

User Manual

Gel Casting System

T-20

Please read the instructions carefully and keep them properly before using the product for future reference.

CONTENTS

01 Precautions	/ 01
02 Product Description	/ 02
03 Product Parameters	/ 03
04 Product Structure	/ 04
05 Operation Guide	/ 05
5.1 Instrument Startup and Shutdown	/ 05
5.2 Instrument Adaptation	/ 05
5.3 Gel Filling Function	/ 05
5.4 Customized Functions	/ 09
5.5 Automatic Cleaning Function	/ 12
5.6 Maintenance Function	/ 12
06 Fault Analysis and Troubleshooting	/ 13
07 Packing List	/ 14
08 After-sales Service	/ 15
09 Warranty Card & Maintenance Records	/ 16

01 Precautions

Safety precautions

Please observe the following safety measures during all stages of operation, maintenance and repair of this instrument. Violations of safety measures will affect the normal use and service life of the instrument. The company shall not be held responsible for any consequences arising from the user's violation of safety measures.

⚠ Attention

- This product is for indoor use only

1. Keep away from live circuits

It is strictly forbidden for operators to disassemble the instrument or replace components without authorization. If the equipment needs to be repaired, it should be done by professional maintenance personnel with a certificate while the equipment is powered off.

2. Pay attention to the power supply

Before connecting the power supply, ensure that the voltage of the power supply is consistent with the voltage required by the instrument (allowing a deviation of $\pm 10\%$), and ensure that the rated load of the power socket is not less than the requirements of the instrument.

3. Pay attention to the placement of the instrument

The instrument should be placed in a place with low humidity, little dust, and away from water sources, ensuring good indoor ventilation and avoiding interference from corrosive gases or strong magnetic fields.

Do not block the ventilation holes of the instrument. Keep the area within 25cm to the left and right of the instrument clear, avoid direct sunlight, and stay away from heat sources. If the instrument has not been used for a long time, cut off the power supply and cover it with a soft cloth or plastic paper to prevent dust.

⚠ Attention

In the following situations, immediately cut off the power supply of the instrument and contact the supplier or request a maintenance personnel for handling

- Liquid spills into the instrument
- The instrument falls or its casing is damaged
- The instrument is exposed to rain or water
- There are noticeable changes in the functions of the instrument
- The instrument operates abnormally, such as making strange noises or emitting strange odors

Instrument Maintenance

The access for instrument inspection and maintenance is located on the back. When inspecting and maintaining the fluid system, use an M3 knurled screwdriver to remove the screws of the access panel in order, and then take off the access panel.

If there are stains on the surface of the instrument, they can be wiped off with a soft cloth that has been soaked in water and wrung dry.

Warning

- When cleaning the surface of the instrument, the power must be cut off
- It is strictly prohibited to use corrosive cleaning agents on the surface of the instrument

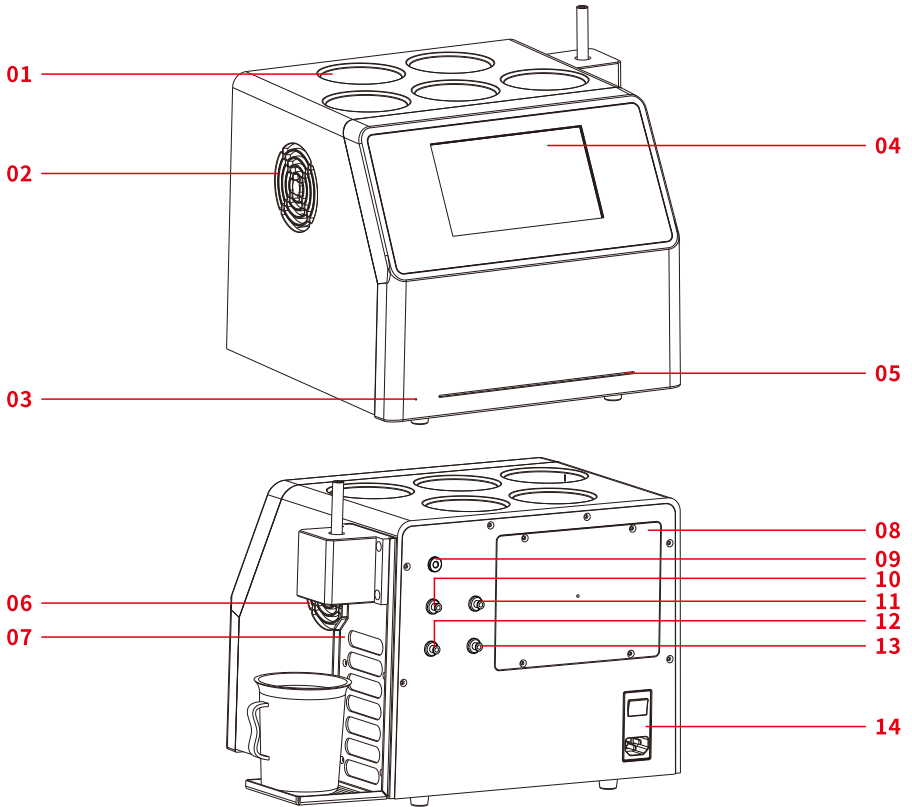
02 Product Description

The T-20 Gel Casting System is characterized by its compact size, convenient storage and access, quick installation, and portability. It is compatible with various glass gel plates such as 0.75mm, 1.0mm, and 1.5mm. This product can be used for rapid gel making and batch gel making in laboratories.

03 Product Parameters

Product Name	Gel Casting System
Cat.No.	T-20
Applications	Production of polyacrylamide gradient gels for Western Blot process
Gel Concentration Range	4% ~ 20%
Gel Specifications	Mini-sized gel, thickness of 0.75mm / 1.0mm / 1.5mm
Gel Electrophoresis time	≤30s per gel
Reagent Bottle Rack	4 × 500mL wide-mouth round-shouldered reagent bottles (3 for reagents, 1 for cleaning) / 1 × waste liquid cup (500mL beaker)
Automatic Cleaning	Supports automatic flushing of mixing lines during gel filling intervals to prevent gelation, and one-button cleaning of lines
Automatic Pre-filling	Supports automatic filling of gel filling lines
Fault Indication	Equipped with fault indication function
Operation Mode	7-inch Chinese color LCD touch screen
Operating Environment Temperature	10°C~40°C
Input Voltage	100~240V AC, 50/60Hz
Rated Power	270W
Dimensions	305×305×270mm
Weight	12Kg

04 Product Structure



- | | | | | | |
|----|------------------------------------|----|--------------------|----|--------------------|
| 01 | Bottled Liquid Placement Area | 02 | Air Inlet | 03 | Buzzer Port |
| 04 | Color LCD Touch Screen | 05 | Indicator Lights | 06 | Air Outlet |
| 07 | Gel Filling and Drainage Component | 08 | Access Panel | 09 | Gel Outlet |
| 10 | Inlet for Liquid A | 11 | Inlet for Liquid B | 12 | Inlet for Liquid C |
| 13 | Washing Solution Inlet | 14 | Power Switch | | |

05 Operation Guide

5.1 Instrument startup and shutdown

Press the startup/shutdown button located at the left rear of the instrument screen. After hearing a "beep" sound, the screen will light up and the indicator light below the instrument will flash, indicating that the instrument is powered on. Press the startup/shutdown button again to turn off the instrument, the screen will go dark and the indicator light below the instrument will go out.

5.2 Instrument adaptation

Before operating the instrument, please insert the aspiration tubes A, B, C and the cleaning solution tube (the cleaning solution is 20% ethanol) into the corresponding reagent bottles respectively. Then place the waste fluid bottle on the waste fluid tray on the right side of the instrument. After completion, turn on the instrument and check the indicator light below it to confirm whether it changes from flashing yellow to solid on.

Note: The screen cannot be clicked when the yellow light is flashing, and it becomes operable when the light is solid on. If the light remains flashing yellow, please restart the instrument or contact maintenance personnel.

5.3 Gel Filling Function

The home interface is shown in Figure 1. Click on "Gel Filling".

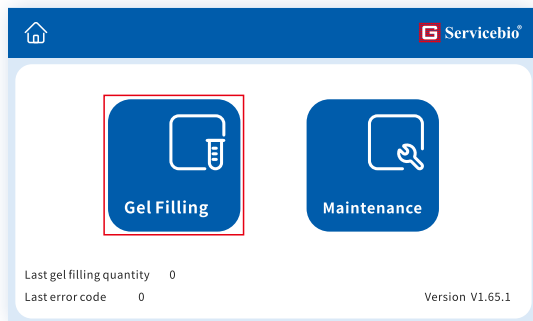


Figure 1 Home Interface

The Gel Filling concentration setting interface will appear as shown in Figure 2. Click to select the desired concentration (the selected concentration is highlighted in dark green), and then click "Next".

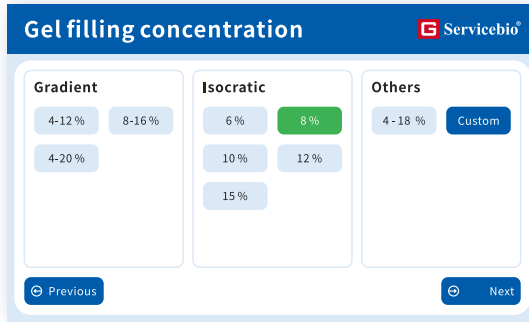


Figure 2 Gel Filling Concentration Settings

The gel plate type setting interface will appear as shown in Figure 3. Click to select the desired gel plate type (the selected type is highlighted in dark green), and then click "Next".

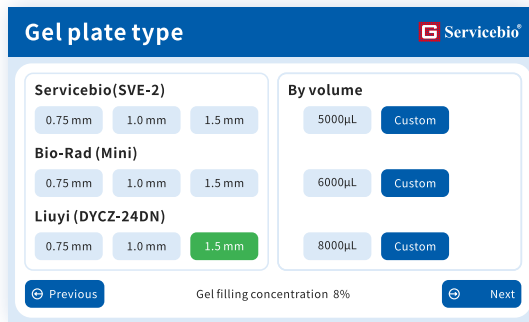


Figure 3 Gel Plate Type Settings

The parameter confirmation interface will appear as shown in Figure 4. After confirming that the parameters are correct, click "Next".

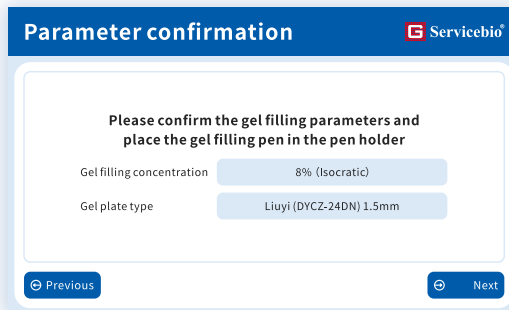


Figure 4 Parameter Confirmation

If the Gel Filling pen is in the pen holder, the prompt interface as shown in Figure 6 will appear directly.

If the Gel Filling pen is not in the pen holder at this time, the prompt interface as shown in Figure 5 will appear.

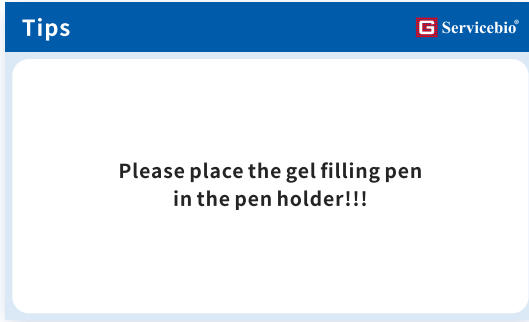


Figure 5 Gel Filling Pen Not in Pen Holder

After placing the Gel Filling pen in the pen holder, the prompt interface as shown in Figure 6 will appear.

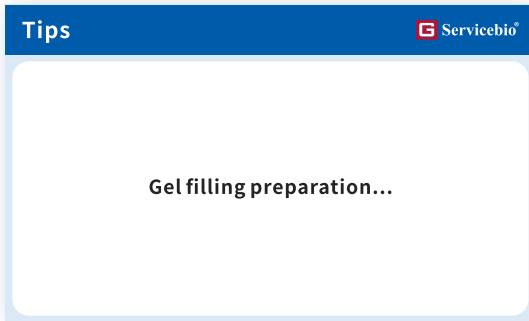


Figure 6 Gel Filling Preparation in Progress

After approximately 2 minutes, the Gel Filling interface as shown in Figure 7 will appear.

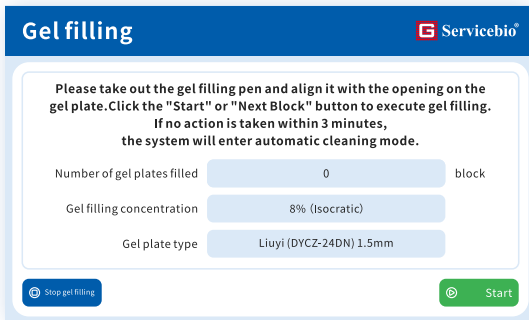


Figure 7 Gel Filling

Click the "Start" button. If the Gel Filling pen is in the pen holder, the prompt interface as shown in Figure 8 will appear.

If the Gel Filling pen is not in the pen holder, the Gel Filling interface as shown in Figure 9 will appear.

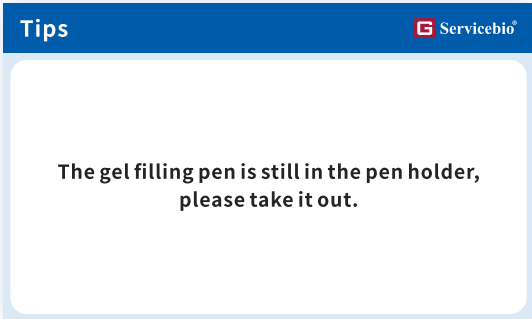


Figure 8 Waiting to Remove the Gel Filling Pen

After removing the Gel Filling pen, it will return to the Gel Filling interface as shown in Figure 7. Click "Start" or "Next Block", and the Gel Filling interface as shown in Figure 9 will appear.

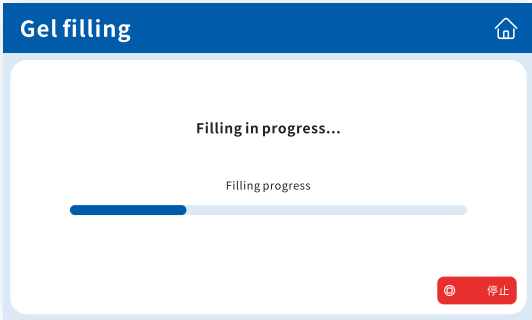


Figure 9 Dispensing Gel in Progress

Upon completion of Gel Filling, it will return to the Gel Filling interface, and the "Number of Gels Dispensed" will increase by 1, as shown in Figure 10.

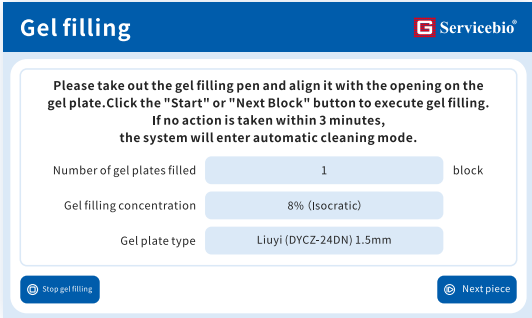


Figure 10 Gel Filling Completed

Click "Next Block" to continue dispensing the gel, and the Gel Filling interface appears as shown in Figure 9. Click "Stop Gel Filling", and the prompt interface appears as shown in Figure 11.

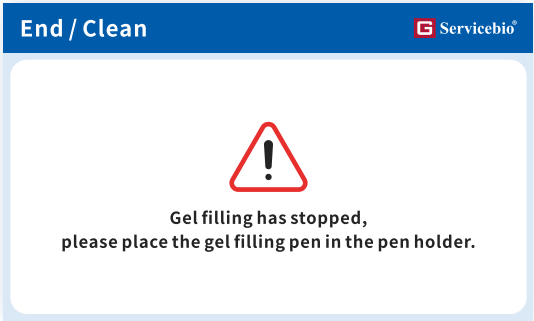


Figure 11 Stop Gel Filling

After placing the Gel Filling pen in the pen holder, it will automatically clean the pen, and a prompt interface will appear as shown in Figure 12.

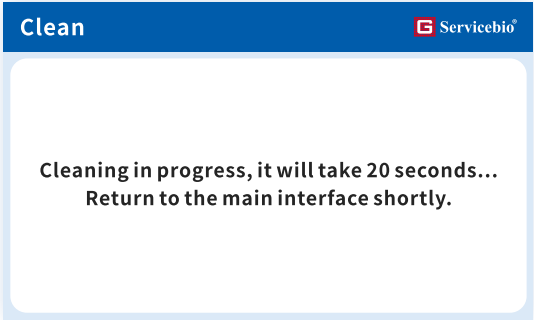


Figure 12 Automatic Cleaning of Gel Filling Pen

Once the cleaning is completed, it will return to the main interface as shown in Figure 1.

5.4 Customized Functions

5.4.1 Customized Concentration

The Gel Filling concentration setting interface is shown in Figure 13. Click "Customize".

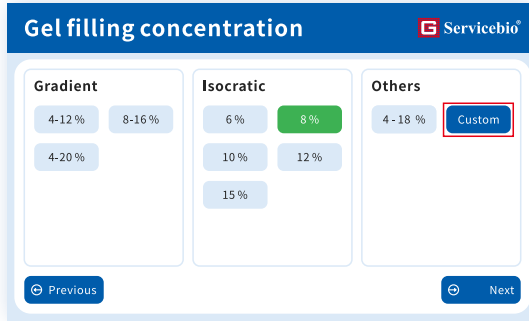


Figure 13 Gel Filling Concentration Settings

The customized concentration interface will appear as shown in Figure 14, where you can define the concentration range. After setting, click "Save".

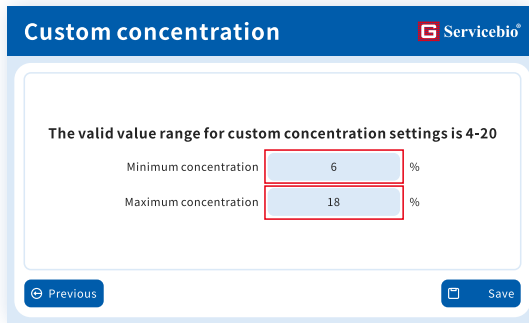


Figure 14 Customized Concentration Settings

After saving, it will return to the Gel Filling concentration setting interface with the customized concentration automatically selected, as shown in Figure 15.

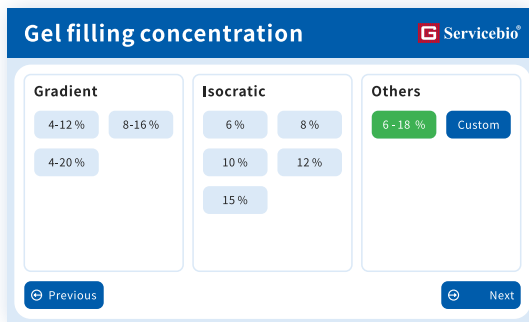


Figure 15 Gel Filling Concentration Settings

5.4.2 Customized Volume

In the Gel Plate Type Setting interface shown in Figure 16, click "Customize".

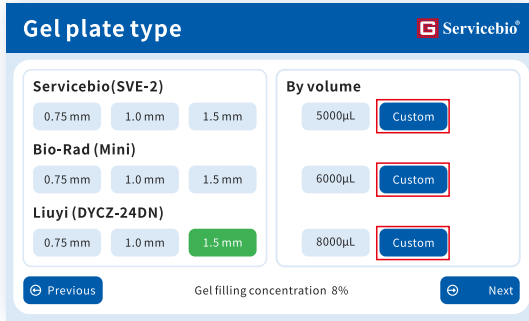


Figure 16 Gel Plate Type Settings

The customized volume setting interface will appear as shown in Figure 17

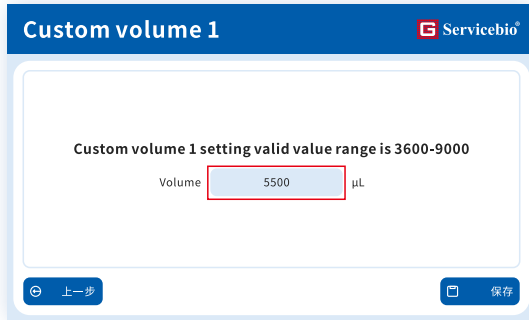


Figure 17 Customized Volume Settings

After making the modifications, click the "Save" button. It will return to the Gel Plate Type Setting interface with the "Custom 1 Volume" automatically selected, as shown in Figure 18.

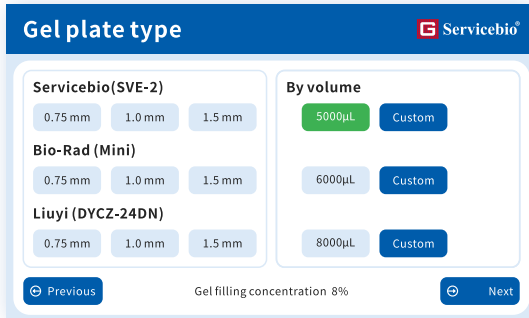


Figure 18 Gel Plate Type Settings

The operations for "Custom 2 Volume" and "Custom 3 Volume" are the same as above.

5.5 Automatic Cleaning Function

If the gel filling pen is not placed on the pen holder for cleaning within 3 minutes following the above procedure, the buzzer will start beeping to alert, and a prompt interface will appear as shown in Figure 11.

5.6 Maintenance Function

Click "Maintenance" on the home page interface as shown in Figure 19.

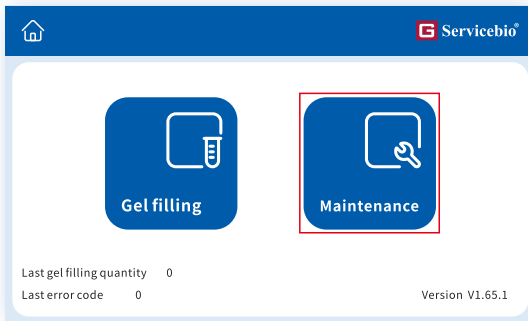


Figure 19 Home Interface

Figure 20 Maintenance Interface

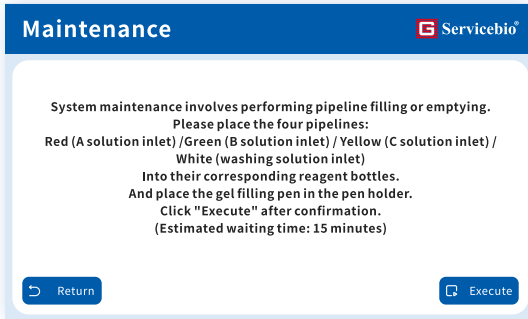


Figure 20 Maintenance interface

Click "Execute". If the gel filling pen is not in the pen holder at this time, a prompt interface will appear as shown in Figure 5.

If the gel filling pen is in the pen holder, a prompt interface will appear as shown in Figure 6.

After placing the gel filling pen in the pen holder, a prompt interface will appear as shown in Figure 21.

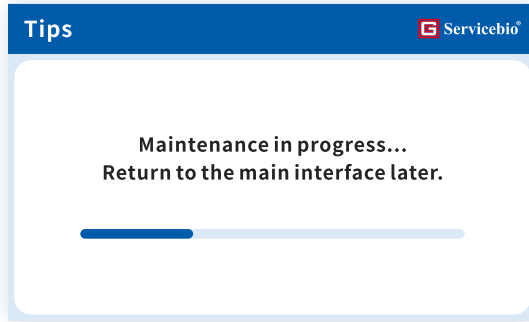


Figure 21 Maintenance in Progress

Upon completion of maintenance, it will return to the home page interface as shown in Figure 1.

06 Fault Analysis and Troubleshooting

No.	Fault	Cause Analysis	Troubleshooting
1	The display screen is not bright after turning on the power	<p>The power is not connected</p> <p>The switch is damaged</p> <p>Others</p>	<p>Check the power and connect it</p> <p>Replace the switch</p> <p>Contact the supplier or manufacturer</p>
2	Gel outlet blockage	Gel liquid solidified at the outlet	Contact the supplier or manufacturer
3	Error code 20 / 21 / 22	Motor self-test abnormality	Restart or contact the supplier or manufacturer

07 Packing List

No.	Name	Qty.
1	Gel Casting System	1 pc
2	Product User Manual	1 pc
3	Warranty Card	1 pc
4	Maintenance Record	1 pc
5	Product Qualification Certificate	1 pc
6	Fluid Circuit Pipe Components	1 set
7	Waste Liquid Cup (250mL/500mL)	1 pc
8	Cleaning Solution Bottle (500mL)	1 pc
9	Touch Pen	1 pc
10	Power Cord	1 pc

08 After-sales Service

Warranty Content

During the warranty period, any damage to the instrument caused by the user's failure to comply with safety measures or force majeure factors is not covered by the warranty. The company will repair or replace the damaged instrument within the scope of the warranty based on the extent of the damage. For damage to the instrument outside the warranty period, the company will charge repair costs.

⚠ Attention

- After opening the box, the contents of the package should be immediately inspected according to the list on the packing list. If any item is damaged or missing, please contact the supplier immediately
- After passing the acceptance inspection, please fill in the relevant information on the product acceptance form and send a copy back (or fax) to the shipping unit for archiving and maintenance purposes
- Please keep the packing box and packaging materials properly after opening the instrument box for future use during maintenance. The company will not be responsible for any damage to the instrument that occurs due to improper packaging during transportation to the maintenance department

Warranty Card

User Name		Tel.	
Cat.No.		Manufacturing No.	

Maintenance Records

Warranty date	Fault and repair log	Date of repair	Maintenance engineer



Wuhan Servicebio Technology Co., Ltd.



027-5111-3188



4006-027-178



www.servicebio.com



5th Floor, 22 Building, Biopark, No. 388 Gaoxin 2nd Road, East Lake High-tech Developing Zone, Wuhan, Hubei China, 430079