WRIST PULSE OXIMETER INSTRUCTION MANUAL

Edition:V2.0W1

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Content of the manual is subject to changes without prior notice.

Caution! Read this entire manual carefully before using the wrist oximeter.

The information in this manual has been checked carefully and is believed to be accurate. In the interest of continued product development, our company reserves the right to make changes and improvements to this manual and the products it describes at any time, without notice or obligation.

Precautions for use

Read and follow all safety instructions before using the Wrist Oximeter.

Contraindications

- Do not use the Wrist Oximeter in a magnetic resonance imaging (MRI) environment.
- Explosion Hazard: Do not use the Wrist Oximeter in an explosive atmosphere or in the presence of flammable anesthetics or gasses.

⚠ Warnings!

- The wrist Oximeter is intended only as an adjunct in patient assessment. It must be used in conjunction with other methods of assessing clinical signs and symptoms.
- General operation of the Wrist Oximeter might be affected by the presence of an electrosurgical unit (ESU).
- As with all medical equipment, carefully route patient cables and connections to reduce the possibility of patient entanglement or strangulation.
- Do not use the wrist oximeter when the alarms are required!
- Discontinue use of adhesive tape strips if the patient exhibits an allergic reaction to the adhesive material

- Use the Oximeter only within the specified temperature ranges: 5℃ ～ 40℃ humidity≤80% for operating, and -20℃~50℃ humidity≤93% for storage and transportation.
- When you simultaneously measure blood pressure, attach the sensor to a different arm's finger.
- Do not stretch the adhesive tale while applying the pulse oximeter sensor.
- Ensure that the wrist band fits comfortably on the patient's arm. Do not over-tighten the wrist band.
- Pulse oximeter readings might be affected while patients are being defibrillated.
- Do not use the unit under conditions of shocks and vibrations. Do not use it, either, with the patient connected to such medical electrical equipment as a cardiac pacemaker and other electrical stimulators. And keep away from MRI, CT etc. It may cause burning and adversely affect MRI measurement.
- SpO_2 measurements may be adversely affected in the presence of high ambient light. Shield the sensor area (with a surgical towel, or direct sunlight, for example) if necessary.
- The device should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the device should be observed carefully to verify normal operation.
- The use of accessories, sensors, and cables other than those listed in this manual may result in increased emission and /or decreased immunity of this device.
- DO NOT USE THE OXIMETER FOR TREATMENT, we are not responsible for contretemps happened during measuring.

Cautions!

- Before using any sensor, carefully read the direction for use.
- Do not, under any circumstance, perform any testing or maintenance on the wrist oximeter while it is being used to oximeter a patient.
- Verify that all visible indicators appear during the start-up (initialization) sequence. If any indicator does not appear, do not use wrist oximeter. Contact Choice Customer support for assistance.
- Portable and mobile RF communications equipment can affect medical electrical equipment.
- If the wrist oximeter fails to respond as described, refer to “Troubleshooting” or discontinue until the situation has been corrected by qualified personal.
- Do not remove any covers other than the battery cover when replacing batteries. There are no user- serviceable parts inside.
- Batteries might leak or explode if used or disposed of improper. Disposed of the used batteries according to the applicable local regulations.
- Follow local governing ordinances and recycling instructions regarding disposal or recycling of the device and device components including batteries.
- Do not immerse the wrist oximeter or sensors in water or any other liquids.
- Do not place or pour liquids on top of the wrist oximeter.
- The wrist oximeter is a precision electronic instrument. It must be repaired by trained Choice personnel only.
- The wrist oximeter is designed to determine the percentage of arterial oxygen saturation of functional hemoglobin. Significant levels of dysfunctional hemoglobin may affect the accuracy of the measurement.

- Check the pulse oximeter sensor application site frequently to determine the positioning of the sensor and the circulation and skin sensitivity of the patient. Patient sensitivity varies depending on medical status or skin condition.
- Dyes introduced into the bloodstream,such as methylene blue, indocyanine green ,indigo carmine, patent blue (PBV), and fluorescein may adversely affect the accuracy of the SpO_2 reading.
- This device has not been tested for immunity to electromagnetic disturbances.
- Some nail polish color or artificial nails can reduce light transmission and affect SpO_2 accuracy.

Warning!

DO NOT use the wrist oximeter when the alarms are required!

Unpacking and inspecting the wrist oximeter

Contact the carrier immediately if the shipping carton for the wrist oximeter is damaged.

Confirm that the items listed below are packed with the wrist oximeter:

Model MD300W wrist oximeter

Standard accessories:

- One 1.5V AAA alkaline Battery.
- Wrist oximeter instruction manual
- Finger-clip sensor
- One reusable wristband
- MedView software CD
- Data cable

CONTENT

1. General Description

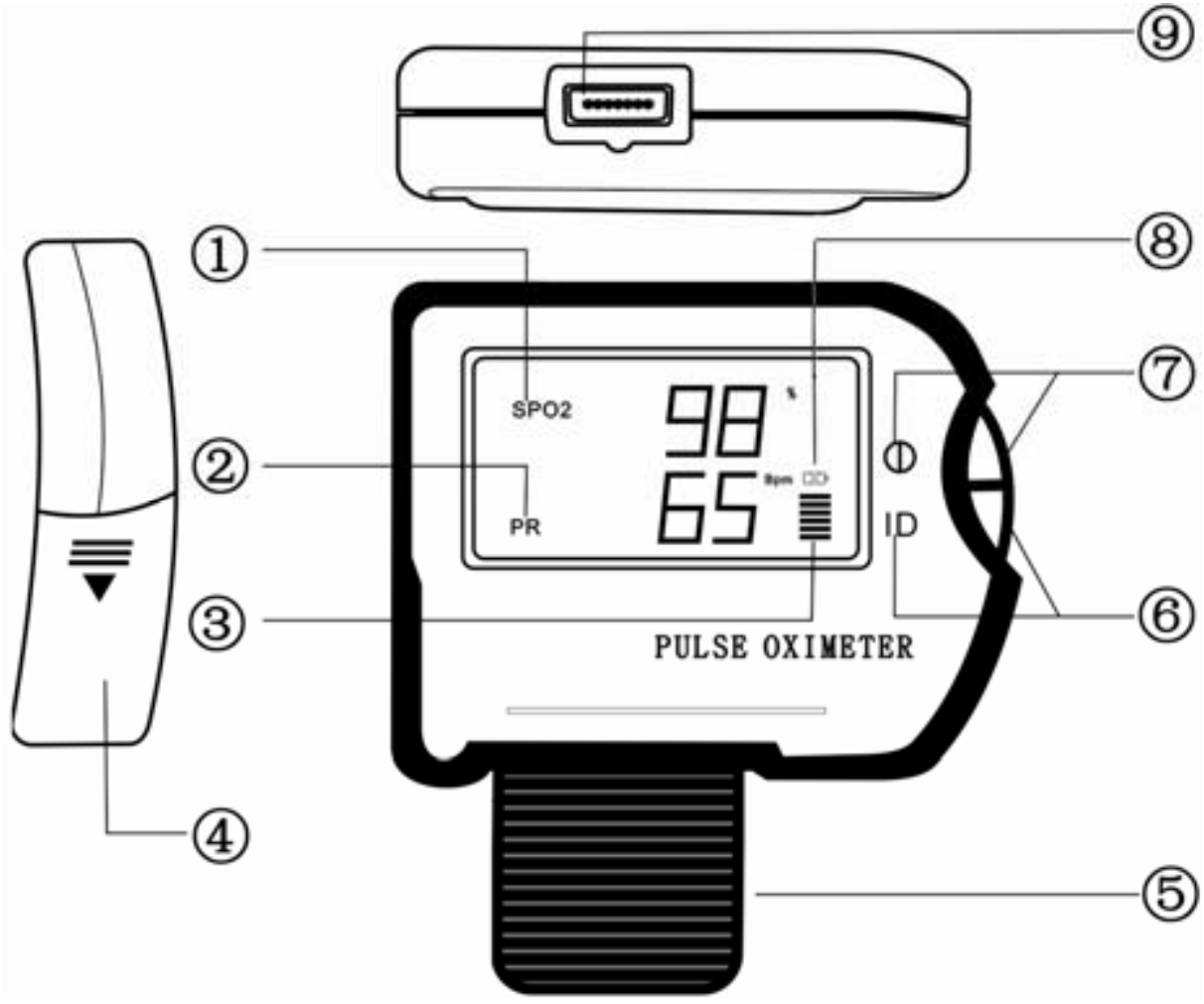
The MD300W wrist oximeter is a small, wrist-worn device indicated for use in measuring, displaying, and storing functional oxygen saturation of arterial hemoglobin (SpO_2) and pulse rate. It may be used for spot-checking and/or data collection and recording of adult and pediatric patients in hospitals, medial facilities, ambulatory, subacute, and sleepy study environments.

Scope of application:

- ✧ OSAS (obstructive sleep apnea syndrome)patients
- ✧ Outdoor sportsman
- ✧ Best solution to SIDS(sudden infant death syndrome)
- ✧ Fire fighter, Military, Pilot collier, Subhealth.

The function of this new type unit includes: SpO2& PR oximetering, finger out indication, sensor out indication, data storage, data transfer.

1.1 Know your unit



Picture 1

Description of picture 1:

- ① SPO2: Real-time SpO2 value of measuring. (Now the value is 98%)
- ② PR: Real-time pulse rate value of measuring.(now the value is 65)
- ③  : Pulse Strength Bargraph, the height of the pulse bargraph is proportional to the pulse amplitude.
- ④: Battery box cover.
- ⑤: Reusable Wristband
- ⑥ ID: OK button / Parameter selection button
- ⑦ Φ: Power / data setting button, press this button for a long time, you can turn on or turn off the unit; under setting menu, press this button for a short time, you can set the data.
- ⑧  : Low battery voltage
- ⑨: Sensor / Data Transfer interface

1.2 Product Features

- ✧ Exquisite, compact & light design.
- ✧ Displaying & recording SpO2 &PR rate.
- ✧ USB interface for data transfer.
- ✧ Wearing around wrist, very compact design, easy-to-carry on hand, a weight of only 26g.
- ✧ A safe and convenient design of keeping sweat outside the product.
- ✧ One AAA battery, easy to replace, and insuring power support.
- ✧ Low power consumption.

2. Inserting and Replacing the Batteries

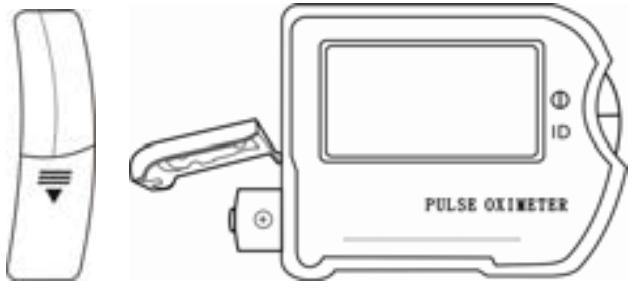
(1). Slide the battery cover in the direction of the arrow by your thumb, and lift the end of the cover upwards.

Note: Do not pull too hard on the cover.

(2). Insert one battery as indicated in Picture 2.

Note: Make sure that the polarity of the battery is correct.

(3). Remove the old battery and discard or recycle them according to local applicable regulations.



Picture 2

(4). Carefully re-position the battery cover. Do not force the cover into place; it fits only when positioned properly.

(5). If the wrist oximeter dose not turn on when you press the power on button, reinsert the battery or refer to “Troubleshooting”

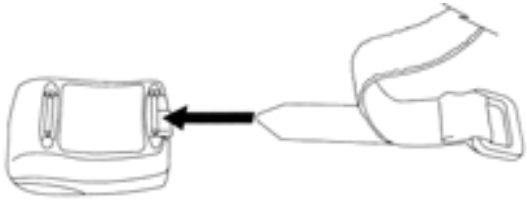
Note:

- The battery indicator will begin to appear when the voltage is too low, please replace the battery in time.
- The Wrist Oximeter contains non-volatile memory, so removing or replacing batteries will not affect the data will remain in memory until overwritten by newer data stored in Wrist Oximeter memory. Stored data will remain in memory until overwritten by newer data or cleared from memory with MedView software.

3. Setting up the Wrist Oximeter and Attaching the Sensor

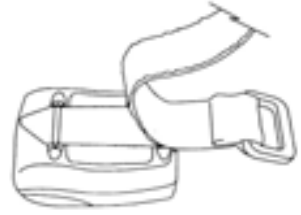
3.1 Use the following procedure to thread the wrist strap, attach the sensor.

1. Begin threading the short of the wrist strap through the spring bars on the rear of the Wrist Oximeter. As illustrated above, the spring bar near the top of the Wrist Oximeter should be threaded first.
2. Continue threading the wrist strap until it is pulled securely through both spring bars on the rear of the Wrist Oximeter.



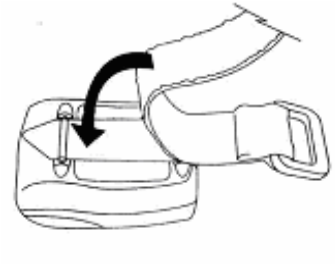
Pic.3

Pic.4



Pic.5

3. Press the long segment of the wrist strap securely against the already-threaded strap. The Wrist Oximeter is now securely mounted on the wrist strap.

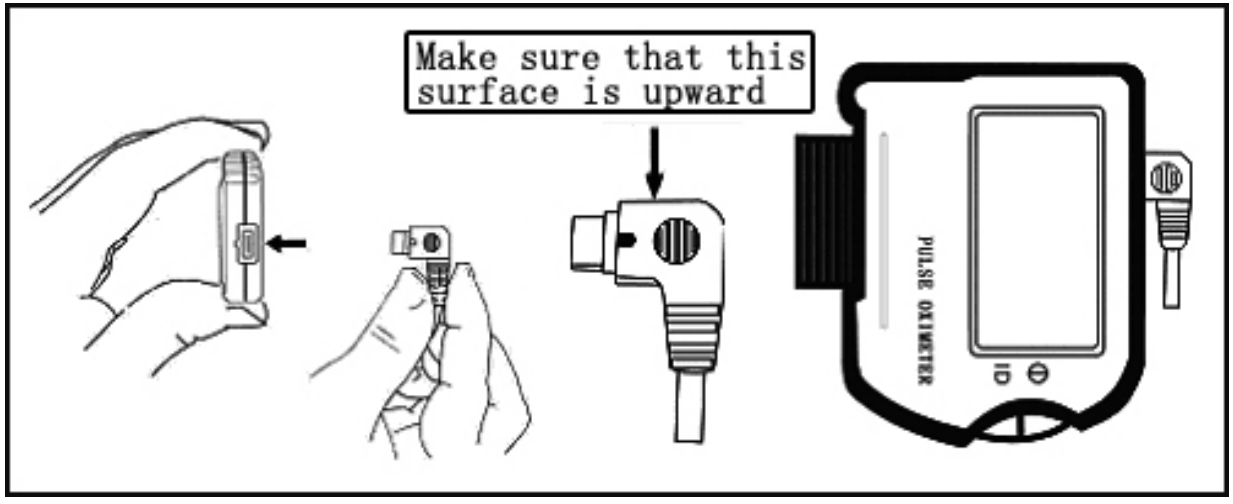


Pic.6

Pic.7

4. Apply the wrist band securely and comfortably around the patient's wrist.

5. Plug the sensor into the connector at the top of the Wrist Oximeter, ensuring that the sensor is plugged correctly and firmly, refers to picture 8.



Pic.8

NOTE: Do NOT insert the sensor incorrectly; otherwise there is no SpO2 signal.

6. Place the patient's finger inside the sensor. Refer to the respective sensor instructions for specific information about placement and patient safety, shown as picture 9.

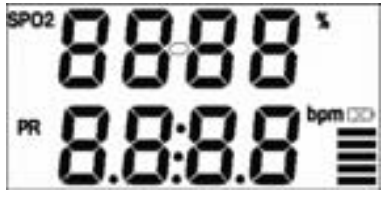
Pic.9

3.2 ID &Time setting

Please set the ID number and time before first measurement. Set different ID number for different users.

3.2.1 ID Setting

Press the"⏻" button for about three seconds to start up the unit.



Pic.10

Pic.11

The display panel will be high light for self diagnoses when powered on. And then the next screen will display the version of the software shown in Pic.11.

If there is no probe inserted, after power on, the following information will appear shown as Pic.12. If the probe is inserted into the oximeter but no finger, the information will be shown as Pic.13.

Pic.12

Pic.13

Pic.14

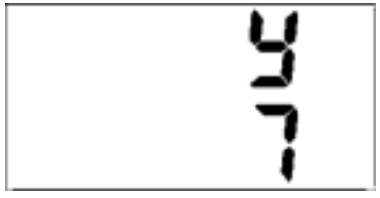
Regardless of the information press the “ID” button for about 3 seconds, then you will enter into the screen(Pic.14):
Then press the “Φ” button and the Id number will change from 1~10. Set the number and then press the “ID” button for a short time, you will save the setting and enter into the time setting screen. If you press the “ID” button for about 3 seconds, you will return to the measuring screen.
Note: If the ID number is one, the measurement result will be saved automaticly.

3.2.2 Time setting

Press the “ID” button for about three seconds to enter into the parameter setting screen. And then press the “ID” button for one second repeatedly, the parameter will display as following order: ID, Y (year), No (month), d (date), H (hour), N1 (minute), S (seconds). Press the “Φ” to set the correct number.

3.2.2.1 Year setting

Press the “ID” button for about three seconds to enter into the parameter setting screen. And then press the “ID” button for one second repeatedly, to enter into the year setting picture shown as picture 15. Press “Φ” button to set the right year. The setting range is 0~99, it means that the year is from 2000 to 2099. After finish setting the year, press the “ID” button for about one second to enter into other parameter setting screen or press the “ID” button for about three seconds to return to the measuring screen.



Pic.15

3.2.2.2 Month setting

After finish setting the year, press the “ ID ” button for about one second to enter into the month setting screen shown as Pic.16, And then press the “Φ” button to set the right month. The setting range is 1~12.And then press the “ID” button for about one second to enter into the date setting screen or press the “ID” button for about three seconds to return to the measuring screen.

Pic.16

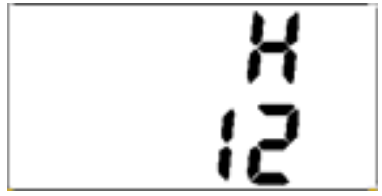
3.2.2.3 Data setting

After finish setting the month, press the “ID” button for about one second to enter into the date setting screen shown as Pic.17, and then press the “Φ” button to set the right date. The setting range is 1~31. And then press the “ID” button for about one second to enter into the hour setting screen or press the “ID” button for about three seconds to return to the measuring screen.

Pic.17

3.2.2.4 Hour setting

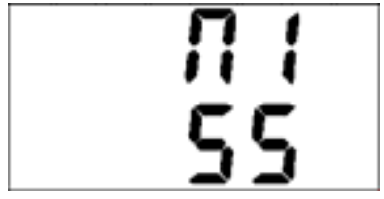
After finish setting the date, press the “ID” button for about one second to enter into the hour setting screen shown as Pic.18, and then press the “Φ” button to set the right hour. The setting range is 0~23. And then press the “ID” button for about one second to enter into the minute setting screen or press the “ID” button for about three seconds to return to the measuring screen.



Pic.18

3.2.2.5 Minute setting

After finish setting the hour, press the “ID” button for about one second to enter into the minute setting screen shown as Pic.19, and then press the “Φ” button to set the right minute. The setting range is 0~59. And then press the “ID” button for about one second to enter into the minute setting screen or press the “ID” button for about three seconds to return to the measuring screen.

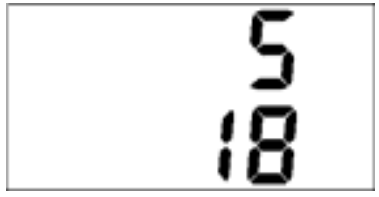


Pic.19

3.2.2.6 Seconds setting

After finish setting the minute, press the “ID” button for about one second to enter into the second setting screen shown as Pic.20, and then press the “Φ” button to set the right minute. The setting range is 0~59. And then press the “ID” button for about one second to enter into the minute setting screen or press the “ID” button for about three seconds to return to the measuring screen.

After setting parameter, you can measure the SpO_2& PR.

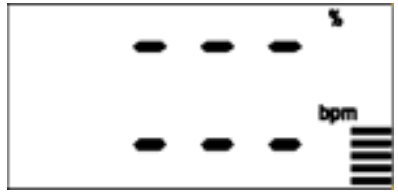


Pic.20

4. Measurement

(1). After parameter setting, you can press the "ID" button for about three seconds to return to the measuring screen.
Place the patient's finger inside the sensor shown as the picture 21. Refer to the respective sensor instructions for specific information about placement and patient safety. The signal searching picture is shown as Pic.22.

Pic.21



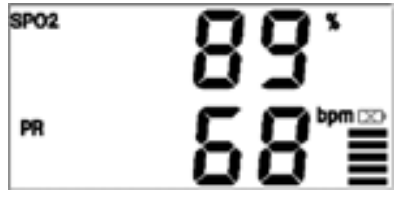
Pic.22

(2). The measuring result shown as Pic.23

Description of picture 23: The SpO_2 value is 89% and the PR value is 68bpm.

NOTE: Inaccurate measurement can be caused by:

- Incorrect application of the sensor.
- Placement of the sensor on an extremity with a blood pressure cuff, arterial catheter, or intravascular line.
- Patient's moving.



Pic.23

5. Specifications

5.1 Parameters

SPO_2:

Display range： 0%～100%
Measuring range： 70%～100%
Measuring accurate: 80%～100% ±2% ; 70%～79% ±3% ; ＜70% unspecified.

PR

Displaying range: 0～254bpm
Measuring range: 30～235bpm
Measuring accurate: 30～100 ±2bpm ; 101~235bpm ±2%.

5.2 Operating conditions

Operating temperature: 5℃～40℃
Relative humidity: ≤80%
Atmosphere pressure: 86kPa～106kPa
Power supply: DC 1.5V
Battery: One AAA alkaline battery.
Continuous measurement time: Twelve hours

5.3 Package & Storage conditions

Operating temperature: -20℃～50℃
Relative humidity: ≤93%

5.4 weight & Dimensions

Weight: 26g
Dimensions: 60mmX50mmX20mm （length×width×height）

5.5 Automatic storage

Total storage time: 30 h
Frequency: the interval between two records is 1 s.
Note: Data is saved automatically, when the oximeter is started. If the register of the oximeter is full, the newest data will replace the oldest data.

5.6 Data transmission

Transmission method: Cable transmission
Data Cable Interface: USB
Note: Connect the oximeter with the computer by the data cable, then you can transmit data saved in the oximeter to the computer through the transmission software, refers to the transmission software's manual.

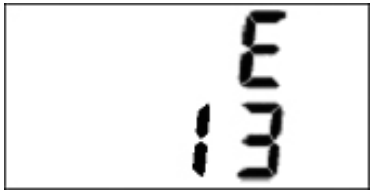
5.7 Indication function

- Battery power indication: When the power less than 1.2V. The low remaining power indication light will be lighted; when the remaining power less than 1.1V, the unit will power off itself automatically.
- Probe off indication: when the probe is not connected to the unit, the following indication picture will appear. Refer to Pic12.
- No finger indication: when the probe is connect to the unit but the finger is out, the following indication picture will appear. Refer to Pic13.

● Error 1 indication. Refer to picture 24.Error 2 indication. Refer to picture 25. Error 13 indication. Refer to picture 26.

Pic.24

Pic.25



Pic.26

6. Error code

In measuring mode, press the right button, the error code of the happened malfunction will be displayed. Refer to the following table.

Error code	Malfunction phenomenon
E1	Malfunction of SpO2 mode, can not measure usually.
E2	Failure to store or read data, but can enter into normal state.
E13	Low battery voltage

Note: Please DO NOT repair or disassemble the unit, when the error code appear. Please connect to our service department in time.

7. Key symbols

Symbol	Meaning	Symbol	Meaning
	Type BF applied part.	ID	OK button / Parameter selection button
	Warnings!		Power / Data setting button
PR	Pulse rate	**SpO_2**	Hemoglobin saturation
	Low battery voltage	**SN**	Serial number
IPX1	Protected against dripping water		

8. Maintenance and storage

(1). Remove the battery if you not to use it for long time.

(2). Clean the wrist oximeter separately from its associated sensors.

(3). Clean the wrist oximeter with a soft cloth dampened with isopropyl alcohol. Do not pour or spray any liquids onto the wrist oximeter, and do not allow any liquid to enter any openings in the device. Allow the wrist oximeter to dry thoroughly before reusing.

(4).Store the wrist oximeter within the stated environmental specifications. See “Specifications” for additional information.

9. Warranty and Repair

9.1Service Method

a）Service respond time: 9:00am～17:30pm, Monday to Friday

b）Service support: Our company will offer user telephone and e-mail technology support and parts change.

Parts change:

Our company will change parts if it is necessary free of charge in the warranty period.

Because parts are the sources of maintenance, user should send them back to our company if not specified.

c）Update the system software free of charge.

9.2 Exempt and limitation

a) Our company isn't responsible for such damage caused by force majeure. For example: fire, thunder flash, flood, cyclone, hail, earthquake, house collapse, commotion, plane failing and traffic accident, deliberate damage, lack of fuel or water, labor and capital bother, strike and stop-working etc.

b) No-service offer

The corresponding charge and insurance charge of disassembling, refurbishing, repackaging and moving the oximeter or the part of it.

The damage caused by the third company not commended by our company to adjust, install replace the parts of the oximeter.

The damage and failure caused by user or its representative doesn't comply with the operator's manual.

c) The oximeter is installed or connected with such external device without our company permission as printer, computer, data cable and lead to oximeter failure. Our company will charge for the maintenance.

d）Responsibility limitation

During the period of maintenance contract validity, if user changes the parts manufactured by other manufacturers without our company permission, our company is entitled to stop contract.

9.3 User Guarantee

a)Please read user manual carefully before operation.

b)Please operate and make daily maintenance as request of manual and guarantee.

c) Power supply and environment.

9.4 No-guarantee principle

There is no-dispelled smut and not-original mark in the crust.

- There is physical damage on oximeter and its accessory.
- There are liquid leftover and eyewinker on oximeter and lead to short circuit and plug board failure.
- All the probe and accessories belong to consumption and beyond free change range.
- Such damage of probe caused by mechanical force doesn't belong to free change range.
- During measure of SPO2, principle leads to measure value difficult or inaccurate measurement.

- ●Not-original package lead to oximeter during transportation
- ●Not our company professionals or authorized personnel disassemble oximeter and lead to oximeter failure.
- ●Not carefully read manual and so wrong operation lead to oximeter damage and failure.
- ● Any product of any other manufacturer.

9.5 User's Special Request for Guarantee Time

Our guarantee constitution for oximeter complies with electronic product after-sale service standard regulated by national laws. We regulate the guarantee time of host board is one year and all the accessories are six months. If users request the guarantee time beyond our regulated guarantee time, we should take it into consideration.

Return Policy:

Any material to be serviced or returned to our company, the following procedures should be followed:

(1).Obtain return authorization:

(2).Contact the Technical Support Department and obtain a RMA (Return Materials Authorization) number.

(3).The RMA number must appear on the outside of the shipping container.

(4).Return shipments will not be accepted if the RMA number is not clearly visible.

(5).Please provide the model number, serial number (SN), and a brief description of the reason for return.

Freight policy:

(1). Within Warranty: The customer is responsible for freight & insurance charges when the equipment is shipped to our company for service (this includes custom charges). Our company is responsible for the freight & insurance charges from us to the customer.

(2). After Warranty: The customer is responsible for any freight & insurance charges for returned product.

9.6 Repackage

- Take all the accessories and put them into plastic cover
- Try to use original package and packing material: User will be responsible for such damage caused by bad package during transportation.
- Please offer guarantee list and copy of invoice to standby with the period of guarantee.
- Please describe failure phenomenon in detail and altogether offer oximeter.