



Automatic Blood Culture System LMBCS-A100

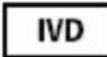
Index

Sr.no	Title	Page no
1.	Safety Measures	2
2.	Introduction	4
3.	Features	4
4.	Specifications	4
5.	Applications	4
6.	Installation	5
7.	Operations	8
8.	Maintenance	13
9.	Troubleshooting	15
10.	Accessories	16

1. Safety Measures

Warning: To ensure normal operation and accurate results of the Automated Blood Culture System, the warnings must be strictly followed.

Main Icons

Symbol	Explanation
	For the power switch, "I" means on and "O" means off.
	Warning symbol, indicating caution, danger. In all cases marked with this symbol, it is necessary to consult the accompanying documents to understand the nature of the potential danger and any countermeasures that must be taken.
	Biological hazards symbol, indicating the potential risk of biological hazards.
	In vitro diagnostic application equipment.
	"Fragile items" identification, the instrument is a precision inspection instrument, and shall be handled with care.
	"Up" identification
	"Fear of rain" identification shall be kept dry, so as not to affect the performance of the equipment.
	"No Turning Over" sign, indicating that no turning over is allowed during handling.
	"Stacking Limit" sign, indicating the maximum number of layers that can be stacked in the same shipping package.

Warning: If the user fails to implement a satisfactory maintenance and repair plan, it may cause abnormal failure of the instrument or even endanger personal health.

The **Automated Blood Culture System LMBS-A100** should be used under the conditions specified in this Manual. If the equipment is not used under the method specified, the culture results will be unreliable, parts of the System may be damaged, and personal safety may be compromised.

Warning and safety tips: In vitro diagnostic application equipment. For in vitro diagnosis, before use, read the following contents carefully and strictly abide by them.

Warning: Read the following precautions carefully before using the **Automated Blood Culture System LMBS-A100**

- 1) If any smoke, special smell, or sound appears during use, cut off the power supply immediately and unplug the power plug from the power socket.

- 2) Blood, reagents, and metal materials should be avoided from entering the instrument, which may cause a short circuit or fire. In case of any abnormality, immediately cut off the power supply and pull out the power plug from the power socket. The operator should not contact the electronic circuit in the instrument; when the hands are wet, it is more likely to cause an electric shock.
- 3) When repairing and inspecting the instrument, rubber gloves must be worn, and the specified tools and parts must be used. Wash your hands with disinfectant after use.

Avoid the risk of infection

- 1) The specimens should be handled with great care by wearing rubber gloves, otherwise, they may cause infection. If any specimen enters an eye or wounds, rinse immediately with plenty of water and seek medical attention.
- 2) The Blood Enrichment Culture Bottles may be contaminated and potentially biologically infectious. Therefore, the operator should avoid body contact with the bottle position.
- 3) Gloves are strongly recommended when handling the waste. Wash hands thoroughly after maintenance.
- 4) The waste liquids, instrument consumables, and other materials shall be properly disposed of by the local regulations, and special attention shall be paid to microbial infection during operation.

Use and processing of reagents

- 1) Direct contact with reagents should be avoided as reagents may cause inflammation to eyes, skin and mucous membranes.
- 2) If you come into contact with the reagent, wash your skin thoroughly with water immediately.
- 3) If there are any reagent splashes in your eyes, immediately wash thoroughly with water and consult a doctor.
- 4) If you have accidentally swallowed the reagent, consult a doctor immediately.
- 5) Do not inject or take the supporting reagents.
- 6) Follow the instructions marked on the reagent. Do not use expired reagents.
- 7) Do not leak the reagent out. Otherwise, wipe clean with a piece of wet cloth and disinfect.

Power supply voltage, wiring, and grounding

- 1) A good power supply and grounding environment can ensure the normal operation and stability of the instrument.
- 2) Do not plug the power plug into a power socket with a non-rated voltage. Otherwise, it may cause a fire or an electric shock.
- 3) When installing the instrument, the power cord and power adapter provided with the instrument together must be used, and the instrument shall be properly grounded, otherwise, it may cause fire or electric shock.
- 4) The insulation protective covering of the power cord shall not be damaged, and the power cord shall not be pulled violently or hung with any object, otherwise, it may lead to a short circuit or open circuit, thus causing fire or electric shock.
- 5) When connecting any peripheral, be sure to cut off the power first, otherwise, it may lead to an electric shock or failure.

2. Introduction

Automatic Blood Culture System LMBCS-A100 supports bottle capacities ranging from 50 to 240. It delivers high-performance blood culture analysis with barcode reading for automatic specimen information input. Integrated with constant temperature culture monitoring every 10 minutes. Visible light indicators help to reduce errors in bottle placement. Our Blood Culture System features triple alarm system that indicates positive results through sound, light, and color notifications.

3. Features

- Space-saving touchscreen design
- Independent heating control
- Multi-instrument cascade support
- User-friendly graphical interface
- Clinical data export function
- Ergonomic user design
- Automated Calibration and QC

4. Specifications

Model No.	LMBCS-A100
Number Of Specimen Positions	50 to 240
Culture Temperature	35 °C ±1.5 °C
Ambient Temperature	10°C to 30°C
Relative Humidity	RH ≤ 85%
Atmospheric Pressure	86 to 106 kPa
Safety Features	Automated power-off in case of overloading or short circuit
Power Supply	AC 220V 50Hz
Packaging Dimension (W × D × H)	840 × 916 × 1316 mm
Weight	255 kg

5. Applications

Automatic Blood Culture System are employed for rapid detection and identification of pathogens in blood samples. It supports clinical laboratories in diagnosing infections, monitoring treatment efficacy, and improving patient outcomes.

6. Installation

The Automated Blood Culture System shall be installed by or under the guidance of your professional technicians.

6.1 Unpacking and Inspection

Open the packing box of the Automated Blood Culture System and carefully take out the instrument and accessories from the box. The packing list is attached to the packing box of the Automated Blood Culture System. After unpacking, the instrument and all accessories should be carefully checked to ensure that the items necessary for startup are complete.

6.2 Precautions Before Installation

6.2.1 Installation environment

- 1) It is intended for indoor use and shall be kept away from direct sunlight.
- 2) There should be no large amount of dust.
- 3) There should be no strong electromagnetic radiation.
- 4) The ground should be flat and firm, and the bearing capacity of the ground should meet the building requirements.
- 5) There should be no less than 20cm space between the wall and the instrument, to ensure that the air flow of the instrument fan is not blocked, and to maintain the space and ventilation required for effective maintenance.
- 6) The left and right distances shall be 15cm at least, and the top distance shall be 25cm at least.
- 7) The room temperature shall be 10°C~30°C, and the humidity shall be RH≤85%.
- 8) The instrument shall be placed on a horizontal stable support or table with sufficient space and a load-bearing capacity of 50kg greater than the instrument's weight.
- 9) The USB interface on the instrument can be used to insert the keyboard or mouse, and is not allowed to be used for other purposes or to power other devices.
- 10) The instrument is provided with a cascading interface, which can be connected with other devices with the same interface. It is not allowed to connect to unrelated devices without permission.

Cautions

- 1) Read this Manual carefully and operate according to the requirements.
- 2) The equipment should be placed in a way that meets the above requirements, to ensure that the operator can easily and timely disconnect the power supply of the equipment to ensure safety in case of an emergency endangering the safety.
- 3) If the device is transported or stored under humid conditions, it may not meet all safety requirements. The device should be left in a dry place for at least 1 hour to restore it to normal condition before use.

6.2.2 Power supply and grounding requirements

The rated voltage and input power of the instrument must be in accordance with the requirements of 3.1. A regulated power supply shall be provided between the power supply and the system. The capacity of the fuse is indicated on the rear panel. The replacement should meet the requirements. The power cord should be installed in a safe and reliable way.

Cautions:

- 1) Before this step, read this manual carefully and follow the requirements.
- 2) Connect the power cord to a power outlet that is correctly connected and properly grounded.
- 3) Disconnect the connected power cord or other wire before opening the device housing unless otherwise stated.
- 4) Do not plug or unplug any cable, or install or maintain the product during lightning.
- 5) Pay attention to keep the socket within the load capacity to prevent fire.
- 6) The instrument should be equipped with protective grounding. The grounding wire of the three-core power cord must be effectively and directly grounded, and the grounding resistance should be less than 0.1 ohm, to avoid accidents.

6.2.3 Installation steps

- 1) Take out the instrument carefully.
- 2) Open the door of the instrument, take out the internal fasteners used for transportation in the instrument, and make sure that no irrelevant items are left in the instrument.
- 3) Install the all-in-one machine on the swing arm as required. Connect the computer host and monitor as required.
- 4) Insert the other end of the data cable provided on the instrument into the RS232 COM1 port (which is near the power port) of the all-in-one machine to connect the computer host and the instrument.
- 5) The data cable is a bifurcation cable with three lines in total, and the convergence end is connected to the data line interface of the mainframe. One of the three lines is connected to the serial port of the computer host, and the other two are connected to the corresponding interface of the data acquisition card of the computer host.
- 6) Connect the protective grounding wire and connect the power cord. Then start the system enters an automated operation state.
- 7) Turn on the computer (which is located on the computer host, while the computer switch is located at the back of the instrument), double click on the screen to enter the blood culture control program. The system starts to enter the monitoring state.
- 8) A modular management mode is adopted. If you want to use it online, you need to connect it with a male straight-through connector with DB9 ports at both ends. Users must not connect privately to prevent the unrecoverable failure of the device.

6.3 Transportation and storage environment requirements

The Automated Blood Culture System is a precision testing instrument, so care should be taken during transportation and storage to avoid it from being damaged. The words and marks such as "Fragile", "Up", and "Keep dry" should be marked on the outer packing box. During transportation of the product from the factory to the designated place, the transportation department or unit must prevent strong impact, rain, and sun exposure. The instrument shall be transported and stored in the following environment:

- 1) **Ambient temperature:** -20°C~55°C
- 2) **Relative humidity:** RH≤95%
- 3) **Atmospheric pressure:** 50.0kPa-106.0kPa

6.4 Instructions on Electromagnetic Compatibility Requirements

The equipment is designed and tested by Class A equipment. This device may cause radio interference in the household environment, so protective measures shall be taken. The equipment complies with the emission and immunity requirements specified. The user shall ensure that the electromagnetic compatibility environment of the devices that the device can work normally. It is recommended to assess the electromagnetic environment before using the device.

The Automated Blood Culture System is composed of the mainframe, computer, and application software. The mainframe of the detector is composed of the culture rack, driving motor, control circuit, photoelectric detection system, and temperature control system. The system adopts the homogeneous optical enhancement detection technology.

The optical sensor at the bottom of the culture bottle is stimulated by metabolites produced by the bacteria to produce optical changes, and the light intensity increases with the increase in the number of bacteria. The system judges the growth of microorganisms according to the changing trend of light intensity.

Warning: The Automated Blood Culture System is heavy and requires at least two people to move. When lifting the Automated Blood Culture System, be sure to hold the bottom of the instrument tightly to prevent serious damage or man-made damage to the instrument.

7. Operations

7.1 Setting of system parameters

- 1) **Culture time:** The default time is 120 hours in the system. If there is any special requirement, the time parameter displayed on the screen should be modified when the bottles are placed.
- 2) **Culture temperature:** The culture temperature is set constantly at $35.0^{\circ}\text{C} \pm 1.5^{\circ}\text{C}$.
- 3) **Department settings:** Run the instrument control program, click the "System settings" button to pop up the dialog box interface, click the "Department", directly enter the department name, and then press the up and down keys on the keyboard. Run the instrument control program, click the "System settings" button to pop up the login dialog box interface, enter the password, click "OK" to enter the system setting dialog box interface, click "Department", enter the department name in the text box directly, and then click the "Add" button; or, select a department name and click the "Delete" button to delete the selected department.
- 4) **Data:** Run the instrument control program, click the "System settings" button to pop up the dialog interface, click "System reset", and click "Clear all bottle positions". Run the instrument control program, click the "System settings" button to pop up the dialog box interface, click the "Data" button to pop up a dialog box interface, select the time to clear the historical data, click the "Confirm clear" button to clear test data of the specimens; click "Clickable radio button" and click "OK" to allow access to LIS; or, click "Un-clickable radio button" and click "OK" to deny access to LIS.
- 5) **Alarm mode:** Run the instrument control program, click the "System settings" button to pop up a dialog box interface (login dialog interface), enter the password, click "OK" to enter into the system settings dialog box interface, click the "Alarm mode", enter the default time in "Reset the default detection time", and click "OK" to modify it; click the "Select a sound file" in the sound alarm box to select the file. The path and file name of the selected file will be displayed in the blank text box. Click the "OK" button to complete the selection of the sound file.

7.2 Culture operation procedures

- 1) **Sampling:** Blood specimens should be collected and added to the Blood Enrichment Culture Bottles on the Code of Practice for Clinical Microbiology Blood Culture. The Blood Enrichment Culture Bottles adopt a vacuum negative pressure design, which makes it more convenient to collect blood samples from patients. For the amount of blood collected each time, please refer to the operation manual of Blood Enrichment Culture Bottles. After the blood specimen has been collected, half of the barcode (half of the barcode can be torn off and then pasted) should be torn off from the Blood Enrichment Culture Bottles and pasted to the blood culture application.
Note: When tearing and pasting the barcode, please remember to check whether the application form is consistent with information on Blood Enrichment Culture Bottles.
- 2) **Placement of Blood Enrichment Culture Bottles:** Placement of Blood Enrichment Culture Bottles by code reader: When you open the door of the instrument and click the "Bottle placement" button, the instrument will automatically pop up a dialog box. When the barcode on the Blood Enrichment Culture Bottles is read by the code reader, the instrument automatically gives the position number of the Blood Enrichment Culture Bottles to be placed.

When you place the Blood Enrichment Culture Bottles into the instrument according to the given position number, click the "Placement" button (the position number of Blood Enrichment Culture Bottles on the main program interface is shown in yellow at the same time) and close the instrument door, the instrument will resume running automatically.

- 3) **Blood Enrichment Culture Bottles input barcode:** When you open the door of the instrument and click the "Bottle placement" button, the instrument will automatically pop up a dialog box. When the barcode on the Blood Enrichment Culture Bottles is manually entered into the dialog box, the instrument automatically gives the position number of the Blood Enrichment Culture Bottles to be placed. When you place the Blood Enrichment Culture Bottles into the instrument according to the given position number, click the "Placement" button (the position number of Blood Enrichment Culture Bottles on the main program interface is shown in yellow at the same time) and close the instrument door, the instrument will resume running automatically. When an incubator is opened, the corresponding incubator window will automatically pop up. When barcode on the automatically is scanned by the code reader, the Blood Enrichment Culture Bottles is placed on the empty position after scanning (the position number of Blood Enrichment Culture Bottles on the main program interface is shown in yellow at the same time), and the incubator is closed, the instrument will resume running automatically.

Note: When the instrument is running, opening the door for a long time or frequently will easily lead to temperature fluctuations, which should be avoided; Otherwise, the test results may be affected.

- 4) **Entry, query, and statistics of patient information**

Information entry: When you run the instrument control program and click the "View data" button, the "Specimen settings" dialog box interface will pop up. When you click the "Specimen information entry" key to read the barcode with the code reader, the instrument will automatically generate the ID number (which is the same as the barcode number). Then you can fill in the patient information according to the dialog box, and click the "Save" button after completing the filling.

Information query: When you run the instrument control program and click the "View data" button, the "Specimen settings" dialog box interface will pop up. When you click the "Specimen query" button to pop up the query dialog box, and read the barcode with the code reader, the instrument automatically pops up the patient information and test results, and you can view the curve.

Comprehensive statistics: When you run the instrument control program and click the "View data" button, the "Specimen settings" dialog box interface will pop up. You can click the "Comprehensive statistics" button to automatically pop up the statistics dialog box, and then you can conduct statistics by period, department, negative results, and positive results.

Culture: After the Blood Enrichment Culture Bottles is placed into the instrument, the Automated Blood Culture System will operate automatically to culture the Blood Enrichment Culture Bottles. The temperature is maintained at $35.0^{\circ}\text{C} \pm 1.5^{\circ}\text{C}$, and the culture rack swings at a constant speed.

7.3 Detection

The instrument carries out dynamic detection on the Blood Enrichment Culture Bottles in a 10-minute cycle. The optical signal generated by the Blood Enrichment Culture Bottles is transmitted to the computer analysis program of the system via the photoelectric detector and the A/D conversion system. The position numbers with Blood Enrichment Culture Bottles on the main program interface are shown in yellow.

7.4 Alarm

The system analyzes the detection signal and gives a timely alarm when it finds a positive signal. After the alarm, the position number of the Blood Enrichment Culture Bottles on the main program interface will be shown in red. Then the bottle can be taken out and sub-cultured to a petri dish for other analytical experiments. The Blood Enrichment Culture Bottles without microbial growth after 5 days of continuous culture will be reported as negative and alarmed. The position number of the Blood Enrichment Culture Bottles on the main program interface is shown in green. The Blood Enrichment Culture Bottles can be taken out.

Color description for Blood Enrichment Culture Bottles information on the software interface:

- 1) **Yellow:** Detecting bottle position
- 2) **Red:** Positive alarm bottle position
- 3) **Green:** Negative alarm bottle position
- 4) **Dark Blue:** Anonymous bottle position

Hint: All negative bottles should be sub-cultured in time after being taken out, to prevent the instrument from giving a false alarm!

7.5 Taking out the bottle

Code reader: The user can open the instrument door and take out the bottle whose position number is shown in green or red on the main program interface. Then, when you click the "Take out the bottle", the instrument will automatically pop up a dialog box, and you should read the barcode on the label of the Blood Enrichment Culture Bottles, and click "Take out". At the same time, the position number of the Blood Enrichment Culture Bottles on the main program interface will be shown in white, indicating that the Blood Enrichment Culture Bottles have been taken out.

Barcode manually: The user can open the instrument door and take out the bottle whose position number is shown in green or red on the main program interface. Then, when you click the "Take out the bottle", the instrument will automatically pop up a dialog box, and you should manually enter the barcode number on the Blood Enrichment Culture Bottles into the dialog box, and click "Take out". At the same time, the position number of the Blood Enrichment Culture Bottles on the main program interface will be shown in white, indicating that the Blood Enrichment Culture Bottles have been taken out.

Note: To ensure the correctness of the culture results, the operation types of users are limited. Each time the incubator is opened, only one operation can be carried out, such as placing the bottle, taking out the positive bottle, taking out the negative bottle, and handling the bottle under detection. When an operation is carried out, the information of other states will be shielded, and only the information of the bottle position for this operation will be highlighted.

Hint: After taking out all the Blood Enrichment Culture Bottles, close the instrument door in time to avoid insufficient temperature in the instrument!

7.6 Specimen Collection

1) Indications for the collection of blood specimens

In general, one or more of the following physical signs of the patient can be used as an important indication for blood collection:

- Fever($\geq 38^{\circ}\text{C}$) or low temperature ($\leq 36^{\circ}\text{C}$)
- Shivering, Leukocytosis (the count is higher than $10.0 \times 10^9/\text{L}$, especially when the “shift to left” appears)
- Mucocutaneous hemorrhage
- Unconsciousness, Multiple organ failure, Blood pressure reduction
- Elevated C-reactive protein and accelerated breathing
- Granulocytopenia, thrombocytopenia, and so on in patients with blood diseases.

2) Collection part and time

- Blood should generally be collected at the beginning or peak of a patient's fever.
- Patients with suspected bacterial endocarditis, blood cultures should be carried out three times to isolate the pathogen, and blood specimens should be separately taken at least once an hour within 24 hours.
- If the patient has been treated with antimicrobial agents 1 to 2 weeks before culture, two to three blood cultures should be carried out within the next day.
- One specimen should be collected from two to three parts at a time. Specimens should be collected 2 to 3 times within 24 hours.

3) Amount of blood collected

The operation manual of the blood enrichment Blood Enrichment Culture Bottles.

4) Skin disinfection procedures

- Wipe the venipuncture site with 75% alcohol for 30 seconds.
- Wipe with iodine tincture for 30 seconds or wipe with iodophor for 60 seconds.
- Remove iodine with 75% alcohol.
- Puncture to collect blood after the alcohol evaporates and dries.

5) Disinfection Procedures of Blood Enrichment Culture Bottles

- Disinfect the rubber stopper of the Blood Enrichment Culture Bottles with 75% alcohol for 60 seconds.
- Remove any remaining alcohol on the surface of the rubber stopper with sterile gauze or cotton swab.
- Add the specimen to the Blood Enrichment Culture Bottles.

6) Storage and transportation of specimens

- After blood collection, the specimens should be sent to the laboratory for detection immediately.
- If immediate detection is not possible, they can be stored at room temperature or in an incubator ($35^{\circ}\text{C} \sim 37^{\circ}\text{C}$), and shall not be refrigerated. The delayed time for detection should not exceed 20 hours.

7) Receiving criteria

- Visually observe whether there are signs of bacterial growth, such as turbidity, biofilm, lawn, and coagulation. Whether the amount of blood collected is appropriate.
- Check whether the Blood Enrichment Culture Bottles have any leakage, breaking, or obvious contamination.
- Whether the label on the Blood Enrichment Culture Bottles is consistent with the application form, and whether the information of the patient is complete.

8) Disposal of unqualified blood culture specimens

- The Blood Enrichment Culture Bottles will be rejected the Blood Enrichment Culture Bottles are not consistent with the test application form, or the Blood Enrichment Culture Bottles are broken or contaminated.
- The Blood Enrichment Culture Bottles will be supplemented: they have been placed for more than 20 hours after collection, the type of Blood Enrichment Culture Bottles is not properly selected, the Blood Enrichment Culture Bottles are expired, or the amount of blood collected is insufficient, etc

7.7 Results

The blood of an able-bodied person is sterile. Invasion of the bacteria into the blood may cause bacteremia or sepsis, endocarditis, endoarteritis, and early typhoid fever. The brucella patients have bacteremia, and some other infections may also have intermittent bacteremia. The different results of blood culture should be analyzed in combination with the specific situation, rather than simply judging the bacteremia according to the culture results.

1) **Negative results:** It can be understood in two ways

There was no bacteremia.

Failure for detection despite the presence of clinical symptoms due to:

- Local infection
- Specimens of fastidious bacteria, chlamydia, and L-form bacteria
- Inappropriate collection time
- Antibacterial treatment before detection
- Recurrent bacteremia

2) **Positive results**

One-time positive:

Pathogenic bacteria: Brucella, Salmonella, and other bacteremia

Saprophytic bacteria: Propionic acid bacteria, Staphylococcus epidermidis contamination

Multiple positive:

Same bacteria: meningitis, endocarditis, bacteremia

Different bacteria (due to immunosuppression): burns, bacteremia

8. Maintenance

8.1 Maintenance Instructions

- 1) Before this step, read this Manual carefully and operate according to the requirements.
- 2) The operator is recommended to wear special work clothes and gloves during the operation.
- 3) The air filter on the back cover of the instrument should be cleaned every other week.
- 4) The surface of the instrument and the internal parts that are easily contaminated with bacteria should be cleaned and disinfected with 75% alcohol every other week.
- 5) The dust around the instrument should be cleaned every other month, and the foreign objects, such as paper scraps, in the instrument should be removed.
- 6) The detectors in the instrument should be checked every three months for cleanliness. If cleaning is necessary, clean with a dry cotton swab.
- 7) The output voltage of the regulated power supply should be checked every six months to see if it is normal.
- 8) When running each time, the temperature displayed by the software should be visually checked to see if it is normal; the internal heating temperature of the equipment shall be calibrated and checked with a thermometer every six months to ensure effective operation of the system.
- 9) The room temperature should be maintained, the laboratory should be kept dry and clean, the windows should be opened less, and the door should be closed behind you.
- 10) In case of power failure, the power switch of the instrument should be turned off, and the instrument shall be restarted after the power supply is restored.
- 11) In case of any fault alarm that cannot be cleared, the power supply of the instrument should be turned off, and the instrument should be restarted three minutes later. — Check whether the heating device can operate normally once a week to avoid the danger of high temperatures.
- 12) Check whether the power cord connection plug is loose once a week. If any looseness is found, it should be dealt with in time.
- 13) Check the power supply voltage of the network power supply before each operation to ensure the normal power supply of the equipment.
- 14) The device provided with the wireless key and mouse set is powered by triple-A batteries, and the voltage of each battery is 1.5V. The waste batteries should be effectively disposed of according to local environmental protection policies, regulations, and management measures, and must not be discarded at will.
- 15) When replacing the battery, remove the battery cover according to the arrow on the corresponding battery. When installing the battery, attention should be paid to the direction as the side marked with "+" is positive, and the side marked with "-" is negative.

Warnings: Strong acid and alkali cleaning agents or disinfectants should not be used, to avoid damaging the equipment from being damaged. If you have any doubts about the compatibility of disinfectant or cleaning agent with equipment parts or the materials contained in the equipment, you should consult your authorized service personnel.

8.2 Maintenance of the instrument

Biological hazards: During the maintenance of instruments, please wear protective clothing, protective gloves, etc., and follow the maintenance steps in this manual to achieve the best implementation effect. Wash hands thoroughly after maintenance.

Computer viruses

Although software has been checked for computer viruses, certain user environments may be configured to easily expose it to computer viruses through interconnection or a removable storage device.

We advise users to take the measures against computer viruses that are appropriate for their computer operating environment. For users who use antivirus software in the operating environment, the following matters must be noted:

- 1) Check for viruses with the antivirus software regularly.
 - Check for viruses regularly with the antivirus software appropriate for your operating environment.
 - Disable the anti-virus software during the operation of the instrument software, or it will not be conducive to the operation of the instrument.
 - Disable access to check files. Disable the firewall and any other functions that protect or control data transmission.
- 2) Do not install any software other than the antivirus software.
- 3) When using USB storage devices, you must check for viruses before use.
- 4) Do not open any email attachments or files from unknown sources before virus checking.
- 5) Do not download files from the Internet or other sources that are not necessary for instrument operation.
- 6) Always check for viruses before accessing files in folders you share with other computers.
- 7) Check the effectiveness of anti-virus measures on other computer systems in the laboratory and select the most effective one to be used on this instrument.
- 8) When connecting to an external network, the user must assume full responsibility.

Use of other software: Do not install any software other than that preinstalled on the instrument. And do not run any other software on the instrument. However, this restriction does not apply to the installation of antivirus software. It shall be noted that we are not liable for any failures caused by using other software.

Pharmaceutical law stipulates: It is forbidden to refit medical instruments.

9. Troubleshooting

Types	Possible Causes	Solutions
Temperature alarm	The incubator temperature is too low.	Reduce the door opening time.
		Check the laboratory temperature.
	The incubator temperature is too high.	Clean the filter screen.
		Check the laboratory temperature.
The voltage is too high or too low		Check the power supply.
		Restart the machine.
The detection is discontinued for 30 minutes		If the instrument is opened or the power is off for more than 30 mins, all the Blood Enrichment Culture Bottles detected in the instrument culture will be stopped, and it's taken out for subculture inoculation & culture.
Data destruction		Copy the data.
		Take out all Blood Enrichment Culture Bottles for subculture inoculation.
The Blood Enrichment Culture Bottles are wrong	The Blood Enrichment Culture Bottles are not well placed.	Place the Blood Enrichment Culture Bottles well.
	The Blood Enrichment Culture Bottles are taken out at will.	Find the lost Blood Enrichment Culture Bottles.
	The position of the Blood Enrichment Culture Bottles is wrong.	Forcibly terminate the resurrection of the wrong position.
	The bottle position hardware is wrong.	Close the damaged bottle position.
Power error		Check that the power supply is matched.
The instrument is not powered on	The fuse is blown out	Replace fuses.

10. Accessories

Optional Accessories

- Aerobic Antimicrobial Neutralization Culture Bottle
- Pediatric Antimicrobial Neutralization Culture Bottle
- Anaerobic Antimicrobial Neutralization Culture Bottle



Labmate Scientific Inc

Email: info@labmate.com | Website: www.labmate.com