Labnics

Slide Dryer

NSD-100

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Index

1. Safety Measures

Kindly read the Product Instructions carefully before use.

- This instrument is designed for spreading and drying slides during tissue analysis, so it is not suitable for other purposes.
- There should be no water stains on the bottom of the slide dryer to avoid affecting the normal operation of the instrument.
- When the instrument is in operation, if flammable items need to be used, strict safety precautions must be taken.
- After finishing drying the slides, you cannot directly hold the hot plate with your hands. The temperature of the hot plate and the microscope slides during the heating process is too high and can easily burn your hands.

⚠ **Warning**

- The instrument must be placed stably, and the inclination should not exceed 5 degrees.
- The instrument must be used by professional technicians because the operating temperature is too high, and it should be placed out of the reach of children.
- It is strictly forbidden to touch the display screen with hard objects. The instrument should not be placed in a high-frequency vibration environment. (such as centrifuge, etc).

2. Introduction

Slide Dryer NSD-100 offers temperature control within a range of room temperature to 90°C, with a precision of ±1°C. It features a specialized heating element allowing for rapid and uniform drying of slides. This unit comes with automatic memory and restoration functions for seamless operation. It displays both the actual and preset temperatures on its interface for easy monitoring and adjustment. Our slide dryer operates efficiently with 200W power, ensuring minimal energy usage.

3. Features

- Dual power compatibility
- User-friendly interface
- Easy temperature adjustment
- Corrosion-proof material
- Lightweight and portable
- Low maintenance design

4. Specifications

Model	NSD-100
Temperature range	RT to 90°C
Temperature control precision	±1°C
Ambient temperature range	0 to 40°C
Power consumption	200W
Power supply	AC220V±10%,50Hz AC110V±10%, 60Hz
Product dimension	360×350×120mm
Packaging dimension	410×410×190mm
Net weight	5kg
Gross weight	7kg
Temperature range	RT to 90°C
Temperature control precision	±1°C
Ambient temperature range	0 to 40°C
Power consumption	200W
Power supply	AC220V±10%,50Hz AC110V±10%, 60Hz
Product dimension	360×350×120mm
Packaging dimension	410×410×190mm
Net weight	5kg
Gross weight	7kg

5. Applications

Slide Dryer NSD-100 is used for quick and uniform drying of microscope slides, ensuring accurate results in laboratory procedures. It is commonly found in histology, pathology, microbiology, and research laboratories for sample preparation.

6. Instrument Introduction

The slide dryer consists of a chassis, a hot plate, a heater assembly, a lighting lamp, a sensor, and a control system (see **Figure 1** and **Figure 2**).

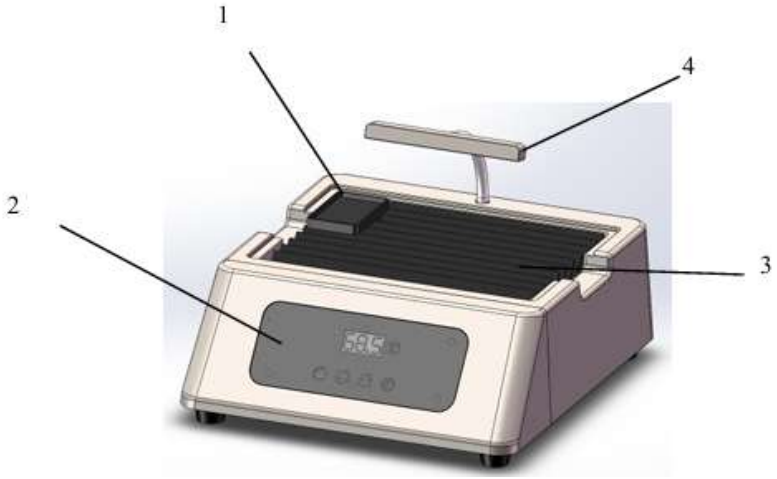

Figure-1

1) Wax Sealing Table
2) Operation Interface
3) Hot Plate
4) LED lighting Lamp

Figure-2

1) Power switch
2) Power socket and fuse
3) Binding Post
4) Power outlet of connecting to the water bath and slide dryer

6.1 Operation Panel diagram and functions **(See figure 3)**

Operation panel diagram and function key labels (each key has different functions for short press and long press).

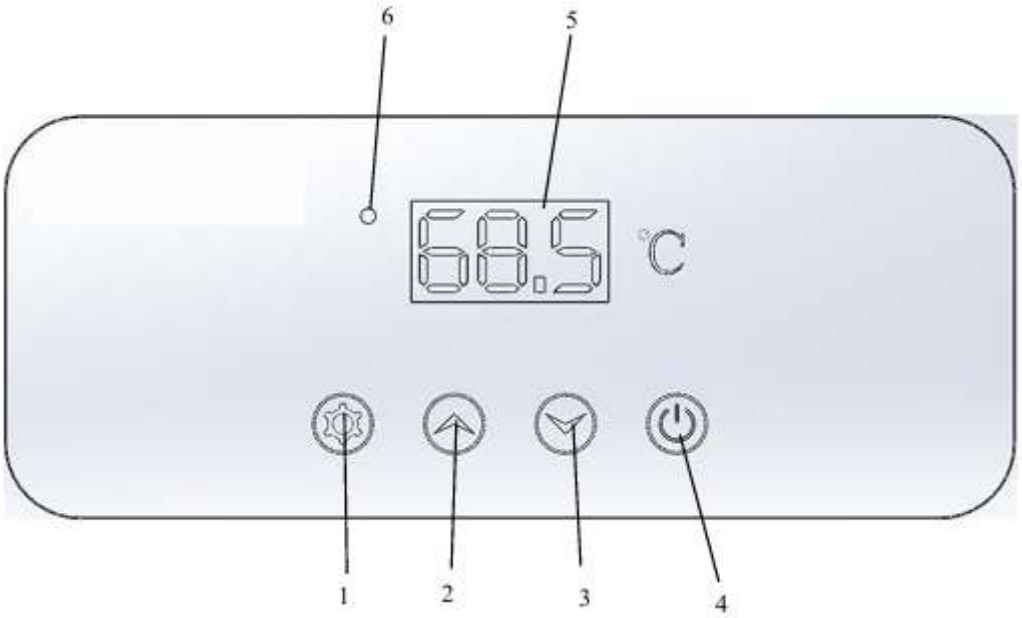

Figure-3

6.2 Key Introduction

1) Setting
2) Increase
3) Decrease
4) On/OFF
5) Display Screen (L. 00~L. 05 indicates the brightness of the lighting, and the display without L indicates the temperature value).
6) Color-changing indicator light

6.3 Key function description

6.3.1 Key Function Description

1) **Setting Key**: This button has the function to set the temperature of the slide dryer and adjust the brightness of the lighting. Long press the (1) key, and the slide dryer will directly display a numerical value indicating that it has entered the temperature setting state; the temperature setting range is 0~99 ℃.

Pressing the (2) or (3) keys can increase or decrease the set temperature of the toaster. After waiting for a few seconds, the value is automatically saved, and the setting state exits. A short press of the (1) key will cause the toaster to display (L.00), indicating entry into the lighting brightness adjustment state. The (2) and (3) keys can be used to adjust the lighting brightness from 00~05 levels. After waiting for a few seconds, the value is automatically saved, and the setting state exits, or you can exit the setting state by pressing the setting key again.

2) **Increase Key:** When the slide dryer is in the brightness setting state, a short press of the (2) key can increase the brightness of the lighting. When the slide dryer is in the temperature setting state, a short press of the (2) key can raise the temperature. Long-pressing the (2) key can quickly increase the brightness or temperature.
3) **Decrease Key:** When the slide dryer is in the brightness setting state, a short press of the (3) key can decrease the brightness of the lighting. When the slide dryer is in the temperature setting state, a short press of the (3) key can lower the temperature. Long-pressing the (3) key can quickly decrease the brightness or temperature.
4) **On/Off Key:** Long pressing the (4) key can start or stop the heating function of the slide dryer.
5) **Display Screen:** Shows the operating status of the slide dryer, including the temperature value of the hot plate, the brightness value of the lighting, as well as the standby and on states.
6) **Indicator Light:** Red indicates a fault alarm state, green indicates a warming state, and orange indicates a heating state. When in standby mode, the indicator light does not illuminate.

7. Installation

7.1 Usage Environment

- Ambient temperature 5°C to 40°C
- Atmospheric pressure 860hPa~1060hPa
- Relative humidity ≤ 80%
- It should be used in a well-ventilated, dry environment free from corrosive gases and electromagnetic interference.

7.2 Unpacking and Installation

Ensure that the instrument's connection to the power supply has good.

1) Check if there is any obvious damage to the packaging material.
2) Open the packaging box, remove the user manual and accessories, and verify against the packing list.
3) Move the instrument out. If the instrument needs to be safely transported again, it is recommended to use the original packaging materials.
4) Place the instrument on a stable workbench with a tilt angle not exceeding 5 degrees.
5) The instrument should not be placed in areas where flammable or explosive materials are present. It is not suitable to install it in environments with magnetic field interference.

7.3 Transportation and Storage

Storage: This device should be stored in a clean room with good ventilation, where the relative humidity does not exceed 80%, and there are no corrosive gases. **Handling and Storage**: "Handle with Care," "Protect from Moisture," "Keep Upright."

8. Operations

1) It is recommended to use the power cord provided with the device for connection.
2) Before connecting to the main power supply, ensure that the power switch [O] and [I] are set to [O] for the off state.
3) When connecting the power, first connect the instrument to the power cord, then plug it into the mains socket.
4) To turn on the machine: Switch on the power switch on the instrument. The green light on the switch indicates that the power is connected. (Kindly refer to the nameplate label of the instrument for power usage requirements.)
5) Upon turning on, the display screen lights up. In the standby state, the interface shows "OFF," and the color-changing indicator light is off. To start heating, long-press the on/off key. An orange light indicates that the unit is in the heating state; a green light indicates that the set temperature has been reached, and the unit is warming; a red light indicates a fault state, accompanied by a "beep-beep-beep" alarm sound. (If the temperature sensor of the hot plate is not aligned with the heating base or if the hot plate has been removed, the unit must be restarted by long pressing the on/off key after the hot plate is realigned with the base to return to normal operation).

Note: For user convenience, based on commonly used values, the instrument has been pre-set at the factory to a heating temperature of 65°C for drying slices. If this setting is satisfactory to the user, there is no need to reset the temperature, and the unit can be put directly into operation.

8.1 Symbol Explanations

Symbol Explanation:

 : Represents functional grounding; Switch O indicates disconnection; Switch I indicates power-on.

 Represents high temperature, handle with care.

1) Operation Panel Schematic (see **Figure 4)**: The display screen shows information such as the lighting brightness level and the temperature of the hot plate. When the power is turned on, the display screen shows "OFF. “Long press the  (4) key to start the heating operation of the slide dryer, and the display screen will show the current temperature. Long press the (4) key again to stop the heating operation of the slide dryer.

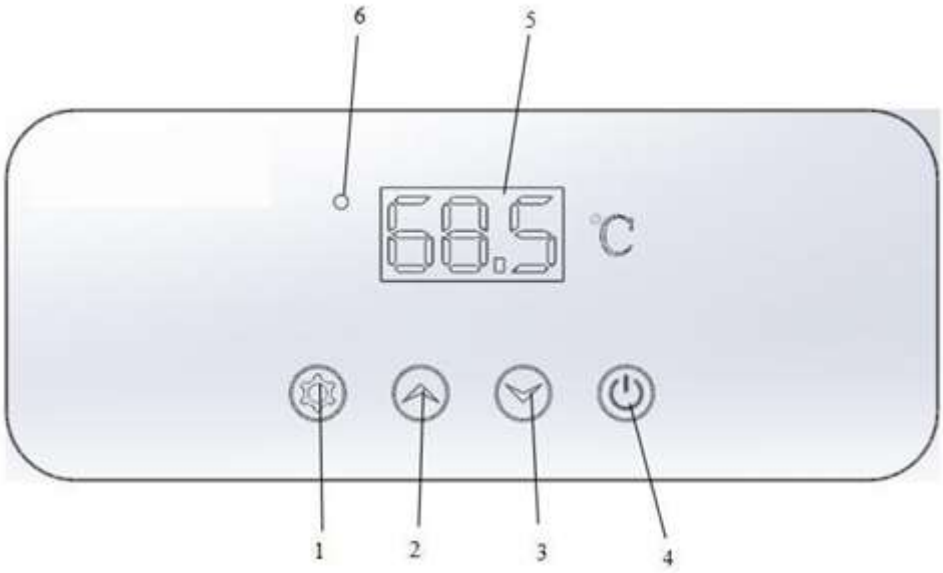

Figure-4

2) Lighting Brightness Setting Function (see Figure 5)

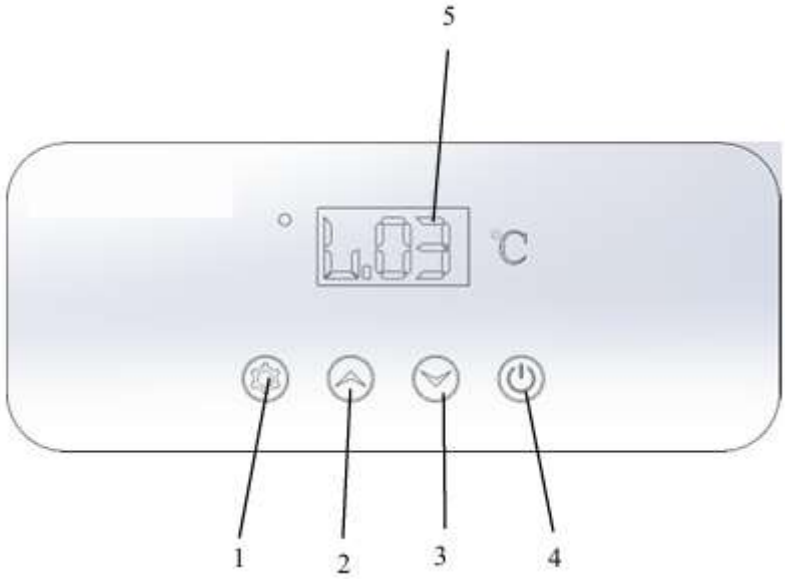

Figure-5

In the normal operating state, the first long press of the (1) key enters the temperature setting function. A subsequent short press of the (1) key enters the lighting brightness setting function, displaying the brightness level. Use the (2) and (3) keys to increase or decrease the lighting brightness value (L.00-L.05). After completing the settings, a short press of the (1) key automatically exits the brightness setting and automatically saves the brightness value.

While in the working state, to check the lighting brightness value and temperature setting value, a long press of the (1) key is required to enter the settings.

3) Temperature Setting Function **(see Figure 6**)

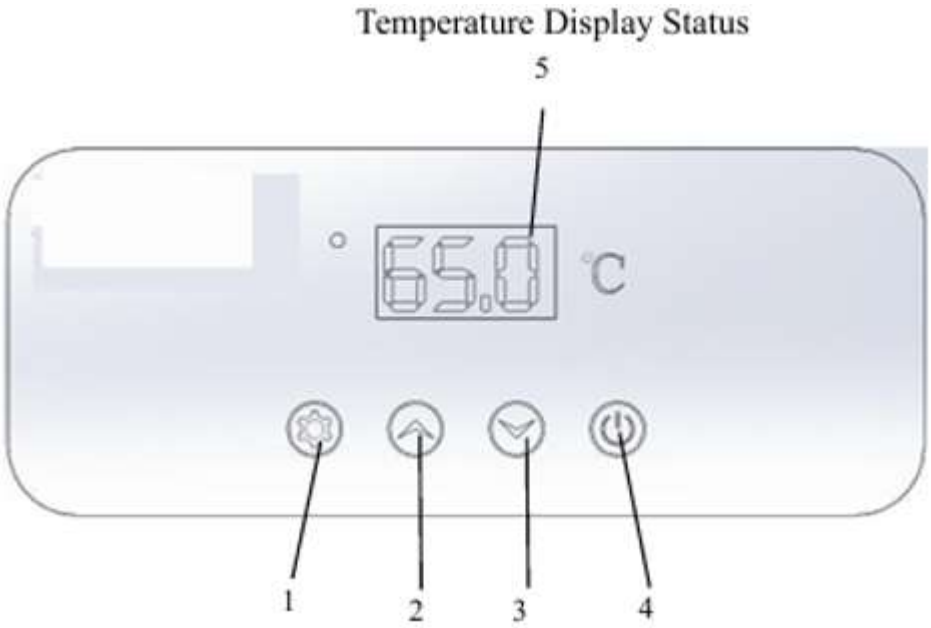

Figure-6

In the normal operating state, long-press the (1) key to enter the temperature setting function. Press the (2) key to increase the toaster temperature setting value or press the (3) key to decrease the toaster temperature setting value. The temperature setting range is 0~99℃, with increments/decrements of 0.5℃. In this state, a short press of the (1) setting key can switch to view the lighting brightness and temperature setting values.

4) This hot plate is equipped with a liquid-draining structure. Before the microscope slide is tightly attached to the hot plate for drying, it can be placed on the liquid-draining step to drain excess liquid first, then adhered to the hot plate. This prevents the tissue from sliding down or forming bubbles. (**See Figure 7**).

Figure-7 Hot Plate

8.2 Precautions for Use

1) Upon receipt of the instrument, unpack and inspect the appearance and included accessories. Carefully read the user manual before operating the instrument.
2) To ensure personal and equipment safety, this machine must use a three-wire power source and ensure that the instrument is reliably grounded. Do not use a power source without an earth wire.
3) The machine is equipped with an overheat protection device. When the heater temperature loses control and exceeds the dangerous temperature of 100℃ (fault condition), the temperature protector will automatically cut off the power supply to the heater. Heating will resume automatically when the temperature falls below this threshold. Do not touch the heating parts directly.
4) Do not allow hard objects to meet the display screen.
5) During use, do not let liquids flow into the instrument. Water must not enter the bottom heating plate of the hot plate to prevent electric leakage. Keep the area clean and free of foreign objects to avoid affecting temperature control. The instrument should not be placed near flammable, explosive materials, or objects that produce magnetic field interference.
6) Before replacing the fuse, turn off the main power switch and unplug the power cord. The fuse must be the same type and specification as the original.
7) When using the instrument, it should be powered by a dedicated power outlet to avoid interference.
8) Before cleaning, make sure to turn off the main switch of the instrument and unplug the power cord.
9) Repairs should only be carried out by authorized personnel.

9. Maintenance

Cleaning and Maintenance

- The hot plate should be cleaned regularly with hot water to effectively maintain its cleanliness.
- Clean the surface of the instrument first with a soft, damp cloth and household cleaner, then dry it with a soft, dry cloth.
- Do not use organic solvents such as acetone or xylene to clean the surface of the casing. Do not allow liquids to flow into the interior of the instrument during cleaning.
- After each use, the instrument should be cleaned and tidied up.
- If the instrument is not going to be used for a long time, kindly unplug the power cord and store it in a well-ventilated, dry environment free from corrosive gases

10. Troubleshooting

Fault	Reason	Troubleshooting
No indicator lights light up upon startup.	Power not properly connected.	Connect the power properly and restart the machine.
No indicator lights light up upon startup.	The switch is not turned on.	Turn on the switch, the switch indicator light should light up.
No indicator lights up upon startup	Fuse not connected	Check if the fuse is damaged and replace the fuse.
Not heating	Bad fuse.	Replace the fuse.
Not heating	The heater is faulty.	Replace the heater.
Not heating	The temperature sensor is faulty.	Replace the temperature sensor.
Not heating	The main control board relay is damaged.	Replace the relay.
Not heating	Loose wires	Open the bottom cover to check all connections
Alarm sounds	The water bath was not placed correctly.	Realign and place the water bath correct.
Alarm sounds	Loose wires	Open the bottom cover to check all connections

11. Accessories

Standard Accessories

Accessories	Quantity
Fuse	2pcs
Power Cord	1pc

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