

Water bath Sample Concentrator

Cat. No. BT1609

INTRODUCTION

The Water Bath Sample Concentrator combines a precision water bath with nitrogen injection needles to concentrate samples. This product a high-precision control instruments adopts the microcomputer processing and PID control method, its working principle is rapid, continuous and controllable blown nitrogen to the surface of the sample. According to the evaporation rate and the boiling point of the solvent, to set the heating temperature, and to achieve a large number of samples concentrated.

SPECIFICATIONS

Temperature range	RT+5°C ~ 100°C
Time range	Max 99h59min
Accuracy of the temperature	≤ ±0.5 °C
Display Accuracy	±0.1 °C
Temperature Uniformity (60 °C)	≤ ±0.5 °C
Heating time (40-100°C)	≤30 mins
Number of sample positions	12
Test tube range	φ10-29mm (liquid volume 1-50ml)
Max. Lift Stroke	200mm
Max. gas pressure	0.2Mpa
Max. Flow rate	15L/min
Gas-in Joint Outer Diameter	φ7mm
Needle Length	150mm
Heating power(W)	1000
Fuse	250V 10A φ5×20
Working size	φ260X150mm
Dimension(mm)(L×W×H)	370X300X860
Weight(kg)	9.5

NORMAL OPERATING CONDITIONS

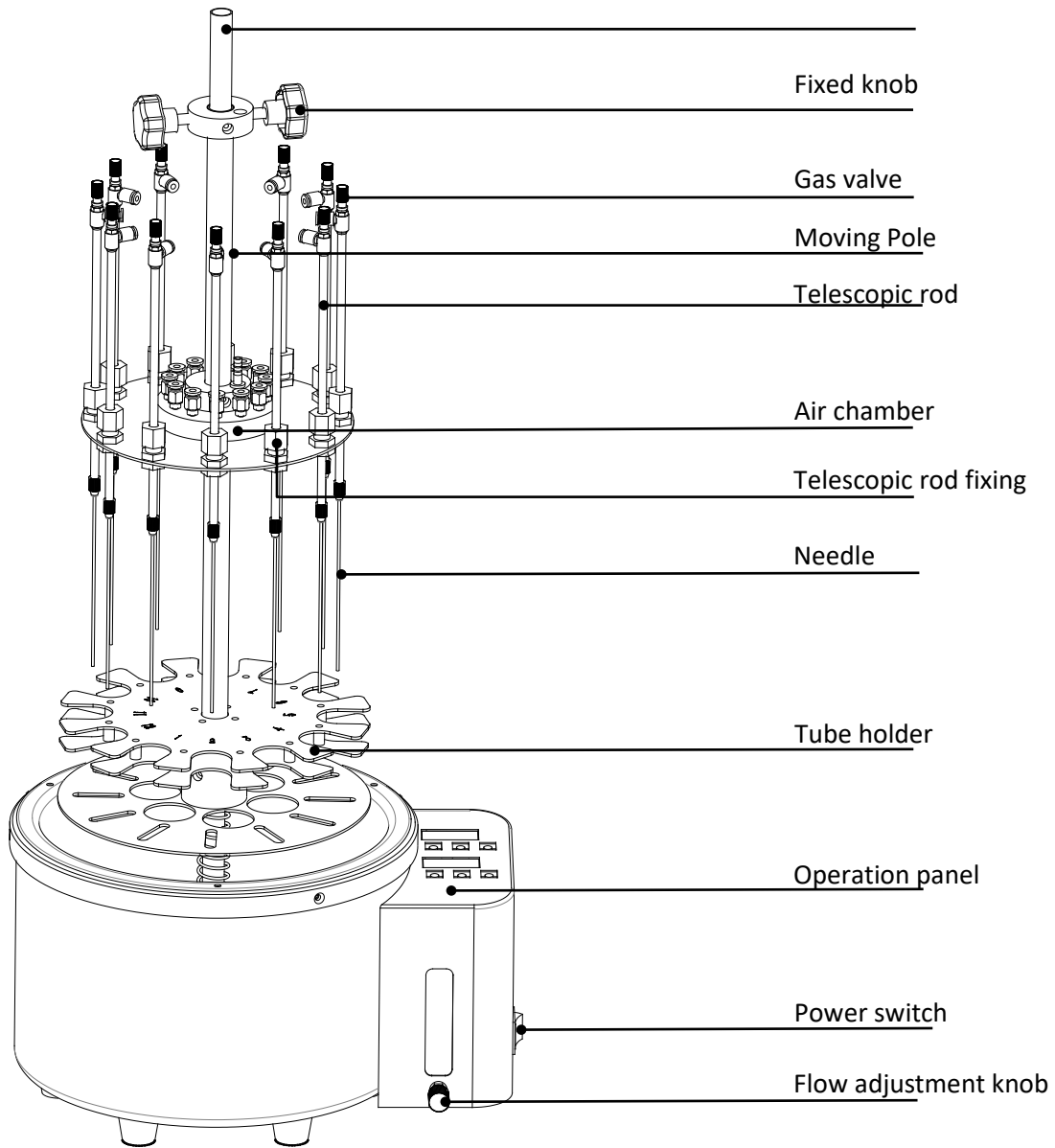
Ambient temperature: 5°C ~30°C

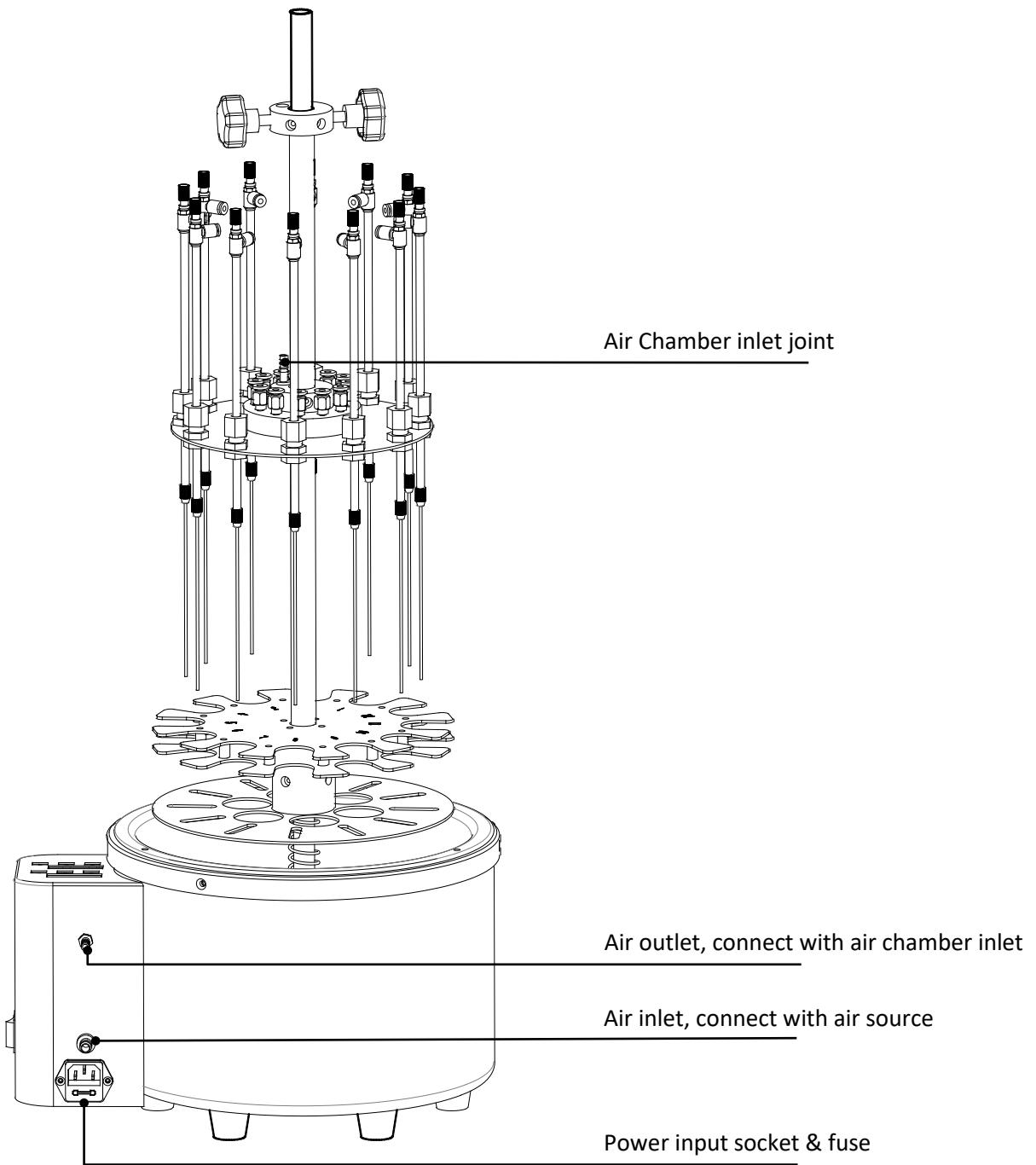
Relative humidity: ≤ 70%

OVERVIEW

This section describes the instrument's mechanical structure, the keyboard and functions of each key, as well as preparation before turning the power on. Please learn this section well before operating the instrument for the first time.

Support bar

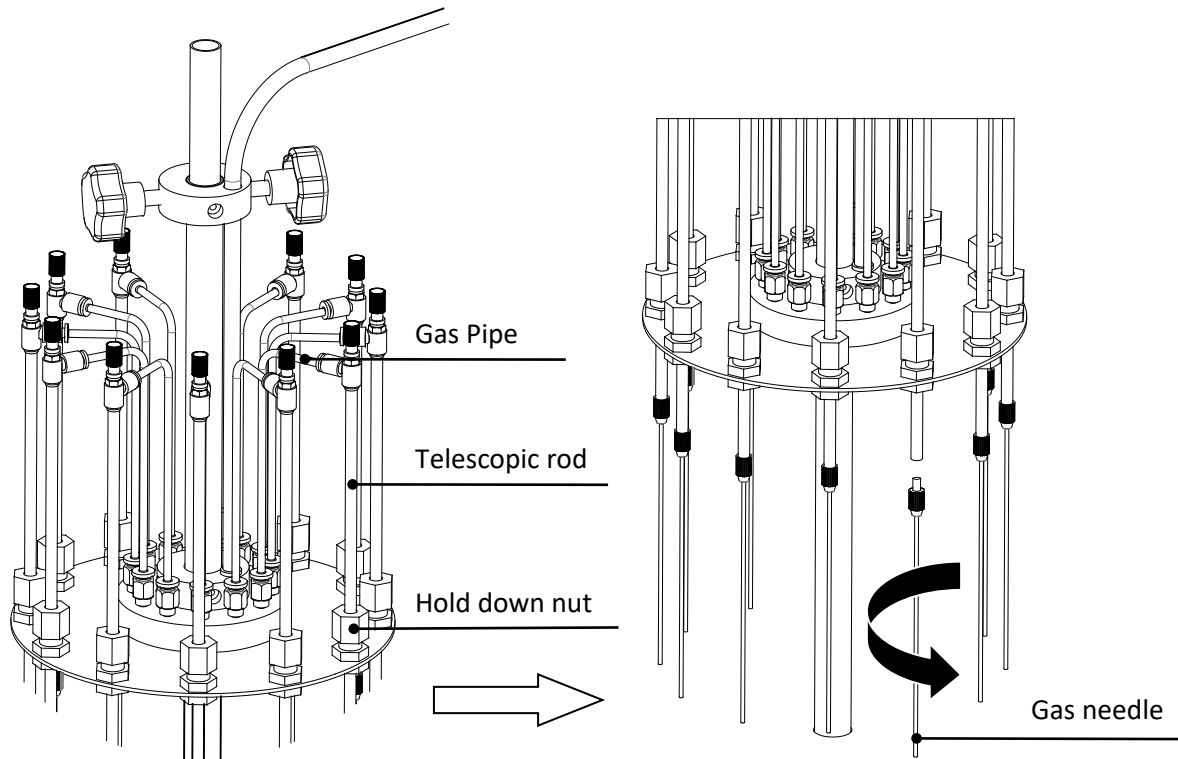




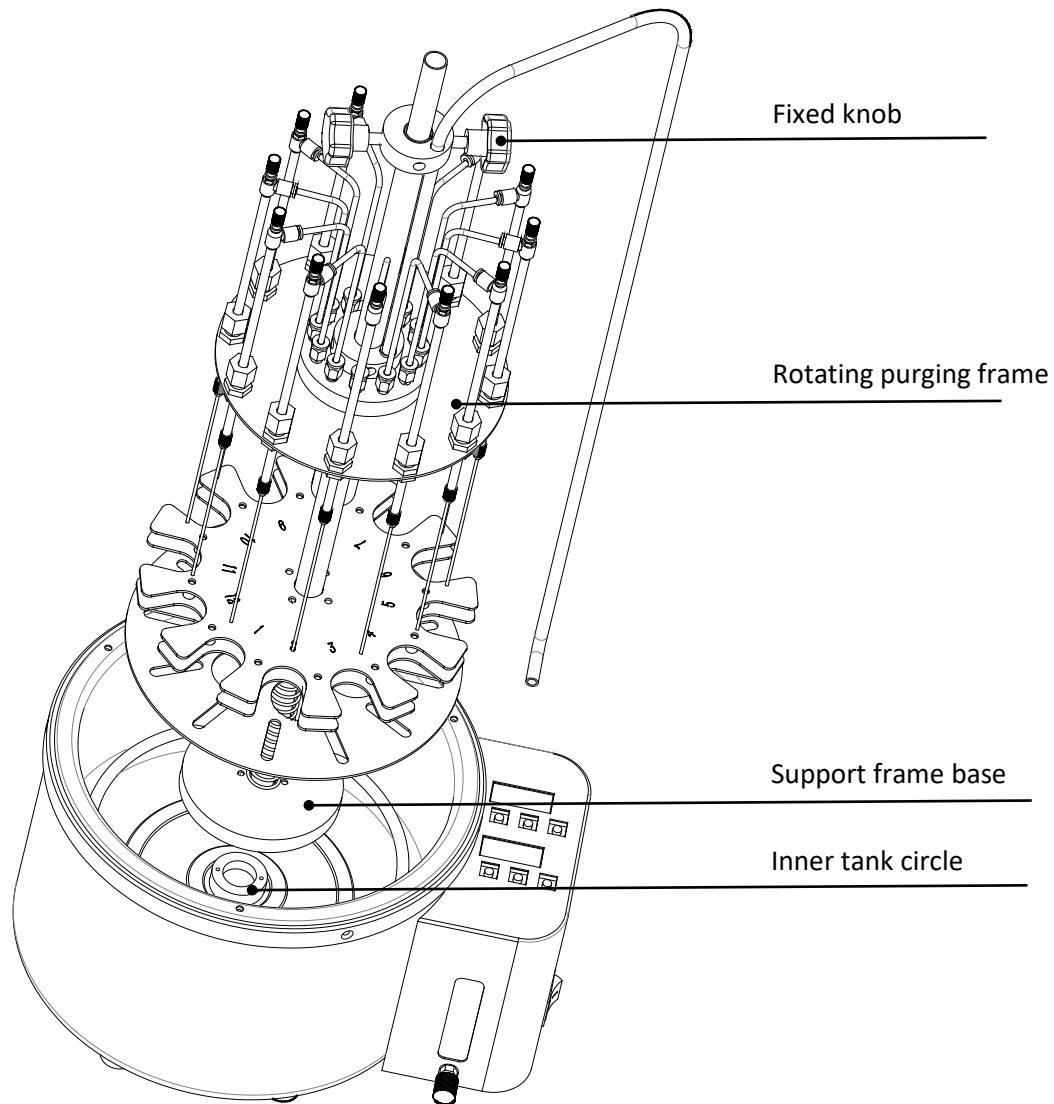
INSTRUMENT INSTALLATION

Gas Needle Installation

1. Put the purge frame vertically on the table.
2. Loosen the hold down nut and insert the telescopic rod into the hold down nut.
3. Connect the gas pipe on the air chamber and the needle valve on the top of telescopic rod, completely inserting the gas pipe into the needle valve.
4. Install the rest of the telescopic rods in the same manner.
5. Screw in the gas needle counterclockwise into the bottom of the telescopic rod according to the following image, hand tighten.

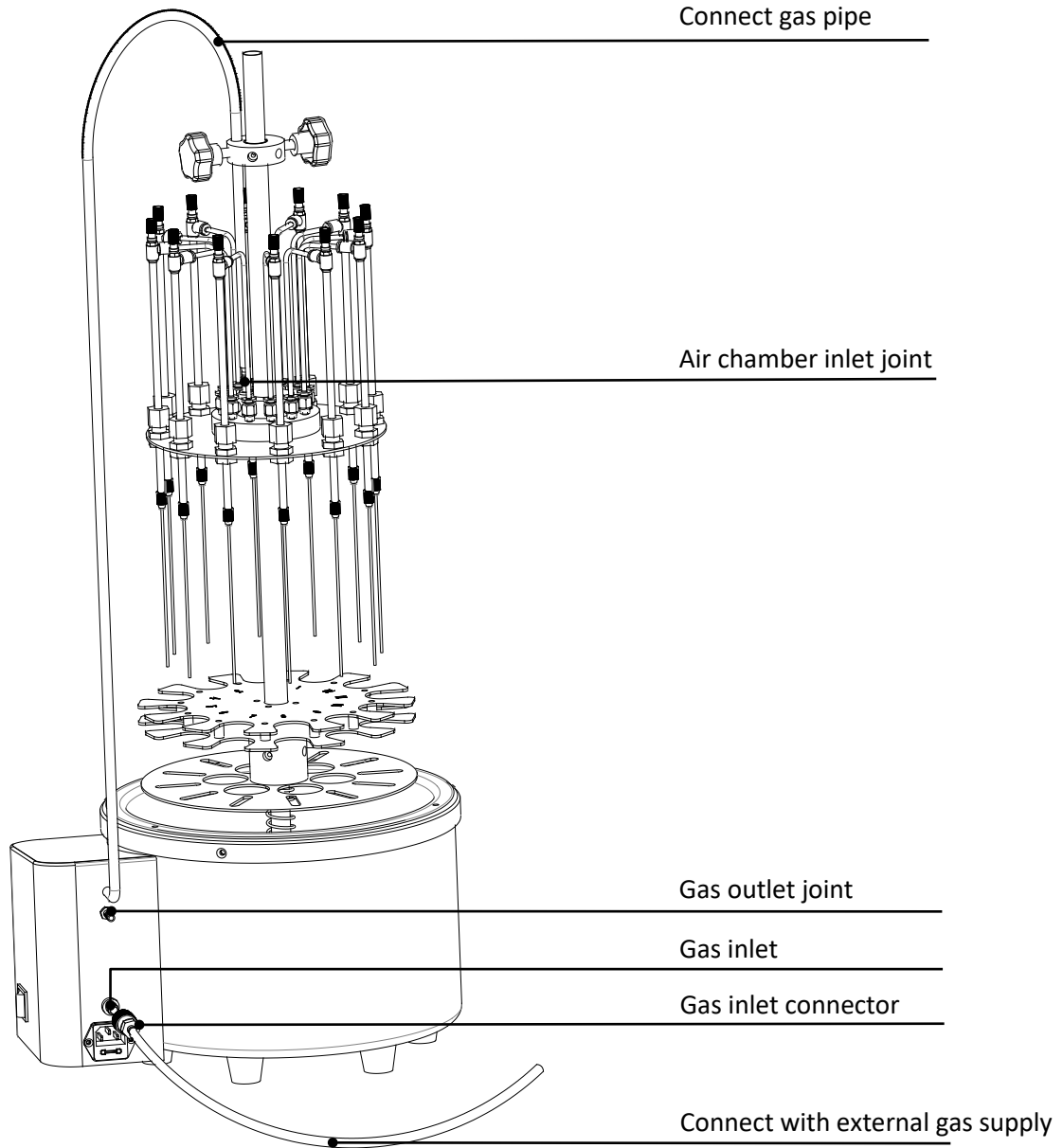


Rotating Purging Frame Installation

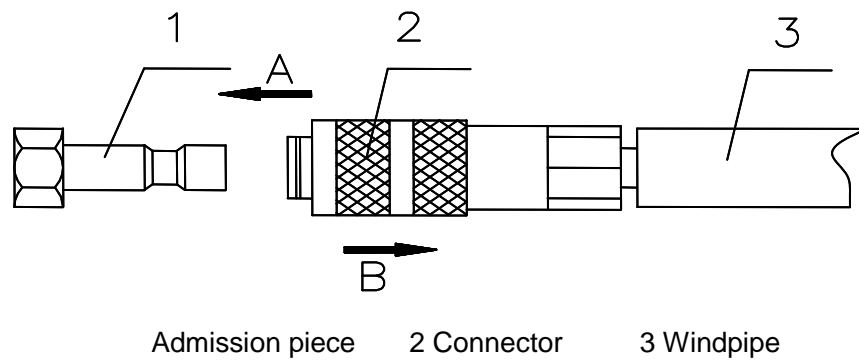


1. Put the installed rotating purging frame with gas pipe and gas needles into the inner tank, the support frame base must stack into the Inner tank circle.
2. The height of the purge frame to can be adjusted, release the knob, press down the knob and move the purge frame to the desired height. Tighten the knob. If you want to raise it, release the knob, the internal spring will automatically raise the purge frame.

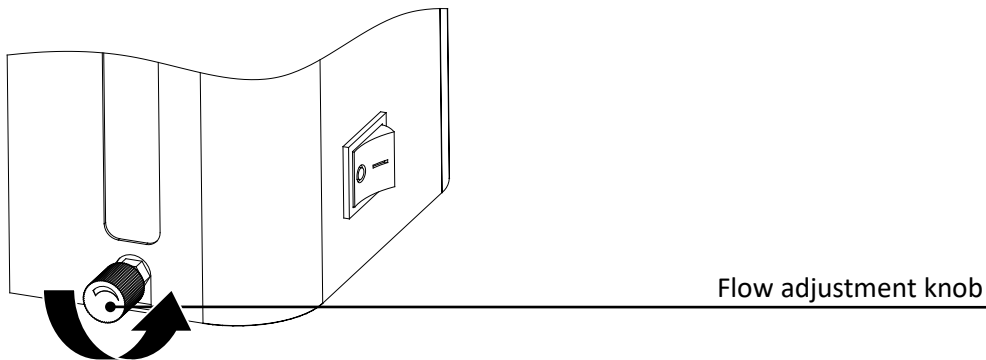
Gas source connection



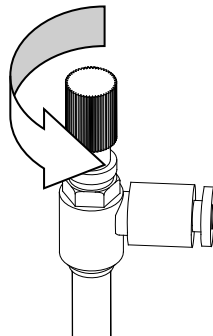
1. Connect one end of the connect gas pipe to the air chamber inlet joint and the other end to the gas outlet joint behind the control box. The connecting pipe must be completely inserted onto the air chamber inlet joint and the gas outlet joint.
2. The gas joint is equipped with quick connection function, the user can easily and quickly turn on and off the gas source. Operation is as follows:
3. Tighten part 2(Connector), Target 1(Admission piece), force to the direction A. The spring parts within the connector will tighten automatically to part 1(Admission piece). Press part 2 to B direction, the spring member within the connector will automatically disengage.



4. Connect the other end of the gas source connection pipe to the gas supply.
5. Adjust the flow adjustment knob first, adjust the size of the total gas inflow volume, counterclockwise rotation to increase the flow, clockwise rotation to reduce the flow until the closure.



6. Adjust the needle valve of any single gas path to turn on or off this gas path, turn counterclockwise to increase the flow, turn clockwise to decrease the flow until it closes. So by adjusting the needle valve can also adjust the size of the gas flow of that gas path.



7. Open the input gas supply valve, turn on the gas, adjust the "flow adjustment knob" and "needle adjustment knob" to the appropriate flow rate as needed.
NOTE: The pressure of the input gas should not be more than 0.2Mpa, too much pressure of the gas source will make the gas chamber seal bad, so that the gas chamber leak, thus wasting air.
8. After the gas path is connected, add pure water to the water bath and the liquid is about 30mm from the top of the tank.

OPERATION PANEL

Key Function

“DOWN” arrow	Decreasing button: decreases the value
“UP” arrow	Increasing button: increases the value
Start/Stop	Run/stop button: start operation by pressing the button after setting the temperature and the time value. Press this button for 2 seconds to stop the instrument in operation.
Mode	Use this key to switch between a timer or continuous operation.



Temperature and Time Setting

1. Power on, the LED displays “8” . The instrument enter to the initial state
2. Two seconds later, the value changes to water’s current temperature and setting time of last operation.
3. Click “UP” or “DOWN” arrow of temperature, the temperature value changes to the setting value in last operation, and the last digit of the setting value flickers. Press “UP” or “DOWN” arrow of temperature to change the temperature setting value. When the value reaches the target, release “UP” or “DOWN” arrow, the instrument automatically confirms and saves the value.
4. Click “UP” or “DOWN” arrow of time, the last digit of the time setting value flickers. Press “UP” or “DOWN” arrow of time to change the time setting value. When the value reaches the target, release “UP” or “DOWN” arrow, the instrument automatically confirms and saves the value.

NOTE: The time setting “00:00” means no operation timing, the instrument runs continuously at the setting temperature.

Start/Stop

1. After setting the temperature and time, click the Start/Stop key to start the instrument operation. The temperature will rise. Press “start/stop” to run the program after setting time and temperature value. When program completes, instrument stops running and alerts.
When the time is up, the operation stops with buzzer alarm. LCD displays current block temperature and time display is “……………” which means the operation is completed.
2. When the operation completes, the instrument goes to waiting interface. Press “UP” or “DOWN” arrow to reset the temperature and time, then, press start/stop to start a new operation. Press start/stop without any change of the setting to restart the operation.

- Continuously press start/stop for 2 seconds during the operation to stop running. Press start/stop again to continue the operation.

TROUBLESHOOTING

Issue	Possible Causes	Solution
No signal display when power-is turned on.	No power	Check the power connection.
	Broken Fuse	Exchange fuse (250V 4.0A Φ 5x20)
	Broken Switch	Exchange the switch
	Other	Contact BT Lab Systems
The actual and displayed temperatures are different.	Broken sensor or loose contact to the block	Contact BT Lab Systems
“ERR” in the display with an alarm sound.	Broken sensor or room temperature is below zero	Contact BT Lab Systems
No heating	Broken sensor	Contact BT Lab Systems
	Solid state relay damage	
	Broken heater	
Key does not work	Key is broken	Contact BT Lab Systems

IMPORTANT SAFETY INFORMATION

- Please read this operation manual carefully before using the instrument.
- This product is an indoor Instrument.
- These units are designed for laboratory use by persons knowledgeable in safe laboratory practices.
- The operator should never open or repair the instrument. Opening or repairing the instrument will void the guarantee and can cause accidents.
- The power plug should safeguard against an electric shock. The 3-pin plug supplied with the instrument should be matched with a suitable grounded socket.
- The temperature of metal block will be very high during the normal operation. The liquid will be boiling. Do not touch any part of the body to the instrument due to risk of scalding.
- Close the test tube lid before putting the tube into the block. Liquids may spill out in the block or onto the device if the tube lid is opened, which will damage the block or the device.
- Make sure the rated electrical outlet load is no lower than the demand. Power line should be replaced with the same type if it is damaged. Make sure there is nothing else on the power line. Hold the jack when pulling out the power line. Do not pull the power line. Do not put the power line in a place where there is a tripping hazard.

- The instrument should be used in an area with low temperature, little dust, no water, no sunshine or hard light and with good air circulation. Do not use where there is corrosive gas or a strong magnetic field. Keep far away from central heating, camp stove and other hot sources. Do not put the instrument in a wet and dusty area. The vent on the instrument is designed for aeration. Do not wall up or cover the vent. The distance between each device should be more than 100cm when there is more than one instrument.
- Power off when not in use. If the instrument will not be used for a long period, unplug, and cover with a piece of cloth to protect it from dust.
- In case of the following, unplug the instrument at once and contact BT Lab Systems.
 - The instrument comes into contact with liquid
 - The instrument gets soaked or burned
 - The instrument emits an abnormal sound or smell
 - The instrument is dropped or the outer shell damaged
 - The instrument functions abnormally.

MAINTENANCE

The well in the block should be cleaned by a cloth dampened with alcohol to assure good heat translation between the block and the test tube and no residue. If there are smudges on the instrument, clean it with a dry cloth.

Power off when cleaning the instrument. Do not drop the cleaning fluid in the well when cleaning. Do not use corrosive cleaning fluid.

WARRANTY

The instrument is warranted against defects in materials and workmanship for 1 year. If any defects occur in the instrument or accessories during this warranty period, BT Lab Systems will repair or replace the defective parts at its discretion without charge.

For any inquiry or request for repair service, contact your local BT Lab Systems office. Inform BT Lab Systems of the model and serial number of your instrument.

TECHNICAL SUPPORT

BT Lab Systems offers technical support for all of its products. If you have any questions about the product's use or, operation, please contact BT Lab Systems at the following:

E-Mail: info@BTLabSystems.com