

Nucleic Acid Purification System

NPA-96

Operation Manual

Hangzhou Bioer Technology Co.,Ltd.

Caution:	Hangzhou Bioer Technology Co., Ltd. reserves the right to modify this manual at any time without notice.
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Before the initial use of this instrument, please carefully read this manual!

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Important Notes

1 General Practice

Caution:	Important information is contained in any item and should be carefully read. Failure to observe the instructions would result in damage to or malfunction of the equipment.
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2 Safety

During operation, maintenance and repair of this instrument, the following basic safety measures shall be observed. In case of failure to follow these measures or the warnings or notes indicated herein, the basic protection provided by the instrument, its safety criteria of design and manufacture, and its predicted use range would be impaired.

Bioer Company is not responsible for any consequences caused by users' failure to comply with the following requirements.

a) The ground connection

To avoid the electric shock, the input power line must be reliably grounded. The instrument is equipped with the three-pin plug that has the third pin (the pin connects the ground), therefore, the plug shall be used with the grounded power socket only. This is a kind of safety device. If the plug cannot be plugged into the power socket, please ask the electrician to install a correct power socket, so as to make the grounded plug to work for safety.

b) Keeping apart from the live circuit

The operator shall not disassemble the instrument without permission. Only qualified professionals are allowed to replace elements or adjust the machine inside. Replacement of elements under energizing state is prohibited.

c) Be careful of the power supply

Before the instrument is connected with the AC power source, the voltage of the power source shall be the same with the required voltage of the instrument (a deviation of $\pm 10\%$ is allowed). The rated load of the power socket shall not be lower than the requirements of the instrument.

d) Be careful of the power line

Usually, the instrument shall use the power line attached to it. If the power line is destroyed, it must be replaced but not be repaired. The replacement shall be carried out with the power line of the same type and same specification. No goods shall be put on the power line when the instrument is working and please do not put it in a frequently-visited place.

e) The plugging in and removing of the power line

The user should hold the plug to remove the power line. When plugging in the plug, the user should make sure that it has been fully plugged in; when removing the plug, do not pull the power line

forcefully.

f) Placement of the instrument

This instrument should be placed indoors and should be well ventilated without corrosive gases or strong magnetic field interference. Do not place the instrument in a damp or dusty place.

The openings on this instrument are for ventilation circulation and in order to avoid over-heat of the instrument body, they shall not be blocked or covered. When a single instrument is used, the distance between the ventilation holes on both sides of the instrument and the nearest object should be no less than 20cm. When multiple instruments are used at the same time, the distance between them should be no less than 70cm. Excessive temperature would impair the test performance or result in fault of instrument. This instrument shall not be used in location subjected to direct sunshine. The instrument shall be kept away from hot gas, stove and all other heat sources.

If the instrument is to be set aside for a long time, the power plug shall be withdrawn and the instrument covered with soft cloth or plastic film to avoid entrance of dust.

Caution :	In any of the following cases, immediately cut off the power supply, withdraw the power plug from the power socket, and contact the supplier for treatment: <ul style="list-style-type: none">● Liquid drops into the inside of the instrument;● The control part of the instrument is rained or watered;● The instrument works abnormally, especially generates abnormal sound or odor;● The instrument is dropped or its casing is damaged;● The function of instrument obviously changes.
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3 Instrument Label

Warning sign



Warning !	This device is marked with “HOT SURFACE !”. The metal part (module and hot cover) near this sign is strictly forbidden to touch with any part of the body during the operation of the instrument or a period of time after the operation of the program, so as to avoid scalding!
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4 After-sales Service

a) Warranty Content

Hangzhou Bioer Technology Co., Ltd. is responsible for the replacement for failures caused by material and manufacturing defects within 1 month after goods delivery.

Hangzhou Bioer Technology Co., Ltd. is responsible for maintenance of failures caused by material and manufacturing defects within 12 months after goods delivery. Hangzhou Bioer Technology Co., Ltd. is responsible for selectively repairing and replacing instruments with confirmed defects within warranty period.

Products under warranty shall be sent and delivered by post to maintenance department designated by Hangzhou Bioer Technology Co., Ltd. by the user. The freight incurred for products beyond warranty period shall be borne by the user. Hangzhou Bioer Technology Co., Ltd. will bear the freight incurred by returning instrument. For products within the warranty period, the round-trip freight

will be borne by Bioer. (For domestic users only)

For maintenance out of warranty period, Hangzhou Bioer Technology Co., Ltd. will charge for certain maintenance cost.

b) Warranty scope

The abovementioned warranty does not apply to damages incurred by improper use and maintenance, using under unqualified conditions, unauthorized maintenance or modification.

Hangzhou Bioer Technology Co., Ltd. does not provide any other warranty expressions otherwise; and does not bear liabilities for business promotion under special circumstances.

Caution :	After unpacking, immediately check the goods against the packing list. In case of damaged or missed goods, please immediately contact the supplier. After qualification of acceptance, properly fill in the product acceptance sheet and send (or fax) the copied sheet to the supplier for filing and maintenance. After unpacking, the packing box and packing materials shall be well kept for future repair. For the damage of instrument occurring during transporting to the repair department due to improper package, Hangzhou Bioer Technology Co., Ltd. shall bear no liabilities.
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After-sale Service Hotline: +86-571- 87774558

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Chapter I Introduction

This chapter mainly introduces the features and application of the instrument.

1 Instrument Features

This product controls the step motor through the single chip microcomputer, realizes the precision transmission, thus completes the magnetic separation technology in the nucleic acid purification process automatically. It features low noise, fully enclosed working area. Embedded real-time operating system; Transparent working chamber facilitating the observation of working conditions; Large LCD panel, beautiful and easy to operate. It has perfect protection function, open door protection, mechanical movement oversaturation protection and alarm. It is safer and more reliable in use. It can be used to extract DNA, RNA and mRNA from whole blood, cells, tissues and so on, saving time and labor.

2 Instrument Use

This product has introduced the industry's first high frequency vibration heating technology, which can achieve HFS (high frequency shaker unit) above 2000rpm. Combined with magnetic rod up and down concussion method, cell lysis and magnetic bead eluting efficiency were improved in two-way. This method can not only shorten the time of conventional purification process by nearly half, but also effectively prevent the aerosol pollution caused by the fluctuation of magnetic rod.

This product is used for the extraction and purification of nucleic acid from clinical samples.

Chapter II Features

Chapter mainly introduces the usage, transportation and storage conditions of the instrument, as well as its basic parameters, performance and functions.

1. Normal Working Conditions

Ambient temperature: 10°C ~ 40°C

Relative humidity: ≤85%

Power supply: AC100-240V 50-60Hz

Caution: Before using the instrument, please confirm whether the working conditions meet the above requirements. Pay special attention to whether the power line is reliably grounded.

2. Transportation and Storage Conditions

Ambient temperature: -20°C ~ +55°C

Relative humidity: ≤85%

3 Basic Parameters

Model Parameters	NPA-96
Sample size	96 pcs/time
Magnetic rod (fixed)	96 pcs
Sample range	10~1000μl
Magnetic bead collection efficiency	≥99%
Most suitable size of magnetic beads	0.2~1.0μm
Overall dimensions mm	907×495×571 (L×W×H)
Net weight	81.5Kg

4 Basic performance

Operating temperature: 10°C ~ 40°C

Program storage: infinite through U disk

Number of programs that can be viewed at one time: 1000

5 Software functions

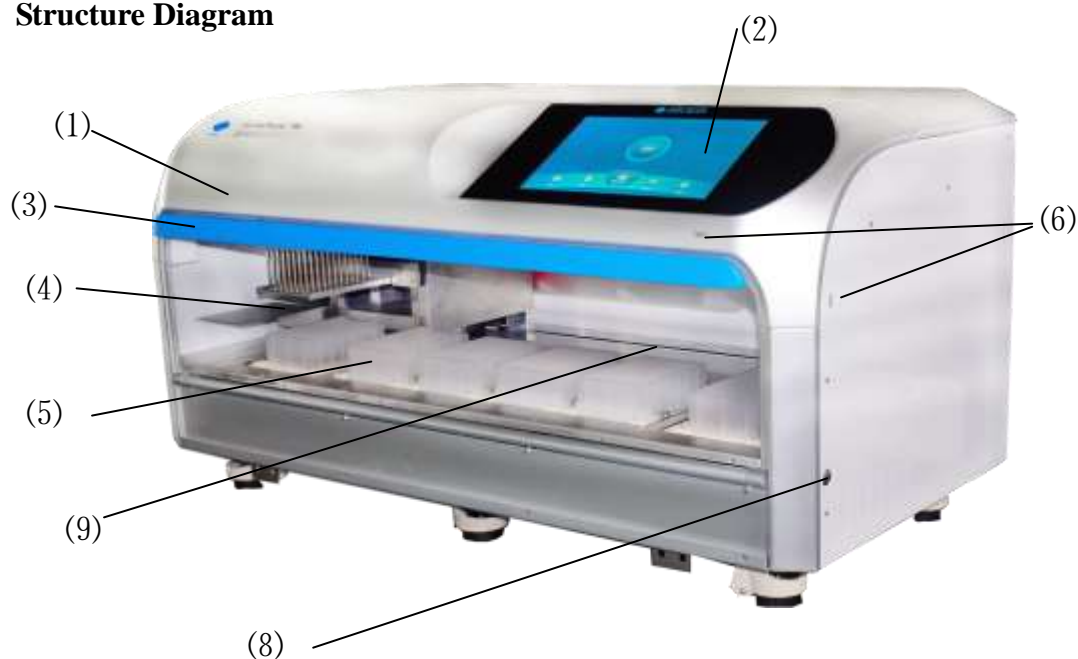
- Experimental file management, including browsing, selecting, creating and deleting files, historical file management, USB drive file import and export,
- experiment files editing, including selecting, viewing, editing, creating and deleting the experiment steps, setting the steps and temperature of lysis, elution and temperature control, and the time and temperature of constant temperature storage after the experiment
- Experimental control including operation, status monitoring, pause/continue, stop, fault alarm and completion alarm
- Equipment maintenance functions, including uv lamp on and timed off
- System Settings, including interface language, prompt tone Settings, common parameter Settings, custom step name label, shut off the device
- Software upgrade function, to update the main modules of the program and control parameters

Caution: The above software features are for reference only, and changes to the software features are not subject to notice.

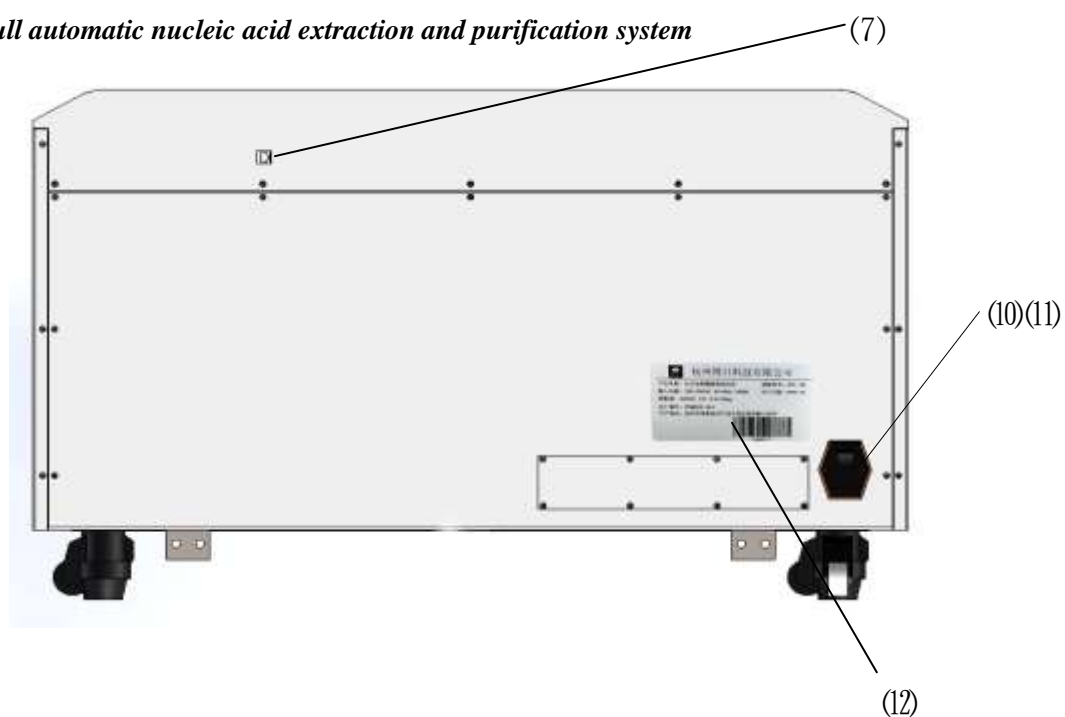
Chapter III Preparatory Work

This chapter mainly describes the structure, the function of both the screen and the function keys on the screen of the instrument, as well as the preparatory work before the startup. When using this instrument for the first time, familiarize yourself with the content of this chapter before starting up.

1 Structure Diagram



Back view of full automatic nucleic acid extraction and purification system



- | | | | |
|---------------------------------------|------------------|---------------------------|------------------------------|
| 1. Enclosure | 2. Display | 3. Closing cover | 4. Where 96 sheath is placed |
| 5. Where 96 deep well plate is placed | 6. USB interface | 7. Internet access | 8. On and off |
| 9. Operating room | 10. Power switch | 11. Standard power outlet | 12. Nameplate |

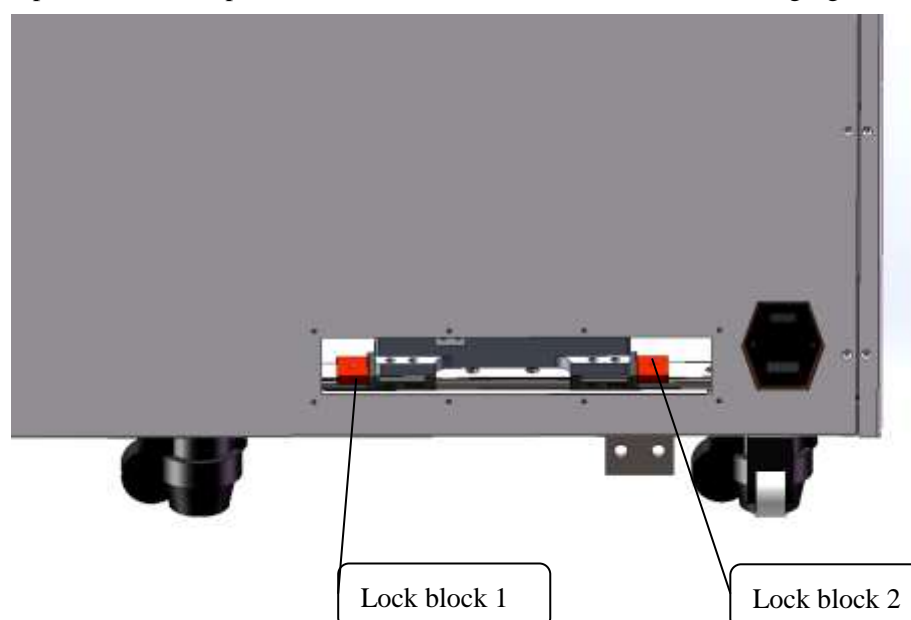
Caution: The fuse seat is fitted with a fuse for which the requirement is: AC 250V 12A Ø5×20. Fuses must be replaced using products that meet the requirements. Contact the supplier or manufacturer for fuses.

2 Check before Startup

The following contents should be confirmed before plug in and power the instrument:

- 1 Whether the power supply meets the required voltage of the instrument; (see chapter 2 of this document for power requirements)
- 2 Confirm that the power cord plug has been reliably inserted into the power socket;
- 3 Reliable grounding of power cord;
- 4 Whether the 96 deep well plate and 8-strip tips have been taken out
- 5 On the first boot after long-distance transportation, it is necessary to check that the transportation lock blocks 1 and 2 have been removed

The positions of transport lock blocks 1 and 2 are shown in the following figure:



Please use the M4 inner hexagon wrench to remove the screw in the center of the lock block.

3 Startup

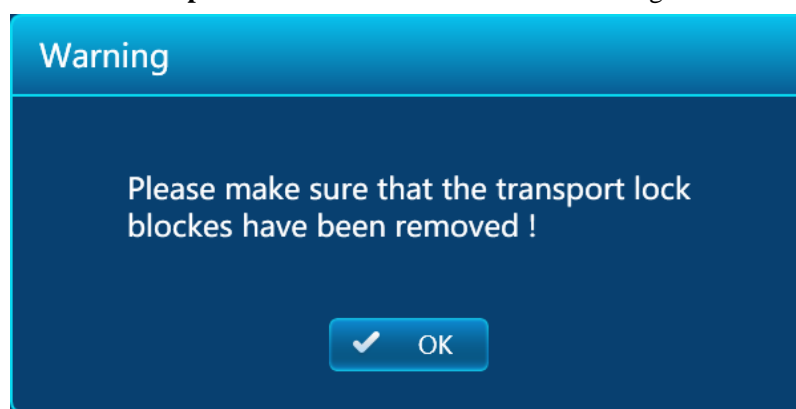
Turn on the power switch operating system (win10), start the application automatically, and it will pop up the **warning dialog box before starting up self-check** as shown in the following figure.



The user follows the instructions to confirm that the experimental consumables (96-hole deep hole plate and sheath) in the instrument have been taken out, then press the "ok" button to start the system self-inspection. If no problem is found in the self-check, the main interface will appear when the screen is idle, and the file can be edited, checked, modified and deleted. Otherwise, it will enter the error state. Please take a picture of the error interface and contact the after-sales service engineer to deal with it.

Notes:

Since the instrument is in the state of mechanical lock during long-distance transportation, the following **transport lock block removal warning dialog box** will pop up before the warning dialog box before starting up the self-test when the instrument is **powered on for the first time** after lifting the mechanical lock state.



The user must check whether the transport lock block 1 and transport lock block 2 have been removed. If the transport lock block has been removed, press "ok" will pop up the dialog box of warning before starting self-check. If the transport lock blocks (lock block 1 and lock block 2) are not removed, please remove the transport lock blocks first and proceed with the procedure.

If the user does not know how to determine whether the transport lock block is removed or how to remove the transport lock block, please press the shutdown button on the right side of the instrument first. After shutting off the instrument, contact the dealer and deal with it under the guidance of the installation engineer. If you ignore the warning and continue the procedure before removing the transport lock block, you may cause serious problems such as physical damage to the instrument.

4 Consumable setting

Before running the experiment, the 96 deep hole consumables plates are placed in the corresponding station of the experiment

a) There are 6 stations on the bench where the 96 deep well plate is placed, with one limit block at each corner to assist positioning, and two elastic steel balls on both sides of the 4 stations to help fix the 96 deep well plate;

b) Pay attention to the fact that the 96 deep well plate can be placed level and in place before the operation test.

Chapter IV Operation Guide

This chapter details how to edit, review, modify, and delete files, and how to run/stop files. It also introduces the meaning of protection interface in the process of file running.

Warning!	If there is any abnormal sound or display after the instrument is switched on, or there is a fault alarm and prompt during the instrument self-test, please switch off the power immediately and contact the supplier.
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Ready? Let's get started!

1 Upper computer operating interface

a. Operation main interface

After the system is started, enter the main interface (as follows) of nucleic acid purification operation, which mainly has the following functions: Run, New File, Ultraviolet Lamp and System Setting. The interface center displays the operation state of the instrument. If the instrument is in operation state, click the icon of the center to further check the detailed operation information. The following are the idle and runtime main interfaces, respectively.



Main interface when idle



Main interface when running

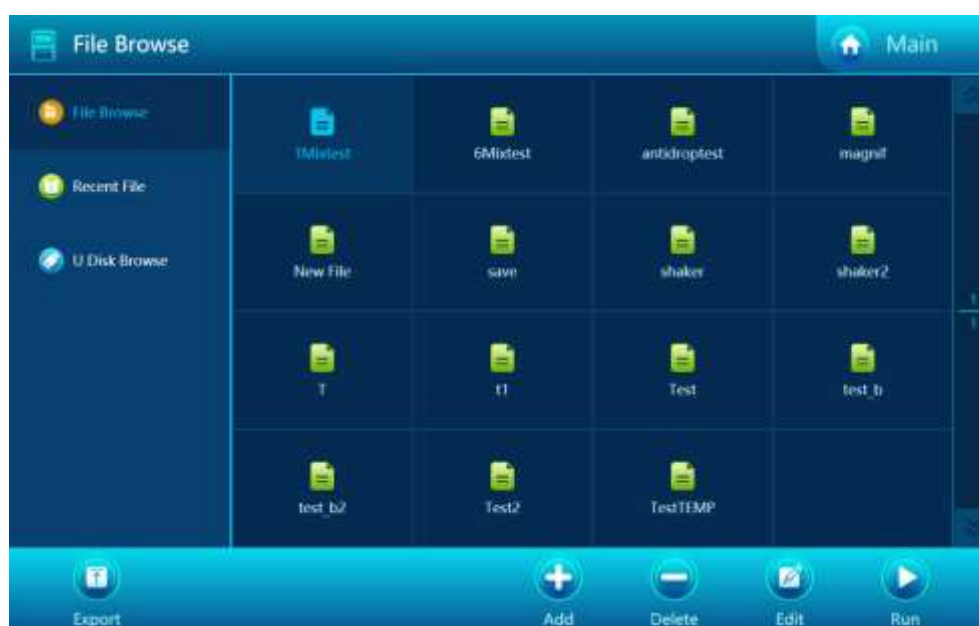
(As above) The next four function buttons from left to right are: Run, New, UV Lamp, System Setting

The middle operation status button and status information are displayed only when the equipment is in operation. Press the operation state button to enter the operation state interface to view the detailed information of the operation state.

b. Run

Click on the main interface [Run] icon to enter the file browsing interface. Select buttons for browsing menu on the left to select device files, history or U disk files, browse information in the middle, function buttons in the bottom, and main interface icons in the upper left corner to return to the main interface. Select different browse menu items at the left menu bar, the lower function button and browse information are different.

The following figure shows the device [File Browsing] interface



(As above) In the middle is a list of files stored in the device, showing up to 16 files and up to 1000 files per page. The currently selected file is displayed in white. Click the currently selected file to enter the file editing interface. The right side is the page number information and page forward and back button; The bottom is the function button, including Export, New, Delete, Edit, Run.

Export : Copy the currently selected file to the default u-disk directory (under the \.GP96ex\ of u-disk directory)

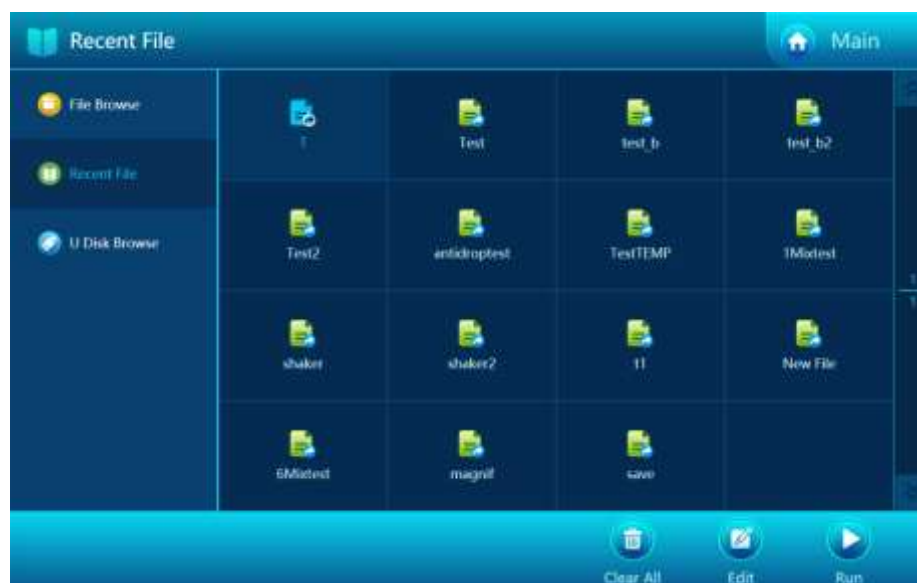
Delete: Delete the currently selected file from the device

New: After creating the default file, go to the file editing interface to edit the newly created file

Edit: Go to the File Editing Interface to edit the currently selected file

Run: Run the currently selected file

The following image shows the[History Browsing] interface



(as above) The middle is a list of 16 files that were last edited and run. The currently selected file is displayed in white. Click the currently selected file to enter the file editing interface. The bottom is the function button, including Clear Record, Edit, and Run.

Clear: Clear history

Edit: Go to the file edit interface to edit the currently selected file

Run: Run the currently selected file

The following figure shows the [U disk file] browsing interface, which can only be displayed when the U disk is inserted. If the U disk is not inserted and it will be prompted for failure to detect the U disk.



(As above) In the center is the .gp96” or “.gp196” file list that conforms to the WIN10 file name standard in the default directory of U disk(U disk root directory; GP96ex) (a legal filename consists of an English letter, a number, and an underscore, and a filename that does not include a suffix is no longer than 12 characters long excluding the suffix). The currently selected file is displayed in white. The right side is the page information and page forward and back button; The bottom is the function button, including the import.

Import: Copy the currently selected file to the device

c. New/Edit file

You must enter the [File Editing Interface] interface (as below) to create a test file, which can be accessed in the following ways:

Click on the new file in the main interface

Click currently selected file in the device file browsing interface

Click New button in the device file browsing interface

Click Edit button in the device file browsing interface

Click the currently selected file in the history browsing interface

Click the edit button in the history browsing interface

Total 08	Step 01	Step 02	Step 03	Step 04	Step 05
Well Position	1	2	1	3	4
Name	Lysis	Beads	Bind	Wash1	Wash2
Volume(ul)	700	200	700	600	800
Wait Time	---	---	---	---	---
Mix Method	800	Low	800	High	High
Mix Time	20:00	00:15	10:00	03:00	02:00
Magic Method	---	Normal	Strong	Strong	Strong
Magic Time	---	00:30	03:00	01:00	01:00

(As above) The upper part of the interface displays the temperature related setting information of the program. Press the left and right arrows to switch the display information, and the middle and lower part displays all the procedure information of the program, including hole location, step name, waiting time, mixing time, magnetic suction time, volume, mixing mode and adsorption mode. Below are function buttons, including

Add, Delete, Parameters, Previous Page, Next Page, Save...; Upper left return and main interface icon used to return to the previous interface or main interface.

The currently selected step is displayed in a special color. Click the unselected step column area to select the specified step. There are up to 30 steps in each file. If there are more than 5 steps, programs will be paged by pressing the up/down button. Add or remove steps by clicking add or remove buttons.

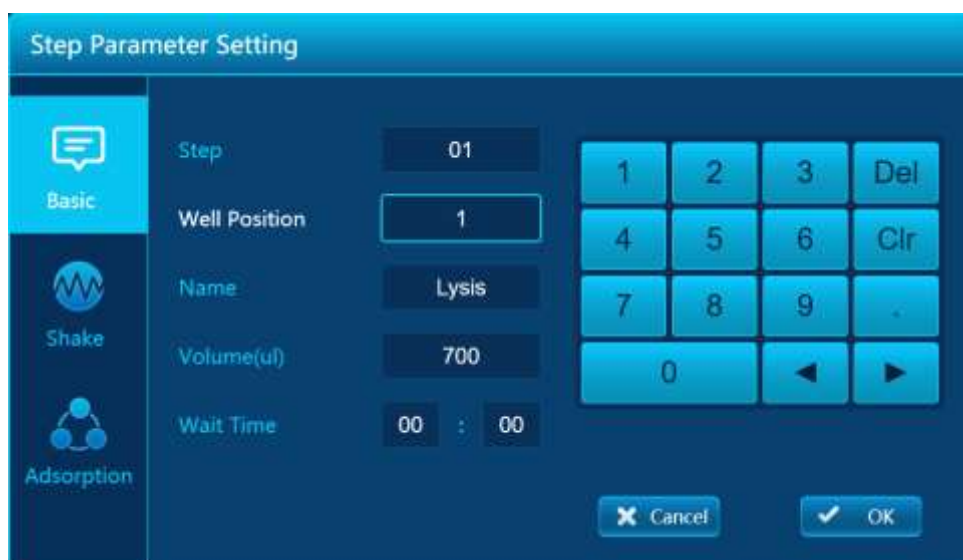
Click the parameter button or click the display area of temperature information in the interface to enter the interface of [Temperature Parameter Setting].



The image shows a 'Temperature Parameter Setting' dialog box with a dark blue background. It contains several settings: 'Lysis Heat' with a yellow 'OFF' button and a temperature input of '0.0' °C; 'Lysis End Step' with a value of '1'; 'Elution Heat' with a yellow 'OFF' button and a temperature input of '0.0' °C; 'Elution Start Step' with a value of '7'; 'Storage' with a yellow 'OFF' button and a temperature input of '0.0' °C; and 'Storage End Time' set to '00 hr 00 min'. On the right side, there is a numeric keypad with buttons for digits 1-9, 0, a decimal point, and navigation arrows, along with 'Del' and 'Clr' buttons. At the bottom right, there are 'Cancel' and 'OK' buttons.

Allow setting for pyrolysis heating and elution heating, Set the pyrolysis temperature and elution temperature, and terminate the pyrolysis heating step and start the elution heating step. Whether the storage is constant temperature after the end of the experiment, the storage temperature is constant temperature, and the execution time of the storage is constant temperature. After setting, click [OK] to return to the file editing interface. If [Cancel] is pressed, the change is waived.

If you click the currently selected step area, you will enter the step parameter setting interface, as shown in the following figure:



Step Parameter Setting

Basic

Step: 01

Well Position: 1

Name: Lysis

Volume(ul): 700

Wait Time: 00 : 00

1 2 3 Del

4 5 6 Clr

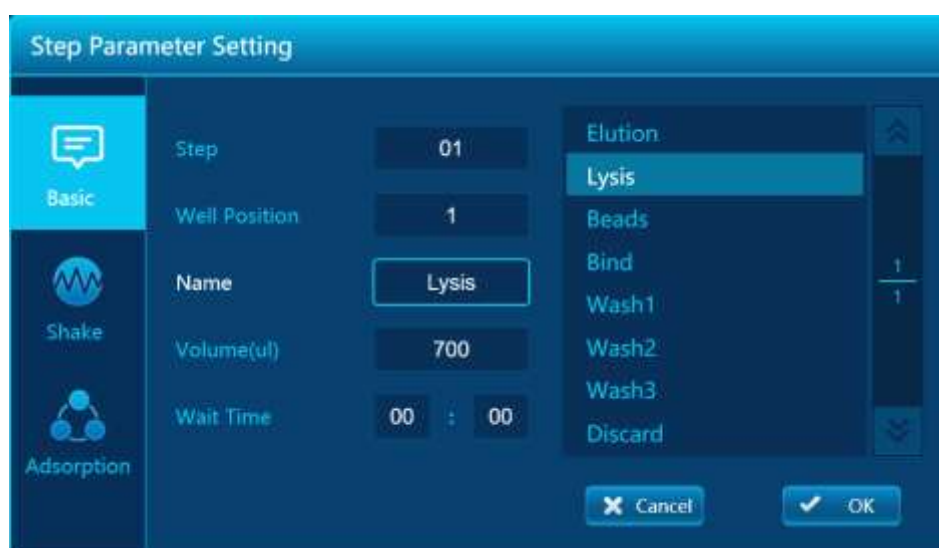
7 8 9

0 ◀ ▶

Cancel OK

Setting of step stations (1~6), liquid volume (influencing the range of mixed motion and adsorption action), and waiting time are allowed. (as above)

Click the edit box corresponding to the name tag, and the keyboard area on the right side of the interface will become a name selection list. (below)



Step Parameter Setting

Basic

Step: 01

Well Position: 1

Name: Lysis

Volume(ul): 700

Wait Time: 00 : 00

Elution

Lysis

Beads

Bind

Wash1

Wash2

Wash3

Discard

Cancel OK

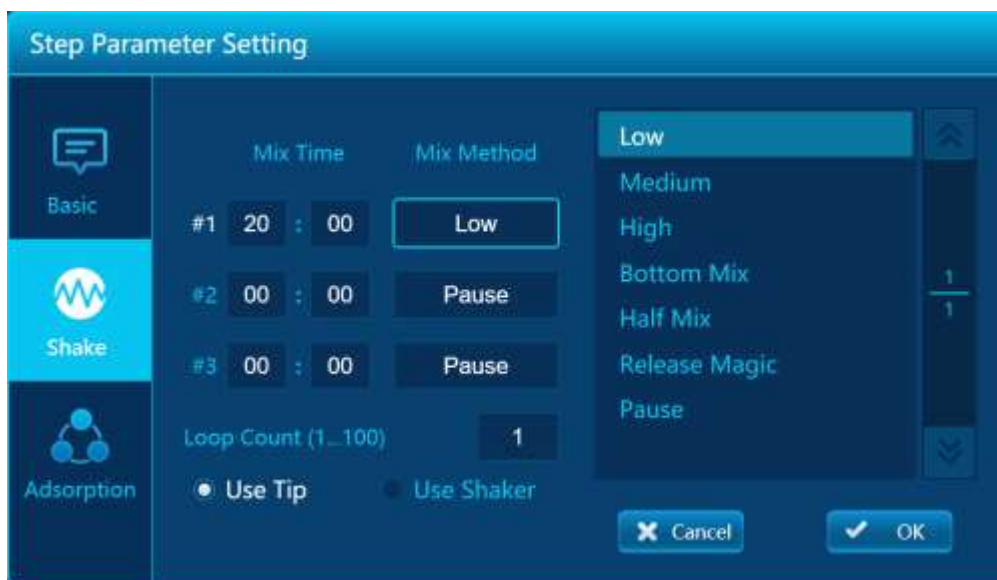
It allows you to select the appropriate name in a pre-set list of step names to describe the action that the step performs. See step name management section for how to add or remove preset step names (as above).

Click the list box of the left shaking mode icon, and the interface will display shaking related parameters. (below)



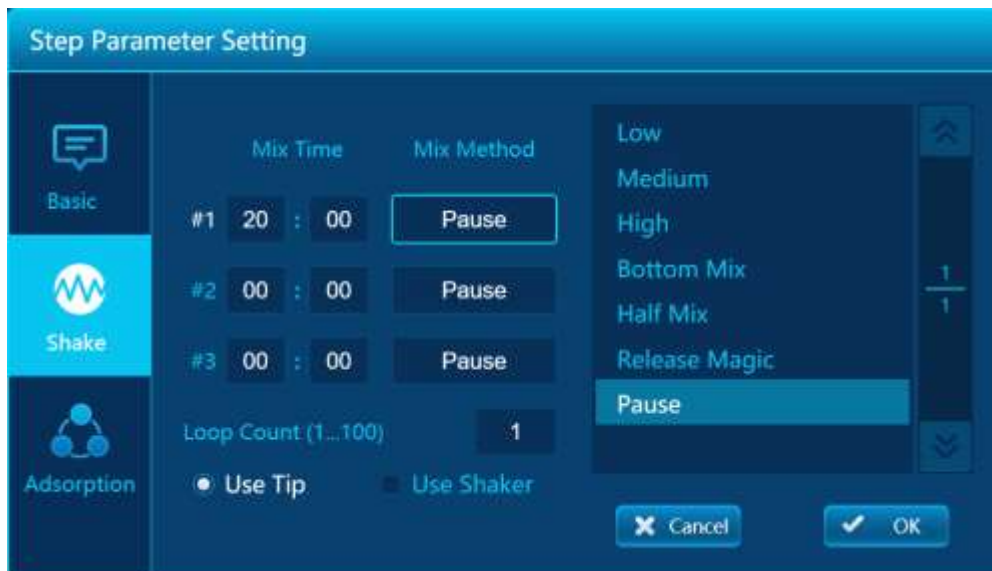
The mixing parameter allows you to set up a mixture step for up to three periods. If the mixed step is not used, set the time to 00:00. The maximum time is 99.59, time unit: seconds. (above)

Click the edit box below the mixing mode, and the right keyboard area will display the alternative blending mode. This is shown below.



The 3 mixed steps can be used for cycling, allowing the number of cycles to be set, with valid values ranging from 1 to 100.

If the basic information page is set to station 1 or 6, these two stations are allowed to use the oscillator. The selection of oscillation tool appears on the interface, as shown below.

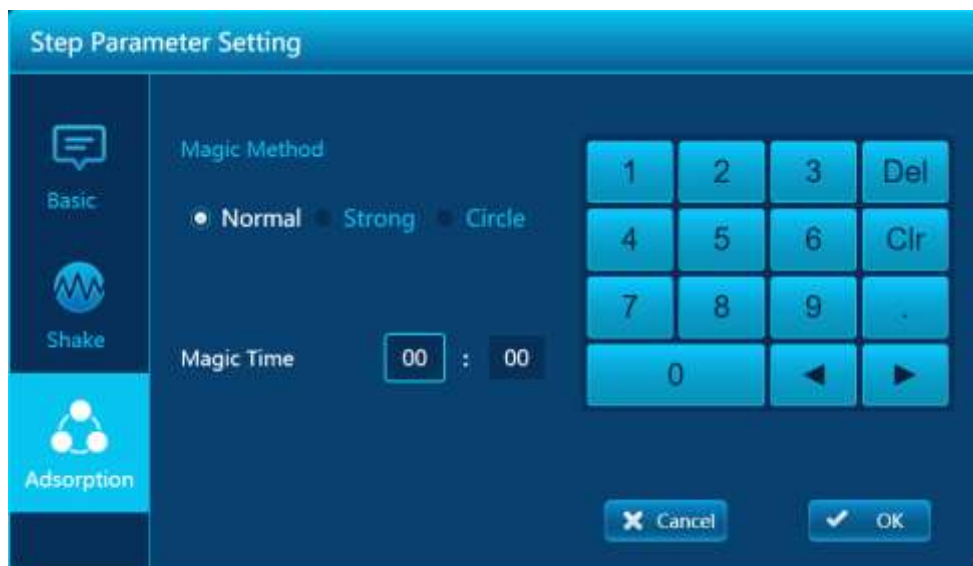


If you choose to **use the oscillator** option, the interface displays as shown below.



The parameter of mixing mode becomes the parameter of mixing speed, which represents the rotation speed of the oscillator when oscillating, unit RPM. The allowable value range is 100~2000. Input 0 indicates the suspension of this step. The other parameters are defined in the same way as when the sheath is used.

Click the list box of the left suction mode icon, and the interface will display the adsorption mode parameters. The interface is shown below.

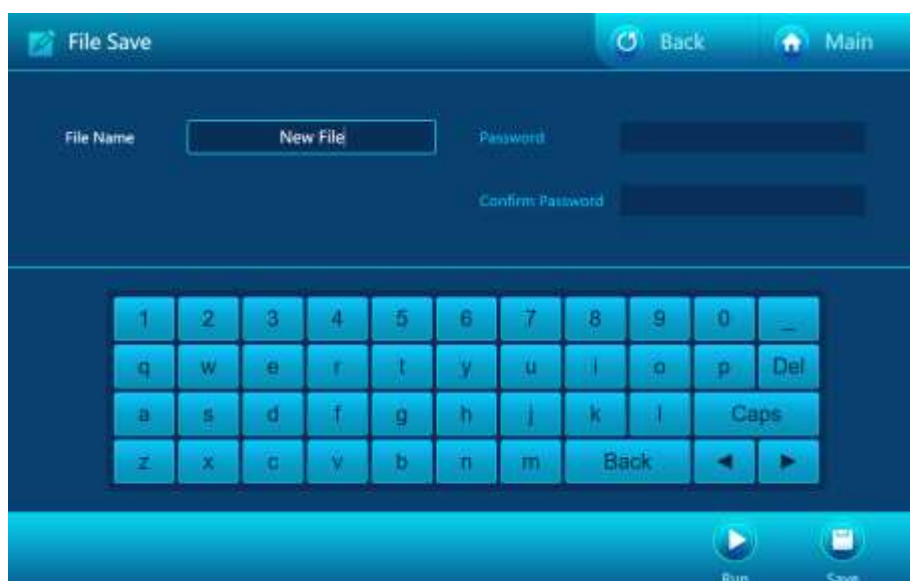


The suction mode allows for the definition of normal, strong and cyclic modes. The maximum allowable suction time is 99:59, unit: seconds.

Notes:

The time defined in the parameters of the experimental procedure only refers to the time of effective action, excluding some additional execution time of jointing action, such as the removal of sheath from liquid level, and the transfer between stations.

Click the save icon to display the file [File Save] interface, as shown in the figure below.



In the middle of the screen is a soft keyboard for inputting file name. If the file does not want to be viewed, modified, or run, you can enter a password at save time. Below are the function buttons, including Run and Save.

Run: Run the file currently being edited. User can directly run the file as a temporarily running file in the edit state without saving the file. If so the file information will not be saved.

Save: Save the file currently being edited.

d. Running files

After editing the test file, you can run the test file in the following ways

Click Run button in the device file browsing interface

Click the Run button in the history browsing interface

Click the Run button in the file save interface



The operating interface is shown in the figure above, and Sensor information such as lysis temperature and elution temperature is displayed at the top of the interface. The lower left side of the interface shows the steps under way, including waiting time, mixing time, magnetic suction time, and remaining time. The bottom is the function button, including: reset, pause and stop. After the experiment is suspended, the function button below will **Reset** and **Pause** and be replaced by **Continue**

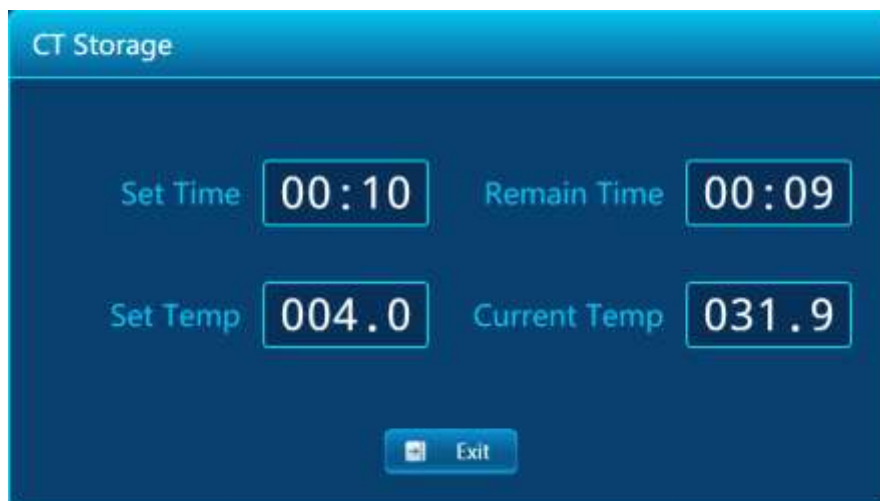
Reset: pause the experiment and raise the TIP head

Pause: suspend the experiment

Stop: stop the experiment.

Continue: continue the experiment

After the normal end of the experiment, if the setting of the experiment files needs to enable the thermostatic storage, it will automatically enter the thermostatic storage interface, as shown in the figure below.



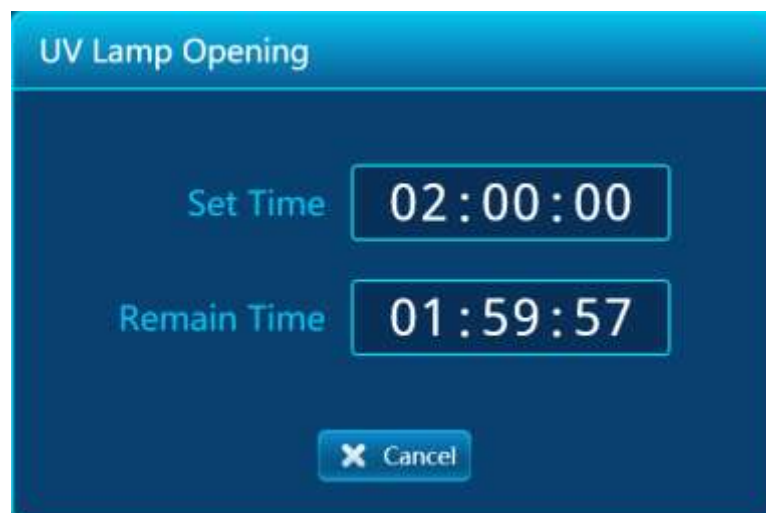
If the setting time is not 00:00, the remaining time will enter the countdown state. When the remaining time becomes 00:00, or the user clicks exit, the constant temperature storage state will **exit** and return to the idle main interface. If the time is set to 00:00, it means that the storage time is infinite. Users should click to **exit** from the constant temperature storage state. Display time unit: minutes.

e. UV light setting

When the device is idle, click the UV lamp setting on the main interface to enter the UV lamp setting interface, as shown in the figure below.



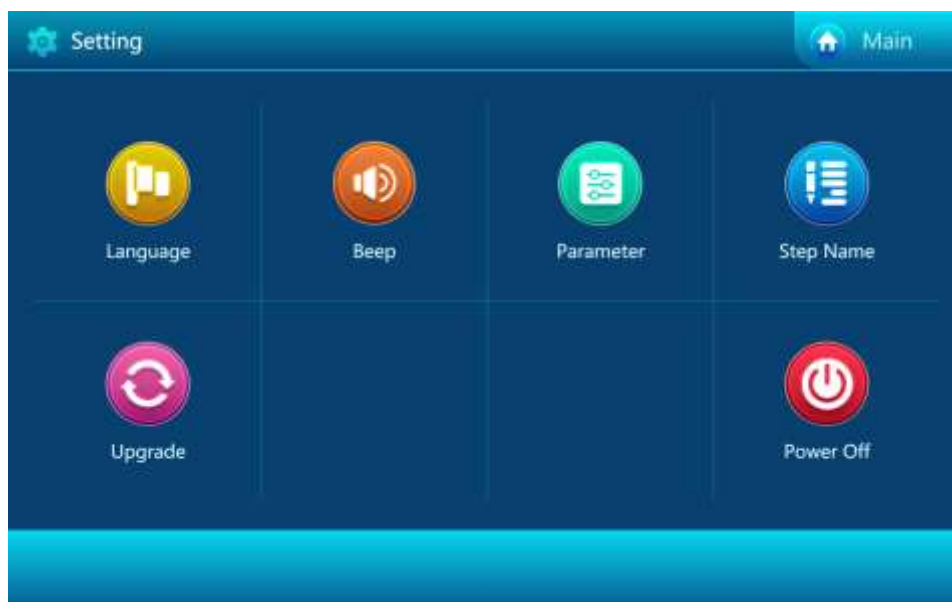
Select the preset time or enter the custom on time and click ok to enter the UV lamp on interface, as shown in the figure below, or **Cancel** button to return to the main interface.



Wait for the remaining time to change to 00:00:00, or after the user clicks cancel, the uv light will be turned off and return to the main interface.

f. System setting

Click on the system settings to enter the [System Settings] interface in the operation main interface

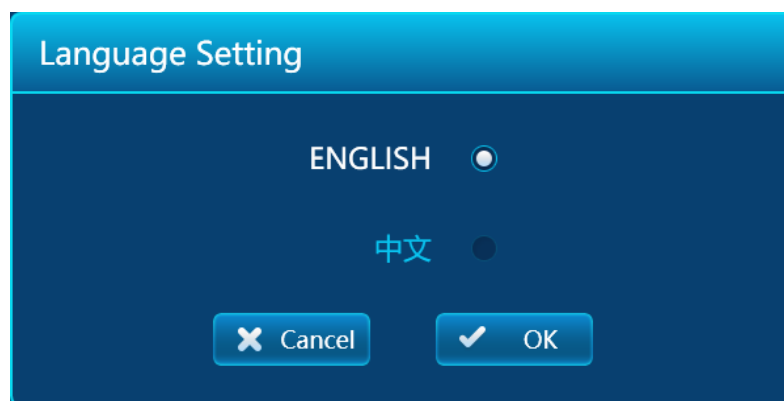


The 6 buttons in the middle correspond to 6 Settings. Click the button in the upper left corner to return to

the main interface.

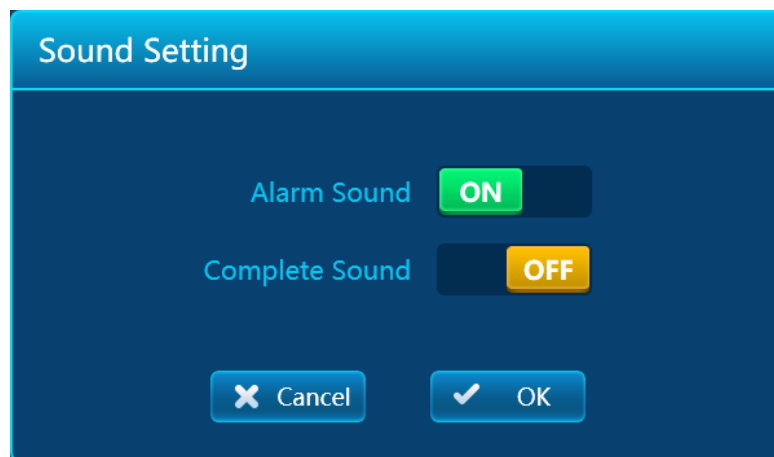
g. Language

In the system settings interface click language into the language settings interface, select Chinese or English, click OK or cancel button to return to the system settings interface (as below).



h. Prompt tone setting

Click the prompt tone to enter the [Prompt Tone Setting] interface on the main interface. After setting the alarm sound, the keyboard sound and the finished sound, click OK or Cancel button to return to the system setting interface (as below).



i. Parameter Setting

Click the parameter setting button to display the interface of [Please Enter Password], as shown in the figure below.



Enter the engineer password into the corresponding parameter setting interface, please follow the instructions of the after-sales engineer for specific operations.

Note: do not modify the equipment parameters at will, it must be set under the guidance of the engineer.

j. Step name management

Click name management to enter the step name management interface in the system setting interface.



The interface displays all the steps currently, and you can create New, Delete and Clear. Click exit button to return to the system setting interface.

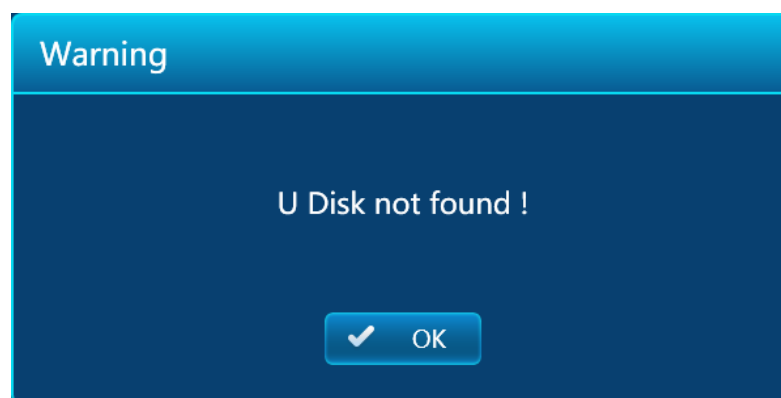
New: Add a new step name tag for English and Numbers only and slip line for up to 12 characters, preferably no more than 8 characters

Delete: Delete the selected custom name label. The default name is not removable

Clear: Remove all custom name tags, leaving only the default name tags

k. System update

After inserting the upgrade USB drive into the system setting interface, click the system update to enter the system update interface as shown below. If the upgrade USB drive is not inserted or there is no upgrade file in the USB drive, it will be indicated that the upgrade file is not detected. If multiple usb drives are detected, the usb disk selection dialog box will appear first.



After selecting the procedures that need to be upgraded, according to the status of upgrade files in the U disk, the items available for upgrading will be automatically listed. Click [OK] button to start the upgrade process, and click [Cancel] button to return to the system setting interface. Please follow the *System Upgrade Instruction* for the specific operation process.

Chapter V Fault Analysis and Troubleshooting

This chapter mainly introduces the possible fault phenomena, causes analysis and troubleshooting of this instrument.

Fault Analysis and Troubleshooting

Serial No.	Fault Phenomenon	Cause	Solution
1	The display screen is not on when the power switch is turned on	Power on	Check the power and switch on
		Fuse was blown down	Replace the fuse (F 250V 3A Φ5x20)
		The switch is damaged	Switching switch
		Others	Contact the supplier or manufacturer
2	When you turn on the power switch, you hear a buzzing alarm, and then the display displays a system error. Please contact the manufacturer.	Self-checking error	Contact with the supplier or manufacturer
3	Click the self-checking, device doesn't conduct not self-checking (self-checking failure)	The closing cover is open	Close the closing cover
		The magnet motor does not work	Magnet motor link failure occurs, contact with the supplier or manufacturer
		The sheath holder is not raised to the highest position	Sheath motor link failure occurs, contact with the supplier or manufacturer
		Platform not moving	Platform motor link failure occurs, contact with the supplier or manufacturer
4	Screen display abnormal	Loose screen connection	Contact with the supplier or manufacturer
		The screen control chip is broken	
5	The screen keys don't work	Touch screen is damaged	Contact with the supplier or manufacturer
6	The screen prompts communication failures	Display communication line fault between main control board and drive control board	Contact with the supplier or manufacturer

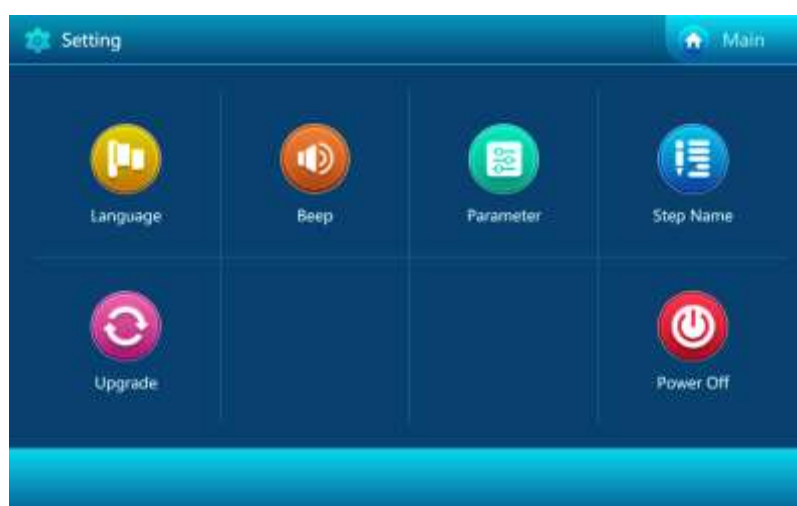
7	The screen indicates a fault with the temperature sensor	Error code corresponding to several channels of sensor circuit has short circuit or open fault	Contact with the supplier or manufacturer
8	After device self-check, the screen displays error code	Error code:0x00000001 Unable to connect to action controller Error code:0x00000002 Unable to properly connect with the lysis oscillator Error code:0x00000003 Unable to connect with action controller and lysis oscillator Error code:0x00000004 Unable to connect to elution oscillator Error code:0x00000005, unable to connect with elution oscillator and action controller Error code:0x00000006 unable to properly connect with elution oscillator and lysis oscillator Error code:0x00000007, unable to connect with action controller, lysis oscillator, elution oscillator. Error code:0x00010091 unable to find the minimum bit of the magnet motor Error code:0x00010092, unable to find magnetic rod motor reference position Error code:0x00010093, unable to find maximum bit of the sheath motor Error code:0x00010094, unable to find the minimum position of anti-sinking plate motor Error code:0x00010095, unable to find reference position of anti-sinking plate motor Error code:0x00010096, anti-sinking plate motor high-speed positioning failure	Please contact the supplier or manufacturer after taking pictures
8	After device self-check, the screen displays error code	Error code:0x000100A3, reference position of sheathed motor not found Error code:0x000100A4, sheath motor reset failed Error code:0x00020002, lysis oscillator temperature sensor fault	Please contact the supplier or manufacturer after taking pictures

		Error code:0x00020012, lysis oscillator temperature sensor fault	
		Error code:0x00020020, elution oscillator temperature sensor fault	
		Error code:0x00020021, elution oscillator temperature sensor fault	
		Error code:0x00020022, elution oscillator temperature sensor fault, lysis oscillator temperature sensor fault	
		Error code:0x00030007, platform motor minimum bit not found	
		Error code:0x00030008, platform motor reference position not found	
		Error code:0x00030009, high-speed positioning platform motor failure	
		Error code:0x0003000A, the platform station detection sensor failed to detect	

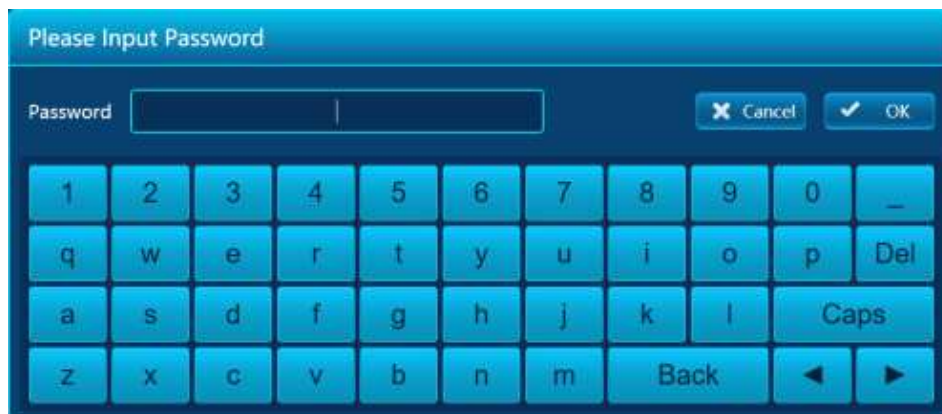
1. Long-distance transportation of instruments and pre-treatment before returning to the factory

Before the instrument is transported over a long distance, the moving platform must be mechanically locked in order to prevent damage to the instrument during transportation. The locking method is as follows:

1. Start the instrument and click [Setup] on the main interface to enter the interface of [System Setup].



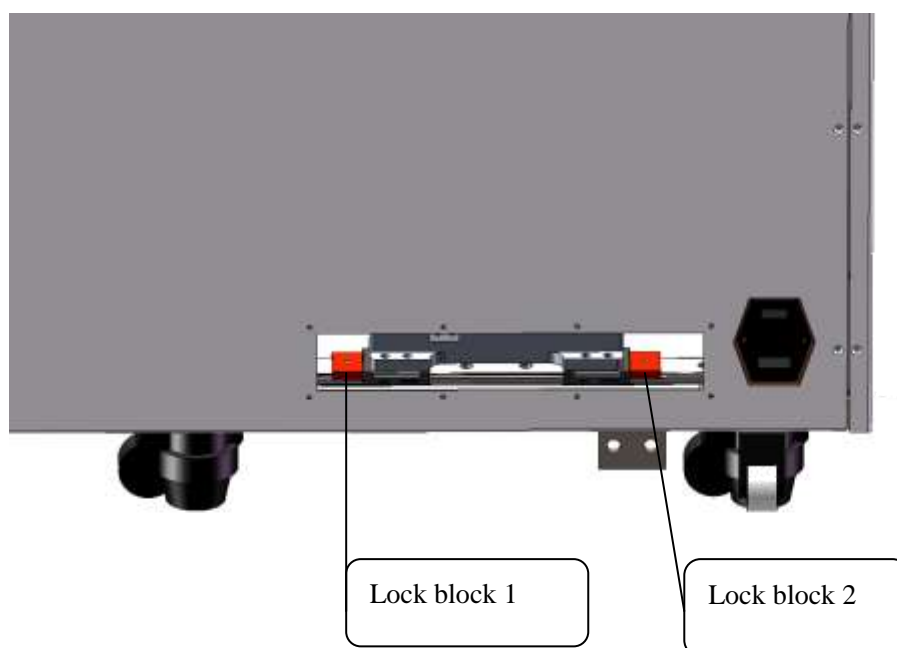
2. Click the [Parameter Setting] icon in the figure above
3. Enter the password "transport" in lowercase in the pop-up password entry interface (below)



4. Press [OK] to open the transportation interface as shown in the figure below, and the platform will automatically move to the transportation position set last time. (below)

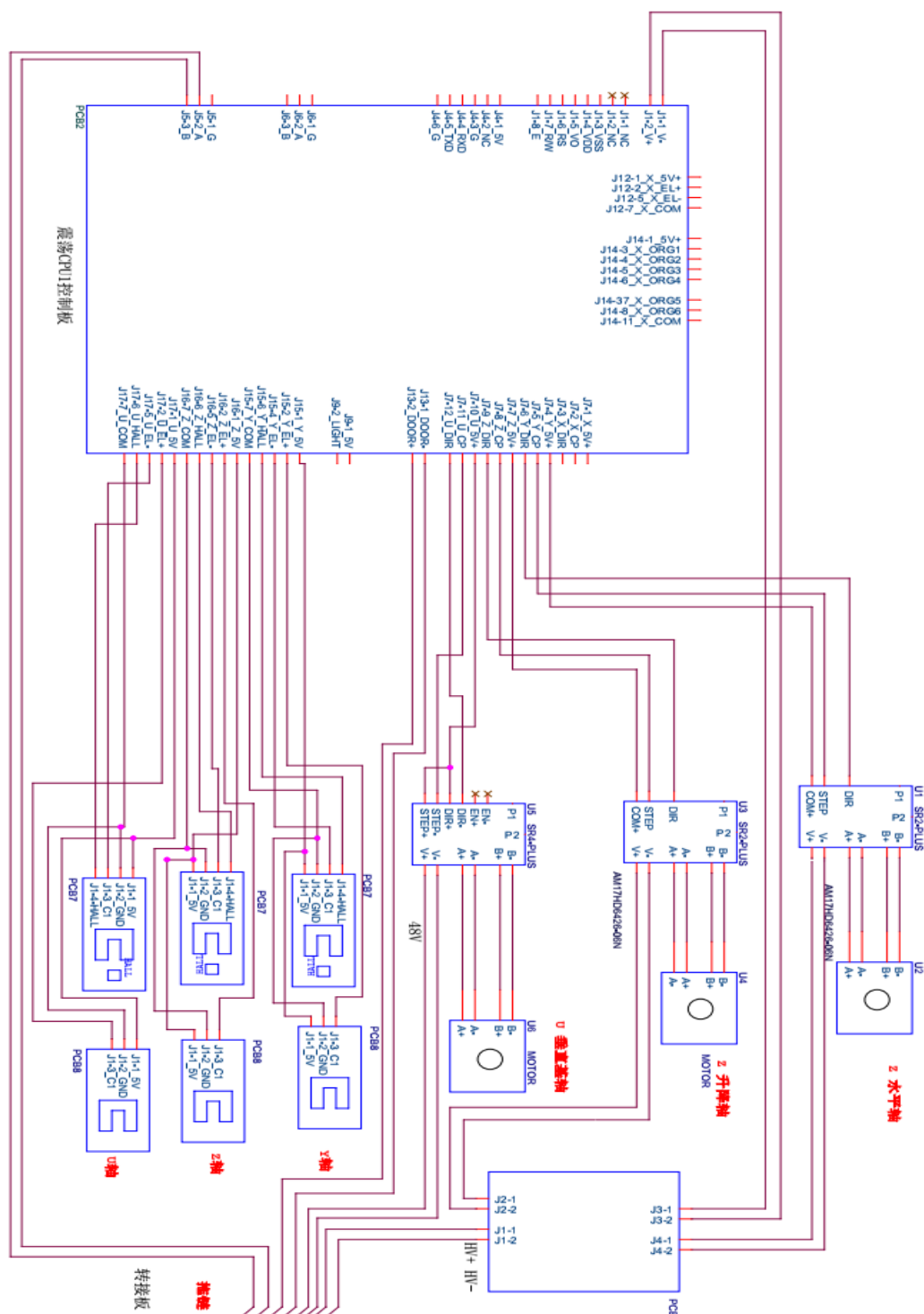


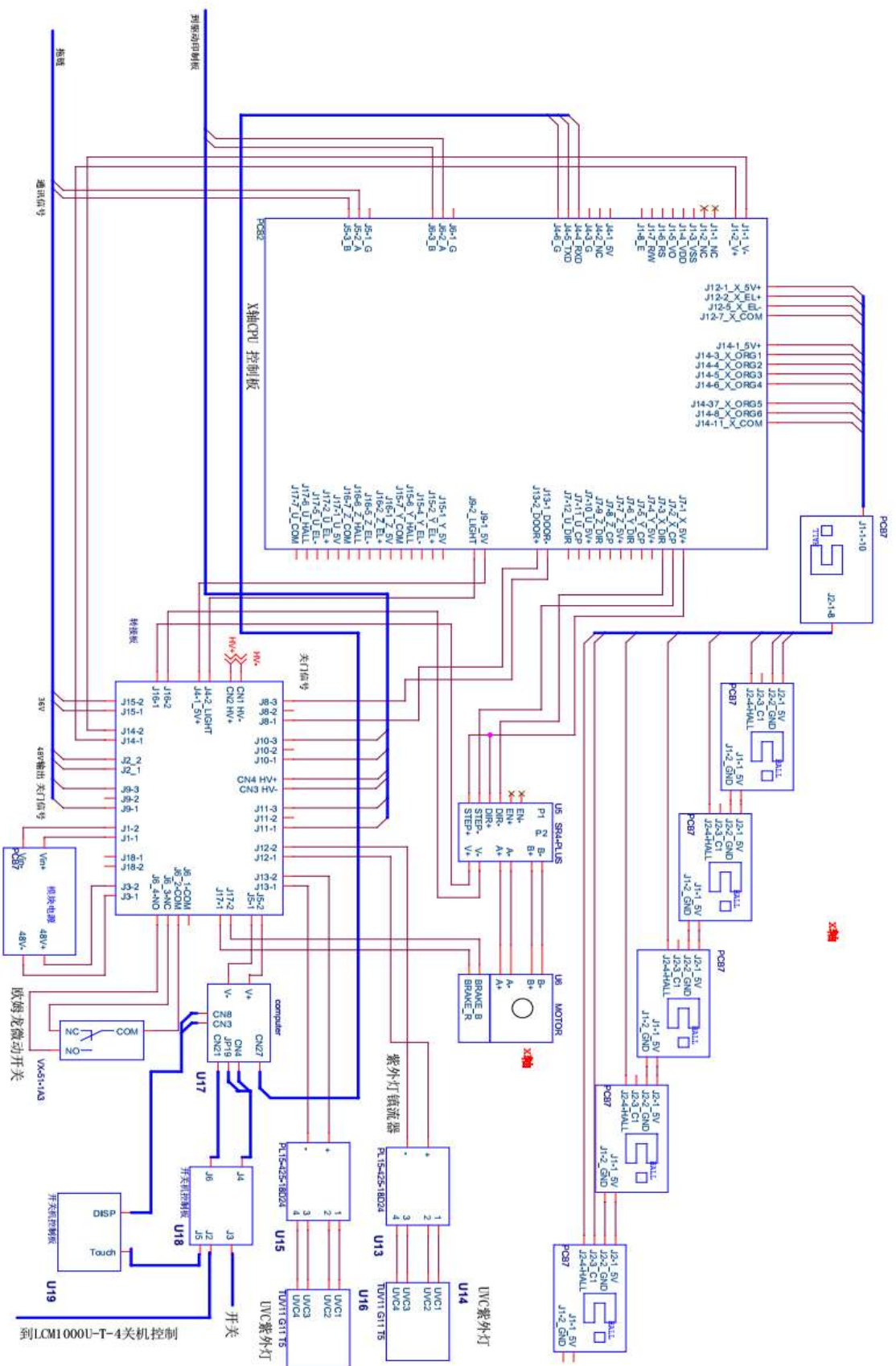
5. Check whether the transportation lock block 2 (below) can be installed smoothly. If it cannot be installed, fine tune the platform position through the forward fine tuning button of +1 or +5.
6. After the installation of transport lock block 2 (figure below), check the gap between the platform and transport lock block 2, and whether the transport lock block 1 (figure below) can be installed smoothly. If it cannot be installed, please go through the negative find tuning button of -1 or -5 to adjust the platform position.
7. After installation of transportation lock block 1, click the exit button to close the application and the instrument.

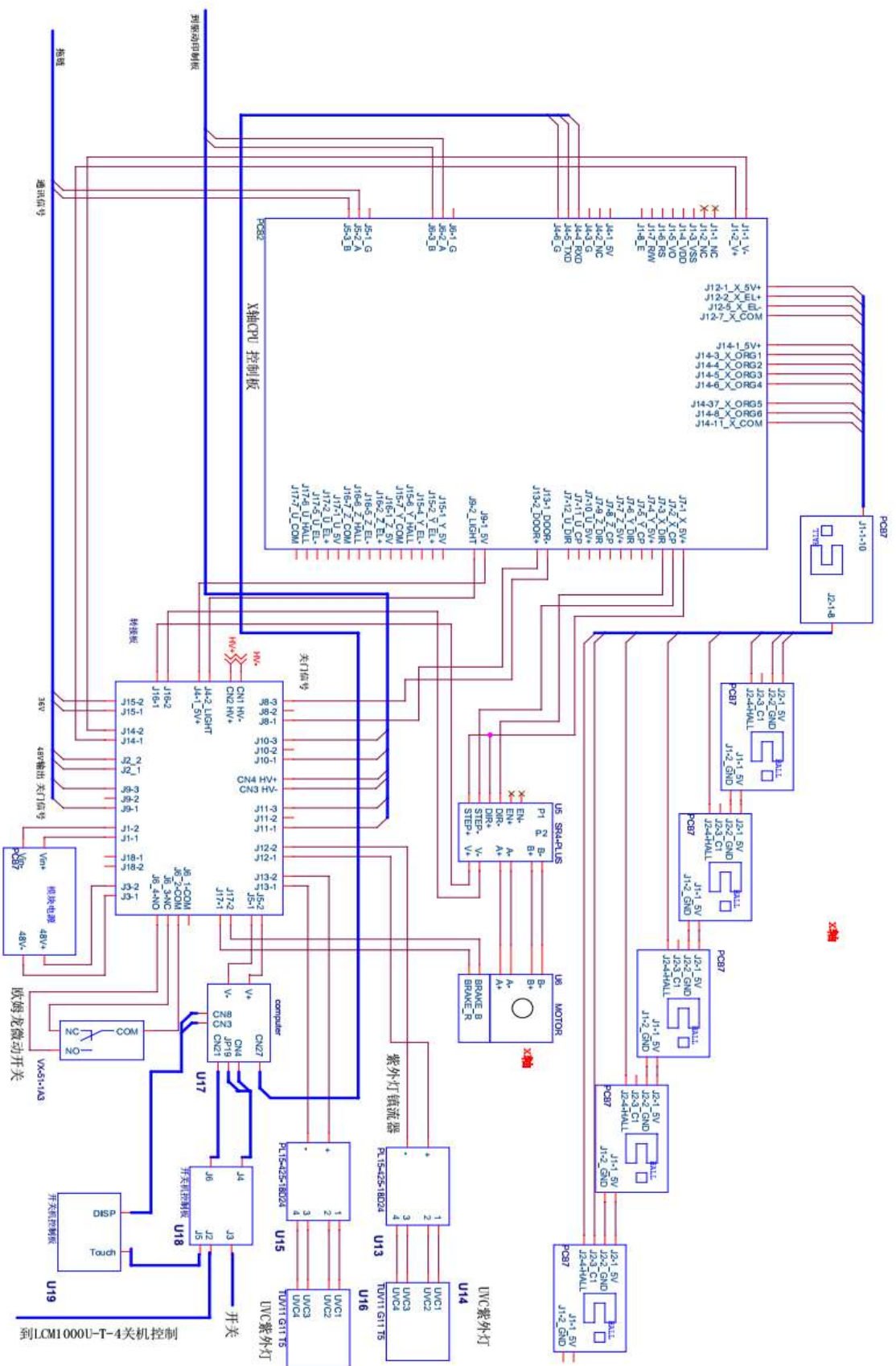


Caution: During the warranty period, it is strictly prohibited for the user to open the instrument shell for self-inspection. In case of any fault in the table that needs to be opened for inspection, the user shall contact the supplier or manufacturer in a timely manner.

Appendix 1: Wiring Diagram of Automatic Nucleic Acid Extraction and Purification Instrument









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