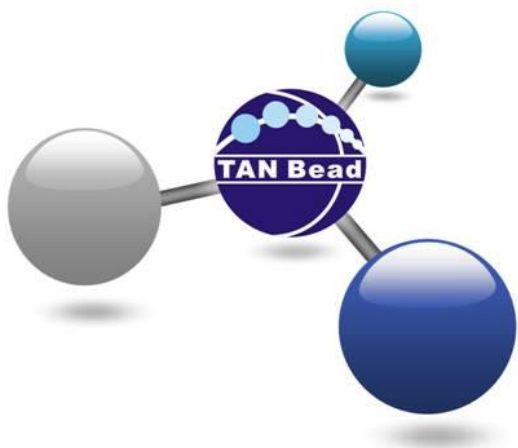


Smart LabAssist Series

使用手冊

User Manual

Model: SLA-E13200



Safety Items



Notice these tips below for avoiding electric shock or fire accidents.

1. Do not touch any plugs and electric switches with wet hands.
2. Turn off and unplug the machine before moving it.
3. Fasten robot before moving and delivering the machine.
4. Put the machine in a room with good ventilation. Keep more than five centimeters around the machine.
5. Hold the plug while you are pulling it out of an outlet. Do not pull the electric wire directly.
6. Do not place electric wires on any subject with high temperature.
7. Do not look steadily at the ultraviolet lamp while it is on.
8. Disconnect the plug from the power source when the machine is not used.
9. Do not mend the machine by yourself. Make contact with our service center or agencies to deal with problems.

Warning

Please remove the **two fixing screws** inside the internal compartment before turning on the machine. The two screws were used to hold the magnetic rod frame during shipping, and it has to be **REMOVED** before turning on the power. This is a very important step. If not, the instrument will experience malfunction and break.

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







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Revised: v01_120218

About This Manual

Symbols

The label on the back of the instrument, the User Manual, and other packaging material may contain the following symbols:

-  Catalog number
-  Serial number
-  Specification of fuse
-  Manufacturer
-  The date of manufacture
-  This product fulfills the requirements of the European Directive
-  In Vitro Diagnostic Medical Device
-  Consult Instructions for Use
-  Authorized Representative in the European Community
-  Caution, consult accompanying documents

Introduction

What is Automatic Platform for Magnetic System?

Automatic Platform for Magnetic System(SLA Series)is a robot designed to handle magnetic reagent assays. It is popularly applied to the extraction of nucleic acids/proteins and the separation of cells.

Users just need to put samples into a pre-filled reagents plate. Then, combining a reagent plate and a specially-designed strip, the SLA-E13200 can automatically handle 1-32 samples simultaneously.

Also, the extraction process of the magnetic system is simpler than that of the spin column system and still achieves scientific and diagnostic requirements with relatively quick, easy, and safe operating procedures.

Operation interface

There are nine parts in operation interface: **RUN, PROGRAM, CLOCK, USB, TEMP, UV LAMP, USER, SETTING** and **Control Panel**. The control panel includes 5 buttons and uses icons and LED light to indicate operator.

Heating System

The heating system can provide reagents with the best working temperatures.

All temperatures are programmed. In Perform Program Screen, “**PRESET**” is programming temperature and “**PRESENT**” is real temperature on stainless steel board.

The heating system is connected with the main power system. Switch off both of the main power and heating switch when you turn your machine off. If you are not going to start this function next time, please remember to turn it off.

There is a light on the heating switch and it will be lit up as the heating is functioning. Meanwhile, the temperature of stainless steel board will raise and please keep clear of the machine.

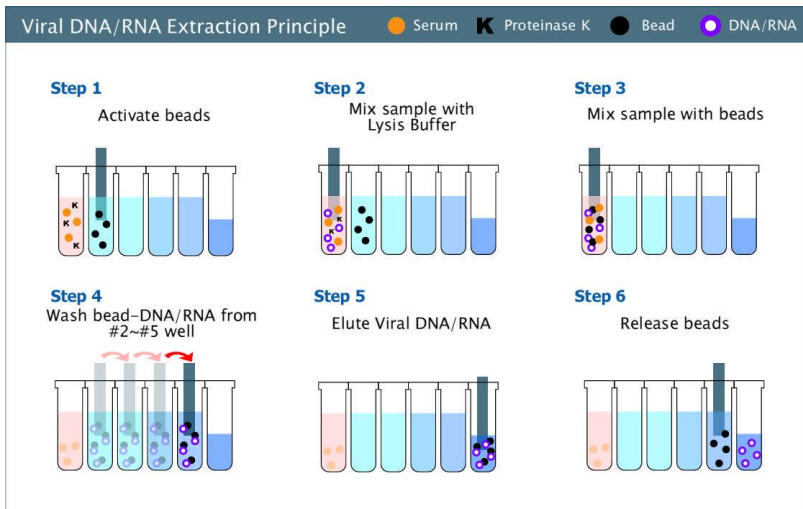
Operation Environment

Place of operation	In door use only
Altitude	2000 m
Pollution Degree	2
Transient overvoltage at Mains Supply	2500 V

Operation Principle

The robot of SLA-E13200 uses magnetic rod to transfer magnetic beads from one well to another and strip to mix solution. By moving the strip up and down to mix solution well, you can get clean nucleic acids after cells lysis, nucleic acids absorption, wash and elution.

■ Flow chart for viral DNA/DNA extraction procedure



Intended use

- Nucleic Acid Extractor is combination with TANBead[®] DNA/RNA Extraction Kit to extract DNA/RNA from specimen.
- Suitable medical inspection personnel in vitro diagnostic testing.
- Strips and reagent plates contacted with the specimen are potentially infectious. After using, please put them in the infectious waste bucket.
- After extraction procedure, the inside body of machine may be infected. Use 75% alcohol to wipe stainless steel plate, and turn on UV lamp to sterilize for 10 minutes or more to ensure that no residual nucleic acids of specimen, bacteria or viruses.

Specification

Model	SLA-E13200
Width (cm)	38
Height (cm)	37
Length (cm)	35
Weight (Kg)	21
Voltage (V)	100-240
Current (A)	3.2
Operation Temperature Range(°C)	5-50
Operation Humidity Range (%)	<80 %

Temperature Range (°C)	RT-70
Sample Number	1-32
Processing Volume	50µl – 1000µl
Transmit Interface	USB / RS232

Safety and EMC information

1.1 Safety Requirements

- The medical device has passed the tests and conformed to the standards of IEC 61010-1:2001 & EN61236-1:2006, “Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use, Part 1: General Requirements”.
- The medical device has passed the tests and conformed to the standards of IEC 61010-2-101:2001&EN61236-1:2006, “Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use, Part 2-101: Particular Requirements for In Vitro Diagnostic (IVD) Medical Equipment”.

1.2 EMC requirements

■ The medical device has passed the tests and conformed to the standards of IEC 61326-1:2005 & EN61236-1:2006 (First Edition), “Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements, Part 2-6: Particular Requirements – In Vitro Diagnostic (IVD) Medical Equipment”.

■ The medical device has passed the tests and conformed to other standards:

EN 61326-1:2006

EN 55011:2009/A1:2010

EN 61000-3-2:2006/A2:2009

EN 61000-3-3:2008

EN 61000-4-2:2009

EN 61000-4-3:2006/A2:2010

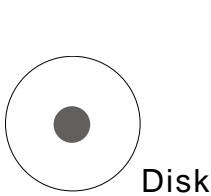
EN 61000-4-4:2004/A1:2010

EN 61000-4-5:2006

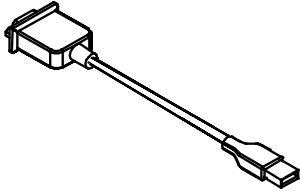
EN 61000-4-6:2009

EN 61000-4-11:2004

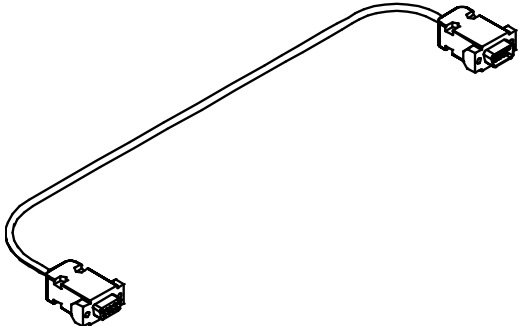
Accessory



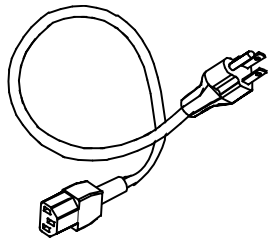
Disk



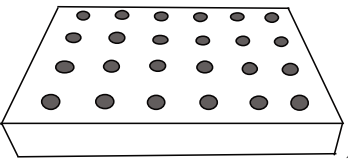
RS232- USB 傳輸線



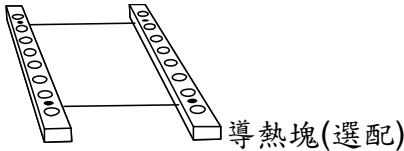
RS232 傳輸線



電源線

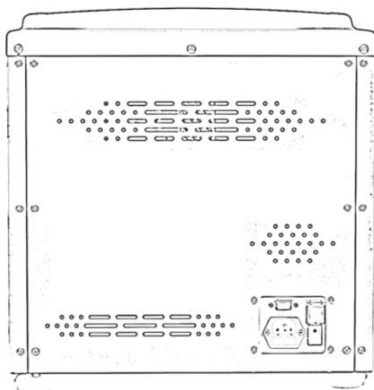


磁座



導熱塊(選配)


Appearance of the Machine



Front view

■ Control Panel Introduction



 LED 燈號指示使用者按該鍵，具有引導功能。

Appearance of the Machine

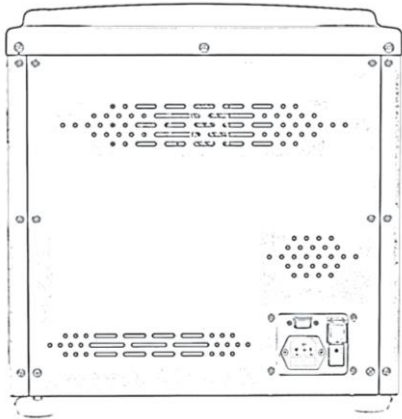
Front view



Control Panel

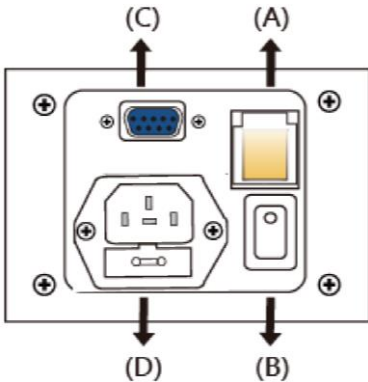


Back view



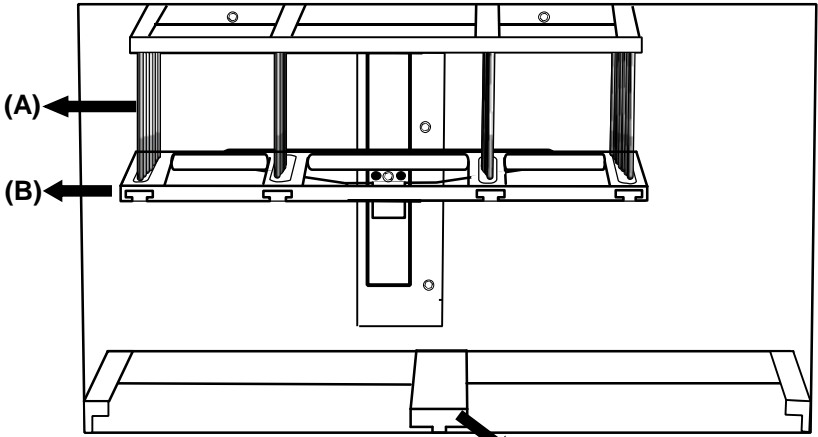
Switches and Electrical Inlet

(voltage: 100-240V · fuse: 5A/250V)



- (A) Heating switch
- (B) Main power switch
- (C) RS232 port
- (D) Electrical inlet

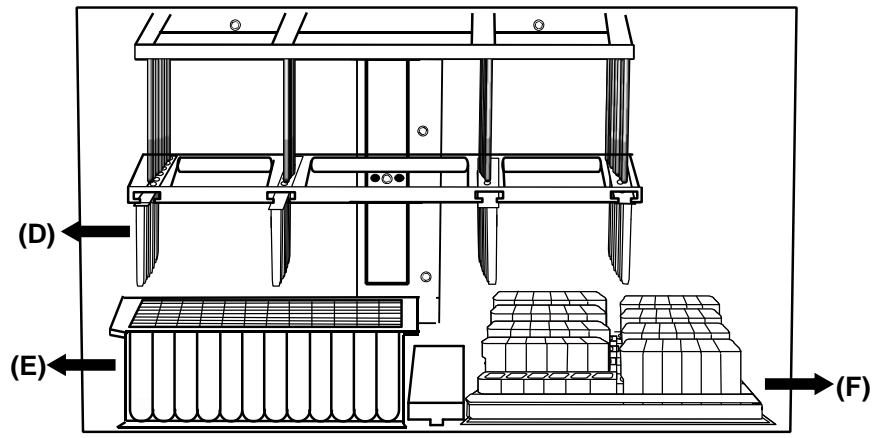
Internal view



(A) Magnetic rod frame (C)

(B) Strip rack frame

(C) Reagent plate rack




(D) 8-channel strip

(E) Reagent plate

(F) Reagent tube

Introduction of the Control Panel



: LED light-up indicates users to press the button. Start bottom LED is green, and others are red.



Start Start: to initiate the program

The buzzer will alarm when turn on the instrument.



Stop Stop: to terminate the program

It shows “STOP?” at status row at the first time you press the button. Press the button again to confirm to stop the program. Then the robot will be back to the initiated site.



Buzzer Buzzer: Press the button to turn buzzer-beater off.



Pause Pause:

It stops temporarily when you press the button. Press the button again to continue program, and the **End** time will be recalculated.



Light Light: Turn on/off the LED light.

Introduction of Touch Screen

I. Home Screen:



: Touch to enter RUN Screen.



: Touch to enter PROGRAM Screen.



: Touch to enter CLOCK Screen.



: Touch to enter USB Screen.



: Touch to enter TEMP Screen.



: Touch to enter UV LAMP Screen.



: Touch to enter BARCODE Screen.



: Touch to enter SETTING Screen.

I. Run Screen:

① Touch "RUN"

The screenshot shows a main menu with eight icons arranged in two rows. The top row contains: RUN (a green play button), PROGRAM (a yellow folder), CLOCK (a white clock face), and USB (a red USB drive). The bottom row contains: TEMP (a red thermometer), UV LAMP (a purple light bulb), BARCODE (a yellow scanner), and SETTING (blue gears). A hand is shown touching the 'RUN' icon.

② Show up READY Screen.
The program is which executed last.
Could touch program icon to change.

The screenshot shows the 'READY' screen. At the top, there are icons for home, program, and temperature. The temperature display shows 'NOW 45 °C' and 'SET 45 °C'. A digital clock shows '10:00'. Below this, a green bar displays 'Program No : 01' and 'Program Name : BLOOD-AUTO'. There are two buttons: 'ProgrammableTemp' and 'Temperature Setting'. The 'Temperature Setting' button shows '45 °C'. On the right, there is a 'Ready' icon of a smiling character.

③ Press "Start" .

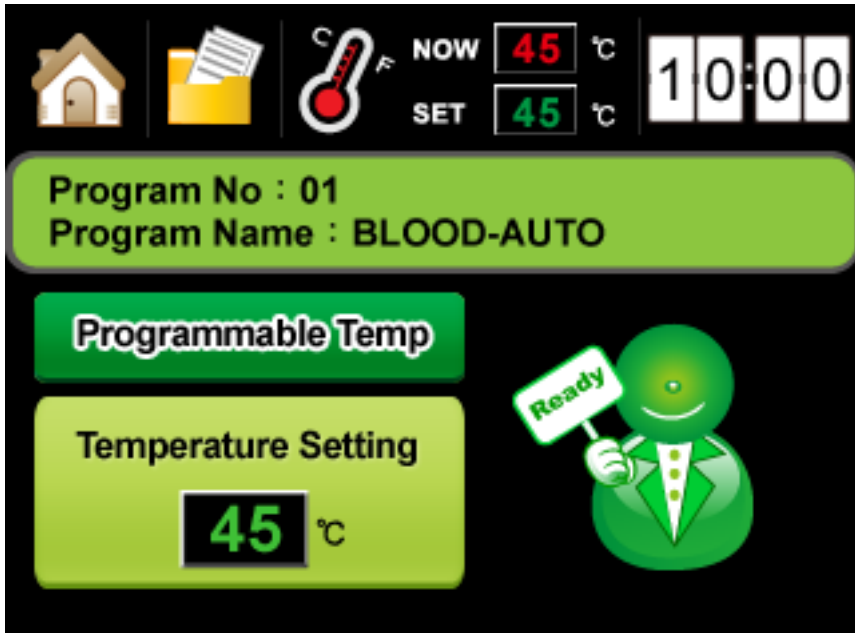
The screenshot shows a vertical column of control buttons. From top to bottom: a bell icon labeled 'Buzzer', a pause icon labeled 'Pause', and a lightbulb icon labeled 'Light'. To the right of these is a 'Start' button (a play button) and a 'Stop' button (a red square). A hand is shown touching the 'Start' button.

④ Start to execution.

The screenshot shows the execution screen. At the top, it shows 'Mixing' with a timer at '00:00' and six small icons representing vials. Below this is a table of parameters:

Volume	800 µl
Start	10:00:00
Pause	10:00:00
End	11:06:00
Status	Running

On the right side, there is a 'Mixing' icon showing a blue flask with a green circular arrow around it.



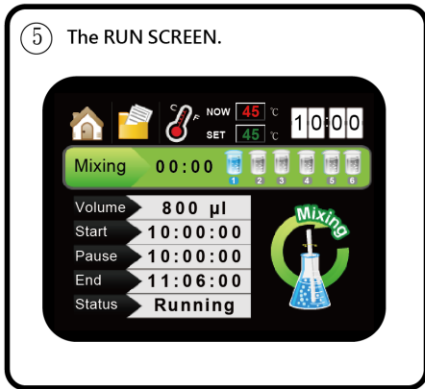
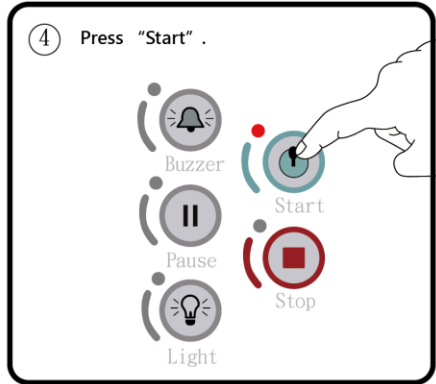
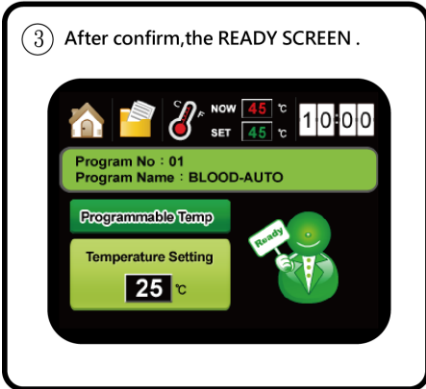
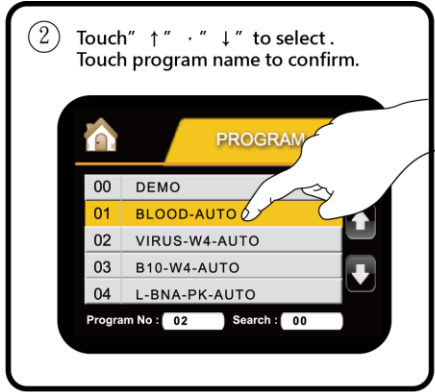
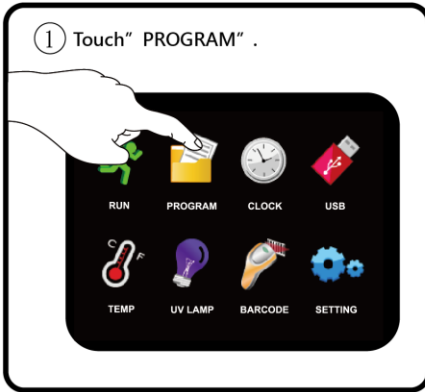
Programmable Temp:

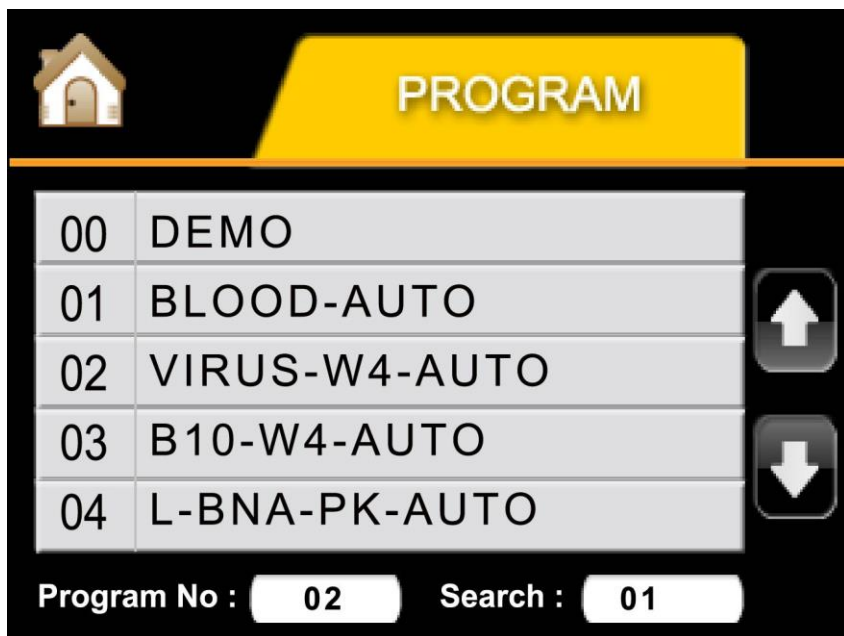
- The temperature is already setting and programmable. It is fluctuation.
- User could reference the reagent protocol which is written the detail.

Temperature Setting :

- The temperature is setting by user currently. It is constant and regular.

II. PROGRAM Screen:





Program Name:

The name is no more than 15 characters.

Program No:

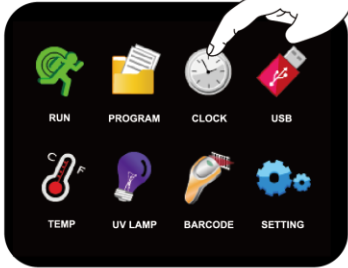
It displays the last program number you used. You can preload 100 programs, program number from 00 to 99.

SEARCH:

Insert the digits to search the program directly.

III. Clock Screen

① Touch "CLOCK".



② Touch setting icon to change time.



③ Time turns yellow, touch input block to enter value.



④ Enter value.



⑤ After entering, touch setting icon to complete setting.



⑥ Back to Home Screen.





TIME SETTING

YEAR

2013

MONTH

09

DAY

28

HOURS

10

MINUTES

00

SECONDS

00



Year(YYYY) : The digits from 0000 to 9999

Month(MM) : The digits from 01 to 12

Day(DD) : The digits from 01 to 31

Hours(hh) : The digits from 00 to 23

Minutes(mm) : The digits from 00 to 59

Seconds(ss) : The digits from 00 to 59

IV. USB Screen

Import Procedure(from instrument to USB)

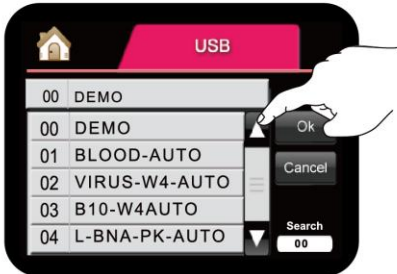
① Touch " USB " .



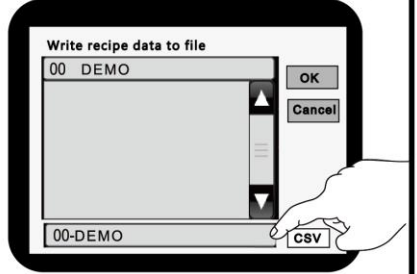
② Plug in USB , touch import icon.



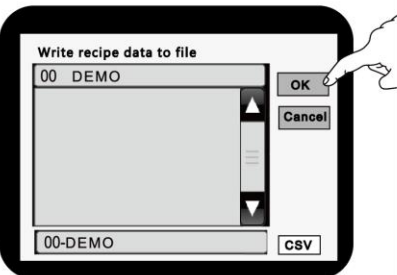
③ Touch ↑ , ↓ to select the program or input digit to search. Then, touch OK to confirm.



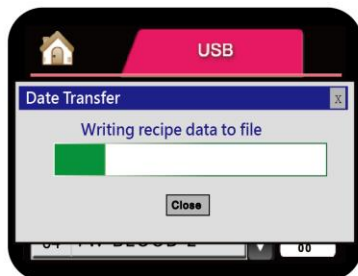
④ Touch the input block to enter file name. (Must be Program No. , program name)



⑤ Touch OK to confirm.



⑥ Appear the message, complete import.



Export Procedure (from USB to instrument)

① Touch "USB".



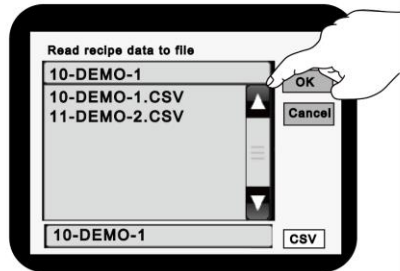
② Plug in USB, touch Export icon.



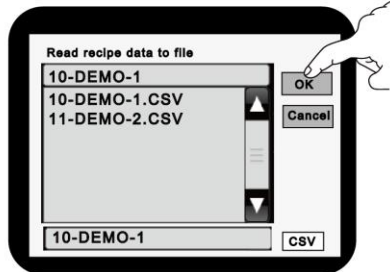
③ Touch Export icon to read the program in USB.



④ Touch ↑, ↓ to select program.



⑤ Touch Ok to confirm.

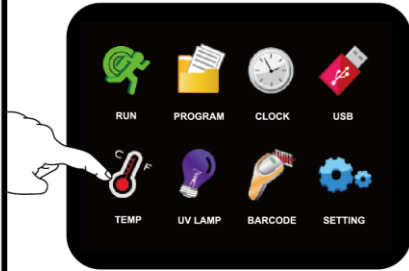


⑥ Touch OK.
Beep on successful transmission.

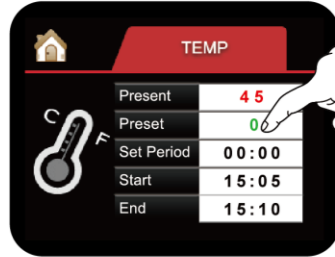


V. TEMP Screen

① Touch "TEMP" .



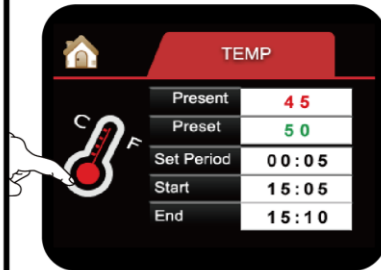
② Touch input block to set up the temperature, time.



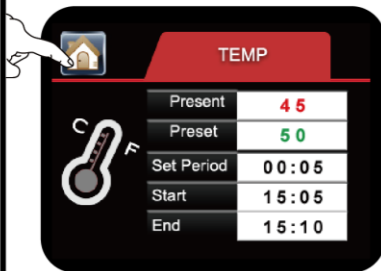
③ Enter value.



④ Touch TEMP icon turn red to excute.



⑤ When finished, back to HOME SCREEN.





TEMP



Present	45
Preset	45
Set Period	00:05
Start	15:04
End	15:09

Present : Real working temperature (°C).

Preset:

Set temperature of bottom stainless plate .

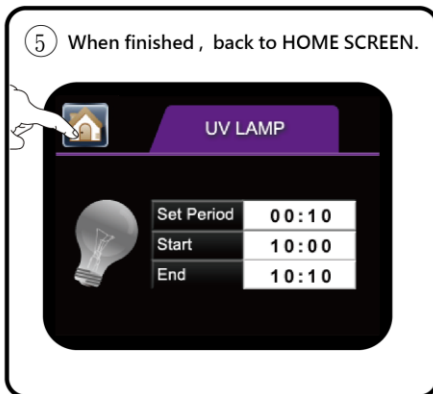
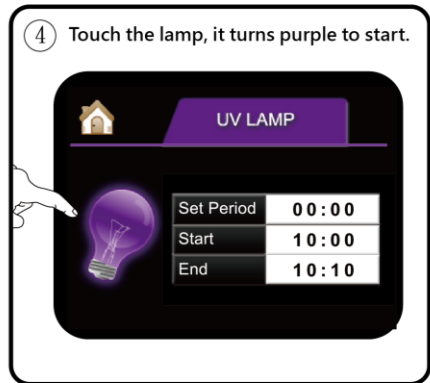
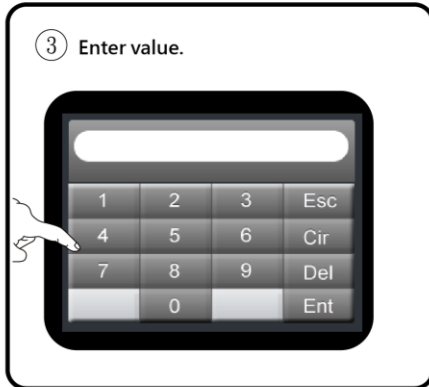
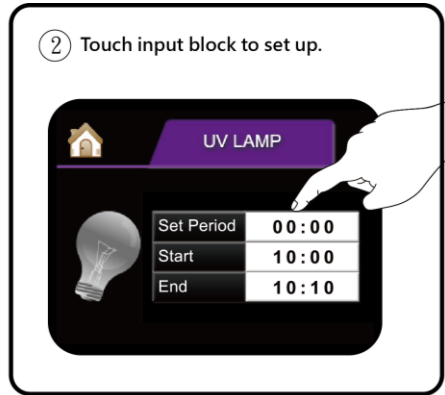
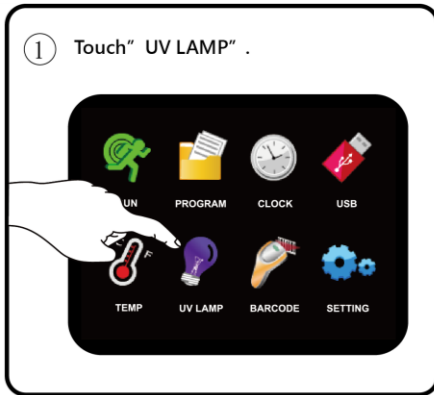
Range from RT to 70(°C).

Set Period : Set up the working time. (hh : mm)

Start : Start time .(hh : mm)

End: Estimated the end time. (hh : mm)

VI. UV LAMP Screen





UV LAMP



Set Period	00 :05
Start	15 :04
End	15 :09

Set Period : Set working time of UV Lamp. (hh : mm)

Start : Start time .(hh : mm)

End: Estimated the end time. (hh : mm)



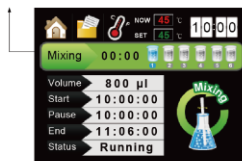
: It shows current time in the right lower corner. Time is 24-hour format.

Introduction of RUN Screen

MIXING : The working time of strip (minute)

COLLECT : The working time of magnetic rod (second)

VAPOR : The time for waiting reaction or alcohol vaporization (mm:ss)



Current time:
Time is 24-hour format.

STATUS : It shows the machine being what kind of status.

RUNNING: The program is progressing.

WAITING: Execute vapor step.

PAUSE: To make a short stop.

END: The program is finished.

HOME: Go to the initial site.

STOP?: Do you want to stop program?

JOG: To move robot slowly.

LIMIT: The site of robot is out of the limited range.

SENSOR: It is fault to detect the initial site.

TEMP MAX: Real temperature is higher than over-temperature protection. (79°C)

TEMP ALARM: It can not be reached preset temperature in a reasonable period.

VOLUME : The buffer volume in the well (µl)

START : Start time of program (hh : mm : ss)

Pause : Pause time (hh : mm : ss)

END : End time of program (hh : mm : ss)



: Return to the “**Home Screen**” at the status of **END**.



: Return to the “**Program Screen**” at the status of **END**.



SET : Preset working temperature.

It shows “**NA**”, when there is no preset input.

NOW : Real working temperature

It shows “**NC**”, when there is no connection with thermal couple.



1) If it shows **LIMIT** or **SENSOR**, it means the machine is out of order. And buzzer will keep on ringing. Press the



button **Buzzer** to stop the buzzer. Turn the power system off, and notify our service center to deal with problem.

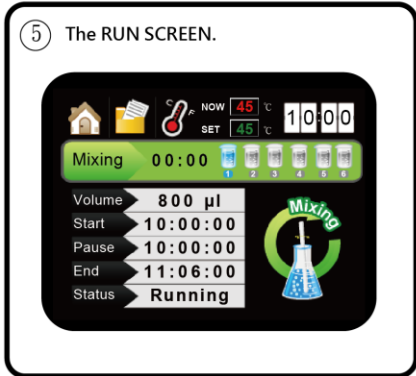
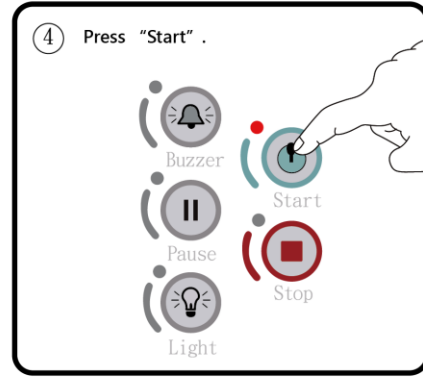
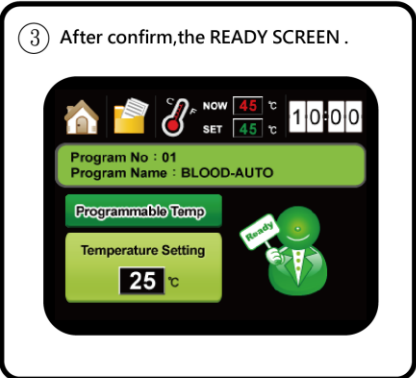
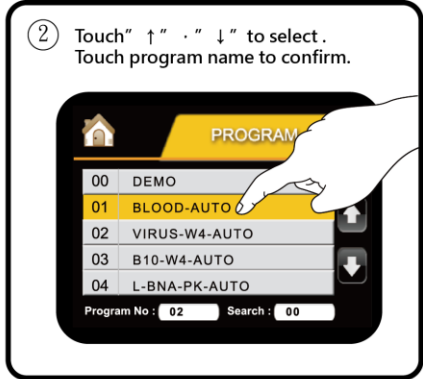
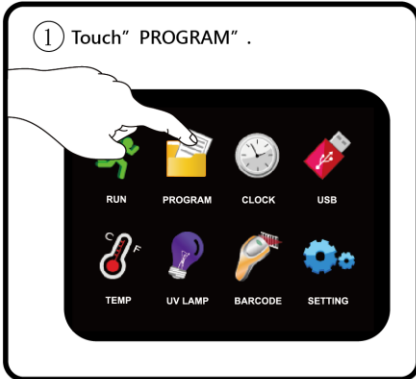
2) If it shows **TEMP MAX** or **TEMP ALARM**, it means heating system is out of order. And buzzer will keep on



ringing. Press the button **Buzzer** to stop the buzzer. Turn heating switch off, and notify our service center to deal with problem.

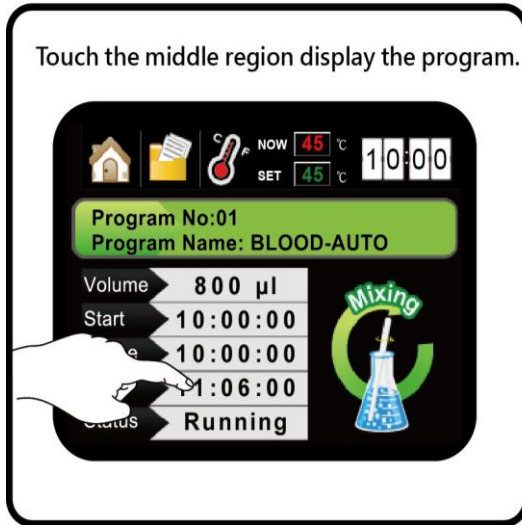
Introduction of execution condition

1. How to START





1) Touch parameter area at the screen last longer, the program name will show up in the green block.




2) Confirm two things before you start the program.

I .Did you put reagent plate toward outside by the missing corner and push it to the bottom of plate rack?

II .Did you put 8-channel strip to the bottom of strip rack?

2. How to PAUSE




2.1 If you press the button  Pause in the process of executing program, the execution will be paused immediately. The robot will stop working and move back to the top. Meanwhile, other buttons will be unworkable.




: In **Collect** step, the robot can not be stopped immediately. It will pause after finishing the collect action. And the magnetic rod and strip will move back to the top together.




2.2 Press the button  Pause again will continue running the program.




: If you press the button  Stop in this stage, the program will be stopped and finished. The robot will go back to the initial site.

3. How to STOP





3.1 Press the button  in the process of executing program, the execution will be stopped immediately. The robot will stop working immediately and it shows “**STOP?**”




at status row. Press the button  again to confirm terminating the program and the robot will go back to the initial site. If you don't want to terminate the program,



press the button  to continue the program.

: In **Collect** step, the robot can not be stopped immediately. It will stop after finishing the collect action. And the magnetic rod and strip will move back to the top together.



3.2  **Stop** is the same as emergency button.3.3 button also move the robot back to the initial site.



Installation the SLA-E13200

1.1 Installation crew:

1.1.1 Instrument installation :

- With general electronic concepts, use the Volt-Ohm-Milliammeter for inspection.
- Pass the training of Automatic Platform for Magnetic System.

1.1.2 Reagent testing :

- With polytechnic, biomedical background, could communicate the operation question with customer.
- Pass the training of nucleic acid reagent kit.

1.2 Installation Validation

- Before plunging into the power cable, use screwdriver remove fixing plate or crew.
- To confirm the instrument relative documents are correctly and completely.
- Keep a distance around 5 cm for ventilated space.

1.3 Operation Validation

- To operate, inspect in normal range, then confirm each switch and controller could not only functioning well but also in compliance with intended use.
- Before plunging into the power cable, use screwdriver remove fixing plate or crew.

- Operation Validation Contents

- A. Function Operation: UV Lamp, heating function, safe door, buzzer etc.
- B. Software testing: Use the standard consumables to test.
- C. Other: Light and alarm etc. (regard if necessary)

1.4 Performance Validation

- Inspect the instrument in the fully state could conform the user requirements.

- Performance Validation Contents :

- A. Consistency test: Use standard reagent kit.

Judgment criteria :

$$\rightarrow \text{Ratio} = \text{S.D. } OD_{260} / OD_{280} \leq 0.06$$

$$\rightarrow \text{S.D. Conc.} \leq 3.00 \text{ } ^\circ$$

- B. Reagent kit test: Use customer's sample
Judgment criteria :

→DNA extraction kit :

$$\text{Ratio} = 1.75 \sim 1.85 \quad \text{Yield} \geq 3\mu\text{g}$$

→RNA extraction kit :

$$\text{Ratio} = 1.95 \sim 2.05 \quad \text{Yield} \geq 10\mu\text{g}$$

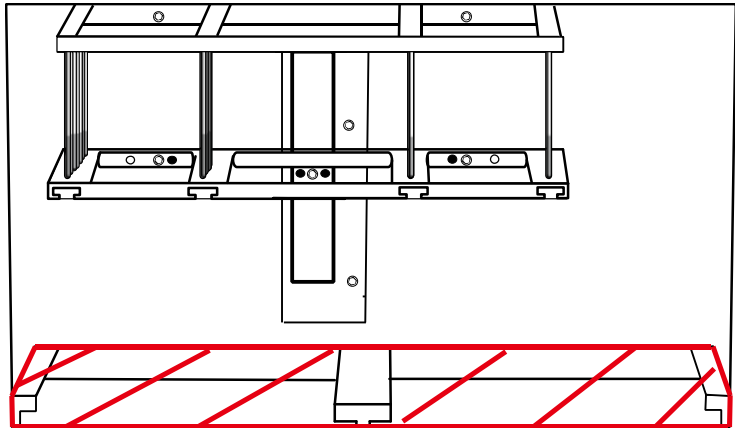
Cleaning the SLA-E13200

1.1 Cleaning the case

- Wiping with 75% ethanol solution.

1.2 Cleaning the inner instrument

- Wiping with 75% ethanol solution in the inner region.



- The magnetic rod and aluminum rod is connecting by adhesive. Please do not wiping with ethanol solution. Please moisten wipes with RO water for cleaning.
- The magnetic rod and aluminum rod is connecting by adhesive. Thus, be careful when cleaning.
- The reagent contain the salt, once the magnetic rod is adhesion with it. Please moisten wipes with RO water for cleaning to avoid magnetic rod corroding.

Maintain the SLA-E13200

1.1 Maintain Cycle: Once a year.

1.2 Maintain by the engineer who pass the training regular.

1.3 Maintain Content

- External inspecting: Only inspecting an external.
- Internal inspecting: Split the case, inspecting an internal.
- Software testing: Execute program “DEMO” to confirm instrument is executing in normal.

1.4 Regular Maintain Items List Content

- External inspecting
 - i. Thermostat function is normal?
 - ii. Magnetic rod without broken, stain?
 - iii. UV Lamp function is normal?
 - iv. Buzzer sensor and function is normal?
- Internal inspecting
 - i. The line without shedding or damaging?
 - ii. Linear Slides without accumulate oil?
 - iii. The elastic of belt is normal?
 - iv. Cleaning inside.
- After maintain inspecting ,
 - i. Turn off then reboot to inspect whether it is normal.

Storage and Transport

1.1 Storage

- Storage condition:
Storage temperature range: 5 - 50°C
Storage humidity range: <80%
- Operation condition:
Operation temperature range: 5 - 50°C
Operation humidity range: <80%

1.2 Transport

- To avoid damaging the linear side through the transport, please use the fixing plate or fixing screws fix the mechanism before transporting.

Replace the fuse

1.1 Using the flathead screwdriver to removed the fuse-base from the power outlet.

1.2 The fuse-base removed.

1.3 The spare fuse is within the framework.



: The fuse specification: 250V/5A

Disposal machine

- 1.1 The strips and reagent plates, reagent tubes which contact with the specimen are potentially infectious. Those are belonged to industrial waste. Please follow the infectious waste treatment. After use, please put in the bucket.
- 1.2 The used instrument its inner region maybe will infect by specimen. Wiping with 75% ethanol solution in the stainless still plate region. Then, turn the UV lamp sterilization 10 minutes or more, to ensure that no residual specimen nucleic acid molecule residues with bacteria or viruses.
- 1.3 The instrument belongs to the general industrial waste, please follow recyclable waste treatment. But the UV lamp, fluorescent tubes and Nd-Fe-B magnets in the instrument please recycling separately.

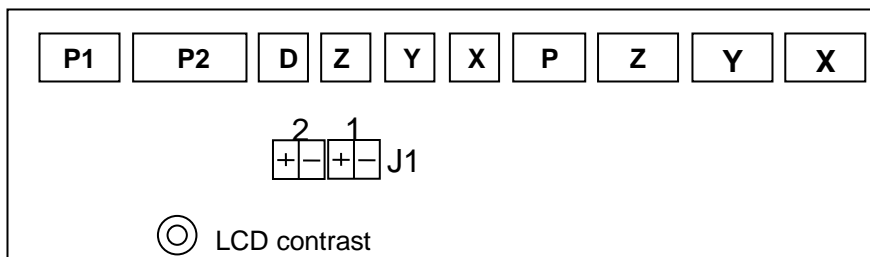
Chart of Pre-loaded Program



: There are 13 pre-loaded programs in the machine.

Program No	Program Name	Model
00	DEMO	SLA-E13200
01	BLOOD-AUTO	SLA-E13200
02	VIRUS-W4-AUTO	SLA-E13200
03	VIRUS-40-5	SLA-E13200
04	B10-W4-AUTO	SLA-E13200
05	L-BNA-PK-AUTO	SLA-E13200
06	RNA-BWE-AUTO	SLA-E13200
07	DNA-RICE-AUTO	SLA-E13200
08	BWE-AUTO	SLA-E13200
10	PK-10MIN	SLA-E13200
11	PK-20MIN	SLA-E13200
12	PK-30MIN	SLA-E13200
99	VALIDATION	SLA-E13200

The picture of wiring at the back of controller



White 4PIN outlet connecting to stepping motor

White 2PIN outlet connecting to DC 24V

Black 3PIN outlet (X, Y, Z) connecting to 3-axis zero sensor

Black 3PIN outlet (D) connecting to emergency door

⊙ It means variable electric resistance.

Green 2PIN outlet (J14) connecting to thermocouple

P1: 9PIN outlet is the usage of transmitting program.

P2: 26PIN outlet connecting to UV lamp, heater and cooler.

LCD contrast: tune the contrast of LCD

I/O Chart

Input points		Output 4 points	
X01	X-axis zero sensor	Y01	UV lamp
X02	Strip zero sensor	Y02	Temp. control
X03	Rod zero sensor	Y03	Cool
X04	Safety door sensor	Y04	Heat
X05	Reserve		
X06	Reserve		

Troubleshooting guide

Problems	Suggestions
It displays nothing on the screen.	<ul style="list-style-type: none">● Did you turn on the power system already?● Did the plug connect with the power system?● Measure the voltage of outlet.
Noises from the machine.	<ul style="list-style-type: none">● Check the strip to see if it has been pushed into the bottom of strip rack.● Check the plate to see if it has been pushed into the bottom of plate rack.● Contact service center: 886-3-3607555.
The action of the magnetic rod frame doesn't work normally. It doesn't move down or move up.	<ul style="list-style-type: none">● Press the button "Stop" to terminate the program. Then, press the button "Stop" again to let the robot move back to the initial site.● Run DEMO program without reagent tube. Check the magnetic rod frame to see if it still is abnormal.● Contact service center: 886-3-3607555.

The function of heating is abnormal.

- Check the heating switch to see if it has been turned on.

The temperature doesn't increase.

- Contact service center: 886-3-3607555.
-

Stain on the magnetic rod.

- Be sure to put a clean strip on the strip rack whenever you operate it. Avoid to be stained by the remaining reagents in the reagent tube.
 - Use clean and moisten cotton cloth or wet tissues to wipe it out carefully. Do not use any solvent or cleanser to clean it.
-

The magnetic rod comes off the magnetic rod frame.

- Contact service center: 886-3-3607555.
-

Program import/ export

1. Accessory

- 1.1 AutoMag.rar file (**AutoMag 4.1**)
- 1.2 USB to serial converter driver disc
- 1.3 RS-232 transmission cable
- 1.4 USB connection cable

2. Install AutoMag software

- 2.1 Copy AutoMag.rar to your computer and extract it.
- 2.2 If you don't have any decompression software, please contact your dealer to obtain AutoMag file.
- 2.3 You can run AutoMag software by executing the **AutoMag** in file.
- 2.4 Key in password to start the software. The original password is "0". You could rebuild another set of new password, but no more than 6 Arabic numerals.

3. Transmit AutoMag program

3.1 RS-232 transmission cable can be connected to the RS232 port of PC. The preset port is COM1.

3.2 For portable computers without RS-232 port, you should connect USB connection cable to USB port. Please install USB to serial converter driver.

If your computer is using the latest operating system, you can download new USB to Serial converter driver at **www.prolific.com.tw**.



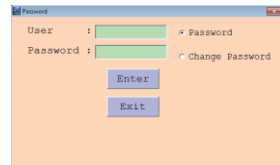
: Before using the AutoMag software, change the communication port firstly. The used USB port can be checked in **control/system/device manage/port**.

AutoMag software

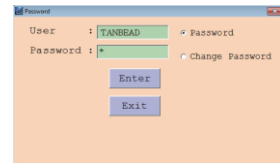
1. Log in

1.1 Key in user name and password

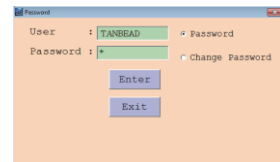
(6 digits at most)



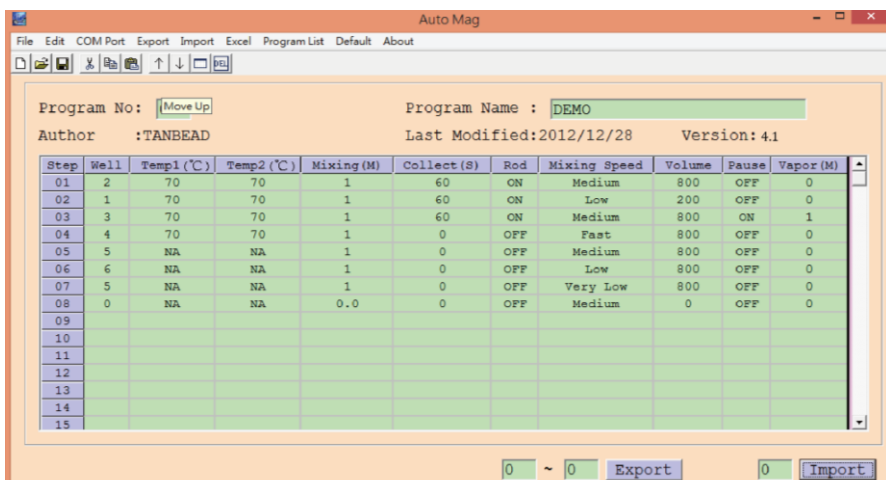
1.2 Change your password



1.3 Confirm your password



1.4 Protocol Edit Window



Auto Mag

File Edit COM Port Export Import Excel Program List Default About

Program No: [Move Up] Program Name : DEMO

Author : TANBEAD Last Modified: 2012/12/28 Version: 4.1

Step	Well	Temp1 (°C)	Temp2 (°C)	Mixing (M)	Collect (S)	Rod	Mixing Speed	Volume	Pause	Vapor (M)
01	2	70	70	1	60	ON	Medium	800	OFF	0
02	1	70	70	1	60	ON	Low	200	OFF	0
03	3	70	70	1	60	ON	Medium	800	ON	1
04	4	70	70	1	0	OFF	Fast	800	OFF	0
05	5	NA	NA	1	0	OFF	Medium	800	OFF	0
06	6	NA	NA	1	0	OFF	Low	800	OFF	0
07	5	NA	NA	1	0	OFF	Very Low	800	OFF	0
08	0	NA	NA	0.0	0	OFF	Medium	0	OFF	0
09										
10										
11										
12										
13										
14										
15										

0 ~ 0 Export 0 Import

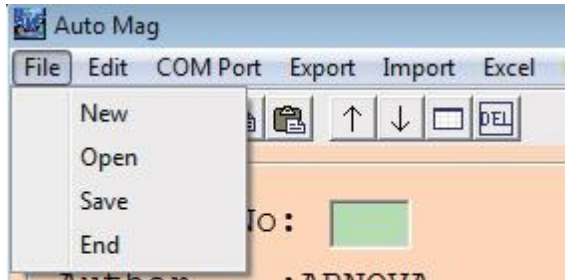
2. Instruction of keys

File: New- open a new file

Open- open an old file

Save- Save a file

End- close the file



Edit: Cut

Copy

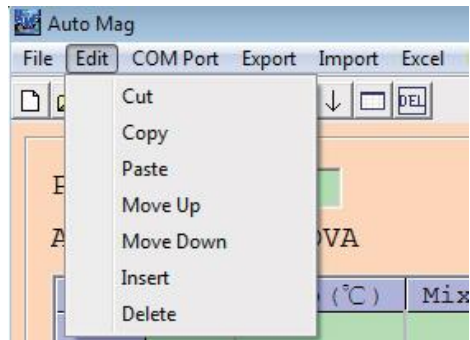
Paste

Move up

Move down

Insert

Delete

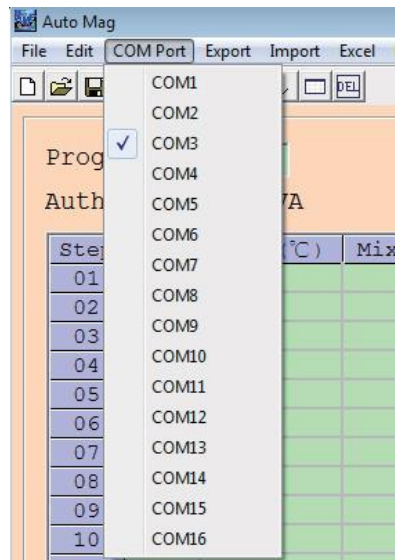


COM Port :

Choose a COM port. There 16 COM ports.

COM1 is a preset port.

Reset a new COM port. The program can record it so that you won't have to set it again when using it





: The used USB port can be checked in control/system/device manage/port.

Export: Export the program from a computer to a machine.

Import: Import the program from a machine to a computer.

Excel: Transfer the program data or program list to Excel. Use Excel software to print the program data or program list in machine.


	A	B	C	D	E	F	G	H	I	J	K	
1											Date:2013/10/7	
2	Program No:00				Program Name:DEMO							
3	Author :TANBEAD				Last Modified :2012/12/28				Version:3.2			
4	Step	Well	Temp1(°C)	Temp2(°C)	Mixing (M)	Collect (S)	Rod	Mixing Speed	Volume	Pause	Vapor (M)	
5	1	2	70	70	1	60	ON	Medium	800	OFF	0	
6	2	1	70	70	0.1	0	OFF	Medium	100	ON	0	
7	3	3	70	70	0.1	0	OFF	Medium	100	ON	0	
8	4	4	70	70	0.1	0	OFF	Medium	100	ON	0	
9	5	5	70	70	0.1	0	OFF	Medium	100	ON	0	
10	6	6	70	70	0.1	0	OFF	Medium	100	ON	0	
11	7	1	70	70	1	0	OFF	Medium	800	OFF	0	
12	8	2	70	70	1	0	OFF	Low	800	OFF	0	
13	9	3	70	70	1	0	OFF	Very Low	800	OFF	0	
14	10	4	70	70	1	60	ON	Medium	150	OFF	0	
15	11	5	NA	NA	0.1	0	OFF	Medium	800	OFF	0	
16	12	0	NA	NA	0	0	OFF	Medium	0	OFF	0	
17												
18												
19												
20												
21												
22												


Program List: Transfer the program list in machine to computer.


Default: You can build a default parameters table in AutoMag.

About: Description of AutoMag version.

3. Instruction of the usage and function of icons

3.1 Open a new file 

3.2 Open an old file 

3.3 Save a file 

3.4 Cut 


When you select a certain row, you could cut off a whole row of data. However, if you highlight a certain cell, all you could cut is the data in the field length that you mark.


3.5 Copy 

Select a certain row, click  to copy a whole row.


However, if you highlight a certain row, you could copy all the data in the field length.

3.6 Paste 

After the actions mentioned above, move to the position that you are going to paste. Click  to paste a whole row of data on the right position.

3.7 Move up 

Move up a whole row of data.

3.8 Move down 

Move down a whole row of data.

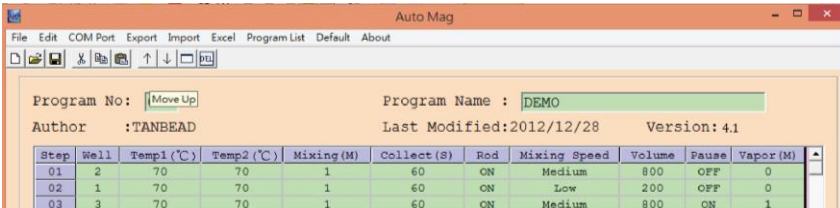
3.9 Insert 

Insert a row of blank space.

3.10 Delete

You could delete a whole row of data when you select a certain row. However, if you highlight a certain cell, all you could delete is the data in the field length.

4. Introduction of program parameters



The screenshot shows the 'Auto Mag' software window. At the top, there is a menu bar with options: File, Edit, COM Port, Export, Import, Excel, Program List, Default, and About. Below the menu bar is a toolbar with various icons. The main area contains the following information:

Program No: Program Name : DEMO
Author : TANBEAD Last Modified: 2012/12/28 Version: 4.1

Step	Well	Temp1 (°C)	Temp2 (°C)	Mixing (M)	Collect (S)	Rot	Mixing Speed	Volume	Pause	Vapor (M)
01	2	70	70	1	60	ON	Medium	800	OFF	0
02	1	70	70	1	60	ON	Low	200	OFF	0
03	3	70	70	1	60	ON	Medium	800	ON	1

Program No:

- You could set 100 programs at most; from 00-99.
- Use serial numbers as the names of files when saving file.

Program Name:

- 15 characters at most.
- Only letters of the alphabet and Arabic numerals.

Step:

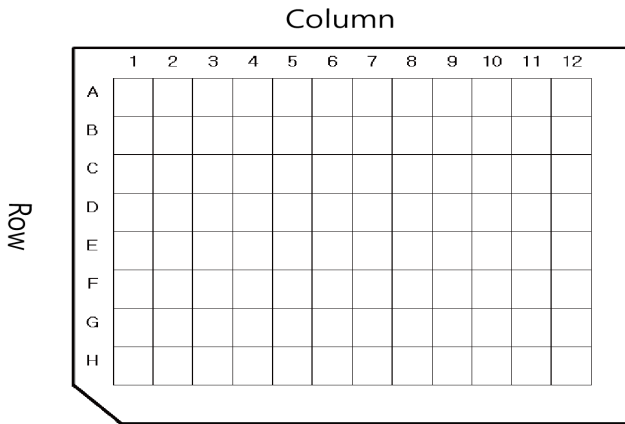
- You could set 40 steps at most in a program; from 01- 40.



It represent the end of program if input “0” or none in Well parameter.

Well:

- The maximum amount working during a program is 6 well. Please refer to the picture of reagent plate.
- First group is from column #1 to #6.
- Second group is from column #7 to #12.



Temp (°C): working temperature of bottom stainless plate

- Input numeral from **RT** to **70**. (unit is °C.)
- If you input “**999**”, it will show “**NA**” to turn off heating system.

Mixing (M): working time of strip

- The time that you use strip to mix solution.(minutes)
- 999 minutes is the maximum.

Collect (S): working time of magnetic rod

- The time using magnetic rod to collect magnetic beads. (seconds)
- 999 seconds is the maximum.



: It takes 30 seconds to move the magnetic rod reaching the lowest position. Therefore, do not set collect time less than 30 seconds.

Rod: Used magnetic rod or not.

Drop-down list to select “ON” or “OFF”.

- OFF: Magnetic rods stay.
- ON: Magnetic rods move down to collect magnetic beads.

Mixing Speed: the mixing speed of strip

- There are four kinds of speed in the program. Use them to control mixing speed.
- Drop-down list to select **highest**, **medium**, **slow** or **slowest** speed.

Volume: the volume of solution in well

- Input numeral from 0 to 1200. (unit is μl)
- The working range of strip will is accord to the volume high.



: It is recommended to use solution volume no more than 1000 μl . It may cause cross contaminations over the volume of 1000 μl .

Pause: short stop after finishing the step

Drop-down list to select “ON” or “OFF”.

- ON : It will stop after finishing this step.
- OFF : It will not stop after finishing this step.



: When you pause, the robot will remain the same action and move to the top and the buzzer will ring at the same time.



Stop buzzer: Please press the button **Buzzer** to stop buzz.



Stop pause: Press the button **Pause** to continue the program.

Vapor (M): The time to waiting reaction or alcohol vaporization.

- After finishing this step, it will stop to wait reaction or alcohol vaporization.
- Input numeral from 0 to 999. (minute)
- 999 minutes is the maximum.

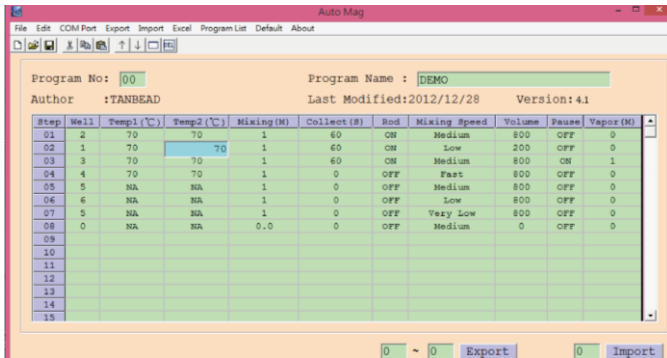


: It is recommended to set the time more than 5 minutes for vapor alcohol.

5. When you use the AutoMag software, please pay attention to the matter below

5.1 Could use the mouse or the keyboard to move the cursor.

- Use the mouse, you could move the cursor to the place that you edit, and then click left key of mouse.
- Use the keyboard, you could move the cursor to the place that you edit, and then click **“Enter”**.



5.2 Key in **“Well Number”** first then you can key in other parameters for step setting.

5.3 Key in every **“STEP”** serially, you couldn't skip any of them.

5.4 If digits in the blue check are over the required number, please press the key **“Backspace”** to delete the digits.

5.5 When program-setting is done, press the key **“Enter”** to make confirm. If you want to cancel it, press the key **“Esc”**. After pressing the key **“Enter”**, the blue check will disappear, and it will appear a check with dotted lines. You could move the dotted-line check to the next place that you want to edit and press the key **“Enter”** to edit again.

5.6 Transmit program

- If you want to transmit the program from a computer to a machine, please save the program first, and then key in the number of the program that you are going to transmit.
- After that, click “**Export**”. If it is transmitted normally, a word “**Success**” will appear in the lower left corner.
- If it is transmitted incorrectly, a word “**Fault**” will appear.
- If you see “**File:#.xgp Not Find.**”, it means that the program hasn’t been saved.
- Before you transmit the program, please switch on the power system of the machine.
- You could transmit more than one program simultaneously at the same time.

Manufacturer



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