Kalstein

Peltier System
Model YR0M100

Instruction Manual

Thank you very much for purchasing our Peltier System Model YR0M100.

Please read the “Operating Instructions” and “Warranty” before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the “Warranty” at a hand place for future reference.

Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.

Kalstein®

OUR SERVICES

Benefits and Support

In Kalstein France, we take care of the full satisfaction of our customers, that is why we provide value-added services of the highest level based on our experience.

Online Inductions and Trainings

In any part of the world, receive your induction or training from our specialized team of engineers

Quick Response

Our work team is always available to response all your consults or questions, in order to support you in any situation.

#Letsgivemore

Thanks to your purchase, a donation will be made to a non-profit foundation that fights against breast cancer and helps most vulnerable communities.

Technical Support

Enjoy of personalized advice for the correct preventive and corrective maintenance of your equipment, thanks to Kalstein's manuals and articles, special catalogues and video tutorials.

Delivery Logistics

We take care of all the necessary logistics for the dispatch of your goods, whether is by sea, land or air.

Kalstein Worldwide

With more than 25 years growing with our customers, Kalstein's multiformat and modern content, is now present in more than 10 countries and increasing.

CHAPTER 1 PREFACE

1 Safety

The safety statements in this manual are complied with the requirements of the Health and Safety at Work Act 1974.

Please read this manual before installing and using the device and its accessories. The device should be operated by appropriate technology professionals.

2 General

The device described in this manual is designed to be used by properly trained personnel in a suitable equipped laboratory. For correct and safe use of this device, it is essential that laboratory personnel follow generally accepted security procedures in addition to the required safety precautions in this manual.

The cover on this device may be removed for servicing. However, the inside of the power supply unit is a hazardous part and its cover should not be removed under any circumstances. There are no serviceable components inside this power supply unit. Avoid touching the high voltage power supply at any time.

3 Electrical

Before switching on the device, make sure that the voltage position fit to the local power supply (see CHAPTER 2 INSTALLATION).

The power cord should be inserted in a socket provided with protective earth terminal. The protective action must not be ignored when using an extension cord without a protective conductor.

4 Warning

Any interruption of the protective conductor inside or outside the device or disconnection of the protective earth terminal is likely to make the device dangerous. Intentional interruption is prohibited.

Whenever it is likely that the protection has been impaired, the device should be made inoperative and be secured against any unintended operation.

Note: NEVER touch or handle the power supply on this device due to the high voltage!

The protection is likely to be impaired if the device is in such case as following:

- Show visible damage
- Subject to prolonged storage under unfavorable conditions
- Subject to severe transport stresses

5 Electromagnetic Interference

For compliance with the EMC standards referred to the EC Declaration of Conformity, it is necessary that only shielded cables supplied by us are used when connecting the device to computers and accessories.

CHAPTER 2 INSTALLATION

1 Environment Requirements

To ensure the best performance, following conditions are required:

- ❑ The best working temperature range is 16-30℃ and the humidity is 45-80%.
- ❑ Keep it as far as possible away from the strong magnetic or electrical fields or any electrical device that may generate high-frequency fields.
- ❑ Place the device at a space that is free of dust, corrosive gases and strong vibrations.
- ❑ Remove any obstructions or materials that may hinder the flow of air under and around the device.
- ❑ The requirement of power supply is 220±22V@50±1Hz or 110±11V@60±1Hz。
- ❑ Use the appropriate power cord and plug into a grounded outlet.
- ❑ If the local voltage is not stable enough, a manostat is required.
- ❑ Be away from direct sunlight.

2 Voltage Confirmation

Make sure that the Voltage Switch is set in the right position to fit your local power supply, otherwise severe damage may occur!

The Voltage Switch is at the bottom of the device.

If your local Voltage is 220V, you should set the Voltage Switch at following status (Fig.2-1).

Fig.2-1

If your local Voltage is 110V, you should set the Voltage Switch at following status (Fig.2-2).

Fig.2-2

3 Installation

Step 1: Unpacking

Unpack the carton and ensure the following items are included:

1) YROMT-100 Control Unit, 1pcs; (Fig.2-3)

2) Cell holder with Peltier System, 1pcs*; (It's already pre-loaded into the compartment of the spectrophotometer) (Fig.2-4a, Fig.2-4b)

3) Control Cable (to connect the Control Unit with the Cell holder with Peltier System), 1pcs*; (Fig.2-5)

4) Peristaltic pump pipe, 1pcs*; (It's already pre-loaded into the pump valve of the Control Unit) (Fig.2-6a, Fig.2-6b)

5) Power cord, 1pcs. (Fig.2-7)

Fig.2-3

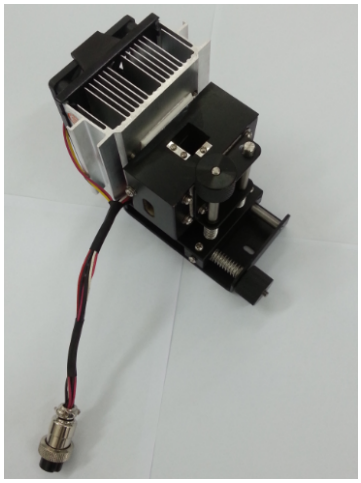

Fig.2-4a

Fig.2-4b

Fig.2-5

Fig.2-6a

Fig.2-6b

Fig.2-7

Note: The item marked with "*" is optional, and it depends on user requirements.

Any damage or lost is found, please contact us or the local dealer.

Step 2: Installation

1. Link the Power cord

First, make sure the power switch of the device is in "Off" condition. Then, link the power cord to the device and insert another end in the socket provided with a protective earth terminal.

2. Link the Control Cable*

If the Cell holder with Peltier System is chosen, link one end of the Control Cable to the device and another end to the spectrophotometer (Fig.2-8a, Fig.2-8b).

Fig.2-8a

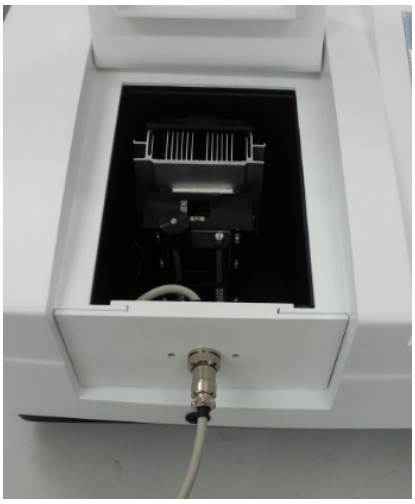

Fig.2-8b

3. Switch on the power

Before switching on the power, make sure that all the links are right. Switch on the power, it is ready to work.

CHAPTER 3 OPERATION

1 Introduction

The panel of Control Unit

There are nine buttons on the panel: Set, Menu, Up, Down, Cancel, Enter, Stop, Start and Inching (Fig.3-1).

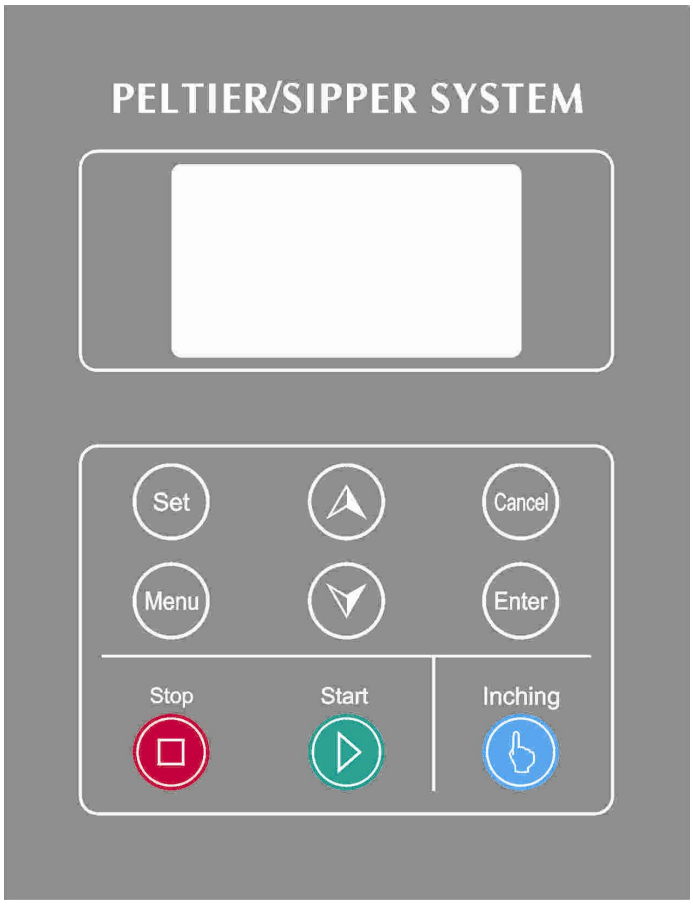

Fig.3-1

Set: Set the parameters such as temperature, sampling time and peristaltic pump speed.

Menu: It contains relevant operation functions.

Up and Down: To select the option or set the value of parameters.

Cancel: Cancel the setting, or return to the previous screen.

Enter: To make sure the setting or choice.

Stop: Stop sample injection.

Start: Start sample injection automatically.

Inching: Sample injection by inching.

The boot interface

After switching on the power, the device shows welcome and enters a default interface (Fig.3-2, Fig.3-3).

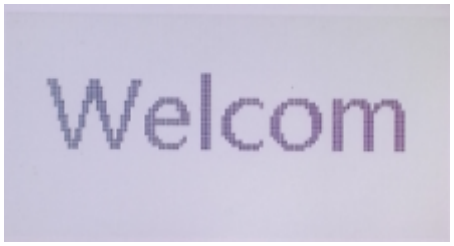

Fig.3-2

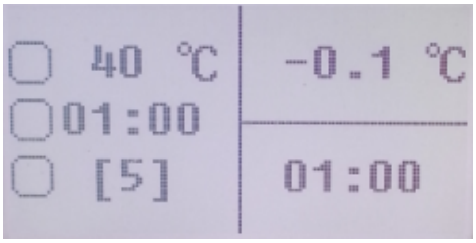

Fig.3-3

If the Cell holder with Peltier System is chosen, and the Control Cable has been linked, the actual temperature will also be shown (Fig.3-4).

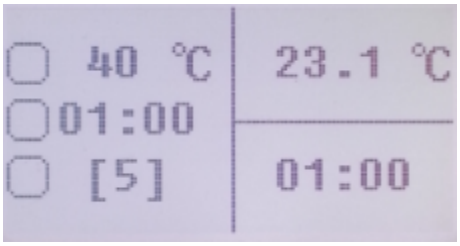

Fig.3-4

About the Menu

Press the button “Menu” to enter the main menu. There are four items to choose: Type, Language, Restore and Version (Fig.3-5).

Fig.3-5

Select “Type” in the main menu and press the button “Enter” to enter the submenu, then, user can choose “All In One (Both Temp and Sample are controlled)”, “Temp” or “Sample” (Fig.3-6).

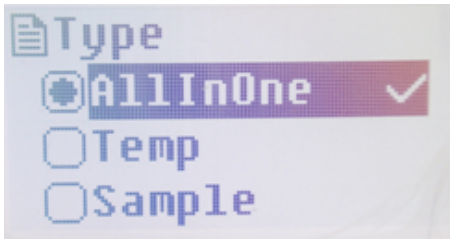

Fig.3-6

Select “Language” in the main menu and press the button “Enter” to enter the submenu, there are two languages to choose, “Simplified Chinese” and “English” (Fig.3-7).

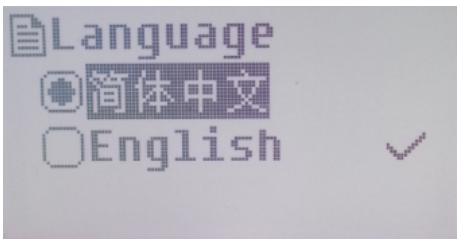

Fig.3-7

Select “Restore” in the main menu and press the button “Enter”, then select “OK” and press “Enter”, user can restore the default parameters (Fig.3-8).

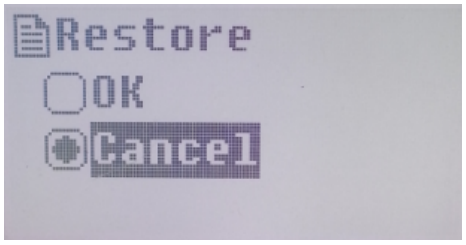

Fig.3-8

Select “Version” in the main menu and press the button “Enter”, user can view the version of software and hardware (Fig.3-9).

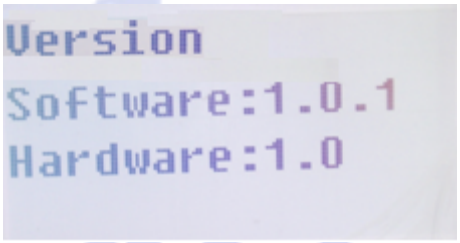

Fig.3-9

2 Operations

Set the parameters.

(Note: The valid peristaltic pump speed range is from 1 to 12, but for now the speed is fixed. This function is being updated.)

Parameters such as temperature, sampling time and peristaltic pump speed which also expressed as sampling speed can be set by following operations.

First, press the button “Set” to choose which parameter to set up. For example, in the default status, press the button “Set” one time to start setting the temperature, press the button twice to start setting sampling time, and press the button “Set” three times to start setting the peristaltic pump speed.

Second, press the button “Up” or “Down” to set the value and press “Enter” to make sure the setting, otherwise, press the button “Cancel” to cancel the setting. The valid temperature range is from 15℃ to 65℃, the valid sampling time range is from 30s to 10min, and the valid peristaltic pump speed range is from 1 to 12. (At present, the pump speed is fixed at only one speed, the sampling speed is about 50ml/min.)

The default parameters are 40℃ as the temperature, 1min as the sampling time and 5 as the peristaltic pump speed.

Implement controls

After the setting of parameters has finished, controls of the device can be implemented once the spectrophotometer warming up.

Temperature controlling: If the Cell holder with Peltier System is chosen, and the Control Cable has been linked, once the device booting, the temperature will be controlled and it will reach the setting value soon.

Sample controlling: If the Peristaltic pump pipe is chosen, it may be pre-loaded into the pump valve of the Control Unit, press the button “Start”, in the setting sampling time, the sample will be automatically pumped into the flow cell in the compartment of spectrophotometer and ready to be tested. User can press the button “Stop” to stop sample injection halfway. The sample also can be injected intermittently by pressing the button “Inching”.

Note: The Peristaltic pump rotates anticlockwise, be sure to distinguish the input and output ports so that the sample will be efficiently pumped into the flow cell.