



# Lifemeta™ Tube Sealer

## Operation Manual



### Attention

Please read this manual carefully before using the product.  
Please keep this manual in a safe place for future reference.

## Safety Warranty

- Please read this manual before unpacking, installing or operating the instrument, especially pay attention to all hazard warnings and precautions.
- This instrument is a product for indoor use. The environment should be as dust-free as possible, without mechanical vibration, avoid direct sunlight or in front of heat sources, choose a well-ventilated place, and do not place the holder on a slope, so as not to affect the sealing effect.
- Before starting the sealing, please check whether the tube on the handheld module is removed to avoid to damage the tube.
- If exposed to toxic organic solvents, the operator must take relevant protective measures during the sealing process.
- Cannot exceed the parameter limit specified by the system.

## Important Information

- Do not use this instrument without fully understanding the contents of this manual.
- If the instrument is lent or sold, please provide this document to the next user.
- If the warning label on this document or the instrument is lost or damaged, please ask for another one from Cobetter in time.
- For your personal safety, please read the safety instructions before using the instrument.

## Statement

- The information in this article is not regarded as a commitment by Hangzhou Cobetter Filtration Equipment Co., Ltd. or its affiliates.

## Copyright

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## 1 Summary

### Product Description and Usage

Lifemeta™ Tube Sealer is a semi-automatic instrument based on electric heating technology, which can be used to sterile seal TPE tubes in non-sterile environments. It can be used for aseptic disconnection of single-use components, aseptic disconnection of medium storage bag and bioreactor, etc.

### Operation Process

- Fix the tube to the handheld module and lock it by the handle;
- Select the sealing method;
- Click the “” icon or quickly press the sealing switch of the handheld module twice, and the operation indicator will light up;
- When the running indicator light goes off, it indicates that the instrument has completed the sealing process. At this time, the operating handle can be opened and the tube can be removed;
- After checking the seal quality, disconnect the tube along the guideline.

### Characteristics

#### Powerful Function

- Lifemeta™ Tube Sealer can seal either dry, wet or liquid-filled tubing in non-classified and classified environment while maintaining product sterility once the assemblies are disconnected.
- The sealing width is up to 20mm, and the cutting guide line is clear and definite.
- Efficient and quick, and the sealing process can be completed in about 3-4 minutes.
- The shortest length of 20 cm liquid-filled tube can be effectively sealed.
- Lifemeta™ Tube Sealer covers TPE tubing of commonly used sizes in the biopharmaceutical industry, and supports the addition of tubing sealing processes of common-used TPE tubing in the market.

#### Safety

- The touching parts of Lifemeta™ Tube Sealer have excellent heat insulation.
- Emergency stop function can effectively stop erroneous operations.
- The instrument detects the temperature automatically in the startup process to prevent touching at high temperature and protect the safety of users.

#### Comfortable Operation

- Lifemeta™ Tube Sealer is equipped with a 7-inch color touch screen to provide comfortable human-computer interaction.
- A variety of sealing methods are preset in Lifemeta™ Tube Sealer, allowing the user to complete the sealing process in a single operation.
- Lifemeta™ Tube Sealer is small and easy to move.

#### Reliable Effect

- Lifemeta™ Tube Sealer has the function of temperature calibration to ensure the reliability of sealing parameters.
- Segmented heating allows more precise temperature control and effectively suppressing temperature overshoot.

#### Controlled Permission

- Lifemeta™ Tube Sealer has authority classification and user management.
- The operation log of the instrument is traceable.

## 2 Installation

### Transport

The product is transported by daily means of transportation. During transportation, it must be protected from strong erosion, rain, and exposure, and must not be transported with corrosive gases and corrosive chemicals.

After receiving the goods, please check whether the equipment and packaging materials show signs of damage during transportation. If there are signs of damage, the person transporting the goods should be notified immediately. After the goods are complete, please contact the installation engineer for installation acceptance.

### Unpacking

Open the package, take out the instrument, and place it on a flat, stable desktop.



#### WARNING

- Store the packaging in a dry area for future use. When the instrument is returned for repair, it must be packed in the original factory packaging for transportation.
- When setting up the instrument, the power cord must be easily plugged in.
- To disconnect the device from the power source, unplug the power cord from the power source.

### Power Requirements

A dedicated power cord is uniformly configured for the Lifemeta™ Tube Sealer.

Single-phase AC 100/240 V (5%-10%), 50/60 Hz, good grounding.

If the voltage is unstable, a stabilized power supply is required.



#### WARNING

##### WARNING

- Please use dedicated power cord.
- Failure to connect to ground and use of non-designated power cords may cause leakage or short circuit.
- Never operate an instrument with an ungrounded power outlet. To disconnect the instrument from the line, unplug the power cord.

##### WARNING

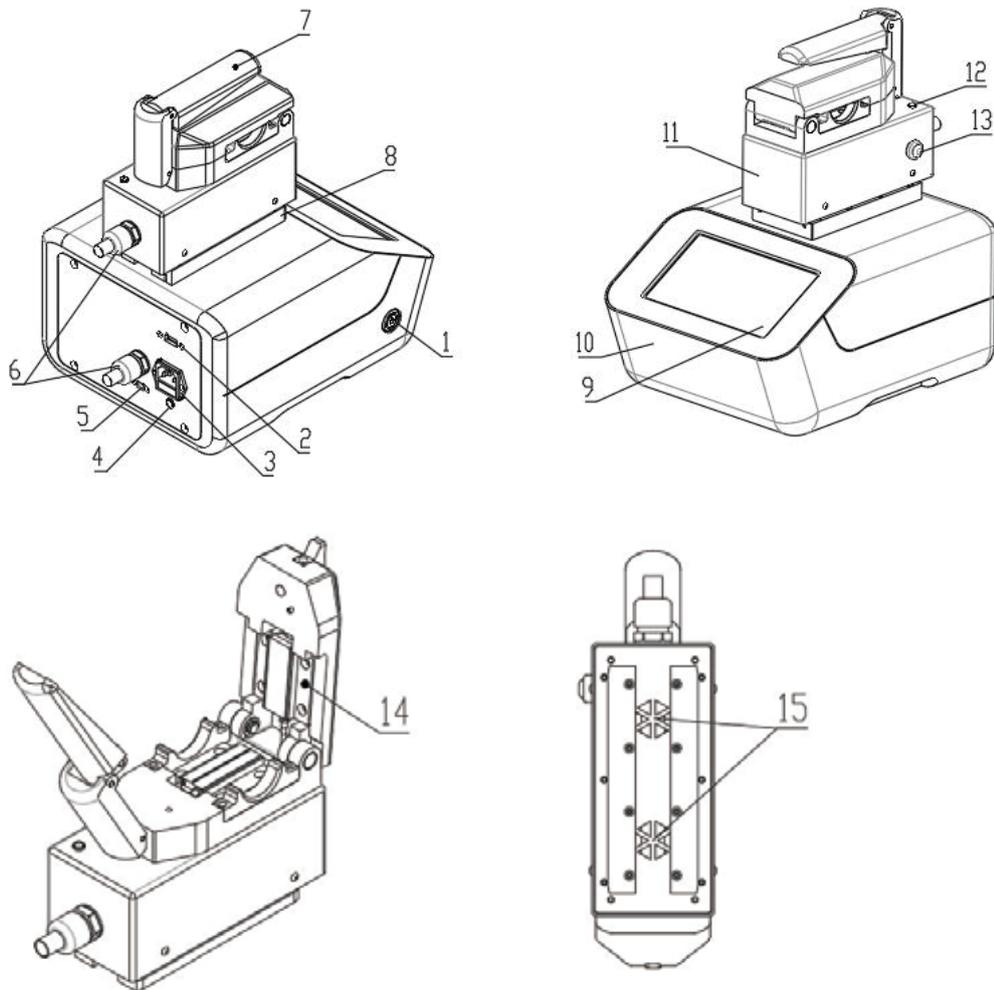
- Please connect the instrument to the specified voltage line.
- If the equipment is connected to a circuit with a higher voltage than the specified voltage, it may cause damage to the instrument.
- If the equipment is connected to a line with a voltage lower than the specified voltage, the instrument may not operate normally.

##### CAUTION

- Please make sure that the power plug is within reach.
- Please ensure that there is enough space behind the power socket of the instrument so that the power connector of the instrument can be accessed and unplugged.
- In an emergency, immediately disconnect the instrument from the line power supply.

### 3 System Survey

#### 3.1 Instrument Layout



■ Figure 3.1 Instrument Layout

- |   |  |     |                     |
|---|--|-----|---------------------|
| 1 | Power Supply   | 9   | Screen              |
| 2 | USB Port   | 10  | Controller          |
| 3 | Power Connection                                       | 11  | Handheld Module     |
| 4 | Reserved Port  | 12  | Operation Indicator |
| 5 | Network Port   | 13  | Sealing Switch      |
| 6 | Connection Port between Controller and Handheld Module | 14  | Heating Module      |
| 7 | Handle   | 15  | Vent                |
| 8 | Installation Slot for Handheld Modules                 | N/A | N/A                 |

## 3.2 Instrument Identification

### Instrument Nameplate

The nameplate is attached to the side of the instrument, as shown in the figure below



■ Figure 3.2 Nameplate diagram

No.	Item	Description	Remark
1	Model	Instrument Model	N/A
2	Power	Power Supply	N/A
3	Weight	Weight	N/A
4	SN	Serial No.	Each instrument has an exclusive serial number.



Cobetter has established an independent file for each instrument. Customers can query related information through the serial number, including the system configuration list, test reports, software version, maintenance record. When the nameplate is accidentally lost or contaminated, please contact to replace it in time.

### 3.3 Technical Parameters

#### Dimension and Weight

Item	Technical Parameters	Remark
<b>Dimension</b>	Length: 305 mm; Width: 220 mm; Height: Controller 160 mm + Handheld Module 150 mm	N/A
<b>Weight</b>	Controller: 3.3kg; Handheld module: 2.5kg	N/A

#### Computer

Item	Technical Parameters	Remark
<b>System</b>	Embedded Control System	N/A
<b>Screen</b>	Type: Touch Screen Size: 7.0 inch Screen Resolution: 1024*600	N/A

#### Power Supply/Environmental

Item	Technical Parameters	Remark
<b>Voltage</b>	100-240Vac 50/60HZ 200W	N/A
<b>Over Temperature Protection</b>	Yes	The upper limit of temperature is 260 °C.
<b>Operating Temperature</b>	5-40°C	N/A
<b>Humidity</b>	35%-80% RH	N/A

## Performance

Item	Technical Parameters			Remark
<b>Adaptable Tubing Sizes</b>	ID1/8"*OD1/4" ID1/4"*OD3/8" ID1/2"*OD3/4"	ID3/16"*OD5/16" ID 1/4" *OD7/16" ID 5/16" *OD1/2"	ID3/16"*OD3/8" ID 3/8" *OD5/8" ID 3/4" *OD 1"	N/A
<b>Sealing Ability</b>	Dry or liquid-filled tubes			N/A
<b>Width of Sealing Position</b>	20 mm			N/A
<b>Guideline</b>	Yes			N/A
<b>Temperature Calibration</b>	Yes			N/A
<b>Sensing Black Latch Function</b>	Yes			N/A
<b>Material</b>	Aluminum, Stainless steel			N/A
<b>Cooling Method</b>	Air cooling			N/A
<b>User Management</b>	Yes, the maximum number of accounts is 100			N/A
<b>Group Management</b>	Users can customize group. Up to 5 groups can be set.			N/A
<b>Log Export</b>	Can be exported through USB port			N/A
<b>Log Capacity</b>	100,000			N/A
<b>Sealing Method Capacity</b>	50			N/A
<b>Language</b>	Chinese and English			N/A

## 4. Instrument Operation

### 4.1 Login



■ Figure 4.1 Login interface

#### First login

User ID: Admin; Password: Admin;

  
**WARNING**  
After logging in for first time, we recommended to change the password.

#### Icon

No.	Icon/character	Description
1	User name	Enter the user name
2	User password	Enter the corresponding password
3		Click on the icon to log in

### 4.2 Navigation bar



#### Title bar

This includes the Run, Edit, User, Log, and Setting buttons.

#### Icon

No.	Icon/character	Description	Remark
1	Run	Enter the running interface	Running sealing method
2	Edit	Editing method	Add, edit, delete methods
3	User	User management	Can manage users and permissions
4	Log	Check instrument logs	Can view and export logs
5	Setting	Enter the settings interface	Can perform temperature calibration and other functional settings

■ Figure4.2 Navigation bar

### 4.3 Run

Click the “Run” icon to enter the Run interface.



■ Figure4.3 Run interface

#### Icon

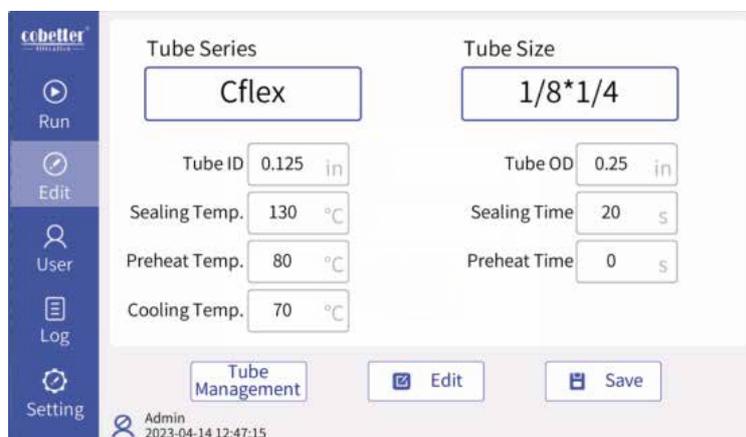
No.	Icon/character	Description	Remark
1	Tube Series	Select tube brand	N/A
2	Tube Size	Select tube size	Unit: inch
3	Tube OD	Display the outer diameter of the tube	N/A
4	Tube ID	Display the inner diameter of the tube	N/A
5	Real-time Temp.	Display real-time temperature during sealing process	N/A
6	Time	Display the running time of the sealing process	N/A
7	Quantities	Display number of runs this time / the total number of runs	N/A
8		Run button	N/A
9		Log out	Enter the login interface
10	Admin	Display current username	N/A
11	2023-03-31 10:39:26	Display system time	N/A
12		Running status bar	N/A

#### WARNING

During the sealing process, it is prohibited to open the operating handle in advance.

## 4.4 Edit

Click the “Edit” icon to enter the Edit interface.



■ Figure 4.4-1 Edit interface

### Icon

No.	Icon/character	Description	Remark
1	Tube Series	Select tube brand	N/A
2	Tube Size	Select tube size	N/A
3	Tube ID	Set the inner diameter of the tube	N/A
4	Tube OD	Set the outer diameter of the tube	N/A
5	Sealing Temp.	Set the value of sealing temp.	N/A
6	Sealing Time	Set the value of sealing time	N/A
7	Preheat Temp.	Set the value of preheat temp.	During the sealing process, the instrument will quickly heat up to this temperature.
8	Preheat Time	Set the value of preheat time	During the sealing process, the instrument will maintain the preheat temp. during the preheat time.
9	Cooling Temp.	Set the value of cooling temp.	N/A
10		Manage tube series and size	Click the icon to enter the Tube Management interface
11		Click the icon to edit the sealing method	N/A
12		Click the icon to save the sealing method	N/A

## Tube Management



■ Figure 4.4-2 Tube Management interface

## Icon

No.	Icon/character	Description	Remark
1	Tube Series	Select the tube series to be deleted	N/A
2	Tube Size	Select the tube size to be deleted	Unit: inch
3		Add tube series	N/A
4		Delete tube series	When deleting the selected series, all sizes attached to the series will be synchronously deleted
5		Add tube size	N/A
6		Delete tube size	N/A
7	Back	Return to the Edit interface	N/A

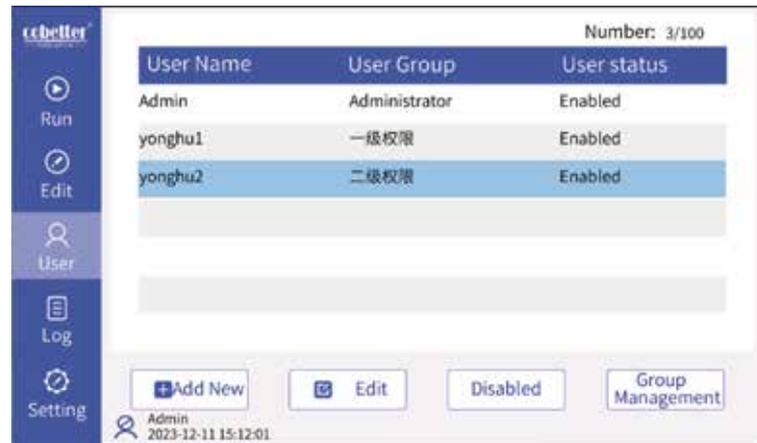
**Attention**

The preset method cannot be modified or deleted.

## 4.5 User

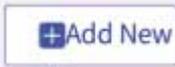
Click the “User” icon to enter the User interface. In the User interface, users can add, edit user information, enable/disable users, and manage group.

Click the the user list and select a user to view and edit information.



■ Figure 4.5-1 User interface

### Icon

No.	Icon/character	Description	Remark
1	User Name	List of user names	N/A
2	User Group	List of user groups	N/A
3		Add user	N/A
4		Edit password and user group	Edit password and user group
5	Enabled/Disabled	Enable or disable selected users	N/A
6		Manage user groups	N/A

## Add and Edit Users



■ Figure 4.5-2 Add and Edit User interface

## Icon

No.	Icon/character	Description	Remark
1	 test	Enter user name	After modification, you need to click the save icon to take effect
2	 *****	Enter Password	After modification, you need to click the save icon to take effect
3	 Back	Return to the User interface	N/A
4	 Save	Save the changes	N/A
5	User Group	Select the user group of the current user	After modification, you need to click the save icon to take effect
6	Licensed Content	Displays the licensed content of the selected user group	N/A

Group Management



■ Figure 4.5-3 Group Management interface

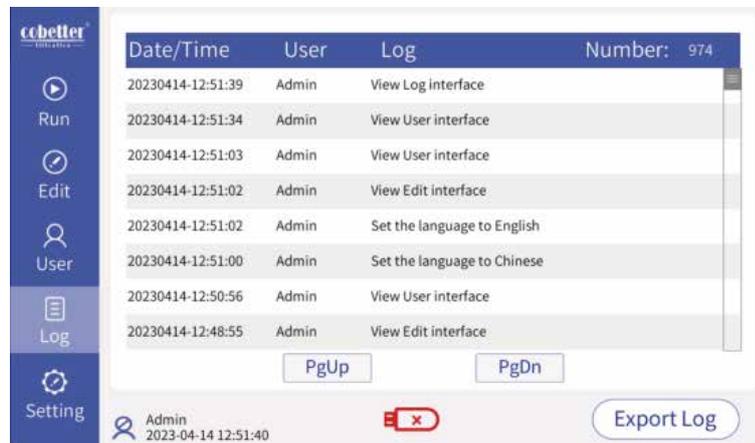
Icon

No.	Icon/character	Description	Remark
1	Group Name	Select the group name to be edit or deleted	N/A
2	Run Method	Allows the user to seal	N/A
3	Add Method	Allow users to add tube series and size	N/A
4	Edit Method	Allows users to edit method	N/A
5	Delete Method	Allow users to delete tube series and size	N/A
6	Browse Log	Allow users to browse log	N/A
7	Export Log	Allow users to export log	N/A
8	Delete Log	Allow users to delete log	N/A
9	User Management	Allow users to manage user	N/A
10	Setting	Allows users to change system Settings	N/A
11		Add user group	The max number of user groups is 5
12		Edit user group	N/A
13		Delete user group	N/A
14		Save the changes	N/A

**Caution** Administrator cannot be edited or deleted.

## 4.6 Log

Click "Log" icon to enter the Log interface. In the Log interface, users can browse, export, and delete log.



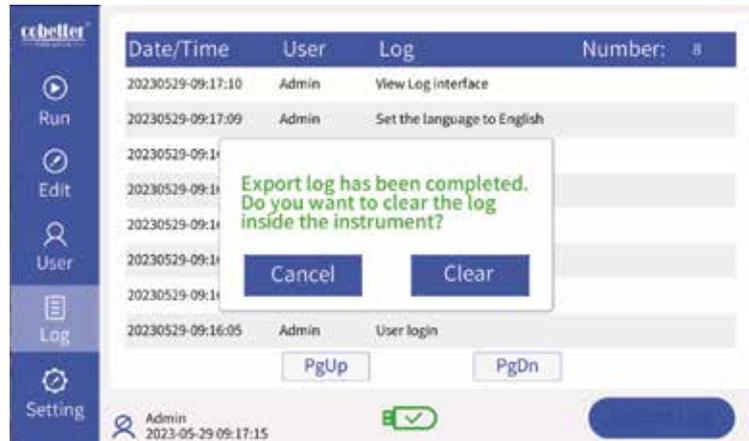
■ Figure4.6-1 Log interface

### Icon

No.	Icon/character	Description	Remark
1	Date/Time	Display the time when the log was generated	N/A
2	User	Display the user name when the log was generated	N/A
3	Log	Record log content	N/A
4	Number	Display the total number of logs	N/A
5		Page up	The max number of single page displays for logs is 100
6		Page down	The max number of single page displays for logs is 100
7		Insert USB drive and export logs	N/A
8		USB drive icon	When the USB drive is inserted, the icon changes to green

## Export Log

After inserting the USB drive, users can export all logs by clicking the "Export Logs" button on the interface. The maximum storage capacity for logs is 100000. Please choose whether to clear the logs based on the storage capacity.



■ Figure 4.6-2 Delete Log interface

 **Caution**

1. Users can only delete logs when they have the "Delete Log" permission.
2. Unable to recover deleted logs, please use this feature with caution!
3. The exported file is in CSV format and encrypted. It needs to be converted to PDF using Cobalt software for viewing.

## 4.7 Setting

Click the “Setting” icon to enter the Setting interface.

Users can complete operations such as selecting system language, performing temperature calibration, enabling/disabling prompt sounds, and modifying time on this interface.

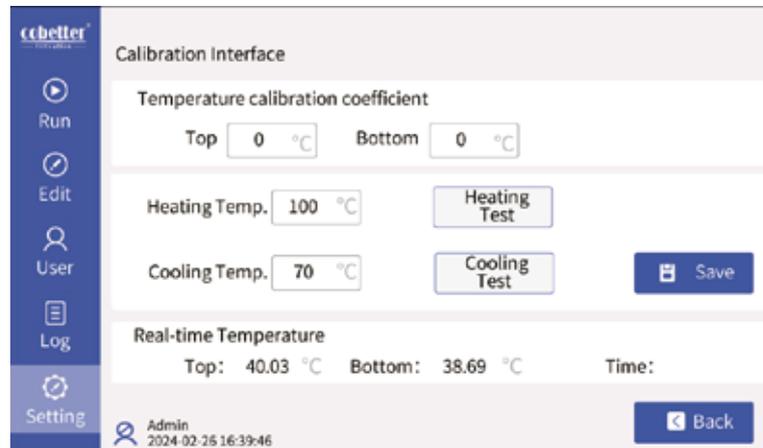


■ Figure4.7-1 Setting interface

### Icon

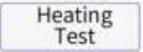
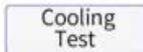
No.	Icon/character	Description	Remark
1		Set the system language	The instrument language can be set to Chinese or English
2		Perform temperature calibration	N/A
3		Enable/disable sealing prompt sound	N/A
4		Set system time	N/A

## Calibration



■ Figure 4.7-2 Calibration interface

## Icon

No.	Icon/character	Description	Remark
1	Temp. calibration coefficient Top	Calibration coefficient of top heating module	Unit: °C
2	Temp. calibration coefficient Bottom	Calibration coefficient of bottom heating module	Unit: °C
3	Heating Temp.	Set heating temperature	Unit: °C
4	Cooling Temp.	Set cooling temperature	Unit: °C
5		After clicking the button, the instrument starts heating up	N/A
6		After clicking the button, the instrument begins to cool down	N/A
7		Save parameters	Save temperature calibration coefficient
8	Real-time Temp. Top	Real time temperature of top heating module	N/A
9	Real-time Temp. Bottom	Real time temperature of bottom heating module	N/A
10	Time	Temperature calibration time	N/A
11		Return to the Setting interface	N/A

## 5 Maintenance

### 5.1 Instrument Cleaning

To ensure the normal operation and use of the instrument, it is recommended to regularly clean the instrument.

- The surface of the controller can be wiped with a non-woven cloth soaked in 75% ethanol.
- The outer surface of the handheld module can be wiped with a non-woven cloth soaked in 75% ethanol. The heating module can be cleaned with a dust-free cotton swab, and if necessary, 75% ethanol can be used.
- If there is a liquid leak during the sealing process, it can be wiped with a dry non-woven cloth.



- When cleaning this instrument, the power supply must be cut off.
- It is strictly prohibited to clean the surface of this instrument with corrosive cleaning agents. If you have any questions, please consult Cobetter.

## 5.2 Error Message

No.	Icon/character	Possible Causes	Action
1	<p>Please close the black latch and clamp the tube.</p> 	<ul style="list-style-type: none"> <li>The black latch is not tightly closed</li> <li>Poor contact of sensing points</li> </ul>	<ul style="list-style-type: none"> <li>After opening black latch, close it again</li> <li>Contact Cobetter for equipment maintenance or replacement</li> </ul>
2	<p>Please press Export Log after inserting a USB flash drive.</p> 	<ul style="list-style-type: none"> <li>USB drive not inserted</li> <li>Poor contact of USB port</li> </ul>	<ul style="list-style-type: none"> <li>Please insert the USB drive again</li> <li>Contact Cobetter for equipment maintenance or replacement</li> </ul>
3	<p>Insufficient storage space. Please contact the administrator to export the log and clear it.</p> 	<p>The available storage capacity is less than 30% of the total capacity</p>	<p>Call the administrator for log deletion</p>
4	<p>Heating abnormal of heating module 1 and 2.</p> 	<p>The difference between real-time temperature and set temperature is too large</p>	<p>Contact Cobetter for equipment maintenance or replacement</p>
5	<p>Irregular patterns and cracks appear in the sealing position</p>	<p>The temperature of the sealing method is too high or the sealing time is too long</p>	<p>Contact Cobetter for method optimization</p>
6	<p>Under natural placement or 1 bar working pressure, the sealing position is reopened</p>	<p>The temperature of the sealing method is too low or the sealing time is too short</p>	<p>Contact Cobetter for method optimization</p>

**WARNING**

- During the warranty period, customers are strictly prohibited from opening the instrument casing for self inspection without the permission of Cobetter. If you need to open the instrument casing for inspection, please contact Cobetter in a timely manner.
- Users are strictly prohibited from inspecting or replacing components without permission, and only Cobetter or agency is allowed to inspect or provide components.



# Collaboration Makes a Better Future



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