OPERATING MANUAL

WATER BATH CONCENTRATOR

BCON-105

INDEX

1.Safety Warnings and Guidelines

1 Important Operation Information of The Security
Before the users' operation, they should have a perfect conception of how to use the Instrument. Therefore, read this Manual carefully before using it.

 Operation before reading the Manual is forbidden. Operation not according to the Manual will bring about serious burning or even electric stroke accident. Read the guidelines and directions below and carry out the countermeasure according to them.
2 Security
The operation, maintenance and repair of the Instrument should comply with the basic guidelines and the remarked warning below. If you don't comply with them, it will have effect on the scheduled using life of the Instrument and the protection provided.

 This product is a normal and an indoor Instrument which conforms to Standard B style- I type- GB9706.1.

 Read the Manual carefully before operation, or the accident will happen. The tester who only has special knowledge in wiring equipment can operate this Instrument.

 The operator should not open or repair the Instrument by himself, which will result in losing the qualification of repair guarantee or occur accident. If there is some wrong with the Instrument, the company will repair it.
A.C. power's grounding should be reliable to safeguard against an electric shock. The 3-pin plug supplied with thermo-shaker's power cable is a safety device that should be matched with a suitable grounded socket.

 Before power on, guarantee the voltage used should be accordant to the voltage needed, and the rated load of electrical Outlet should not lower than the demand. If the electric line is damaged, you should replace it with the same type. You should assure there's nothing on the electric line and you should not put the electric line in the ambulatory place. Hold the jack when you pull out the electric line, and don't pull the electric line.

 The Instrument should be put in the place of low temperature, little dust, no water and no sun or strong lamp. What's more, the place should be good aeration, no corrosively gas or strong disturbing magnetic field, far away from central heating, camp stove and other hot resource. Don't put the Instrument in wet and dusty place.
The vent on the Instrument is designed for aeration. Don't wall up or cover the vent in order to keep from high temperature. If you use the more than one Instrument the same time, the distance between them should be more than 100cm.

 Pull the connector plug from the jack at once in the following case, and contact with the vendor:
- There is some liquid flowing into the Instrument;
- Drenched or fire burned.
- Abnormal operation: such as abnormal sound or smell.
- Instrument dropping or outer shell damaged.
- The function has obviously changed.

⚠
3. The maintenance of Instrument
If the surface of the instrument is stained, it can be cleaned with a soft cloth dampened with cleaning paste.
⚠ Power off when cleaning the Instrument.
It is strictly forbidden to clean the surface of the instrument with corrosive cleaning agents.
4. After-sales service
a）Warranty content
Within a month from the delivery date, the cause of failure due to material and manufacturing defects, the Company will be responsible for the guarantee replacement
Within 12 months from the delivery date, the cause of failure due to material and manufacturing defects. The company will prove to be defective instruments selected for repair or replacement
The product must be sent to the maintenance department of the company by the user. The freight will be borne by the user. The Company will bear the return shipping costs.
Over the warranty period, the Company will receive appropriate maintenance costs.
b）Warranty coverage. The above warranty is not suitable for improper maintenance, damage caused by unauthorized repair or modification.

1. Introduction

Water Bath Concentrator is mainly used for the concentration or preparation of large quantities of samples (such as drug screening, hormone analysis, liquid phase, and sample preparation in mass spectrometry analysis). Working principle: By blowing nitrogen into the surface of the heated sample, the solvent in the sample is quickly evaporated and separated, so as to achieve the purpose of oxygen-free concentration of the sample and keep the sample more pure.
This product has the following characteristics:
★ Elegant appearance, with elevation operation panel, embedded flowmeter, waterproof button, safe and reliable.
★ Good compatibility, suitable for test tubes (diameter 10 ~ 29mm), conical flask, centrifuge tube, the sample capacity of 1 ~ 50ml.
★ Free up and down needle valve tube, independent adjustable needle valve,controls gas flow at each sample location
★ Circular turntable structure, 360-degree rotation, convenient sample support into and out of thewater bath, easy to operate.
★ 12 position, each sample position are numbered, spring tube clamp fixed
position.
★ LED real-time displays temperature and time, water bath temperature:RT +5 ℃ ~ 100 ℃.
★ All use of stainless steel, all components are anti-corrosion and resistant to organic solvents.
★ When concentrated toxic solvents, the entire system can be placed in a fume hood.
★ Built-in level sensor, anti-dry protection.
★Suitable for a variety of test tubes, so that the gas needle is aimed at the

2. Specifications

2.1 The normal working condition:

The room temperature: 5°C 35C
The relative humidity: ≤70%
The using power: AC220V～8A 50/60Hz

2.2 Basic Parameters and Performance.

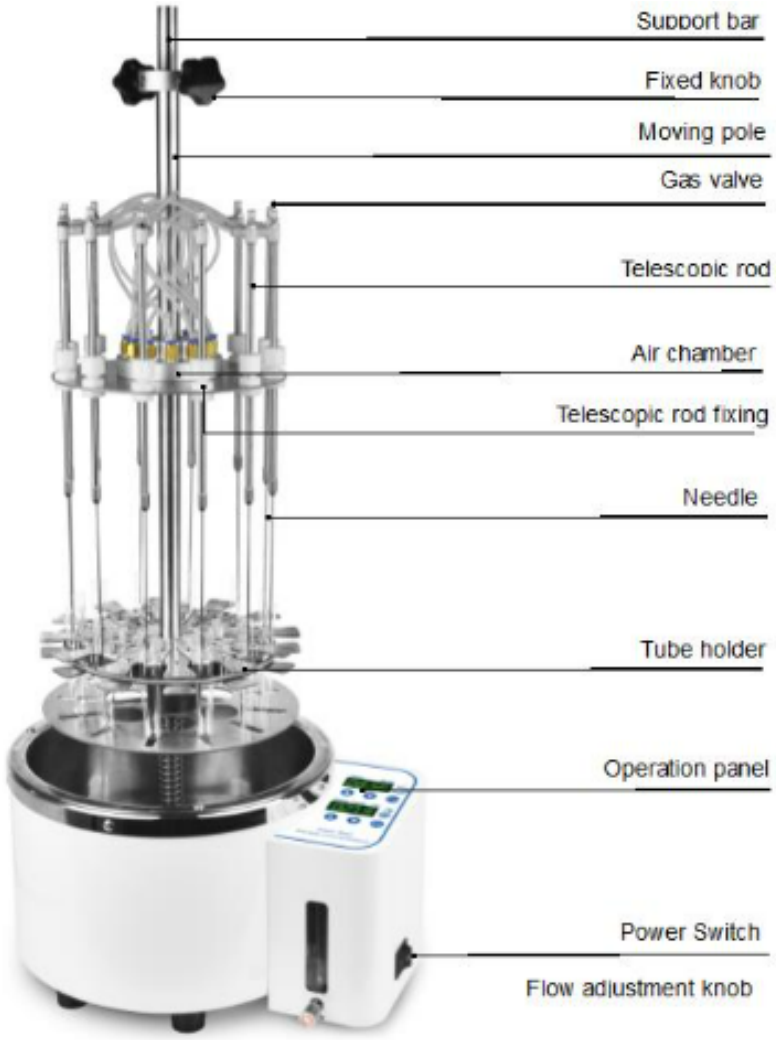
Model Parameters	BCON-105
Temperature range	RT+5C 100C
Time range	1min99h59min
Accuracy of the temperature	≤ 0.5 C
Display Accuracy	0.1 C
Temperature Uniformity(60 C)	≤ 0.5 C
Heating time（40-100C）	≤30 mins
Number of sample positions	12
Test tube range	φ10-29mm(liquid volume 1-50ml)
Max. Lift Stroke	200mm
Max. gas pressure	0.2Mpa
Max.Flow rate	15L/min
Gas-in Joint Outer Diameter	φ7mm
Needle Length	100mm
Heating power(W)	1000
Fuse	250V 8A Φ5×20
Working size	Φ260X150mm
Dimension(mm)(L×W×H)	390*300*850
Weight(kg)	9.5

3. Basic Operation Instruction

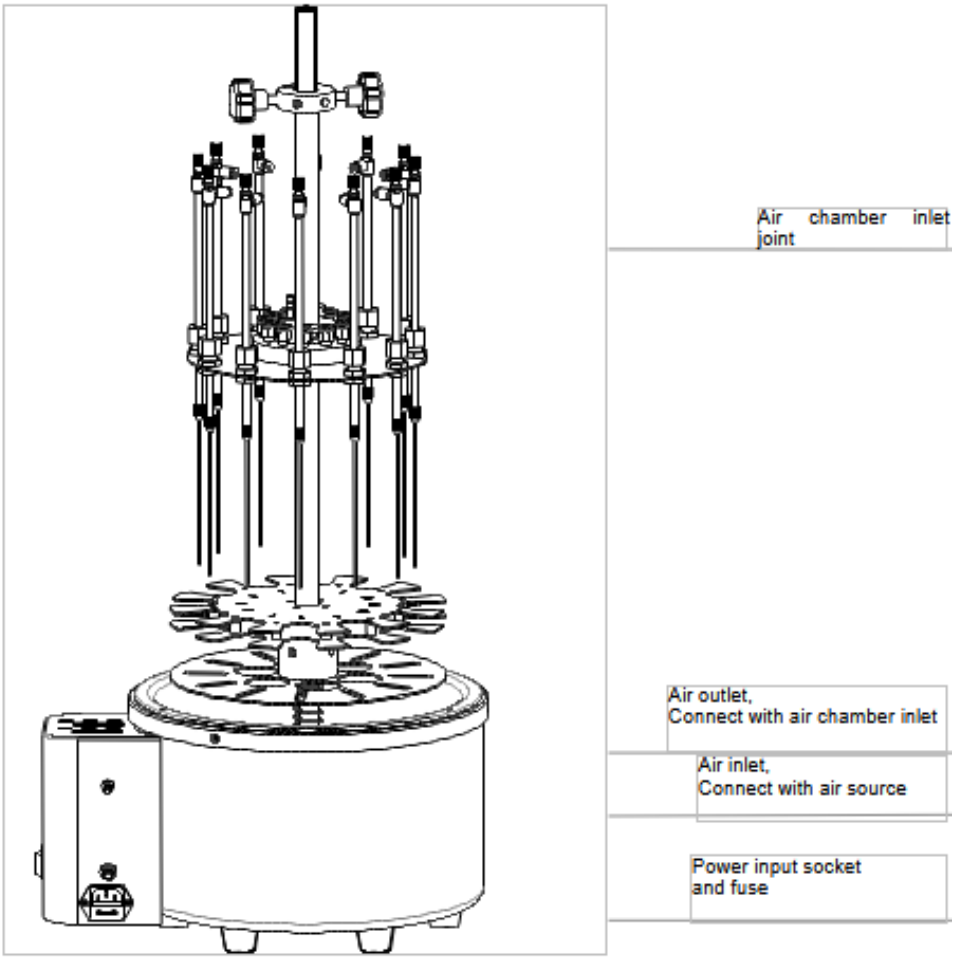
This chapter will introduce the construction of the Instrument, operation panel and the function of all buttons as well as preparing work before starting-up. You should be familiar with this chapter before starting-up when you use the Instrument first time.

3.1 Construction

Front Side

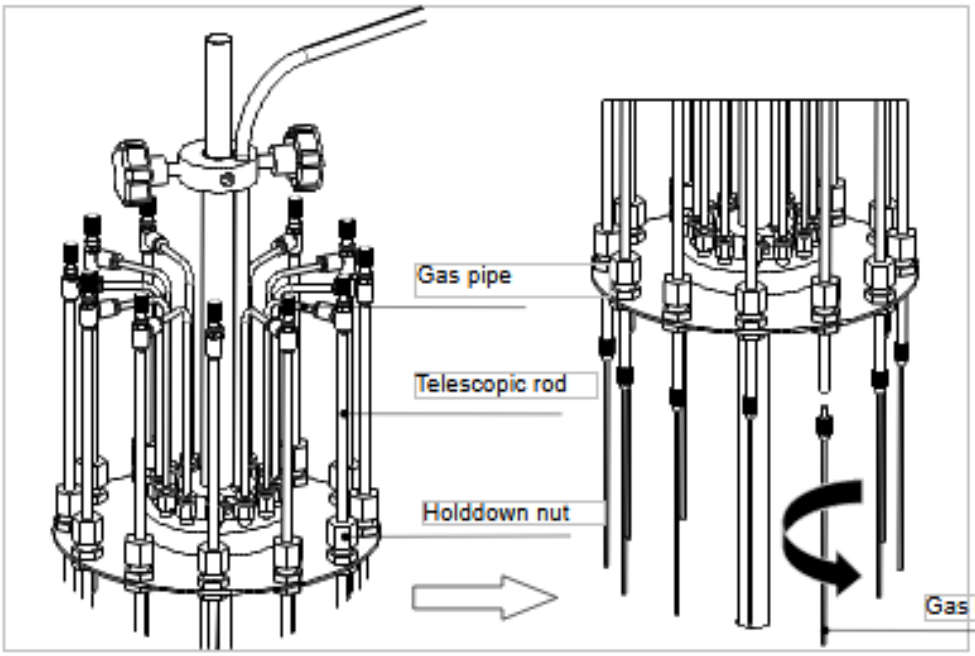


Back Side



3.2 Instrument Installation

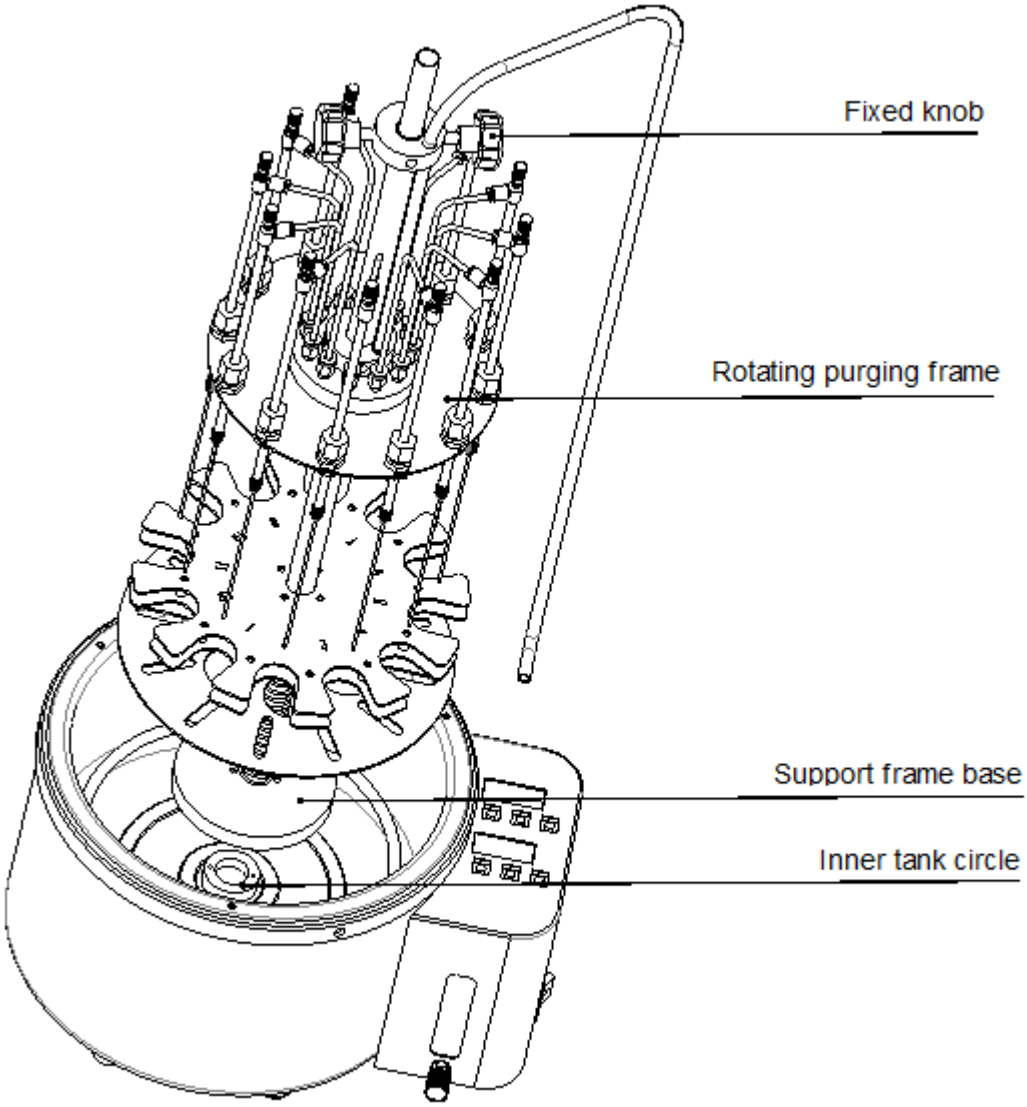
3.2.1 Purge gas path installati



Installation steps:

1) Put the purge frame vertically on the table.
2) Loosen the holddown nut and insert the telescopic rod into the holddown nut.
3) Connect the gas pipe on the air chamber and the needle valve on the top of telescopic rod, completely inserted the gas pipe into the needle valve.
4) Install the rest 11 telescopic rods in the same way.
5) screw in the gas needle counterclockwise into the bottom of the telescopic rod according to drawing, tighten it with your hands.

3.2.2 Rotating purging frame installation

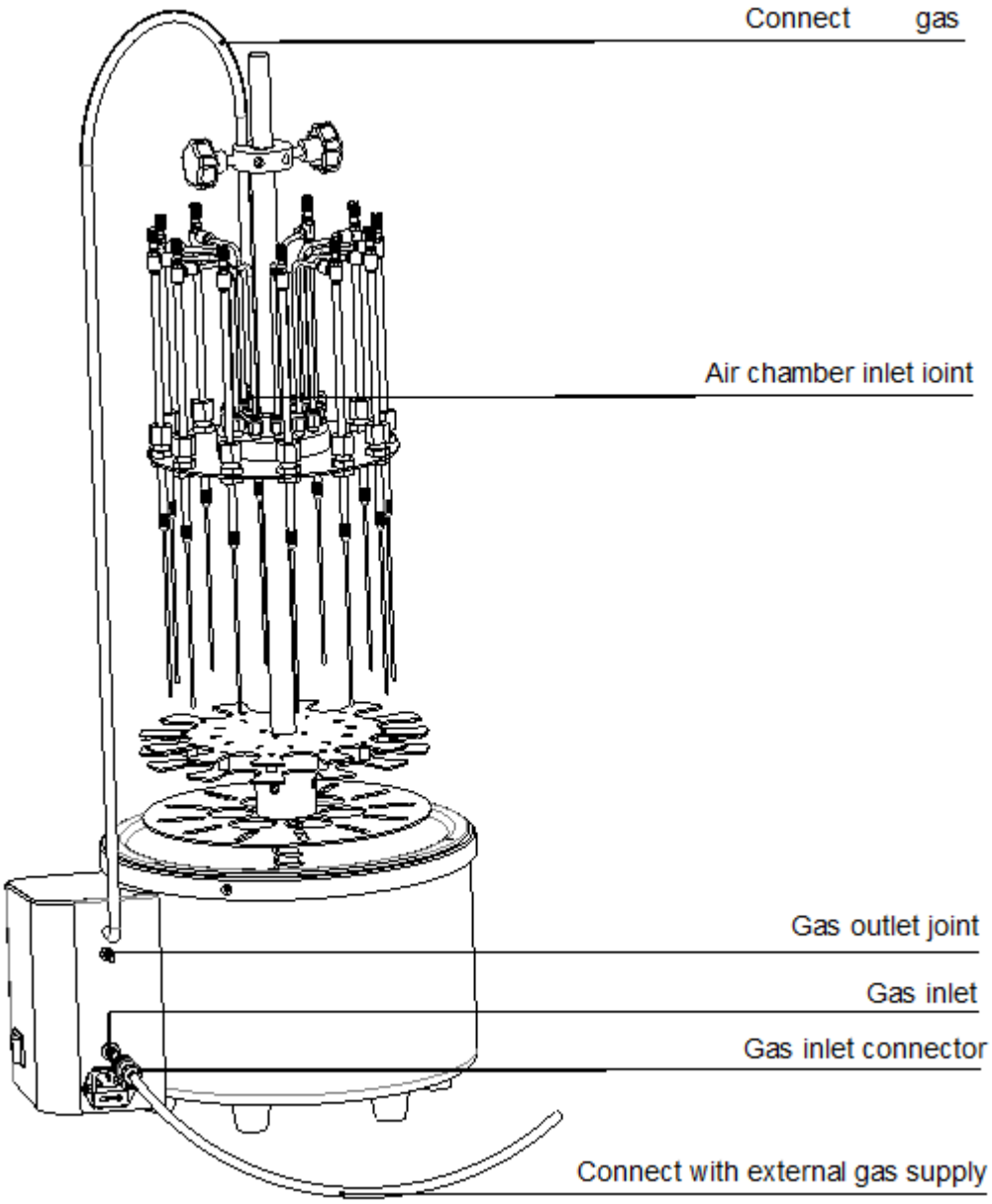


Installation steps：

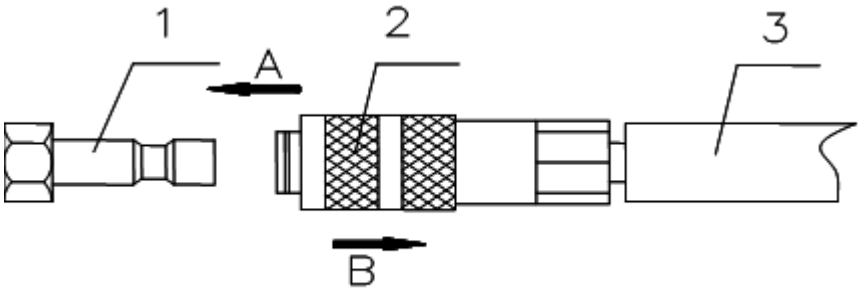
1）Put the installed rotating purging frame with gas pipe and gas needles into the inner tank, the support frame base must stack into the Inner tank circle.

2）The height of the purge frame to can be adjusted, release the knob, press down the knob, the purge frame fall, tighten the knob while it down to the appropriate position. If you want to rise, release the knob, the internal spring will automatically raise the purge frame.

3.3 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 completely inserted into the air chamber inlet joint and the gas outlet joint.
2) 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:
As shown in the figure below, press the 2 (Connector) position by hand, then stuffed the 1 (Gas inlet) with the force toward A direction, and the spring component in the connector will automatically clamps against the 1 (Gas inlet). When it is necessary to separate the gas pipe from the gas distribution chamber, simply press and hold the 2 (Connector) to push it toward to B direction, and the spring component in the connector will automatically disengaged from 1 (Gas inlet).

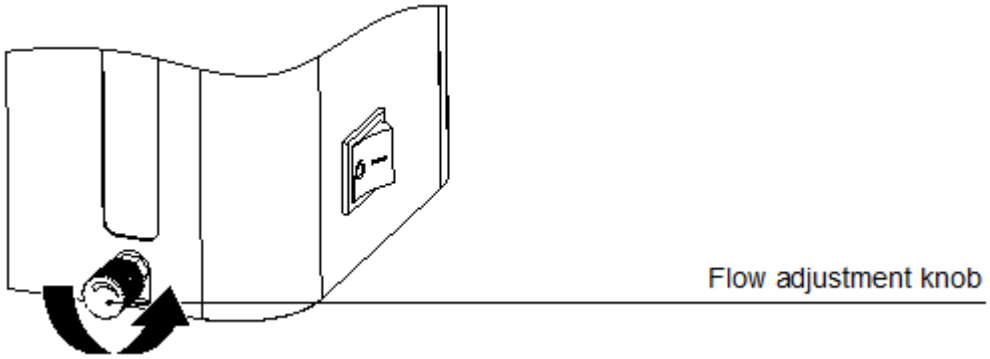


1 Gas inlet 2 Connector 3 Gas pipe

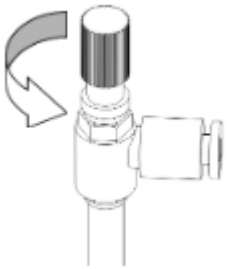
3) Connect the other end of the gas source connection pipe to the gas supply.

4) The steps to connect the gas source is as follows:

A) 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.



B) 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.

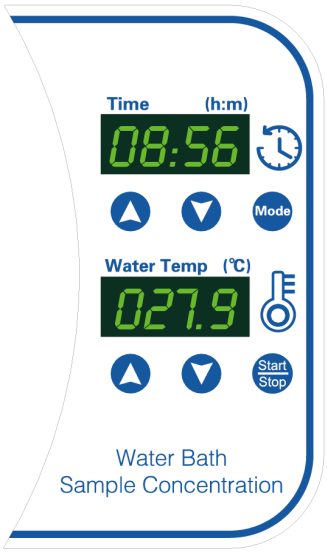


C) Open the input gas supply valve, turn on the gas, adjust the "flow adjustment knob" and "needle adjustment knob" to the appropriate flow rate as needed.

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.

5) 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.

3.3 Operation panel / Button instruction



▼ Decreasing button: decrease the figure set;

▲ Increasing button: increase the figure set;

START/STOP Run/stop button: Run when you press the button once after setting the temperature and the time. Stop when you press this button for 2s.

Mode When the time is in the timer state, press this key for the untimed status, and display OFF, pressed became timer status when in OFF status.

4. Operation Guide

4.1 Temperature and time set:

a). The LED will display “ 8 ” as the chart when the Instrument powers on and the Instrument goes into the initial state with the sound of “du...”.

b). About 2s later, the figure 28.5 is the block’s current temperature; 00:35 in the time display is the last set time.

Press ▲ or ▼ near the word “Temp” and keep off at once. Now, the value in the temperature display is the former setting temperature. As shown in the left drawing, the last digital of the setting temperature is flickering. If you want to set the temperature to 55.5℃， do as follows:

Keep pressing ▲ , when it reach 55.5°C, stop Pressing ▲ , it will auto save as 55.5°C
Keep pressing the above keys for 2 seconds. We can modify the value fleetly. It is very convenient.

c). Press ▲ or ▼ near the word “Time” and keep off at once. Now, the value in the time display is the former setting time. Shown in the left drawing is 00:35 (35minutes). At same time, the last digital is flickering. If you want to change the time to 01:20, do as follows:

Keep pressing ▲ , when it reach 01:20,

stop Pressing ▲ , it will auto save as 01:20,

Notes: If the time setting is 00:00, meaning the time of operation is forever, the Instrument run constantly in setting temperature.

4.2 Operation and stop:

a) After accomplishment of the temperature and time setting, press the button of START/STOP and keep off at once, the Instrument begins operating. The temperature rises with the sound of the “du...”.

Meanwhile, there is current temperature in the temperature display, and the radix point is flickering regularly during the rise process.

When the timing is stopped, the operation is also stopped. The buzzer alarms. Current temperature in the temperature display and “ oUEr ” in time display mean “over”, the complishment of the operation.

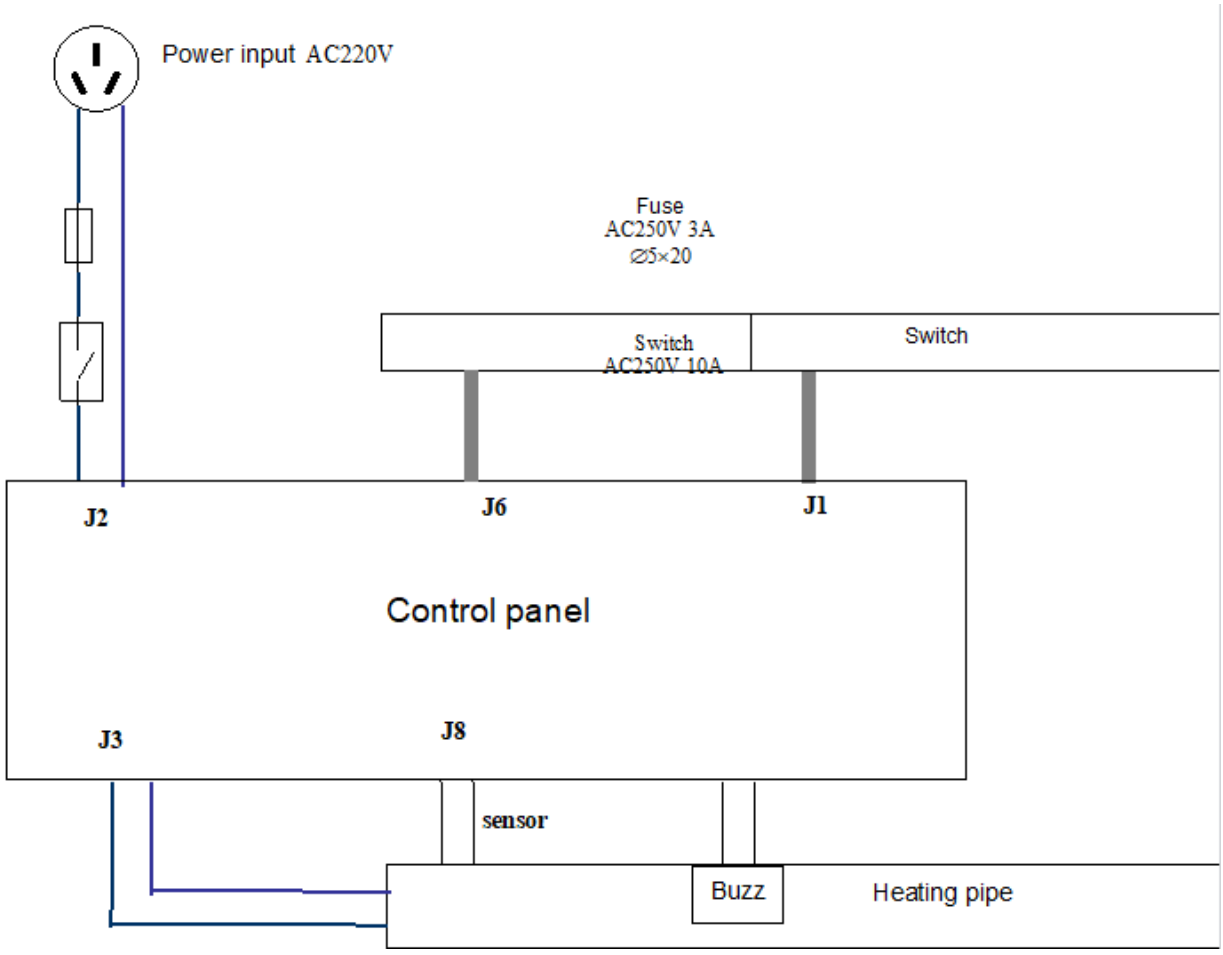
b). After accomplishment of the operation, the instrument is in standby mode waiting for new declaration. Then pressing the keys near “Temp” or “Time” can reset the temperature or the time. Pressing START/STOP, it will operate according to last setting.
c). Press START/STOP for 2s during the operation, it will stop running. Press this button again, operation will continue.

5. Error Analysis and Recovery Processing

No.	Fault phenomenon	Cause analysis	Recovery processing
1	No signals on the display when the instruction is powered on	No power	Check the connection of power
		Broken fuse	Exchange fuse
		Broken switch	Exchange the switch
		Others	Contact to the seller
2	The actual and displayed temperatures are quite different.	Broken sensor or loose contact of the block	Contact to the seller
3	“ ERR ” in the display with the alarm of “du...”	Broken sensor or the environmental temperature is below zero.	Contact to the seller
4	The water bath don't heated	Broken sensor.	Contact to the seller
		Solid state relay damage	
		Broken heater	
5	Key doesn't work	Key broken	Contact to the seller

Appendix A：Wiring Diagram of BCON-105

(Below diagram is just for reference. It is subject to change without prior notice.）



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