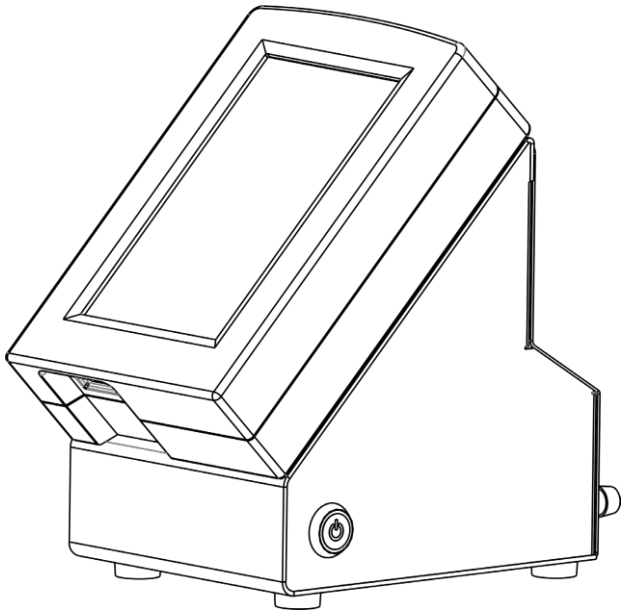
Vacuum Controller

User Manual



Summary

1 Installation requirements and safety recommendations 2
1.1 Installation requirements 2
1.2 Safety instructions 2

2. Product overview 4
2.1 Introduction to Features 4
2.2 Application examples 5
2.3 Technical Specifications 6

3. Instructions for use 6
3.1 Settings 6
3.2 Display 7
3.3 Operations 11
1. Setting the vacuum control 11
2. Setting continuous pumping 13
3. Boiling point pressure detection settings 15
4. Setting programmes 17
5. Setting parameters 19
6 Data logger 20
7 Pressure curve 21

4 Equipment 21

5 Warranty 22

6 Disposal of electronic devices 22

1 Installation requirements and safety recommendations

1.1 Installation requirements

The incubator must be used under the following conditions:

1. Ambient temperature: 15℃ ~ 35℃ (59℉ ~ 95℉), and the maximum relative humidity must not exceed 85%.
2. Electrical requirements: 120V ~ 240V.
3. Atmospheric pressure: (86 ~ 106) kPa.
4. No strong shock sources and no intense electromagnetic fields in the vicinity.
5. It must be placed on a stable, horizontal surface, in a location without excessive dust, direct sunlight, or corrosive gases.
6. Place it in the designated location, adjust the position and quantity of the shelves; samples placed in the working chamber must maintain adequate space above, below and around them.

1.2 Safety instructions

However, understanding and following the instructions described here is extremely important; please adhere to the operating procedures.



1.2.1 Danger ！

Improper use of this unit may result in property damage and/or personal injury.

1. This product must be **reliably earthed** and kept away from sources of electromagnetic interference (the zero line or neutral line **must never** be used as an earth line).
2. Ensure that the supply voltage and frequency meet the product requirements.
3. The product must be connected to a **dedicated power outlet**, and both the plug and socket must be properly earthed.
4. Do not arbitrarily remove or insert the power plug without first turning off the power switch while the product is in operation.
5. Do not extend or shorten the power cord.
6. The unit must be inspected periodically and, when necessary, must be repaired or serviced by qualified technical personnel.

1.2.2 Warning!

Caution (May cause serious material loss or injury and death)

1) Operation should only be performed after reading and fully understanding the instructions for use.

2) As the internal 304 stainless steel container is not acid-resistant, anti-corrosion measures must be taken and **acidic substances must never be used in the incubator**.

3) When removing the power plug, never pull directly on the cable.

4) In the following cases, the power plug must be disconnected:

• When replacing the fuse.

• Inspection and repair when the product malfunctions.

• Suspension of use for a long period.

• When moving the unit.

1.2.3 Caution!

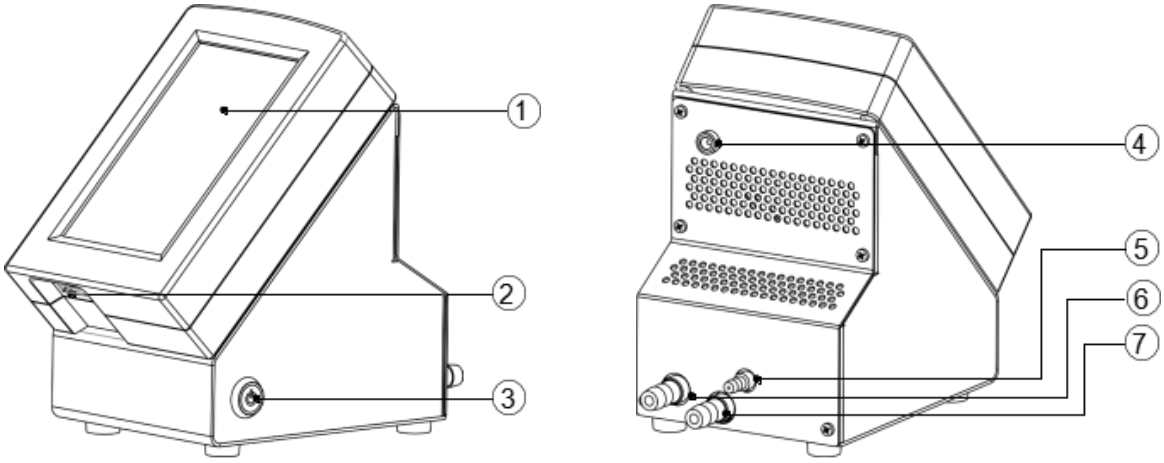
This may affect the service life, causing the product to malfunction.

• When transporting or handling the product, the angle of inclination must not exceed 45° to avoid damage to the cooling system.
• The product must be installed on a solid, stable surface, keeping it in a horizontal position.
• Adequate space must be left around the product.
• The product must be used within certain operating conditions.
• Never open or close the appliance door with excessive force; otherwise, the door may come off and the product may cause injury or damage.
• When the product is not in use for a long period of time, periodic dehumidification is necessary to prevent damage to the internal devices.

2. Product overview

The VC-50 (vacuum controller) can be used universally to display, adjust and control the vacuum. It regulates the vacuum pump and the circulation chiller, thus maintaining the pressure at a constant set value.
The pressure is measured using a capacitive method and is displayed as an absolute value. The measurement process is independent of the solvent used.

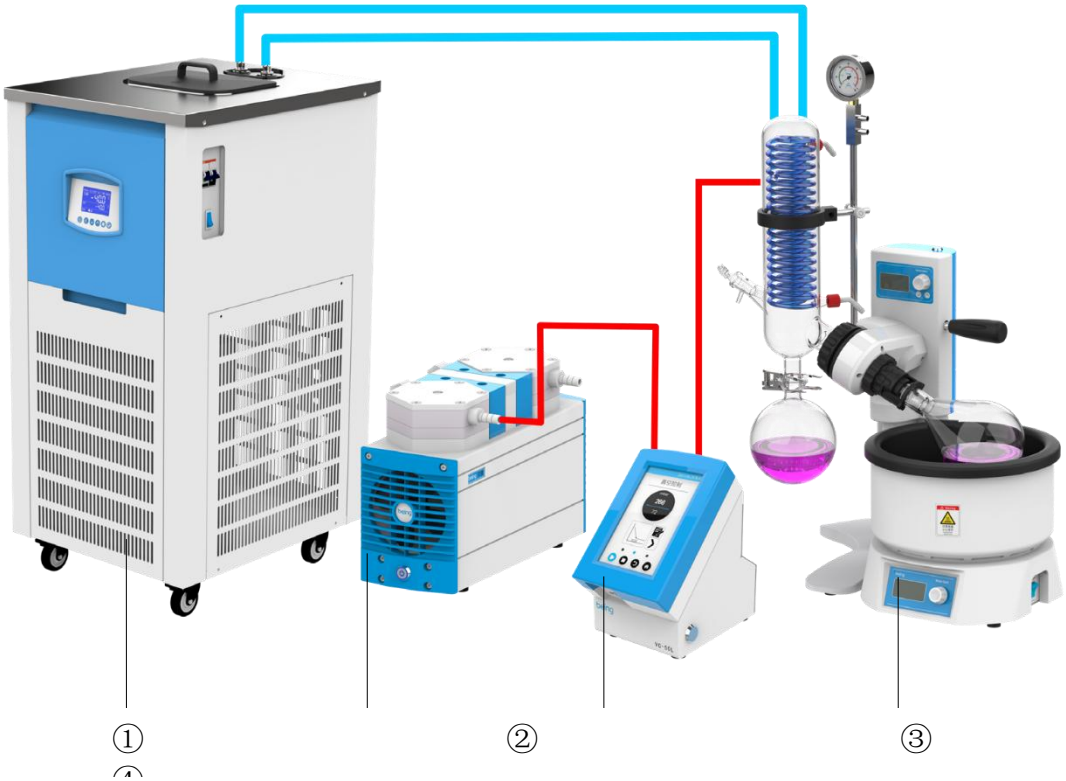
2.1 Introduction to features



No.	Name
1	Touch screen
2	USB connector
3	Switch
4	Power supply connector
5	Sensor
6	Outlet (PUMP side)
7	Inlet (INSTRUMENT side)

2.2 Application examples

The VC-50 is designed for use with the following combinations of equipment.



No.	Name
1	Chiller
2	Vacuum pump
3	Vacuum controller
4	Rotary evaporator

2.3 Technical specifications

Model	VC-50
Control range	0~760mm Hg（Torr），0~1013 hPa (mbar)
Measuring principle	Ceramic diaphragm (alumina), capacitive, gas type independent, absolute pressure
Measuring range	0~800mm Hg（Torr）,0~1066 hPa (mbar)
Control mode	Fixed value automatic control, preset program automatic control (solenoid valve switch)
Screen display	LCD
Steammeasurement range	-20~150℃（Steam temperature sensor connected）
Vacuum connector	8mm PTFE joint
Ambient temperature（operating）	10~40℃
Shell material	Chemical corrosion-resistant plastic housing
Dimension （LxWxH）	190x105x180mm

Input voltage	100 ～ 240V
Output Voltage	24V DC
Power	30 W
Frequency	50/60Hz
Protection class IP	IP20

3. Instructions for use

3.1 Settings

1. Electrical wiring

(1) Remove the adapter power supply and plug from the packaging.

(2) Connect the adapter power supply to the plug.

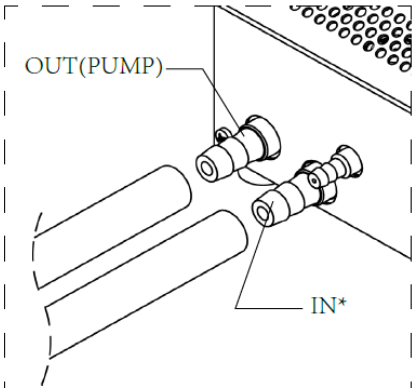
2. Connecting the vacuum pump

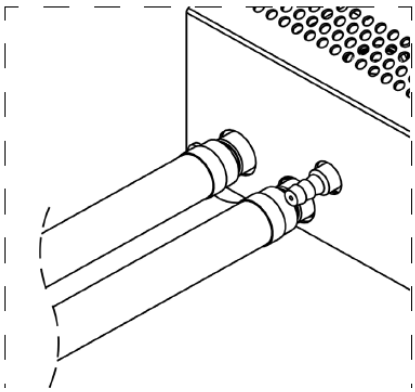
(1) Materials required for connection: compatible vacuum hose and hose clamps (hose and clamps are not included in the scope of delivery).

(2) Use a vacuum hose suitable for the required vacuum range; contamination, kinks in the hose or damage may impair operation.

(3) Connect the OUT outlet to the vacuum pump.

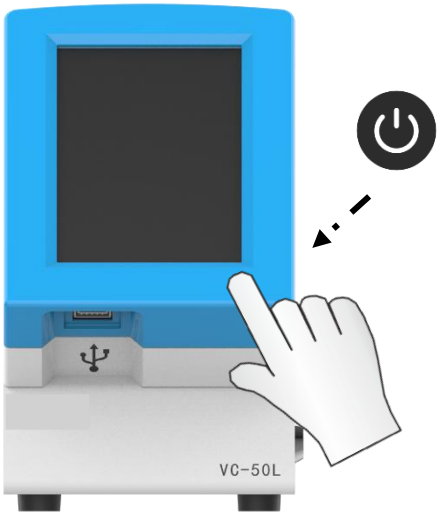
(4) Connect the IN* inlet to the application.





3.2 Display

1. Switching on the







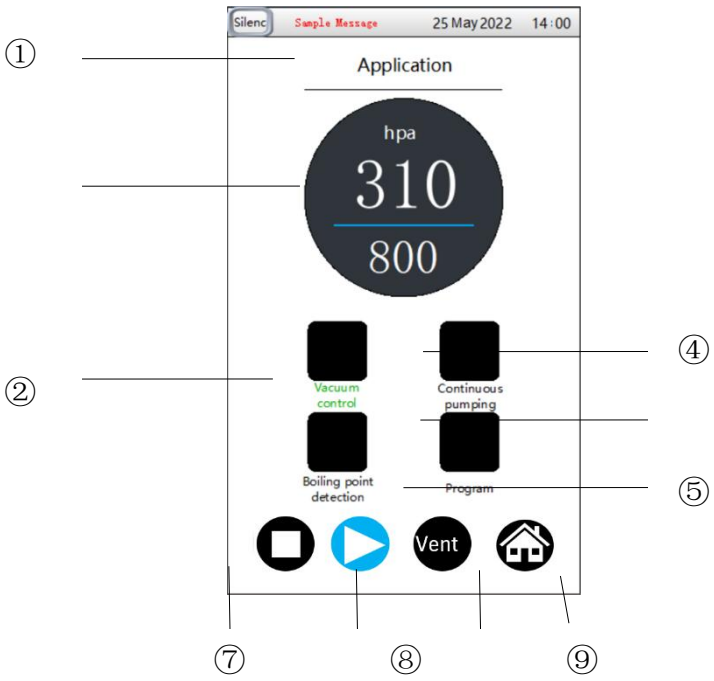
Main screen

2. CONTROLS AND DESCRIPTION

ON/OFF switch

ON/OFF	Description
	Switch on the controller ➢ Press the ON/OFF switch once Switching off the controller ➢ Press and hold the ON/OFF switch for ~3 seconds and confirm the pop-up window.
	Lock/unlock the controller ➢ Press the ON/OFF switch once. ➢ Lock to prevent accidental operation, e.g. when cleaning the display
	Rebooting the controller ➢ Press and hold the ON/OFF switch for ~10 seconds.

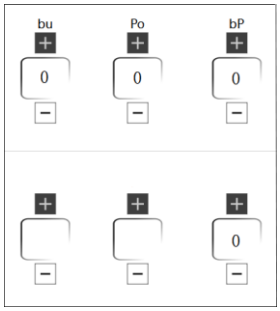
Main screen



No.	Description
①	Header row: application name, indicator or menu
②	Analogue and digital pressure gauges with nominal and actual pressures
③	Pressure curve buttons
④	Application menu open button
⑤	Right/left arrows (indicators for activating/deactivating process phases)
⑥	Screen navigation
⑦	Stop button
⑧	Start button
⑨	Ventilation button
⑩	Main menu button

Symbols and buttons

Symbols and buttons		Description
Active 	Locked 	Black: input fields during execution Blue: input fields when execution is stopped
Active 	Locked 	Black: input fields during execution Blue: input fields when execution is paused
		Shortcut Menu
		Left/right indicator Enables/disables the process phase indicator
		USB connection Indicates that a device is connected via USB.
		Date and time Displays the date and time in the preset format.
		Digital pressure indicator ► Adjust the nominal pressure by clicking.
		Navigating between screens

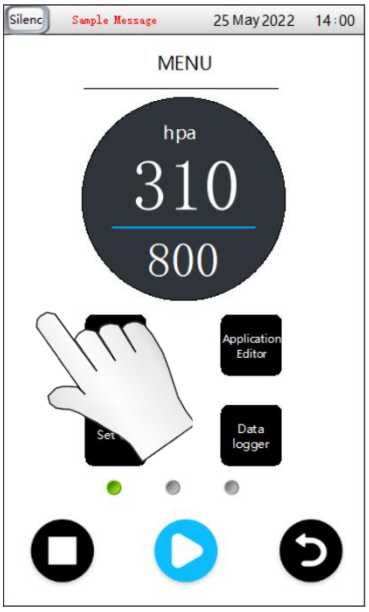
	► Scroll through the menu level screens
	Computer keyboard with special keys ► Enter numerical values. ► Select functions (plus/minus, reset, exit) using special keys. ► Display of min/max values ► Values outside the permitted input range are not accepted
	Parameter setting ► Click on the central number or click on '+/−' to enter numbers directly without leaving the computer keyboard. ► Exit the computer keyboard using special keys ► Display min/max values. ► Enter numerical values

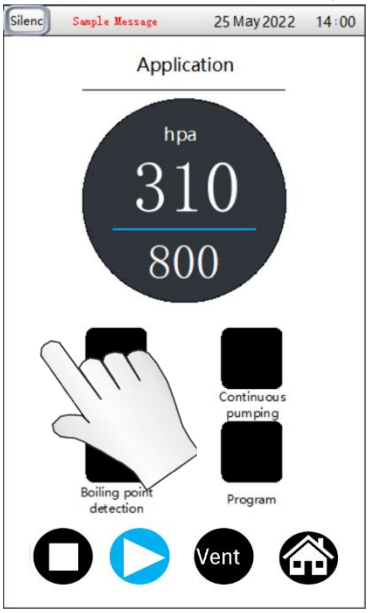
3.3 Operations

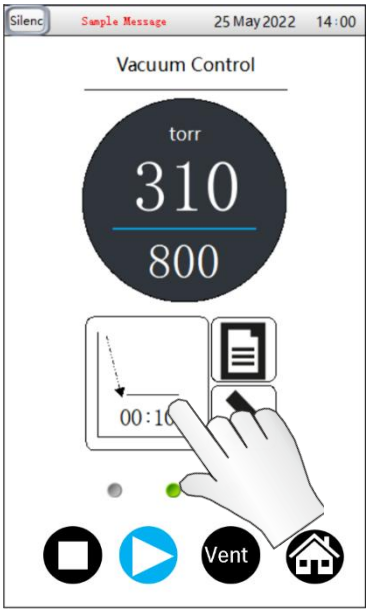
1. Setting the vacuum control – the controller maintains the selected pressure

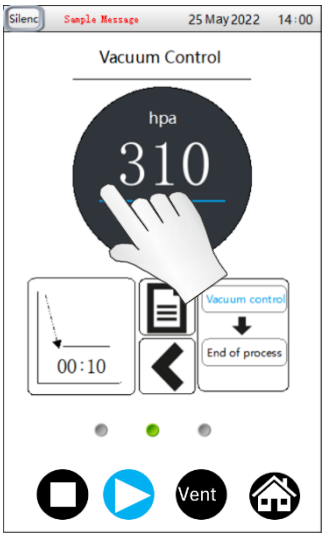
Press

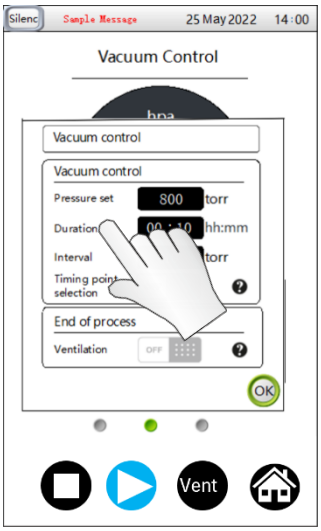








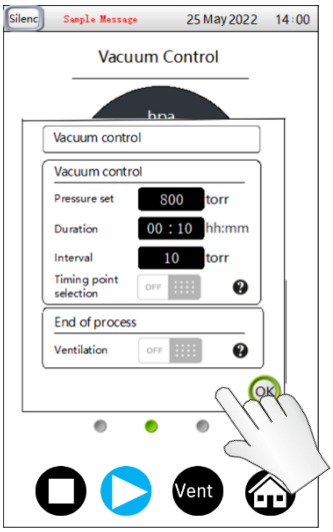




Set the desired value



Press Enter and th



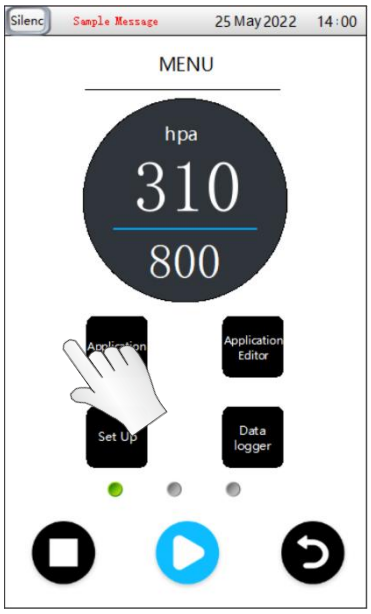
Press "ok" to confirm

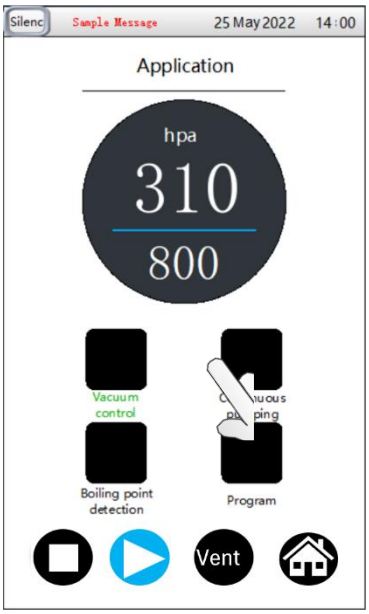


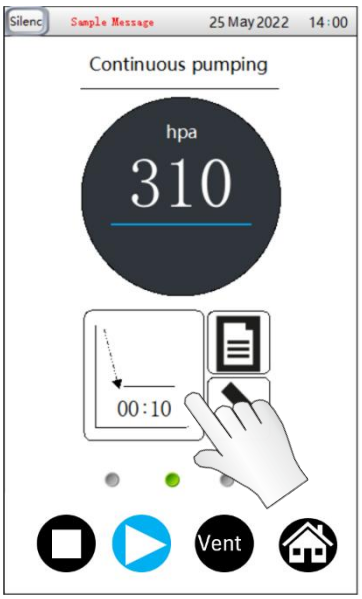
Return to the vacuum control screen

2. Setting continuous pumping – the pump operates continuously until the minimum achievable pressure is reached









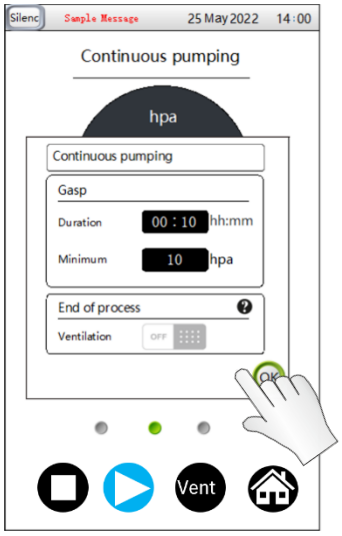




Set the desired value



Press Enter



Press "OK" to confirm

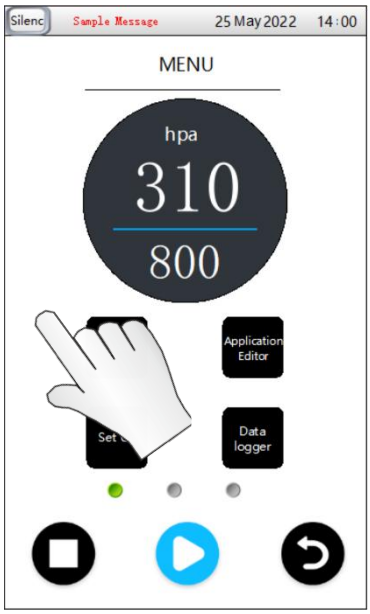


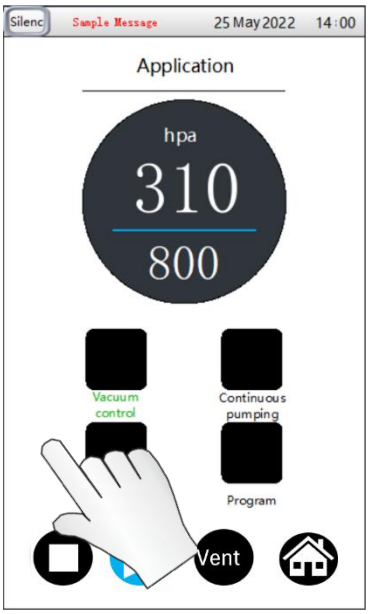
Return to the continuous pumping screen

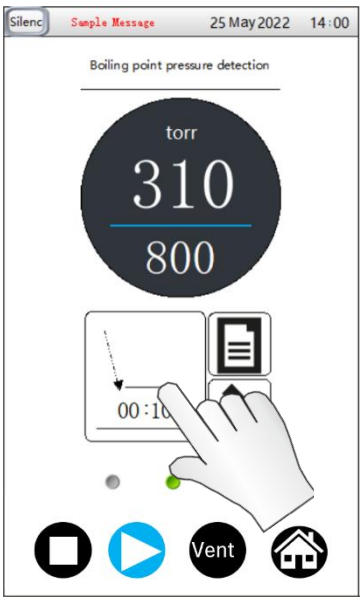
3. Setting the boiling point pressure detection –

When set, the machine will automatically vent when it approaches the boiling point to prevent overheating or excessive boiling

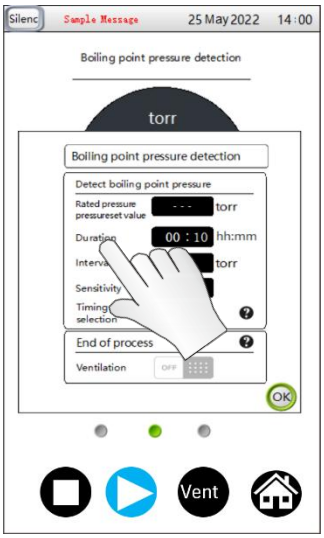




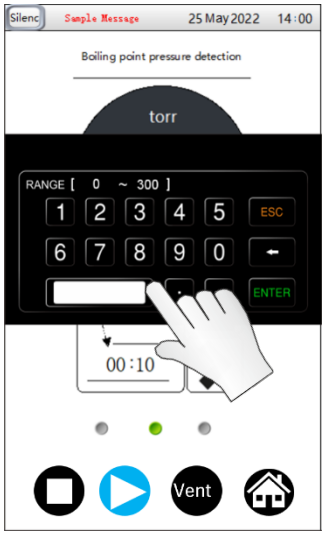


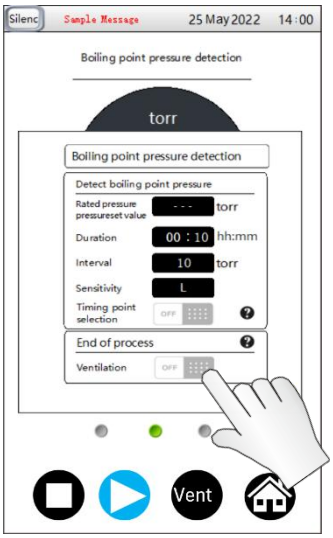






Set the desired value





Press Enter Press "OK" to confirm



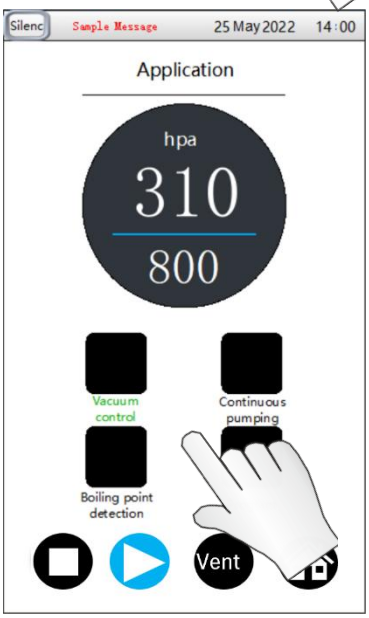
Return to the last screen

4. Setting up programmes

Allows you to set multistep work programmes with duration and pressure selectable by the user

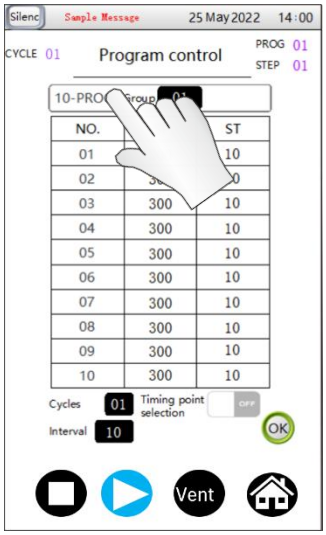








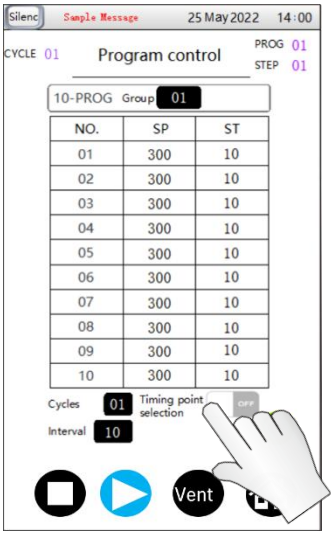




Set the desired value



Press Enter

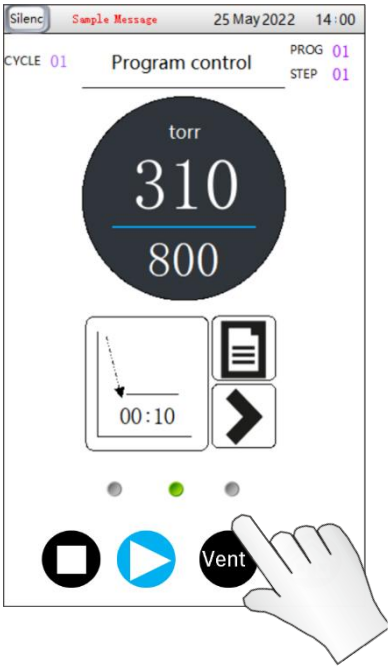


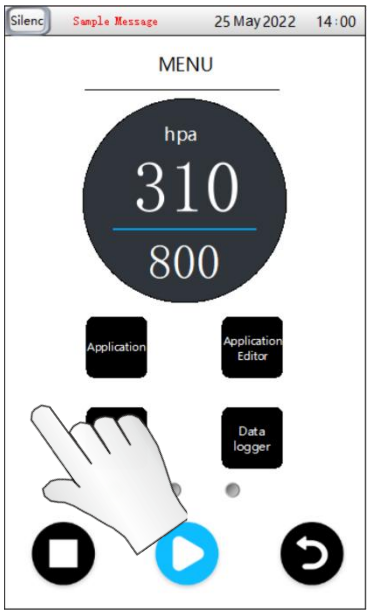
Press "OK" to confirm



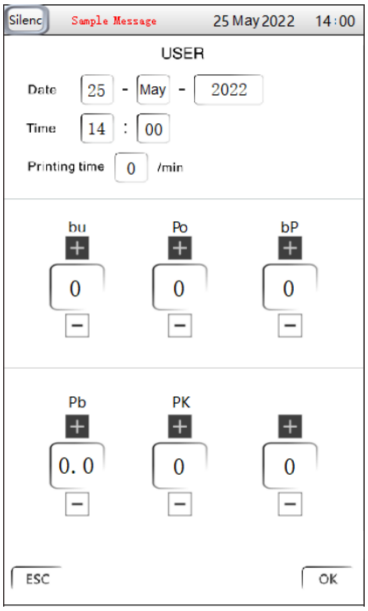
Return to the "Program control" screen

5. Setting parameters



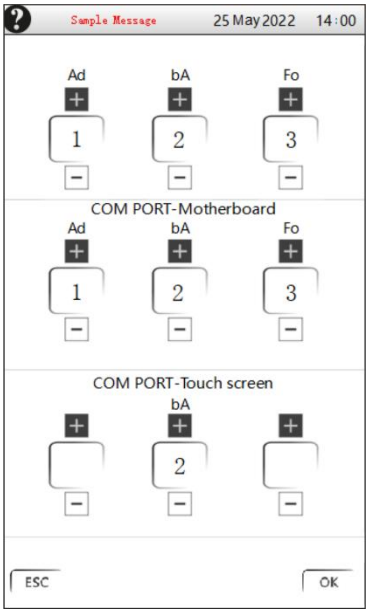






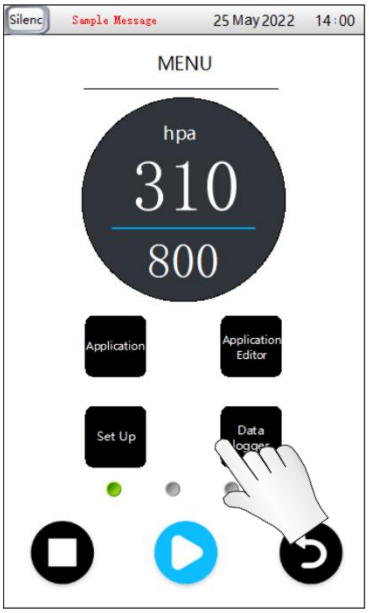
Password =3

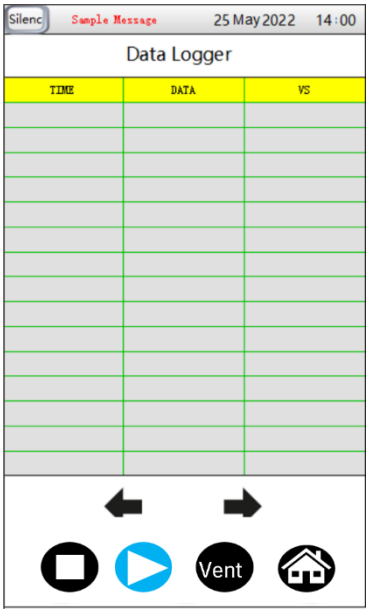




Password =88

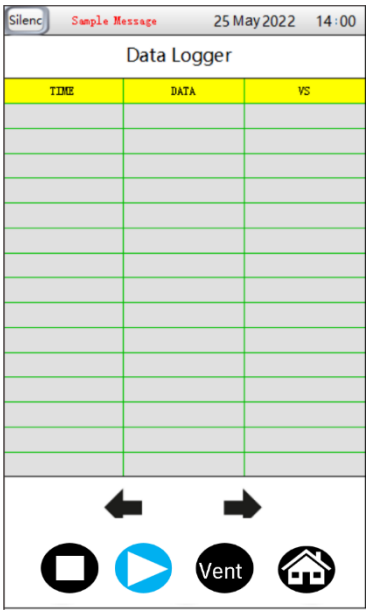
6 Data logger





7 Pressure curve





4 Equipment

Category	Name	Quantity
Instrumentation	Vacuum Controller	1
Document	Manual	1
Accessories	Power adapter	1
Accessories	Power cable	1

5 Warranty

Under normal conditions of use, this instrument is guaranteed for a period of 24 months from the date of purchase. The warranty is valid only if the purchased product remains in its original condition and has not been modified. The warranty does not cover damage caused by incorrect installation, improper connections, misuse, accidents or abnormal operating conditions. Similarly, damage resulting from use not in accordance with the instructions, failure to perform the specified maintenance or unauthorised modifications is excluded from the warranty.

NOTE: We accept no liability for any indirect or consequential damage resulting from failure to follow the instructions for use or unauthorised tampering with the instrument.
Disposal of electronic equipment
This equipment is subject to regulations for electronic devices.
Dispose of in accordance with local regulations.

6 Disposal of electronic equipment

This equipment is subject to regulations for electronic devices.
Dispose of in accordance with local regulations.

