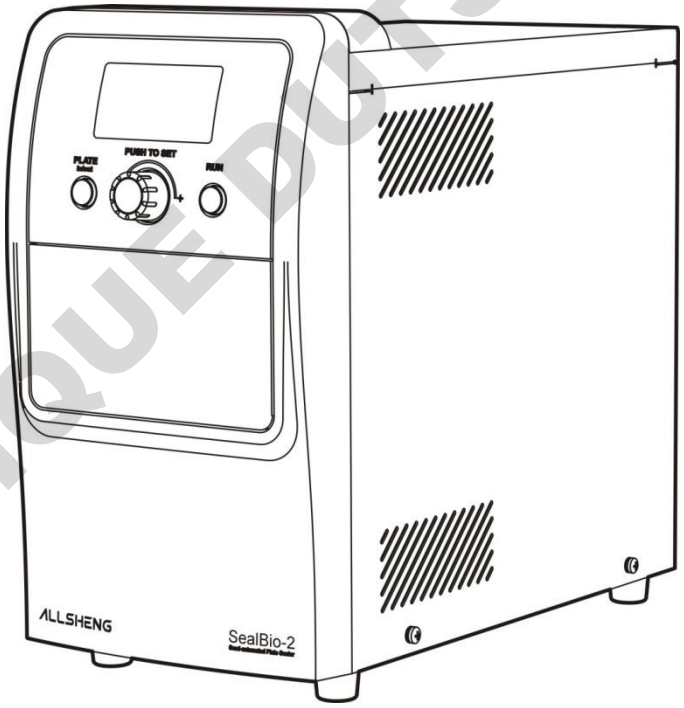
Operation Manual

Version 2.0

SealBio-2

Semi Automated Plate Sealer



ALLSHENG

HANGZOU ALLSHENG INSTRUMENTS CO., LTD.

Foreword

Thank you for purchasing our products: Semi Automated Plate Sealer. This manual for users contains function and operation of the instrument. In order to use the instrument properly, please read this manual carefully before using the instrument.

Opening Check

Please check the instrument and appendix with the packing list when you first open the instrument packing case. If you find there is something wrong with the instrument and the Appendix, do contact the vendor or the producer.

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Safety Warnings and Guidelines

1. Important operation information of the security:

Before the users' operation, they should have a perfect conception of how to use the instrument. Therefore, read this manual carefully before using it.

Operation before reading the manual is forbidden. Or may cause serious burn by heat even caused electric shock hazard during the runtime of instrument. Read the guidelines and directions below and carry out the countermeasure according to them.

2. Security:

The operation, maintenance and repair of the instrument should comply with the basic guidelines and the remarked warning below. If you don't comply with them, it will have effect on the scheduled using life of the instrument and the protection provided.

This product is a normal and an indoor instrument which conforms to Standard GB9706.1 (Class I, B type).

Before using the device, read the manual carefully. This unit is designed for use in laboratory environments. The device must be used by skilled personnel with the appropriate training.

The operator should not open or repair the instrument by himself, which will result in losing the qualification of repair guarantee or cause accident. If there is some wrong with the instrument, the company will repair it.

Before power on, guarantee the voltage used should be accordant to the voltage needed, and the rated load of electrical outlet should not lower than the demand.

If the electric line is damaged, you should replace it with the same type. You should assure there's nothing on the electric line and you should not put the electric line in the ambulatory place.

Insert the plug completely when plug in and pull out the plug directly when need to disconnect, do not simply pull out the power cord.

The heat plate with a high temperature may cause burn accident, any contact with body part is forbidden during the instrument running.

The instrument should be put in the place of low temperature, little dust, no water and no sun or strong lamp. What's more, the place should be good aeration, no corrosively gas or strong disturbing magnetic field, far away from central heating, camp stove and other hot resource. Don't put the instrument in wet and dusty place. The vent on the instrument is designed for aeration. Don't wall up or cover the vent in order to keep from high temperature. If you use more than one instrument the same time, the distance between them should be more than 100cm.

Power off when you finish your work. Pull off the connector plug when there's long time no use of the Instrument and cover it with a cloth or plastic paper to prevent from dust.

Pull the connector plug from the socket at once in the following cases, and contact the vendor:

- **There is some liquid flowing into the instrument;**
- **Drenched or fire burned.**
- **Abnormal operation: such as abnormal sound or smell.**
- **Instrument dropping or outer shell damaged.**
- **The function has obviously changed.**

3. The maintenance of instrument

The rotor should be cleaned by the cloth stained with a little alcohol. If there are smutches on the instrument, clean them by soft cloth stained with cleaning cream.

4. After Service

a) **Warranty Content**

Regard to the fault caused by material and manufacture, within one month from the date of delivery. The manufacture is responsible for change the new instrument.

Regard to the fault caused by material and manufacture, within 12 months from the date of delivery. The manufacture is responsible for change or repair at its option.

Repair products must ship to specified maintenance department by purchaser and freight charge need to be paid by purchaser. Freight charge for sending back to purchaser will be paid by manufacturer.

Regard to the maintenance out of warranty period, manufacture will charge the maintenance cost accordingly.

b) **Warranty Scope**

Above-mentioned warranty is not applicable for inappropriate maintain, improper use and operating under improper condition, also is not applicable for the damage which caused by repair and refit without authorization.

CONTENTS

Chapter 1 Introduction

The SealBio-2 Plate Sealer is a semi-automatic thermal sealer which is ideal for the low to medium throughput laboratory that requires uniform and consistent sealing of micro-plates. Unlike manual plate sealer , the SealBio-2 produces repeatable plate seals. With variable temperature and time settings, sealing conditions are easily optimised to guarantee consistent result, eliminating sample loss. The SealBio-2 apply in product's quality control of many manufacture enterprise such as plastic film, food, medical, inspection institute, scholastic scientific research and teaching experiment.

Feature:

1. Format different micro well plates and heat seals
2. Seals plate heights: 9 to 48mm high
3. Adjustable Sealing Temperature: 80 - 200℃
4. OLED display screen, high light and no visual angle limit
5. Precise temperature, timing and pressure for consistent sealing
6. Compact footprint: only 7.0 inches (17.8cm) wide
7. Automatic counting function
8. The drawer is controlled by high grad MCU, if a hand or objects blocked the drawer when it's moving, the drawer motor will automatically reverse. This feature prevents injury to the user and unit
9. Special and smart design on the drawer, it's detachable from the main device. So user can maintain and clean easily the heating element
10. When the unit is left idle more than 60min, it automatically switches into stand-by mode during which the temperature of the heating element is reduced to 60°C to save energy
11. When the unit is left idle more than 120min, it switches off automatically for added safety. It switched off the display and heating element. After, user will push any button to awaken it

Chapter 2 Specifications

1. Normal operation conditions:

Ambient temperature: 10°C ~ 35°C

Relative humidity：≤70%

Power：AC200~240V, 50Hz/60Hz

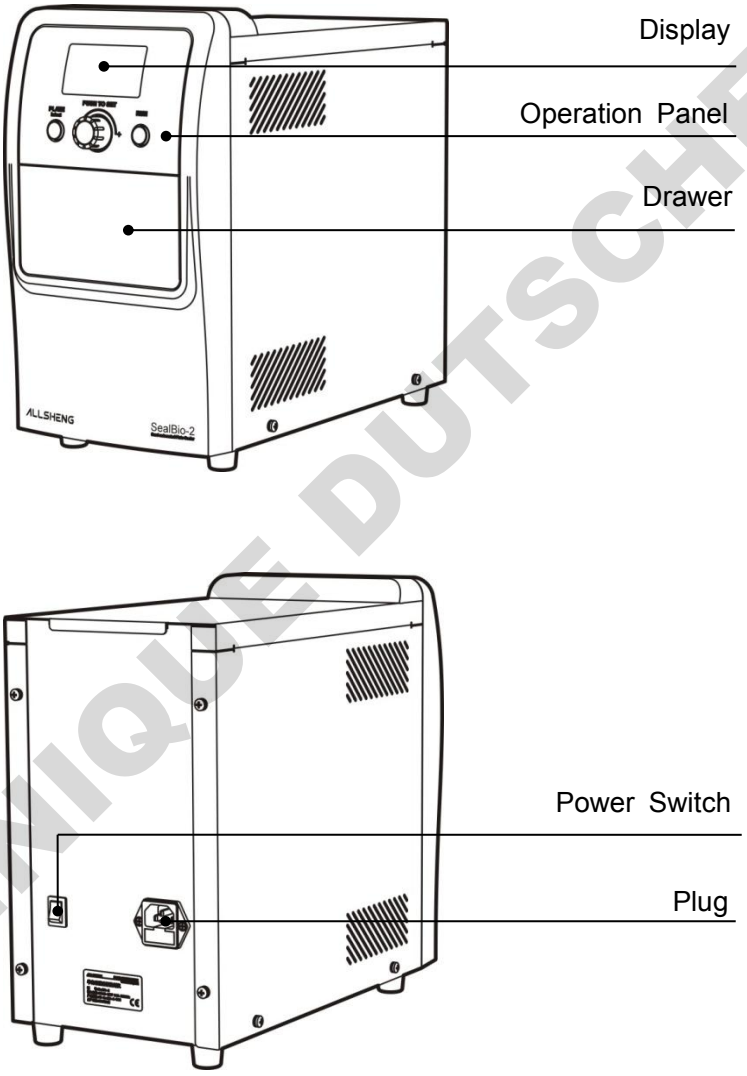
2. The basic parameters and characteristics

Display	OLED
Temperature setting	80℃～200℃
Temperature accurate	1℃
Seal time	0.5s～10s，increased by 0.1 seconds
Cooling time of heating element	≤2℃，return to normal within 25 seconds
Heating element	Electrical heating tube
Input power	300W
Dimension(D×W×H)	370mm×178mm×330mm
Weight	9.6kg

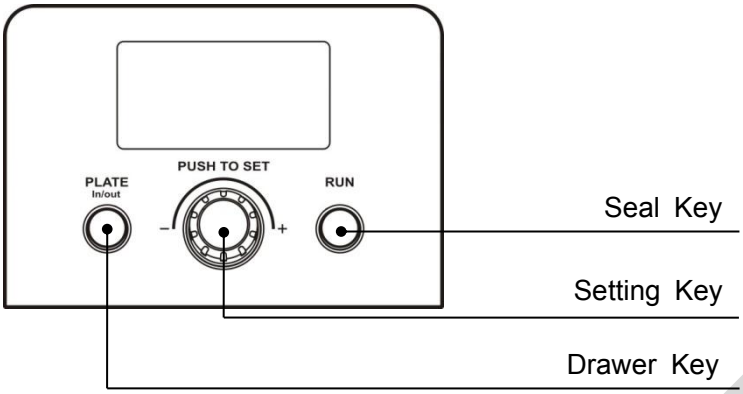
Chapter 3 Basic Instructions

This chapter mainly introduces the structure, operation keys, and displays of the instrument, as well as preparatory work before starting. Please read this chapter before starting when uses this instrument for the first time.

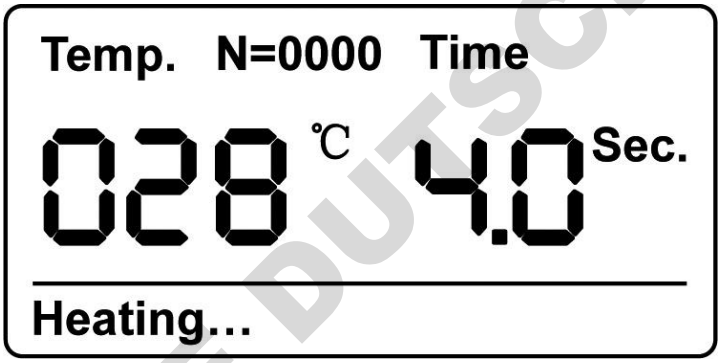
1. Structure overview



2. Operation panel

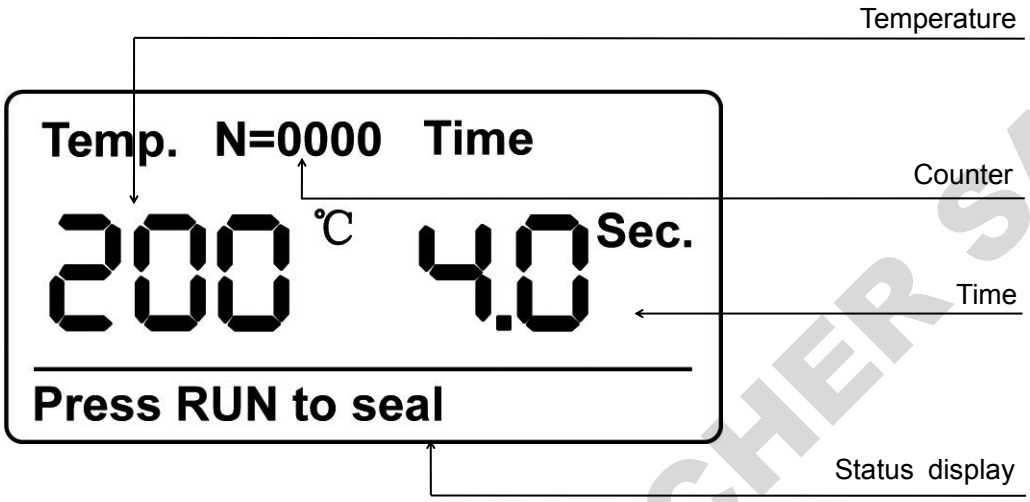


3. Display



Chapter 4 Operation Guide

1 Seal condition setting



1.1 Setting the seal temperature

Switch on the instrument. Then press the "**PUSH TO SET**" key for 3 seconds. When the display of temperature is beginning to glitter, and turn the "**PUSH TO SET**" key to set the seal temperature. Make counterclockwise rotation to lower temperature and clockwise rotation to rise temperature. Temperature setting range is 80℃～200℃.

1.2 Setting the seal time

Press "**PUSH TO SET**" key again after temperature-setting. When display of time is beginning to glitter, and turn the "**PUSH TO SET**" key to set seal time. Make counterclockwise rotation to decrease time and clockwise rotation to add time. Time setting range is 0.5~10 seconds.

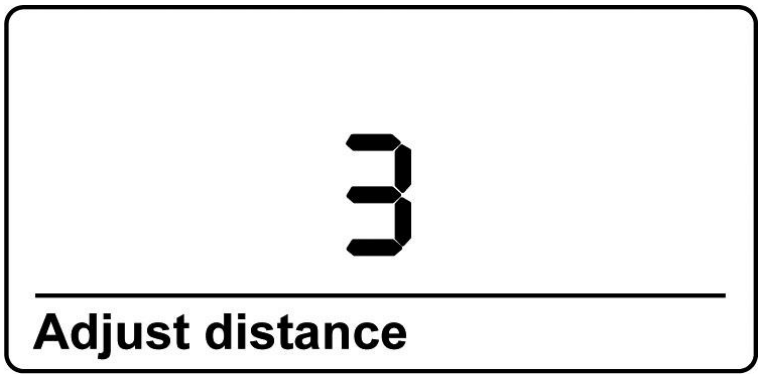
Remark: It will confirm the values automatic after 5 seconds.

1.3 Setting the pressure function

Remark: Adjust the pressure according to the seal quality (the trace in the plate after seal). Turn to high pressure if the trace is light, or turn to low pressure if the trace is much deep.

Long press **"PUSH TO SET**", and press "**PLATE In/Out**" keys simultaneity for 3Sec. Enter into the display of adjust pressure and turn the "**PUSH TO SET**" key to set seal pressure. Make counterclockwise rotation to decrease pressure and clockwise rotation to add pressure. There are 1~5 shifts for pressure adjustment. 1 is the lowest pressure and 5 is the highest pressure. 3 is factory default values.

It will confirm the set value automatic if no any action to instruments after 5 seconds.



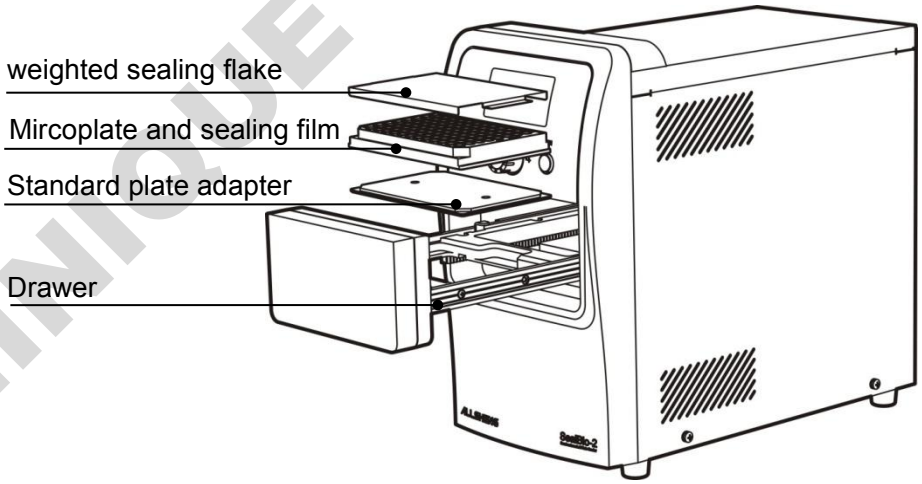
Appendix: Normal seal temperature and time

No.	Item	Seal condition setting	No.	Item	Seal condition setting
1	Clear-Seal	170℃，2.5S	3	Pierce-Seal	180℃，4S
2	Peel-Seal	175℃，3S	4	Alfoil-Seal	180℃，4S

Above parameter just for reference, Sealing efficiency varies depending on the plate type used. So users can adjust according to practical situation

2 Seal operation

After setting up the seal condition, seal operation as follows:



2.1 Press "**PLATE In/Out**" key, and pull the drawer, Then put in the standard plate adapter, micro-plate and sealing film and the weighted sealing flake in turn.

2.2 There is "du…" sound after the temperature reached setting temperature. Press "**RUN**" key, make the drawer shut up and start to seal. And the drawer will go out of automatic after finished the seal. Then the unit can do the seal again.

Note: If the display temperature isn't reach the setting temperature. The instruments cannot seal after press the "RUN" key.

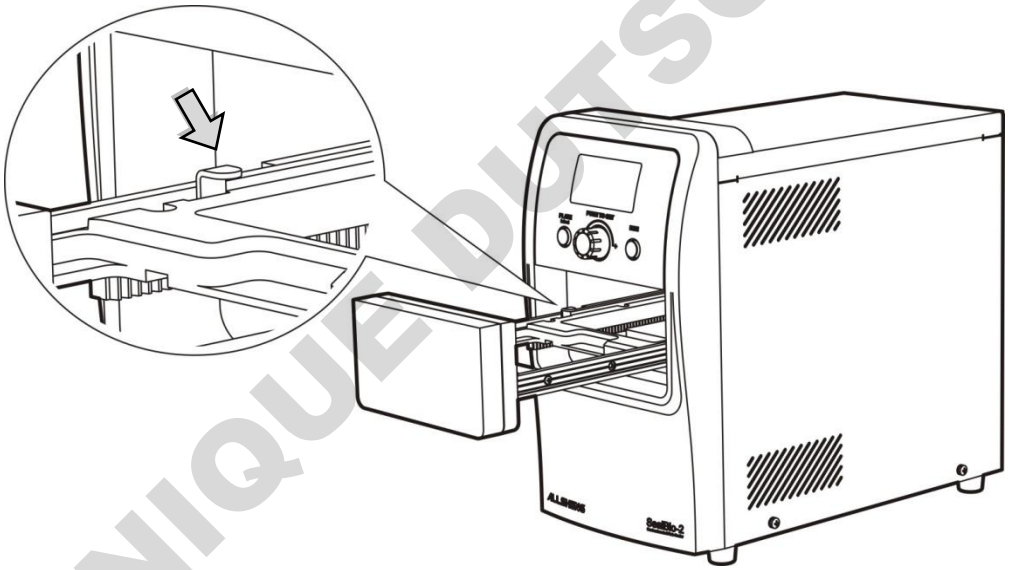
2.3 After finish the seal work, press the "**PLATE In/Out**" key, make the drawer shut up, then power off the switch on the back of the unit.

3 Heating plate cleaning

3.1 If there is residue of seal film or seal plate adhere to heater plate caused by misuse, and affect the instrument normal use, then should clean the surface of heating plate according to following step.

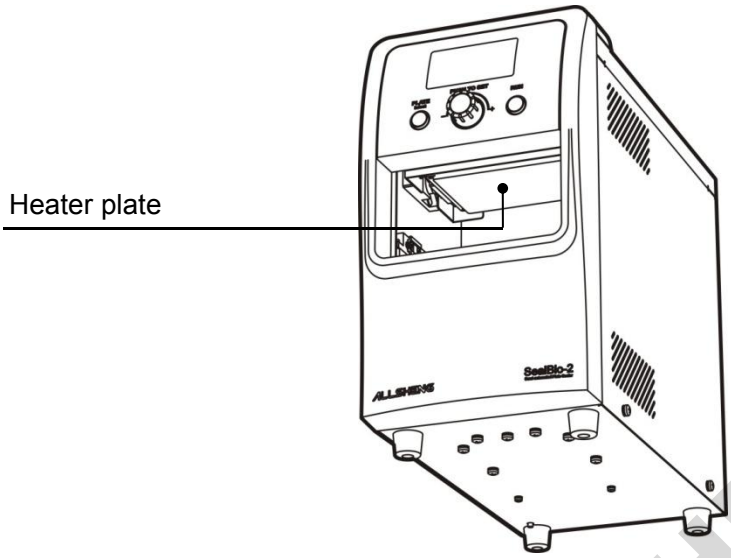
3.2 Press **"PLATE In/Out**" key, make the drawer out, switch of the power and pull out the power plug.

3.3 Press the key in the left side of the drawer which the arrow point in the under picture, and pull out the drawer outward.



3.4 Clean the residue with tissue after the temperature near to ambient temperature on the surface of heater plate.

Note: Any hard tools scraping the surface of heater plate is forbidden, that would be damage the heater plate and affect the seal result.



3.5 Pushing the drawer which aim the slide on the both side into the deepest position slowly after clean up.

4 Other function

4.1 No plate alarming

When the unit is running, if no plate in the unit, it will display “No plate” and alarming.

4.2 Stand-by mode

The unit will into “stand-by” mode if there is no action on instrument more the 60 minutes and temperature will down to 60℃. By press any button to warm up the unit back to setting temperature.

The unit will into “Power-down” mode if there is no action on instrument more than 120 minutes. Display screen will turn off, power off heater supply and only a weak current supply to the main part of control board. By press any button to warm up the unit back to setting temperature.

4.3 Power-off protection

When there is a sudden power lost during the unit running, the motor will stop. Under this condition, moving part adjustment is forbidden. It will be automatic reset when power on again next time.

4.4 Automatic counting function

The counter automatic increase one for sealing work once. Press the “**PUSH TO SET**” key for 10 seconds, the counter can reset (it will be zero).

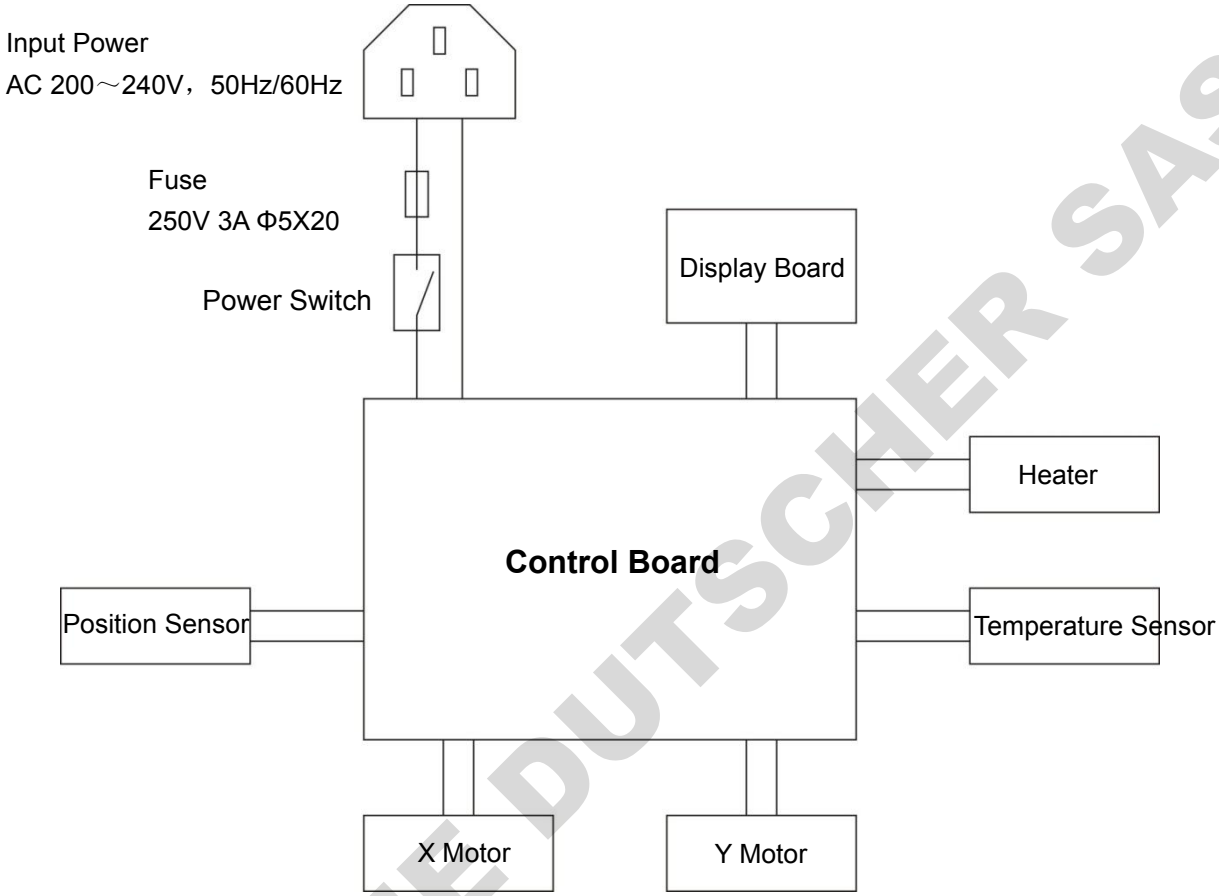
Chapter 5 Troubleshooting Guide

Problems and actions

No.	Common problem	Possible cause	Action(s)
1	No display after power on	No power	Check power supply and plugged properly
		On/Off switch broken	Change switch
		The fuse is broken	Change fuse（5X20 250V 3 A）
		Others	Contact the supplier
2	Display “**Err001**” and alarm “**Du**…” sound	Over-temperature	Contact the supplier
3	Display “**Err005**”, “**Err006**”, and alarm “**Du**…” sound	Open or short circuit of temperature sensor	Contact the supplier
4	Display “**Err601**” and alarm “**Du**…” sound	Motor locked	Contact the supplier
5	Display “**Err405**” and alarm “**Du**…” sound	The upper micro-switch is broken	Contact the supplier
6	Display “**Err412**”	The below photo electric switch is broken	Contact the supplier
7	Display “**Err411**”	The upper photo electric switch is broken	Contact the supplier
8	Display “**Err402**”	The out photo electric switch is broken	Contact the supplier
9	Display “**Err401**” and alarm “**Du**…” sound	The enter-photo electric switch is broken	Contact the supplier
10	“**No plate**“ displayed, alarming “Du…”	No microplate or not place it well	Replace the microplate
11	Instrument cannot run	Controll-board is broken	Contact the supplier
		Motor is broken	
12	Abnormal running noise	Wrong guide rail installed	Contact the supplier
13	Buttons don’t work	Plug connector loose	Contact the supplier
		Button broken	

Annex：Wiring Diagram

（for reference only, users won't be informed if there is modification for this diagram）



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