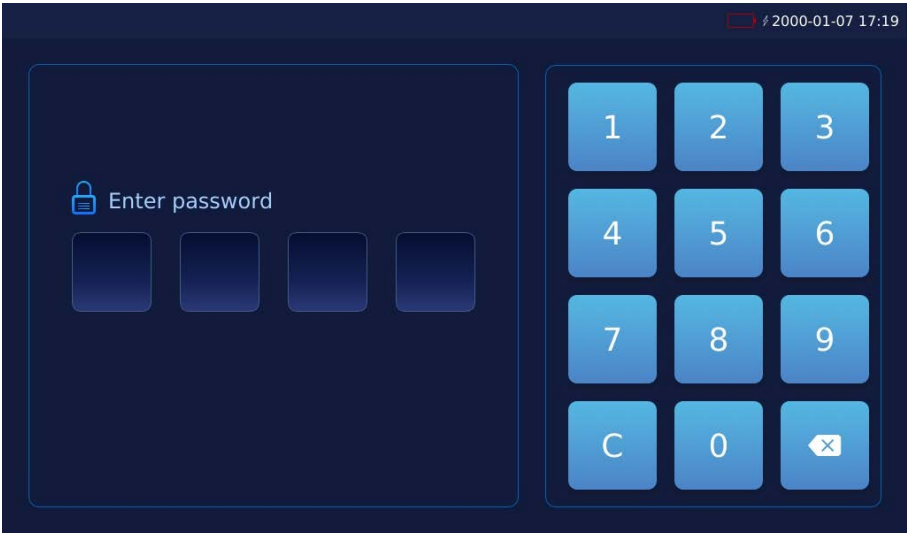


Figure 5-1

Enter the correct password to enter the main interface, as shown in Figure 5-2.

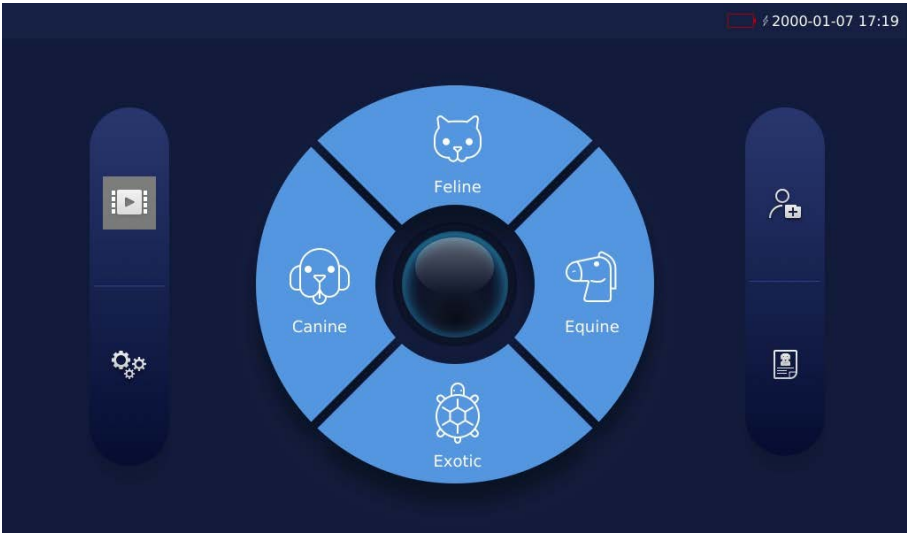


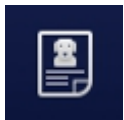
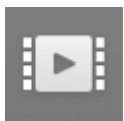



Figure 5-2

Button name/icon	Description
	Feline. Click to enter the [Treatment selections]; the operation of other species of buttons: Canine, Equine, and exotic pets
	Click to enter [Custom treatment] for users to add custom treatment
	Click to enter [Patient List]
	Click to enter [Video Tutorial]. It includes many types of tutoring videos for users to learn and refer
	Click to enter [System Settings]. It is used for system settings of the laser therapy, including brightness, volume, language, weight units, and so on

5.2 Selection of treatment

After users click to select the category, he/she can enter the [Treatment selections]. In the [Treatment selections], the parameters available for users to select include: Species, Category, Condition, Body Part, Coat Color, Chronicity, Weight and Treatment Area. According to the different items selected by the patient, users can goto [Treatment selections], and click at most 7 times to reach the [Treatment preparation].

Example is as follow: users select [Canine] and will enter the interface as shown in Figure 5-3.

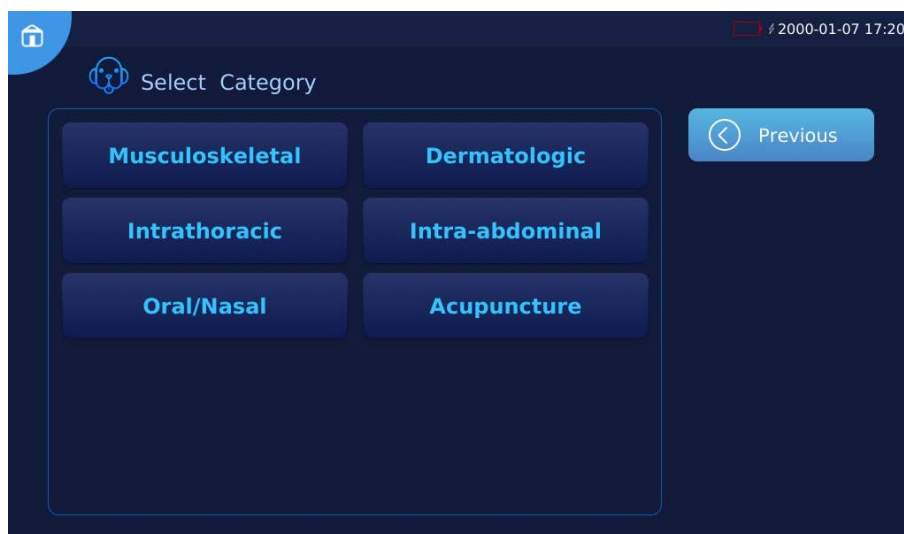


Figure 5-3

Select [Musculoskeletal] and enter the interface as shown in Figure 5-4.



Figure 5-4

Select [PostOp], then select Body Part, Coat Color, Chronicity, Weight and Treatment Area. After selecting all the steps for this species, users will finally enter the interface as shown in Figure 5-5.

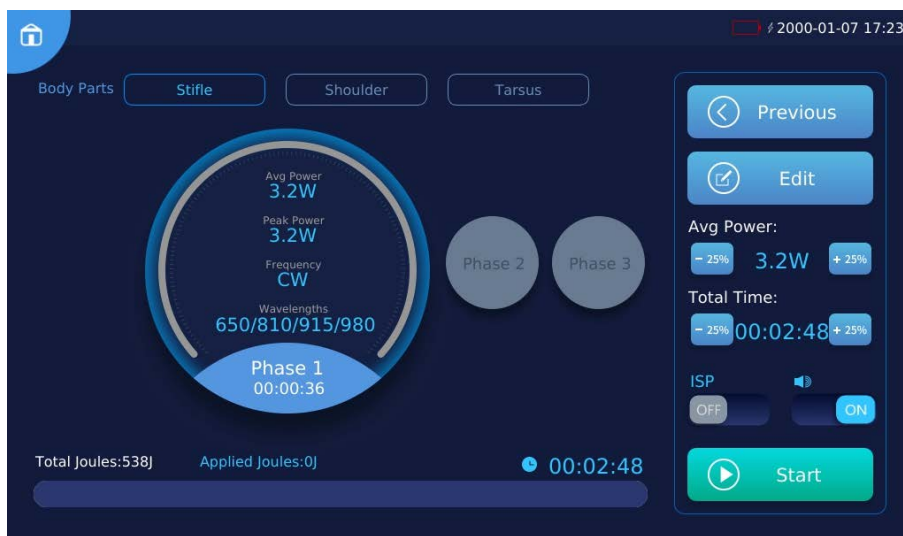




Figure 5-5

5.3 Treatment preparation

Users can view the parameters of different body parts treating at any phase, including Total Joules, Total Time, Frequency, Avg Power, Peak Power, Wavelengths, ISP and Prompt. Users can click the left  and right  button to view the parameters of other phases, as shown in Figure 5-5.

1) Users can change the parameters of all phases for current treatment part in the interface as shown in Figure 5-5.

Parameter	Description
Avg Power	button can increase or decrease the power of all treatment phases for current body part by 25% or 25%, and button can only be clicked twice in a row
Total Time	button can increase or decrease total time of all treatment phases for current body part by 25% or 25%, and button can only be clicked twice in a row
ISP	Click button to turn off/on the ISP
Prompt	Click button to turn off/on the laser emission prompt

Users can change and edit the parameters of any phase for current body part. Click the button in the interface as shown in Figure 5-5 to enter the interface as shown in Figure 5-6.





Figure 5-6

2) Users can click the parameters in Figure 5-6 to edit and change the parameters of current treatment phase for current treatment part.

Parameter	Description
Laser Mode	CW mode, Pulse mode, ISP mode are available for one choice
Phase Time	Click [Phase Time] to edit, and click [Store] / [Store to all Stages] to make the Time applicable to all phases of the current body part. Time ranges from 00:00-(60: 00- total time of other phases)
Avg Power	Click [Avg Power] to edit, with setting range between 0.5-24.0W (CW mode), 0.5-12.0W (Pulse mode), and 0.5-15.0W (ISP mode)
Frequency	Click [Frequency] to edit, with the range between 1-20000Hz
Wavelengths	The number of optional wavelengths include 650nm, 810nm, 915nm, 980nm, and the selected wavelength represents the number of lasers that are turned on at current phase

User can click  to abandon the parameter change;

Click  to restore the adjusted parameters to the default values;

Users can click  to save the currently adjusted parameters, and a pop-up box will pop up as shown in Figure 5-7. Users can save the current treatment as a new custom treatment or an existing custom treatment.

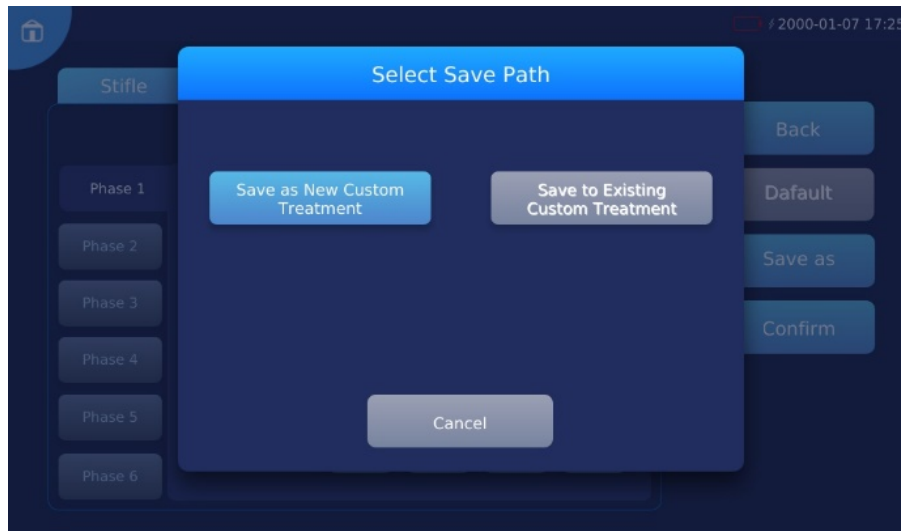


Figure 5-7

5.4 Start treatment

Click [Start] button to select the lens as shown in Figure 5-8.



Figure 5-8

Users select the corresponding lens in the interface as shown in Figure 5-8 according to the lens currently assembled on the device, and the following interface pops up.



Warning:

Be sure to wear protective goggles! Do not turn the laser emitting surface toward the eyes.

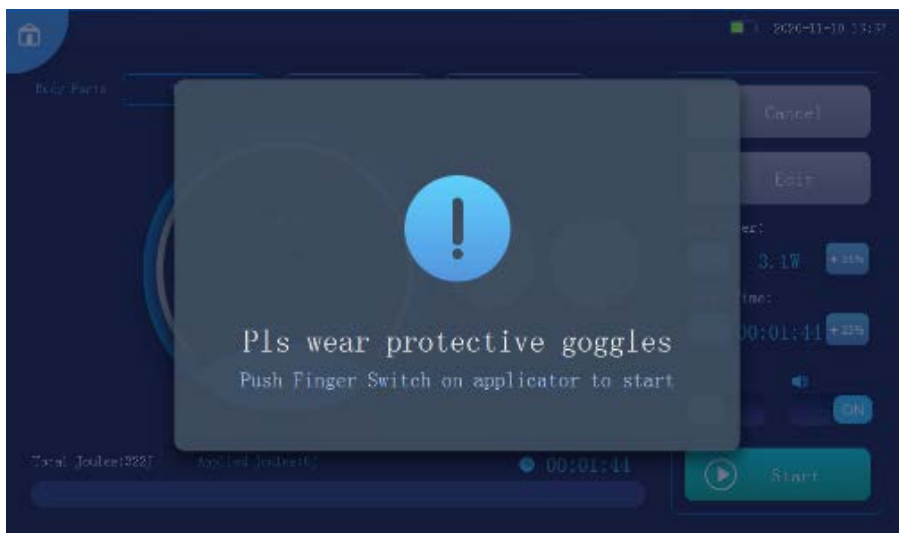


Figure 5-9

Press the finger switch and enter the interface as shown in Figure 5-10 to start treatment in a few seconds.



Figure 5-10

5.5 Pause treatment


Users can click  **Pause** or press the finger switch to pause the current laser emission. The interface is shown in Figure 5-11.



Figure 5-11

Users can click  **Continue** to continue treatment.

5.6 Complete treatment

1) When the current body part treating is finished, the laser emission is paused and the interface is as shown in Figure 5-13. When users select multiple body parts, press the finger switch to the next treatment region.

If users want to cancel the treatment, click [Cancel] to exit to the interface as shown in Figure 5-5.

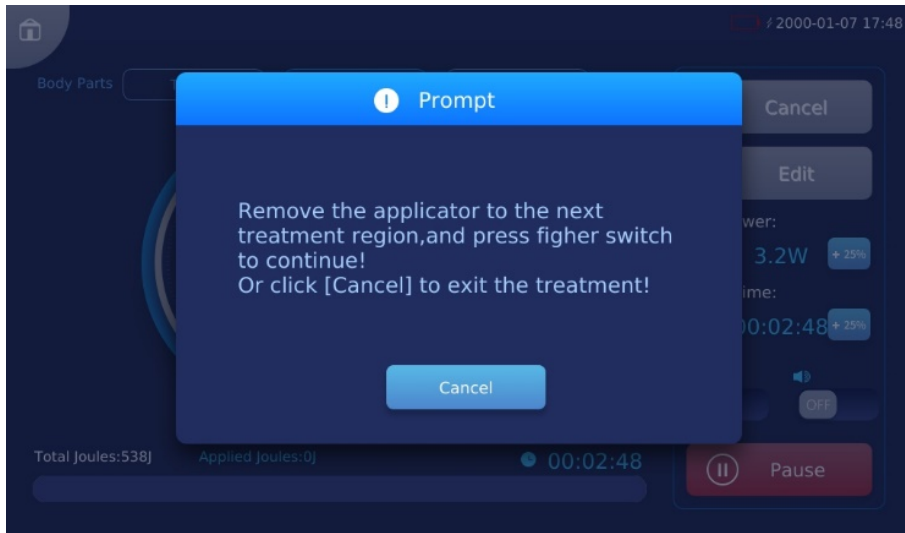


Figure 5-12

2) After the treatment of all the body parts is finished, the [Treatment Complete] as shown in Figure 5-13 will pop up, and users can click the button as needed.



Figure 5-13

5.7 Custom treatment



Users can click  in Figure 5-2 to enter [Custom Treatment] to view the built-in treatment, as shown in Figure 5-14, and search, select, create, delete, edit, rename, and apply any custom treatment. Click  to enter the interface as shown in Figure 5-5, and start treatment.



Figure 5-14

When user's treatment is finished, the treatment can be saved to a new custom treatment or an existing custom treatment, as shown in Figure 5-13.

5.8 Patient list


Users can click  in Figure 5-2 to enter the [Patient List] as shown in Figure 5-15, and search, add, edit, delete and view any patient.



Figure 5-15

When viewing patient, users can click  to view any patient's treatment records, or click .

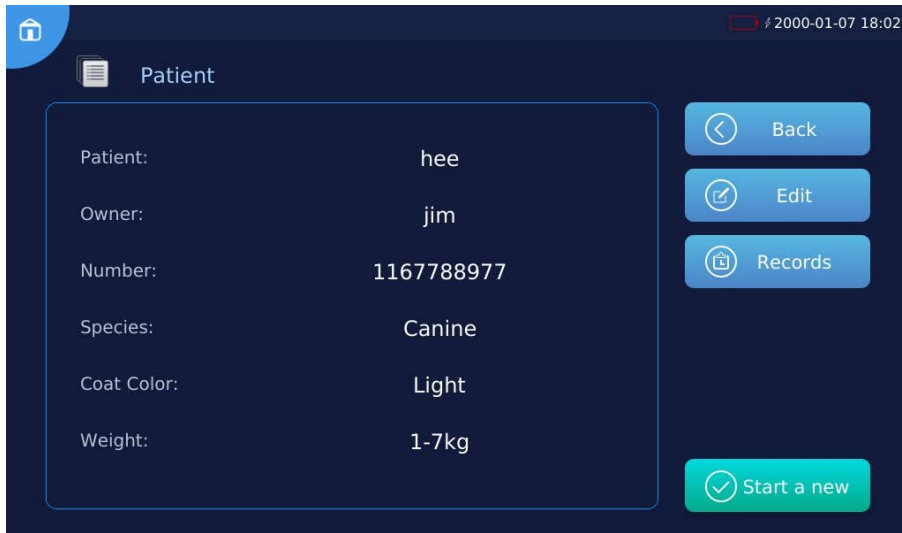


Figure 5-16

After users' treatment is finished, the treatment records can be saved as an existing patient or a new patient, as shown in Figure 5-13.

5.9 System settings

Click to enter [System settings] as shown in Figure 5-17.

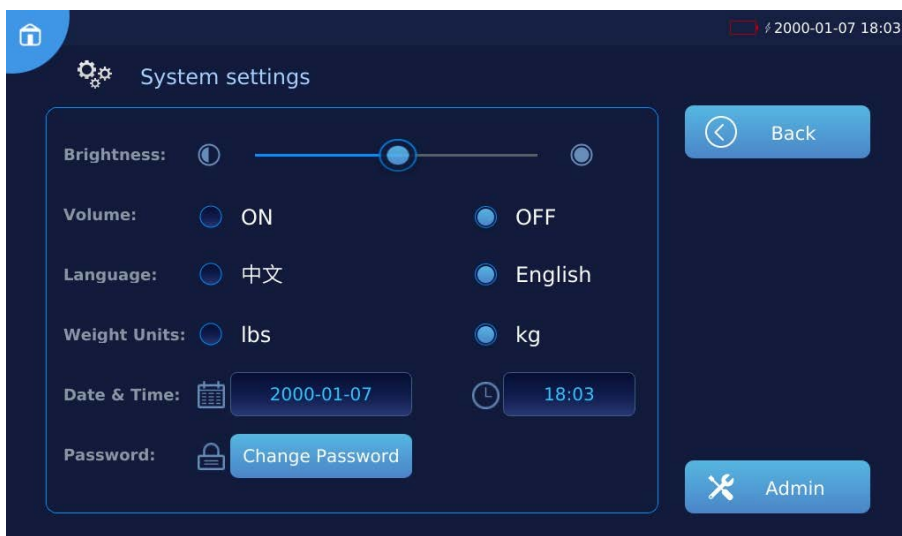


Figure 5-17

Function item	Description
Brightness	Adjust the slider to darken or brighten the display
Volume	Click On/Off to turn on or off the volume
Language	Click to select between Chinese and English
Weight Units	Click to select lbs or kg to display the weight and change weight units of the built-in treatment
Date & Time	Click to edit system date and time
Password	Change enter password
Admin	Only for admin by after-sales personnel

6- Alarm/Fault

This product has a built-in monitoring system that monitors the laser temperature, emergency stop button, interlock, finger switch and optical fibre status in real time, and provides warnings through acoustic and optic graphic texts on the display to remind users that of such device abnormality or fault.

Alarm/fault	Solution
Low battery, please plug in the power cord !	Connect the power adaptor for charging and use it again
Device is about to power off, please connect the power adaptor !	Connect the power adaptor for charging, or otherwise it will power off
System overheat Please do not use the device until the device cool down!	1. Wait for the device to cool down before use; 2. If the alarm information is not removed after the device has cooled down, please contact our after-sales personnel for handling
Low system temperature !	1. The device needs to be used in a permitted environment; please refer to <i>1.7 Device environmental requirements</i> section; 2. If the alarm information is not removed, please contact our after-sales personnel for handling
Laser stop Release the emergency stop button to continue !	1. Pull out the emergency stop button manually; 2. If the alarm information is not removed after manually pulling out, please contact our after-sales personnel for handling
Interlock is uninstalled !	1. Check the rear panel of the device to see whether the interlock is correctly inserted into the device; 2. If the alarm information is not removed after the interlock has been inserted into the device, please contact our after-sales personnel for handling
Optical fibre is unconnected !	1. Insert the optical fibre into the laser aperture; 2. If the alarm information is not removed after the optical fibre has been inserted into laser aperture, please contact our after-sales personnel for handling
Interface of finger switch is unconnected !	1. Check whether the finger switch interface has been correctly connected with the finger switch; 2. If the alarm information is not removed after the finger switch interface has been connected with the finger switch, correctly, please contact our after-sales personnel for handling
Laser error, please contact the after-sales personnel!	Please contact our after-sales personnel

7-Maintenance

7.1 Overview

This chapter describes how to maintain the Veterinary Laser Therapy to ensure it works well.



Warning: This is a Class 4 laser product. You must wear protective goggles during maintenance to protect eyes from injury by laser.

7.2 Daily maintenance

- Please do not knock hard or touch the screen with something sharp;
- Do not bend the optical fibre;
- Cover the handpiece with a dust cap to avoid contamination after removing the lens, and sterilize the dust cap with anhydrous alcohol;
- Clean the surface of the device and the touch screen regularly; try to wipe the surface of the device with a dry cloth and wipe the touch screen with lens tissue. Chemical reagents is not allowed for cleaning;
- Try to keep the device stable and prevent vibration or collision when moving it;
- Do not disassemble the device without permission, and do not open the device shell without the authorization of RWD, otherwise it may cause electric shock or damage to the device;
- Regularly clean the lens surface, and when determining the position of the contaminant, use the lens tissue dipped in a small amount of anhydrous ethanol to lift it up; for the contamination by fingerprint or grease, apply a small amount of cleaning liquid to a new lens tissue and gently wipe the lens surface with a spiral motion from the center to the rim. Inspect the optic and repeat if necessary, but only use each sheet of lens tissue once.

7.3 Routine inspection on device

- Check whether the interlock is in normal condition: When the treatment room is open, the display screen shows that the safety interlock is not installed, accompanied with an alarm sound;
- Check whether the emergency stop button is in normal condition: when the emergency stop button is pressed, the laser emission will stop, accompanied with an alarm sound;
- Check whether the finger switch is in normal condition: in ready mode, press the finger switch to start the laser emission, and press again to stop the laser emission;
- Check whether the prompt and aiming beam are in normal condition;
- For some parts to be replaced during the routine inspection, please contact the after-sales personnel of RWD.

7.4 Annual inspection

RWD recommends an overall annual inspection of the device. Contact RWD for details. Annual inspection is helpful to keep the device in good working condition. It is recommended to record the maintenance process, including the maintenance time, location, and process for future reference.

8-Waste disposal

Optical fibre handpieces, batteries and other waste products should be disposed in strict accordance with local policies and regulations for waste disposal.

9-Electromagnetic compatibility

- The Veterinary Laser Therapy should be used in the electromagnetic environment specified in this chapter. Users are advised to evaluate the electromagnetic environment before use.
- Electromagnetic communication units may affect the normal use of the Veterinary Laser Therapy, so measures should be taken in use to keep it away from strong electromagnetic interference such as mobile phones and microwave ovens.
- Do not use the device near a strong radiation source (such as unshielded RF source), otherwise it may interfere with the normal work of the device.
- Do not stack the laser therapy with other devices, otherwise it may interfere with the normal work of the device.
- Users must use the accessories provided by RWD. Use of other accessories may lower the electromagnetic compatibility of the laser therapy.

9.1 Radio-frequency (RF) emission

RF emission	
Launch test	Compliance
RF emission EN 55011	Group 1
RF emission EN 55011	Class A
Harmonic emission EN 61000-3-2	Class B
Flicker emission EN 61000-3-3	Compliant

9.2 Electromagnetic immunity

Immunity test	GB9706 test level	Compliance level
Electrostatic discharge (ESD) EN 61000-4-2	±8kV contact discharge ±15kV air discharge	±8kV contact discharge ±15kV air discharge
Electrical fast transient burst EN 61000-4-4	±2kV to power cord ±1kV to input/output line	Applicable
Surge EN 61000-4-5	±1kV line to line ±2kV line to earth	Applicable
Voltage sags, short interruptions and voltage changes on the power input line EN 61000-4-11	<5% U_T lasts for 0.5 cycles (at U_T , >95% sags) 40% lasts for 5 cycles (at U_T , 60% sags) 70% U_T lasts for 25 cycles (at U_T , 30% sags) <5% U_T lasts for 5s (at U_T , >95% sags)	Applicable
Power frequency magnetic field (50 Hz/60 Hz)	3A/m	3A/m
Note: U_T refers to the AC grid voltage before the test voltage is applied.		
RF conduction EN 61000-4-6	3V (effective value) 150KHz-80MHz	3V/m
RF radiation EN 61000-4-3	3V/m (effective value) 80MHz-2.5GHz	3V/m

10-Product warranty

The warranty period of this device starts from the delivery date. During the warranty period, if the device cannot be used normally due to problems such as material and process defects, the Company is responsible for providing after-sales services such as device maintenance and parts replacement.

Device damages due to improper use or out-of-scope use of the device is beyond the warranty. In this case, expenses for maintenance or parts replacement will be borne by users.

When the device to be reworked arrives, if it has been dismantled without authorization from RWD, RWD will not provide after-sales services such as warranty, free maintenance and parts replacement.

The warranty statement (including its restrictions) is exclusively issued by RWD, covering all other warranty conditions.



RWD Life Science Co., Ltd.

Web: www.rwdstco.com

Add: 850 New Burton Road, Suite 201, Dover, DE 19904, Kent, Delaware, USA

Add: 19/20F, Building 9A, Vanke Cloud City III, Liuxin 4 Street, Nanshan District,
Shenzhen 518000, Guangdong, P.R. China

Tel: +001-858-900-6602 +86-755-86111286

After-sales Service: +86-755-86111281

After-sales E-mail: service@rwdstco.com