StonyLab®

Forced Air Drying Oven

Operation Manual

(Please read the instruction carefully before you use the machine)

Contents

1. Safety Warnings Before Use

1.1 Prohibited Items 

- Do not store volatile, flammable, or explosive materials in this device, as they may cause fire or explosion.
- Do not place this device in areas exposed to rain, humidity, or water splashes. Doing so may result in leakage, short circuits, or electric shock.
- Do not disassemble, repair, or modify the equipment unless you are a qualified technician. Improper handling may cause fire or electric shock.

1.2 Mandatory Safety Requirements 

- Install this device on a solid and stable surface. Failure to do so may result in tipping or injury.
- Use only the specified power supply indicated on the nameplate. The power socket must be properly grounded to prevent electric shock or fire caused by electrical leakage.
- Always disconnect the power supply before performing any repairs or maintenance to avoid electric shock or personal injury.
- Wear protective gloves during repair or maintenance to prevent injuries from sharp edges or corners.
- If any abnormalities occur during operation, immediately unplug the power cord and stop the device. Continuing operation under abnormal conditions may result in fire or electric shock.

2. Main Product Features

1) Unique vertical dual-duct circulating horizontal air supply ensures high drying efficiency and uniform temperature distribution inside the chamber.

2) Equipped with a standard fan switch, high-brightness LED operation indicator, and a high-temperature-resistant blower motor.

3) Features a new anti-scald handle; the chamber is made of high-quality mirror-finish stainless steel with rounded corners for easy cleaning.

4) LCD temperature controller with solid-state relay output ensures safe and reliable heating control.

5) Adjustable fan with 3–4 speed settings allows users to select airflow volume according to experimental requirements, suitable for drying various sample types.

6) Independent over-temperature protection system: When the chamber temperature exceeds the preset alarm value, a bright red LED warning light activates and automatically cuts off the main heating circuit, ensuring safe operation.

7) Independent temperature limiter: A digital electronic limiter is set to cap the chamber temperature, providing dual-layer safety protection.

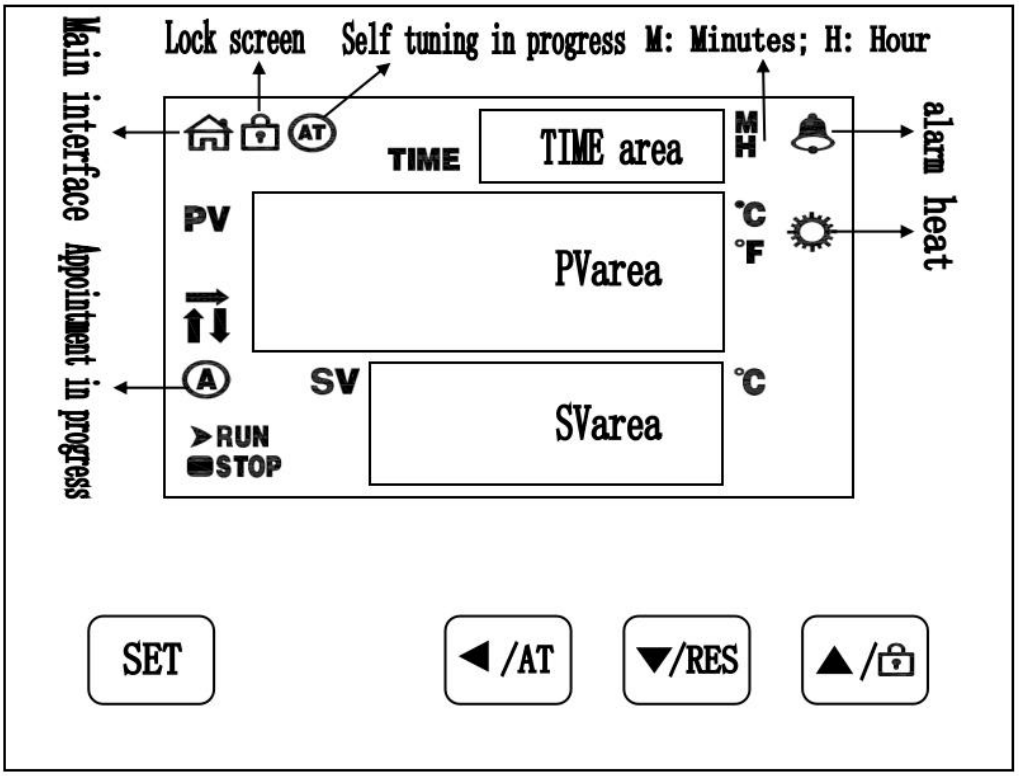
3. Technical Specifications

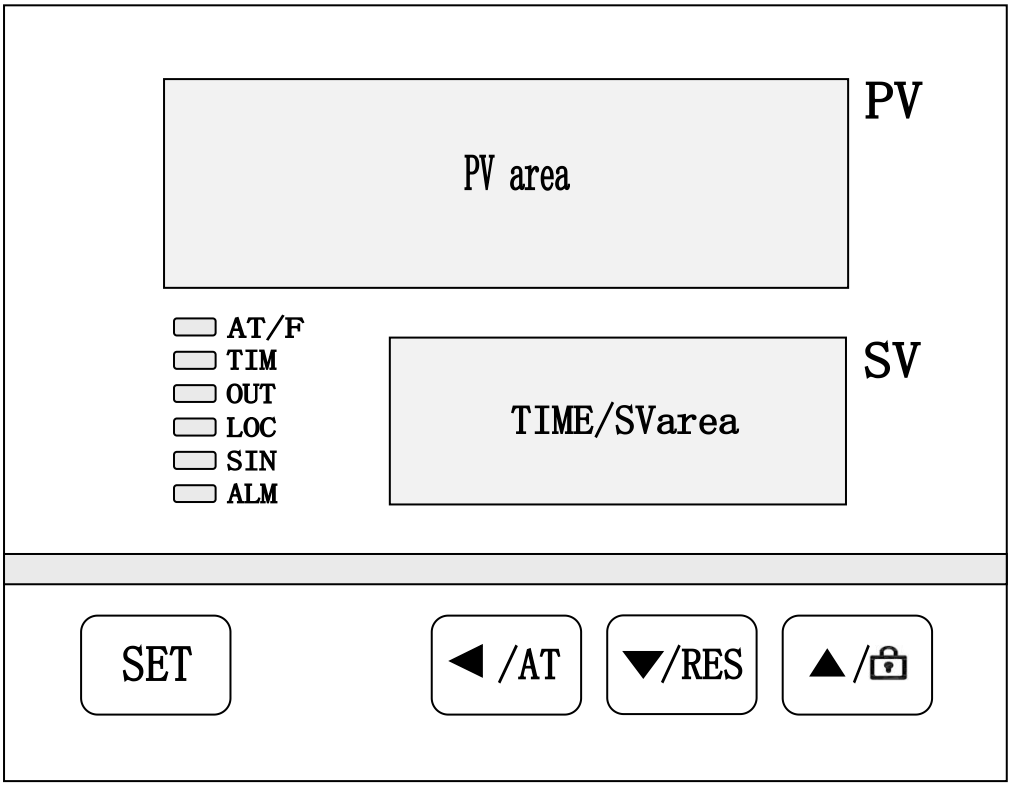
Model		SL000979
Cycle Mode		Forced convection
Function	Operating Temperature Range	RT+10-300°C
	Temperature Resolution	0.1°C
	Temperature Fluctuation	±1°C
	Temperature Distribution Accuracy	±2.5%
Structure	Chamber	Mirror-finish stainless steel
	Housing	Cold-rolled steel with electrostatic coating; 304 series models use SUS304 embossed stainless steel
	Insulation Layer	High-quality rock wool board (CE certified)
	Heater	Stainless steel electric heating tube
	Rated power	0.8 kW
	Exhaust Port	Ø35 mm on top (also serves as a test hole)
Controller	Temperature Control	Dual intelligent temperature control
	Setting Method	Touch-button operation
	Temperature Display Method	Type B: Four-digit LED display (upper row: measured temp.; lower row: set temp.) BE type: LCD screen (upper: measured temp.; lower: set temp.)
	Timer	BE type: Temperature measurement displayed on the upper part of the LCD screen, set temperature displayed on the lower part of the LCD screen
	Running functions	0–9999 minutes (with delayed start function)

	Additional Features	Fixed-point operation, timed operation, auto stop
	Sensor Functions	Type B: Sensor offset correction, auto-tuning for overshoot, parameter lock, memory after power-off BE type: Digital temperature limiter, 3–4 speed adjustable fan (except 230 & 625 models), sensor offset correction, auto-tuning, parameter lock, power-off memory
	Temperature Sensor	Pt100
Safety device		Type B: Over-temperature audible & visual alarm
		BE Type: High-precision independent digital limiter with over-temperature audible & visual alarm
Accessories	Chamber Size (W×D×H mm)	310*310*310
	External Dimensions (W×D×H mm)	450*500*690
	Packing Dimensions (W×D×H mm)	540*575*855
	Internal Volume	30L
	Max. Number of Shelves	5
	Shelf Load Capacity	15 kg
	Shelf Spacing	40 mm
	Net/Gross Weight (kg)	33/37
	Standard Accessories	2 shelves, 4 shelf brackets
Optional Configurations	Type B: Extra shelves BE type: Extra shelves, RS485 interface, printer, programmable controller, USB data storage, WiFi control module	

4. Operation and Display Instructions

4.1 Instrument Operation and Usage





4.1.1 Key Definitions

1) [SET] – Set Button
   - In the main display interface: Press to enter the temperature and time setting mode.
   - Long press (3 seconds): Enter the internal parameter setting mode.
2) [◀ /AT] – Shift / Self-Tuning Button
   - In the setting mode: Press to move the cursor to the digit you want to modify (the digit will flash).
   - In the main display interface: Long press (6 seconds) to enter the temperature self-tuning selection mode.
3) [▼/RES] – Decrease / Rerun Button
   - In the setting mode: Press or long press to decrease the set value.
   - In the main display interface, when the run cycle has ended: Long press (3 seconds) to restart the operation.
4) [▲/🔒] – Increase / Screen Lock Button
   - In the setting mode: Press or long press to increase the set value.
   - If the screen lock function is enabled: In the main display interface, press to lock or unlock the screen.

4.1.2 Definition of LCD Instrument Indicator Lights

1) [Main Interface] Indicator Light
   - Illuminates during normal operation (non-setting state).
   - Turns off otherwise.
2) [Lock] Indicator Light
   - Illuminates when the screen is locked.
   - Turns off when unlocked.
3) [AT] Indicator Light
   - Flashes during the temperature self-tuning process.
   - Remains off otherwise.
4) [Alarm] Indicator Light
   - Illuminates when a temperature deviation alarm or abnormal temperature measurement occurs.
   - Flashes specifically during a temperature deviation alarm.
   - Remains off under normal conditions.
5) [Heating] Indicator Light
   - Illuminates when heating output is active.
   - Turns off when inactive.
6) [A] Indicator Light
   - Flashes during the reservation timing process.
   - Turns off when not in use.
7) [RUN/STOP] Indicator Light

- STOP lights up only after the timer ends.
- RUN lights up in all other operating states.

8) [↑ / → / ↓] Indicator Lights
   - ↑ flashes during heating.
   - → flashes during constant temperature.
   - ↓ flashes during cooling.

4.1.3 Definition of Digital Tube Display Instrument Indicator Lights

1) [AT/F] Indicator Light
   - Illuminates when the temperature unit is set to Fahrenheit.
   - Flashes during the temperature self-tuning process.
   - Turns off in all other states.
2) [TIM] Indicator Light
   - Illuminates when a timing function is set.
   - Flashes during the reservation timing process.
   - Turns off when no timing function is active.
3) [OUT] Indicator Light
   - Illuminates when heating output is active.
   - Turns off when inactive.
4) [LOC] Indicator Light
   - Illuminates in lock screen mode.
   - Turns off when unlocked.
5) [SIN] Indicator Light
   - Indicates an invalid reservation.
6) [ALM] Indicator Light
   - Illuminates when a temperature deviation alarm or abnormal temperature measurement occurs.
   - Flashes specifically during a temperature deviation alarm.
   - Turns off under normal conditions.

4.2 Operation and Usage

1) In the main interface display state, press the [SET] button to enter the temperature setting mode.
   - The PV area will display the prompt SP, and the SV area will display the temperature setting value.
   - Use the [Shift], [Increase], and [Decrease] keys to adjust to the desired value.
2) Press the [SET] button again to enter the time setting mode.
   - The PV area will display the prompt ST, and the TIME area will display the time setting value.
   - Use the [Shift], [Increase], and [Decrease] keys to adjust to the desired value.
3) Press the [SET] button once more to exit the setting mode.

- The set values will be saved automatically.

Explanation:

- For the LCD type, the “symbol” represents the time unit.
- For the Digital type, the “TIME” display area decimal point represents the time unit.

4.3 Reference and Settings of Internal Temperature Parameters

1) In the main interface display state, press and hold the [SET] button for 3 seconds.
   - The PV area will display the password prompt Lc, and the SV area will display the password value.
   - Use the [Increase], [Decrease], and [Shift] keys to adjust the password value.
2) Press the [SET] button to confirm.
   - If the password is incorrect, the instrument will automatically return to the main interface display state.
   - If the password is correct, the instrument will enter the internal parameter setting mode.
3) In this mode, press the [SET] button to navigate and modify each parameter in sequence.
   - To exit, press and hold the [SET] button for 3 seconds.
   - The modified parameter values will be saved automatically.

Explanation:

- In the parameter table, the temperature set value is abbreviated as SP, and the temperature measured value is abbreviated as PV.

Parameter Table-1:

Indicator	Parameter Name	Description	Range (Factory Value)
Lc	Password	When Lc=3, parameter values can be viewed and modified.	0
ALH	Upper Deviation Alarm	When PV > SP + ALH, an over-temperature alarm is triggered.	0～100.0 °C (20.0)
ALL	Lower Deviation Alarm	When PV < SP – ALL, a low-temperature deviation alarm is triggered.	0～100.0 °C (0)
Pb	Offset (Lower Deviation)	When ALL = 0, the lower deviation alarm is invalid.	–50.0～50.0 °C (0)
PL	Over-Temperature Correction	Used to correct errors during temperature measurement. Formula: PL = 1000 × (Actual Temp – PV) ÷ PV	–999～999 (0)

ndT	Measurement Temp. Offset	Formula: Pb = Actual Temp – PV	0～2 (1)
Tdn	Measurement Temp. Slope Correction	Used to correct errors during high-temperature measurements.	0～1 (0)
Hn	Timing Method	PL=1000 * (actual temperature value - PV) ÷ PV	0～1 (0)
SPd	Timing Direction	Explanation: when En = 1 in Parameter Table-4.	0.1～50.0 °C (0.5)
EST	Timing Unit	This setting is invalid.	0～9999 (60)
EH	Timing Direction	0: No timing; 1: Constant temperature timing; 2: Run timing	*0～1 (0)*
LF	Timing End	0: Forward timing; 1: Countdown timing	0～2 (0)
LdT	Prompt Time	0: Minutes; 1: Hours	10～600 s (30)
PAd	Timing End	When SP – SPd ≤ PV ≤ SP + SPd	0～9999 (1)
Add	Constant Temp. Control	Enter constant temperature mode	1～32 (1)

Parameter Table-2:

Indicator	**Parameter Name**	**Description**	**Range (Factory Value)**
Lc	Password	When Lc = 567, parameter values can be viewed and modified.	0
rST	Factory Reset	0: Cancel; 1: Confirm reset.	0～1 (0)

5. Common Faults and Troubleshooting

Fault Phenomenon	Possible Cause	Troubleshooting Method
No display on startup	Power supply not connected	Check the voltage at the power socket
	Power plug not properly inserted	Ensure reliable contact between plug and socket
	Power switch not turned on	Turn on the power switch on the right side of the instrument
	Fuse on the box is damaged	Replace the fuse with one of the same specification
Measured temperature is higher than set temperature or high temperature alarm	Box door not tightly closed	Close the box door tightly
	Instrument has not reached constant temperature state	Wait until the instrument stabilizes
After turning on, temperature does not display or rise	Power cord not properly connected	Insert the power cord properly
	Sensor malfunction	Contact the factory for repair
	Heater malfunction	Contact the factory for repair

6. Warranty

Warranty is effective from the date of purchase and is non-transferable.
For more details about the warranty, please refer to the link below:
stonylab.com/pages/warranty

For any inquiries or assistance, feel free to contact us:
Company: StonyLab Inc.
Email: support@stonylab.com
Phone: 631-406-6080
Website: stonylab.com

This instruction manual is subject to change without prior notice.