Please read this Manual attentively before using and be careful of keeping the Manual in case of contingent use.

SciQuip

User's Manual

Incu-Shake series

Multi-amplitude Orbital Constant Temperature Shaking Incubator

This Manual applies to:

Incu-Shake MINI/ MIDI / MAXI

UKAS QUALITY MANAGEMENT 005

SYSTEM CERTIFICATION ISO9001:2000 SGS

Thank you very much for your purchase of our ZHWY series constant temperature shaking incubators, which are specially designed for you. Your choice indicates that you have very high requirement on style and performance of constant temperature shaking incubator.

The Incu-Shake series constant temperature shaking incubator, which combines automatic control thermostatic incubator with incessantly running shaker , has features like low investment, small area needed and multi-function,etc.

This equipment, which features luxurious streamline mould involving aesthetic designing and man-machine interface with visualization design, has audio and visual alarming P.I.D environment scanning microprocessing chip capable of controlling indexes such as, temperature, frequency, with comparatively high precision. Incu-Shake series constant temperature shaking incubator embodies distinctive professional style, endless originality of design and all around pursue of humanity. All of which enable you to experience high efficiency and quality of the laboratory work brought by high-tech while enjoying the delight brought by art and technology.

This equipment is widely used in germ culture, ferment, hybridization, and research of biochemical reaction, enzyme and cellular tissue and all those require high temperature and oscillation frequency. It has a wide and important range of applications in research of medicine biology, numerator, pharmacy and environmental protection.

Since the date of your purchase of this product, after-sale service will always be with you. No matter what questions you meet in your using, please do not hesitate to contact us whenever you want.

Reminder

The manual should be read and understood thoroughly, because it can help you to master the operating method and feature of this high-tech product. Prior to operation, we strongly recommend you to read this manual completely so that you can master all the function to the utmost extent.

1.Preparation: Assemble the equipment and connect with power supply(see operation manual).

Attention!
Configuration of power supply of AC 220V/50Hz and capacity not less than the power needed with socket reserved for the use of this equipment.

2.Switch on: turn on the power switch on the right side of the equipment and power is applied to the equipment.

3.The multi-parameter large LCD screen displays:

The preset temperature value: ℃

The preset speed value: r/m

The preset time value: hour: minute

*The temperature adjusting value: refrigeration coefficients: the timing of defrosting: defrosting time

The screen can be switched at any moment to display the above parameter, i.e, the preset one or the real one, ..

4.The change of parameter:

4.1.To change the parameter, press the “Change/Confirm” button, then press the “Increase” button to “3”, SV twinkles.

Attention!
If buttons were left untouched for 30 seconds, the screen will automatically switch to display the real parameter.

4.2.Press the “Change/Confirm” button and “Increase” or “Decrease” button to change the parameter.

4.3.When setting is finished, press the “Change/Confirm” button to confirm the change.

Attention:
Please read the remaining operating instruction, especially those for safety!

5.Temperature exceeding alarm signal and time remind signal.

5.1.Temperature exceeding alarm signal: alarm continuously

5.2.Time remind signal: alarm with regular interval

Attention:
Refer to operating manual for further operational option!

Items with the character “*” only applies to the full temperature shaking incubator with refrigeration system.

Safety instruction!

Please be sure to follow the instructions, which are really important for your safety.

⚠ **Danger! (Warnings against likely injury or death.)**

1.Grounding outlet to avoid accidental electric shock or fire disaster.
2.Do not attempt to repair the product yourself. Improper handle will result in fire or electric shock.
3.Please an the independent mains jack socket. Make sure the proper plug with outlet. Loose connection will result in overheating, electric shock, or even fire disaster.
4.Do not pull out the plug when it is operating. Do not drag the wire to plug the outlet.
5.Do not damage the wires or use the undesignated wires. Do not try to extend the wires or attach wires at the middle by yourself. Improper handling of wires will result in fire or electric shock.
6.Plug the outlet with wet will get risk of electric shock.
7.Do not put fingers, rods or other kinds of foreign bodies into the inlet or outlet of air. The fan inside runs at high speed, any touch with it will lead to the damage of the equipment or injury of operator.
8.In case of malfunction or burning smell, the unit must be immediately unplug and ceased for further checking, or use a circuit breaker to cut off the power supply. Continuance of abnormal state will result in fire caused by overheating.
9.Before opening the door of the equipment, make sure the platform is in the static state.
10.The electric power supply must be cut off under following situations:
10.1.When opening the door of power box. Without cutting off power supply, the opening of the door will probably result in electric shock.
10.2.When replacing the fuse. Replacing the fuse without cutting off the power supply will probably result in electric shock.
10.3.When the malfunction occurs. Mishandling will result in the further damage of the equipment or accidental injury.
10.4.When not using for a long period of time. The dust accumulated on the outlet may leads to fire cause by electric leakage.
10.5.When moving the equipment. Moving the equipment connected with power supply will probably result in electric shock..

⚠ **Attention!** **Instructions to keep the normal life and proper operations of the equipment!**

*1.When moving the equipment, the angle of inclination at any direction should be smaller than 45 degree. Or else, it may result in the damage of the refrigeration system, abnormal refrigeration an other malfunction.
2.Open or close the door heavily will probably leads to the damage of the equipment.
3.The unit must be placed horizontally on solid, flat floors, adjust the right front foot to make the equipment touch the ground stably.
4.To achieve good heat dissipation, the unit must be provided with sufficient clearance on all sides of the unit, at least 20cm.
5.Do not leave the unit in a location exposed to direct sunlight or near heater.
*6.If continuous refrigeration is needed, elimination of humidity by heating should be conducted every 10 days.
*7.To achieve good refrigeration, the condenser should be cleaned every month.
8.Regular check on the fixed screw of clamp should be conducted to avoid noise or the falling or clamp.
9.When in operation, do not open the door indiscriminately so as to not affect the temperature inside.
10.The exterior of equipment must be kept away from volatile, flammable, explosive liquids or gases.
11.Please keep the inside and outside of the chamber clean. Regular cleaning is required.

Items with the character “*” only applies to the full temperature shaking incubator with refrigeration system.

⚠ Apart from the above warnings and instruction, there are several other special reminder with a exclamation point within a triangle, please read and follow. Any neglect will probably lead to hidden trouble, serious damage, or accidental injury.

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1.Key features

1.Integrated thermostatic culture with shaking incubator, this equipment needs low investment and small area.
2.The orbital or multidimensional eccentric drive unit make the equipment run smoothly.
3.P.I.D environmental scanning micro-processing controller and intelligentized audio and visual alarm.
4.Pattern operation interface and large LCD screen.
5.Provided with power-off recovery function, the equipment can automatically recover to run according to the originally designed program when the external power is recovered after a sudden cut off
6.The operating parameter locked by encryption prevents misoperaion.
7.Operating parameter memory function avoids monotonous operations.
8.High precision temperature control system, the precision can reach up to ±0.1℃, LCD screen displays the preset temperature and the real temperature.
9.High precision frequency control system, the precision can reach up to ±1rpm, LCD screen displays the preset frequency and the real frequency.
*10.The powerful and fast refrigeration system and automatic defrosting system enable the equipment to run continuously under low temperature for a long period of time.
11.Timer up to 50 hours, culturing time can be set randomly within the time range of 1 minute and 500 hour. LCD screen displays the timing parameter and the balance time. When time reaches the end, the equipment will stop automatically and the audio and visual alarm will be activated.
12.AC inductive long-life motor design, broad speed regulation, constant torque, constant speed of rotation, no carbon brush and maintenance free.
13.Over temperature audio and visual alarming function can automatically cut off the power when the motor overheated, temperature out of control or abnormal temperature occurs.
*14.Wiring of the acceleration control ensures soft start, smooth acceleration and the security of samples.
15.Electronic control closed circulating heating and refrigeration system with noiseless fan.
16.Large variety of flexible and convenient detachable tray accessories.
17.The luxurious streamline mould involving aesthetic designing, large glass window.
18.Mirror stainless steel chamber, electro polished stainless platform, spring and clamp, spare the problem of rust.

2.Technical Specifications

Oscillation Mode	Revolution			
Ambient Temperature (℃)	5~25			
Temperature Range (℃)	Ambient+5~60	Ambient+5~60	4~60	
Temperature Precision(℃)	±0.1			
Temperature Uniformity(℃)	±1			
Speed Rangr(rpm)	30-400	25-600		
Speed Precision(rpm)	±1			
Oscillation Amplitude(mm)	Φ24、32、38、50Four steps adjustable	Φ0~50 Stepless adjustable		
Time Rang(H)	0~500			
Tray Dimension(mm)	280*220	280*220	340*370	400*370
Tray Number(Piece)	1			
Standard(ml)	50*9 or100*9 or250*5	50*9 or100*9 or250*5	50*18 or 100*18 or250*10 or500*9 or750*5 or1000*4	50*23 or 100*23 or250*12 or500*9 or750*7 or1000*5
Maximum(ml)	100*9	100*9	50*4、100*4 250*3、500*3	50*5、100*5 250*4、500*3
Power (w)	280	280	540	700

3. Control Panel

Single temperature thermostatic shaking incubator is without refrigeration system.

vertical type

"Time" button:
press this button to display the preset timing parameter and the status of power-off recovery function, press it again to display the remaining time.

"Confirm/Change" button:
press this button to change the parameter, and press it again to confirm the change

"Power" button:
hold on this button for 2 seconds to turn off the equipment, and press it again to turn on the equipment.

“Temperature” button:
Press this button to display the preset temperature value, and press it again to display the real temperature.

“Speed” button:
press this button to display the preset speed and press it again to display the real speed.

“Refrigeration status” button:
Press this button to display the refrigeration coefficient, press it again to display the timing of defrosting, and press it once more to display the defrosting time.

“Increase” button:
press this button for one time, the parameter increase by one digit, hold on this button and the parameter will keep increasing.

“Decrease” button:
press this button for one time, the parameter decrease by one digit, hold on this button and the parameter will keep decreasing.

“Start/Hold” button:
press this button and the platform begin to oscillate, press it again to stop oscillating.

ALARM **Temperature exceeding alarm indicator:**
When the temperature inside the chamber is abnormal, this indicator twinkles.

HEATING **Heating indicator:**
When the heater is connected with power, this indicator is light.

COLD **Compressor indicator**
When the compressor is working, this indicator is light.

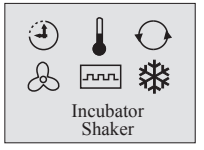
4.Preparation and Start-up

1.This equipment should be placed at a stable, horizontal and dry position without exposing to direct sunlight.
*2.The water receiving plate, packed along with the equipment, should be placed at the bottom of the equipment.
3.To ensure the equipment run smoothly, the equipment must be placed horizontally. Rotate the adjustable foot of the equipment so as to make the equipment stable.
4.To achieve good heat dissipation, the unit must be provide with sufficient clearance on all sides of the unit, at least 20cm.
5.Configuration of power supply of AC 220V/50Hz and capacity not less than the corresponding value in technique specification with socket reserved for the use of this equipment.

Items with the character “*” only applies to the full temperature shaking incubator with refrigeration system.

Attention:
Only use a properly grounded outlet, we are not responsible for damages caused by incorrect voltage of power supply.

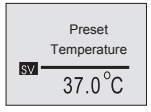
Verify the local voltage to make sure it meet the requirement, a deviation of 10% is allowed.
6.Connect the plug of power supply with the independent jack socket, turn on the main power switch on the right side of the equipment, power is applied to the equipment.
7.The horizontal and double-layer type have lamp inside the chamber, and the switch of the lamp is next to the main power switch.
8.Turn on the equipment and the screen displays below information in turn:
Where there is a will, there is a way!(both in English and Chinese)
Shanghai ZHICHENG Analytical Instrument Manufacturing Co.,Ltd(both in English and Chinese)

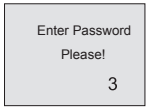


Then, screen displays in turn the operating parameter stored in the equipment:
Preset temperature; Preset speed; Preset time; Real temperature
And now, the temperature control system and temperature control executing unit have started according to the preset parameter.

And now, the temperature control system and temperature control executing unit have started according to the preset parameter.

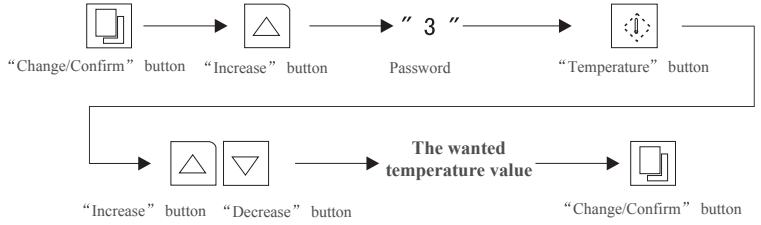
5.Setting of temperature





1.Press the “Temperature” button to display the preset temperature, and press it again to display the real temperature.
2.To set the temperature parameter, first press the “Change/Confirm” button, then press the “Increase” button to “ 3”, at last press the “Temperature” button to display the preset temperature parameter on the screen. SV twinkles, press the “Increase” or “Decrease” button to change the parameter.
3.When setting is finished, press the “Change/Confirm” button to confirm the change.
4.When the heater is working, the red indicator LED is light. When the refrigeration system is working, the green indicator is light.

Simplified instruction on the setting of temperature



Special attention!

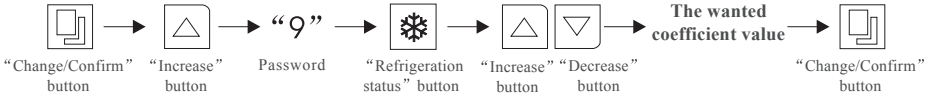
According to the change of temperature inside the chamber, the red heating indicator on the control panel will light or twinkle, and this is normal phenomenon.

6.Raise the Precision of Temperature Control

Only applied to full temperature type with refrigeration system.

1.To set the refrigeration coefficient parameter, first press the “Change/Confirm” button, then press the “Increase” button to “ 9”, at last press the “Refrigeration status” button to display the preset refrigeration coefficient on the screen, SV twinkles..
2.Press the “Increase” or “Decrease” button to change the coefficient.
3.When setting is finished, press the “Change/Confirm” button to confirm the change.

Simplified instruction on the setting of refrigeration coefficient



Special attention:
The proper use of refrigeration coefficient will directly affect the normal operation and temperature control precision of the equipment.

4.Priciples on the setting of refrigeration coefficient:
4.1.If the equipment is needed to work at thermostatic state under the temperature that is within the range of ambient+5℃--60℃, the refrigeration coefficient should be set to be “2”. (To lower the starting temperature control point, the ventilation cover on the side or back of the equipment should be removed and rotate the window to make it open. If ambient is relatively low and the ascent of temperature is too slow, the ventilation cover can be removed when the temperature reaches the preset value.)
4.2.If the equipment is needed to work at thermostatic state under the temperature that is within the range of 4℃-- ambient+5℃, the refrigeration coefficient should be set to be “0.5” and rotate the window to make it close, and close the spiracle.

Special attention:
When the refrigeration coefficient is “0.5”, the compressor will keep running. Make sure the spiracle is closed. The automatic defrosting program should be started!(Refer to the setting of defrosting program for detailed operational instruction)

5.Improving the temperature control blind area
The electric motor, fan and mechanical friction can produce a certain amount of heat, which can make the real temperature inside naturally rise about 5℃ without heating. So, the temperature range between ambient and ambient +5℃ is the blind area of temperature control, unless the compressor is started to control it.
To reduce operation of the compressor, this equipment is equipped with spiracle on the back of the equipment. When the preset temperature is at the blind area, rotate the spiracle to make it open. After that, the rate of temperature naturally rising will be reduced remarkably.
When the above operation is finished, the working temperature is still at the blind area and the deviation of temperature is relatively large, turn on the compressor and close the spiracle.

7.Temperature exceeding alarm

1.When the deviation between real temperature and preset temperature is bigger than ± 3℃, audio and visual will be activated, the yellow LED indicator twinkles, the buzzer alarms intermittently. If the deviation is positive, heating output will be cut off. If the deviation is negative, refrigerating output will be cut off. The platform will keep oscillating.
2.Press the “Temperature” button can eliminate alarm for 30 minutes.
3.Reset the temperature can terminate the alarm.
4.When the deviation between real temperature and preset temperature is smaller than ± 3℃, the alarm will be terminated automatically.

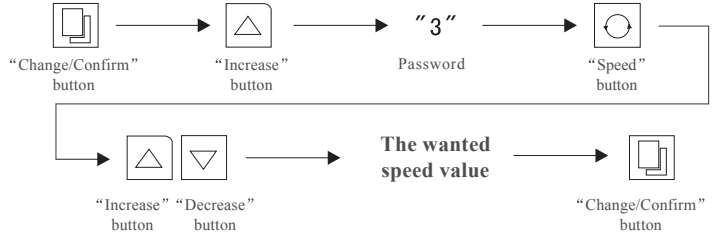
Attention
Please close the door immediately after take/put the sample,otherwise the temperature control precision could the affected.
If the door had to be opened for a long time, please power off the unit

8.Setting of Speed

The speed here amounts to the oscillation amplitude of the platform.

1.Press the “Speed” button to display the preset speed and press it again to display the real speed.
2.To set the speed parameter, first press the “Change/Confirm” button, then press the “Increase” button to “ 3”, at last press the “Speed” button to display the preset speed parameter on the screen. SV twinkles, press the “Increase” or “Decrease” button to change the parameter.
3.When setting is finished, press the “Change/Confirm” button to confirm the change.

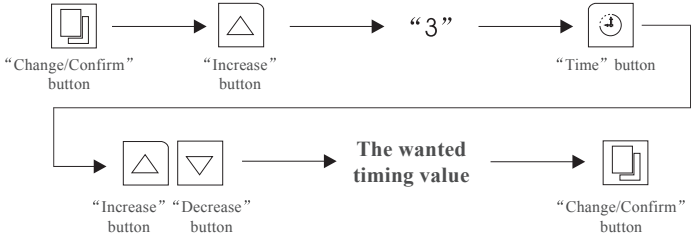
Simplified instruction on the setting of speed



9.Setting of Timing

1.Press the “Time” button to display the preset timing, and press it again to display the remaining time.
2.To set the timing parameter, first press the “Change/Confirm” button, then press the “Increase” button to “ 3”, at last press the “Time” button to display the preset timing parameter on the screen. SV twinkles, press the “Increase” or “Decrease” button to change the parameter.
3.When changing the timing value, the parameter will increase or decrease by 1 minute within the range of 0-12 hour and by 30 minutes within the range of 12-500 hour.
4.When setting is finished, press the “Change/Confirm” button to confirm the change.
5.When the balance time reduce to “ 0:00”, the platform will stop oscillating automatically. The yellow alarm indicator twinkles and the buzzer dings for 2 minutes. The temperature controlling system will keep working to make the temperature inside constant. Press the “Time” button to terminate the alarm.
6.This equipment has a time range of 0-500 hour.

Simplified instruction on the setting of timing



10.Setting of Defrosting

Only applied to full temperature type with refrigeration system.(ZHWY-200D)

The automatic defrosting function enables this equipment to work under low temperature for a relatively long period of time.

1.Explanation on terminology of defrosting used in this manual:

1.1.Defrosting timing

Time interval of defrosting.

1.2.Defrosting time

Time starting from the beginning of defrosting toward the end of defrosting.

2.Setting of defrosting timing and defrosting time:

2.1.To set the refrigeration coefficient, first press the “Change/Confirm” button, then press the “Increase” button to “ 9”, at last press the “Refrigeration status” button to display the refrigeration coefficient on the screen. SV twinkles, press the “Increase” or “Decrease” button to change the parameter.

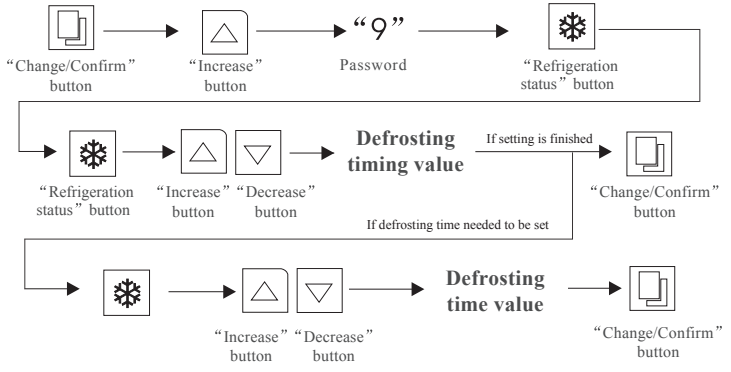
2.2.Press the “Refrigeration status” button again to set the defrosting timing, SV twinkles, press the “Increase” or “Decrease” button to change the parameter.

2.3.Press the “Refrigeration status” button once more to set the defrosting time, SV twinkles, press the “Increase” or “Decrease” button to change the parameter.

2.4.If the “Refrigeration status” button was pressed continuously, the above parameters will be displayed in cycle.

2.5.When setting is finished, press the “Change/Confirm” button to confirm the change.

Simplified instruction on the setting of defrosting timing and defrosting time



3.About the choosing of defrosting timing parameter

3.1.If defrosting timing is set to be “0”, the defrosting program is not started;

3.2.If defrosting timing is set to be “1”, the equipment will start defrosting when the accumulated working time reached 1 hour;

3.3If defrosting timing is set to be “2”, the equipment will start defrosting when the accumulated working time reached 2 hour, and the rest may be deduced by analogy.

4.About the defrosting time parameter:

4.1.If defrosting time is set to be “1”, the equipment needs 1 minute to defrost.

4.2.If defrosting time is set to be “2”, the equipment needs 2 minute to defrost, and the rest may be deduced by analogy..

5.Priciples on the setting of defrosting timing and defrosting time:

5.1.Because of the variance of the ambient temperature, the setting temperature and the time of continuous refrigeration, the setting of defrosting timing and defrosting time should be set according to the accumulation of frost inside the evaporation chamber.

Important attention:

Under normal condition, the defrosting timing can be set to be “6” while the defrosting time “3”. This means the equipment will refrigerate continuously for 6 hour and need 3 minutes to defrost.

5.2.If defrosting operation is end and the accumulation of frost inside the evaporation chamber is still severe, the defrosting time can be extended appropriately.

5.3.When the equipment works continuously under low temperature for a long period of time, the speed of frost accumulation will accelerate gradually because of the humidity increase inside the evaporation chamber. So, shorten the defrosting timing or extend the defrosting time appropriately can solve the problem.

5.4.During the defrosting process, the real temperature inside may have a temporary deviation of 3 ℃ and this is a normal phenomenon.

Important suggestion:

For those equipments working under low temperature for a long period of time, it is good for the equipment to be dried thoroughly every 10 days or at the interval of work.
The method: When the equipment is connected with power, open the cover of the equipment, set the refrigeration coefficient to be “2”,set the temperature to be the highest value, and after these steps, the equipment will conduct dehumidifying operation for 4 hours. The defrosting and refrigerating performance of the equipment will be increased substantially.

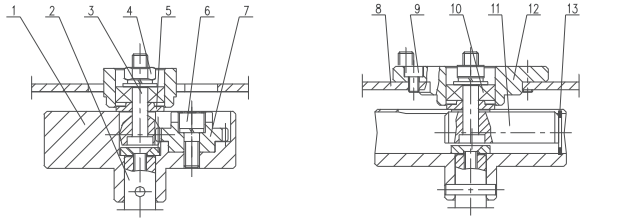
11.Adjusting the oscillation amplitude

Attention:
Before adjustment, the power must be cut off.

1.The adjustment of oscillation amplitude of ZHWY-200D/100D/103D multi-amplitude orbital constant temperature shaking incubator.

This equipment has an adjustable oscillation amplitude of ∮0-50mm.

1.1.Structure illustration



1.eccentric
2.main axis
3.pinch bolt
4.hexagon nut
5.pad
6.inner hexagon nut
7.gear
8.main shaking board
9.inner hexagon bolt
10.bearing
11.gear rack
12.connecting block of mainshaking board
13.hole retaining ring

1.2.Tools needed: M6 inner hexagon spanner, M6 box spanner, gear adjusting spanner(along with the equipment)

1.3.Steps on the adjustment of oscillation amplitude.

1.3.1.Open the cover, put your hands at the bottom of the shaking board assembly and pull it out(need some strength).

1.3.2.Four rubber socket and central eccentric adjusting holes can be seen at the bottom of the equipment. Hold the diagonal rubber boot with fingers firmly and do circular motion, move the gear (7) showed on the illustration to the central adjusting hole.

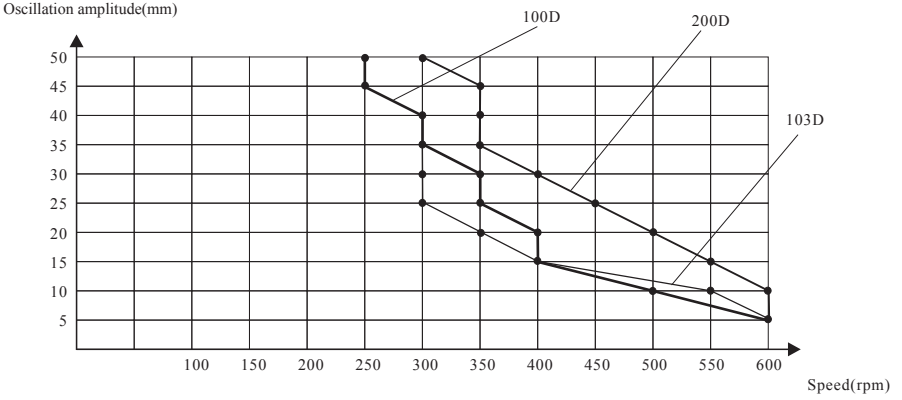
1.3.3.Use a box spanner to loose the M6nut (4) on the pinch bolt(3), then use a M6 inner hexagon spanner to anticlockwise loose the M6bolt(9) inside the centre of gear. To avoid the shaking board rotating with the nut, the box spanner can be used to hold the board.

1.3.4.Place the central position of the pinch bolt and make it the central point, use box spanner to rotate the gear. Rotate the gear clockwise to enlarge the oscillation amplitude and anticlockwise to reduce. Use left and right sides(100D type) or front and back sides(200D type) of the chamber as reference, measure the distance the pinch bolt moved. Rotate the gear until the needed eccentric distance is acquired.

1.3.5.When adjustment is finished, tighten the M6 inner hexagon bolt and M6 nut, put the shaking board assembly back to its original place.

Important suggestion:
The chart below is the highest speed range of three type of product under certain oscillation frequency. The working speed should be set within the stipulated range.

1.4Chart of ratio between speed and oscillation amplitude.



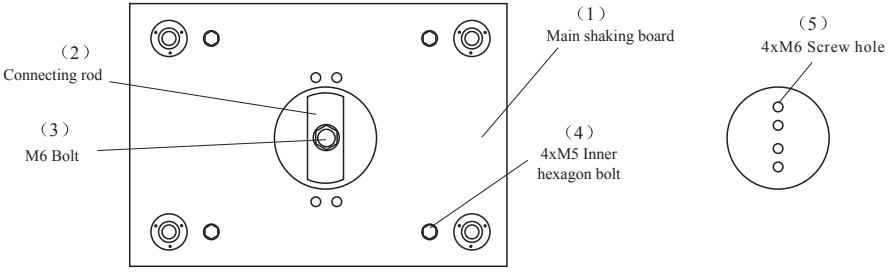
2.The adjustment of oscillation amplitude of ZHWY-103B multi-amplitude orbital constant temperature shaking incubator.

This equipment has 4 oscillation amplitude, i.e. ∮24mm, ∮32mm, ∮38mm and ∮50mm. The initial value is ∮24mm.

2.1.Turn off the main power, unplug the equipment, open the sheathing of the power box on the right side of the equipment, disconnect the electric motor and the circuitry connecting head of electric controlling system.

2.2.Open the cover, grasp the shaking board assembly firmly and pull it out(need some strength)

2.3.Loose the 4 inner hexagon bolt that connect the main body of the equipment and the pedestal, remove the crust. The graph below is what you can see:

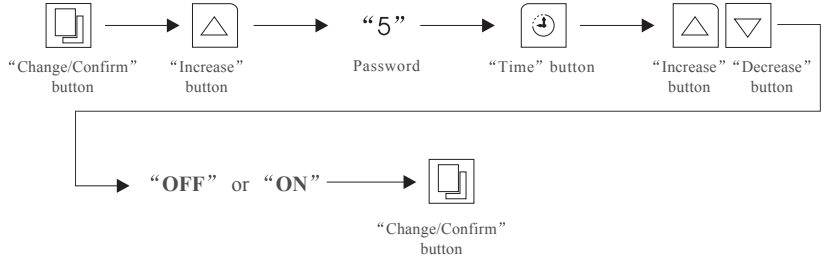


2.4.Loose and remove the 4 M5 inner hexagon bolts on the shaking board, use a spanner to loose and remove the M6 bolt in the middle to disassemble the shaking board. The 4 M6screw hole on a row can be seen in the middle.
2.5.To change the oscillation amplitude, use the M6 bolt in the middle to tighten the connection between the connecting rod and the needed screw hole. The more the distance away from the centre, the bigger the oscillation amplitude.
2.6.When adjustment is finished, according to the opposite sequence of the above step, assemble the box and shaking board, connect the connecting head and cover the sheathing of the power box.

12.Setting of the power-off recovery function

1.If the power-off recovery function has been set, the equipment will run according to the originally designed program when the external power is recovered after a sudden cut off.
2.To set the power-off recovery function, first press the “Change/Confirm” button, then press the “Increase” button to “ 5”, at last press the “Time” button and the screen will display the character “ON” or “OFF”. press the “Increase” or “Decrease” button to change the parameter and press the “Change/Confirm” button to confirm the change.
3.When the character “OFF” is displayed on the screen, the power-off recovery function is not in use.
4.When the character “ON” is displayed on the screen, the power-off recovery function is activated.
5.Press the “Time” button, if the symbol “A” is displayed on the lower left corner of the screen, it means the power-off recovery function has been used, otherwise not.

Simplified instruction on the setting of power-off recovery function

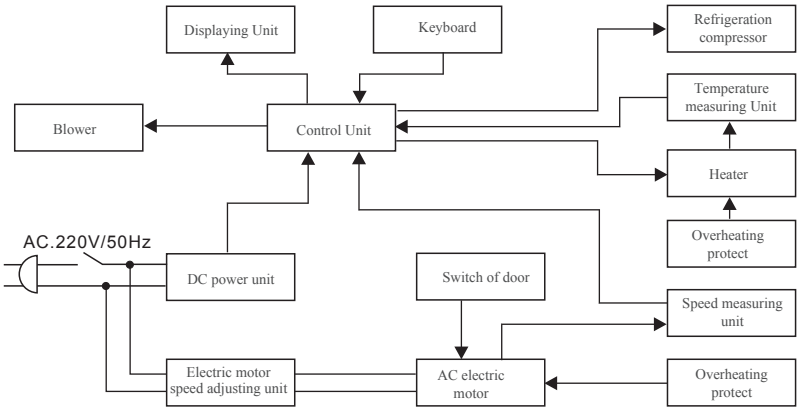


13.Operation and Switch off

1.When the above setting is finished, press the “Start/Hold” button and the equipment will run according to the designed program.
2.When in operation, press the “Start/Hold” button to stop the platform from oscillating temporarily. The operating time is on hold.
3.Press the “Start/Hold” button again to resume operation, the operating time starts counting down from the remaining time when the operation was stopped.
4.When in operation, if the “Start/Hold” button is held on, 3 seconds later the remaining operating time will be cleared to zero. Press the “Start/Hold” button once more, and the equipment begin to count down from the preset operating time.
5.When the equipment is in operation or on hold, the current remaining operating time can not be changed. If it was changed at this time, it is invalid with the current operation. Only when the current operation is over or terminated according to the above method and the “Start/Hold” button is pressed again will the new changed value be effective.
6.The equipment can be turned off by holding on the “Power” button on the control panel for 2 seconds. At this time, .the power control transformer is still connected to power supply, so the main switch on the right side of the equipment must be shut off .

Special attention!
This equipment is provided with such a function, that is when the cover is open, the equipment will stop operation automatically and resume operation when the cover is closed.

14.Electric theorem



15.Normal Malfunction and debugging

Encountered symptoms	Possible cause	Debugging
Power on without display	Power supply is not connected. Block has access to jack socket The power switch has not been turned on The fuse is broken	Check the power supply system to see if there is voltage Check the reliability of the jack socket Turn on the power switch on the right side of the equipment Replace the fuse with new one of same specification
Real temperature is higher than the preset one or the high temperature alarm is activated	Equipment has not yet enter into the state of constant temperature Temperature setting is at the blind area of temperature control Improper setting of refrigeration coefficient. The ventilation fan is broken. Malfunction occurs with refrigeration system.	Wait a moment and observe. Open the ventilation hole. Set the refrigeration coefficient to be “0.5” and close the ventilation hole. Notify the manufacturer to replace the ventilation fan. Notify the manufacturer to repair the refrigeration system.
Real temperature is lower than the preset one or the low temperature alarm is activated	Equipment has not yet enter into the state of constant temperature The circulation of cold air is excessive. The ventilation fan is broken. The heater has abnormal condition.	Wait a moment and observe. Close the ventilation hole. Notify the manufacturer to replace the ventilation fan. Notify the manufacturer to repair the heater.
Real temperature fluctuated and will not be stable.	Improper setting of refrigeration coefficient. The door is not closed firmly. Malfunction occurs with the control circuit.	Refer to User’ Guide and reset the refrigeration coefficient. Closed the door firmly. Notify the manufacturer for repair service.
Real temperature is out of control.	Malfunction occurs with the circuit.	Notify the manufacturer for repair service.
The oscillation of platform is unstable.	The platform get stuck at the bottom by foreign object. The equipment is not placed horizontally. Malfunction occurs with the control circuit.	Remove the platform and clear the foreign object. Adjust the left-back foot to make the equipment stable. Notify the manufacturer for repair service.
The platform does not work.	The door switch has not yet made response. The platform get stuck at the bottom by foreign object. The belt is broken. Malfunction occurs with the control circuit.	Check the door to see if it is closed firmly. Remove the platform and clear the foreign object. Notify the manufacturer to replace the belt. Notify the manufacturer for repair service.
The oscillation of platform is out of control.	Malfunction occurs with the control circuit.	Notify the manufacturer for repairservice.
The platform keeps shaking after the door is opened.	The door switch has short circuit caused by humidity.	Use a blower drier to dry the chamber. Press the “Start/Hold” button before opening the door.
When the door is closed and the platform starts shaking, the speed reached high suddenly.	Improper operating method.	Refer to User’ Guide and press the “Start/Hold” button to operate.
Information displayed on the screen is distorted or lack of stroke.	Block has access to the circuit connector of the displaying circuit.	Refer to professionals or notify the manufacturer for repair service.
The screen has no response when button on the control keyboard is pressed.	Equipment is disturbed by high frequency	Press the “Change/Confirm” button and try other operations. Restart the equipment. Notify the manufacturer to eliminateit.
The equipment has a big noise.	The equipment is not placed horizontally. The fixed screw of clamp is loose. The platform is loose. There is foreign object, like shattered bottle, under the platform. Mechanical malfunction occurs.	Adjust the left-back foot to make the equipment stable. Remove the platform and tighten the screw. Remove the platform and tighten the screws on the four corners. Remove the platform and clear the foreign object. Notify the manufacturer for repair service.
The accumulation of frost is fast after refrigeration is started, resulting in the rise of temperature out of control.	The refrigerating time is too long and the evaporating chamber is too humid.	Refer to User’ Guide and conduct a drying maintenance on the evaporation chamber.

1. Shaking Diameter Adjustment

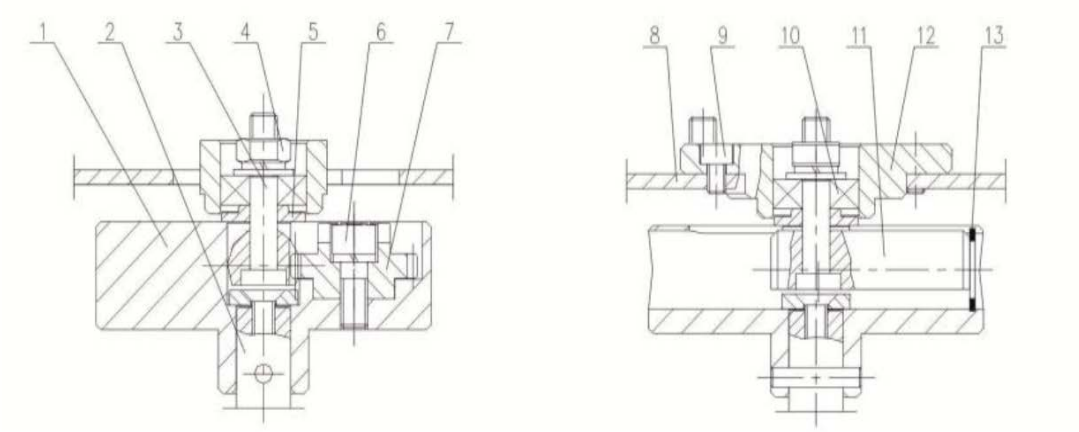
16.1 Instruction of stepless adjustment (MINI – MIDI - MAXI):

	Attention: Power supply must be disconnected before performing the following operations!

These models have an adjustable shaking diameter of Ø0-50mm. To adjust it, please follow the instructions below,

16.1.1. Tools needed: 5mm Allen key, 10mm Socket Spanner, Gear spanner (Included in accessory pack)

Structure illustrations



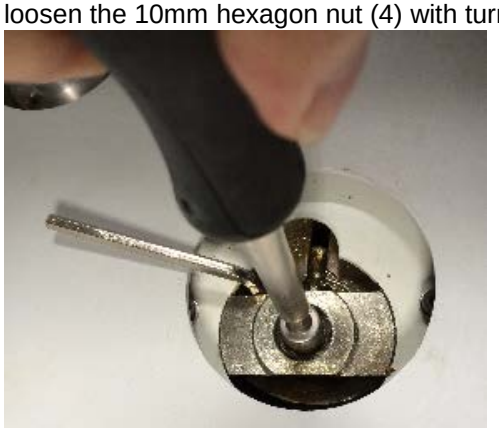
1. eccentric
2. main axis
3. pinch bolt
4. hexagon nut
5. pad
6. inner hexagon nut
7. gear
8 main shaking board
9. inner hexagon bolt
10. bearing
11. gear back
12. connecting block of main shaking board
13. hole retaining ring

16.1.2. Turn off the unit, unplug the power code, open the glass door, hold platform tray from the bottom firmly and pull the whole shaking tray assembly out. (you do need some strength)

16.1.3. Turn the shaking base with four rubber sockets until seeing the center of the shaking mechanism

16.1.4. Use the 5mm Allen key to loosen the inner hexagon bolt (6) on the adjusting kit.

16.1.5. Keep M6 Allen key on the hex bolt to hold the shaking base as stationary, in the meantime, loosen the 10mm hexagon nut (4) with turning anti-clockwise with the socket spanner



16.1.6. Now the shaking base is free to move along in the slot of the shaking mechanism. Move the shaking base to adjust the shaking diameter. The closer to the central, the smaller the shaking diameter, while the further away from the central, the larger the shaking diameter. Alternatively, rotate the gear (7) with the gear spanner clockwise to enlarge the shaking diameter and anticlockwise to reduce it. Use left or right sides (MIDI) or front and back sides (MAXI) of the chamber as reference, measure the distance that the pinch bolt moves as the shaking diameter. Keep adjusting until the ideal shaking diameter is reached.

16.1.7. One adjustment is finished, tighten the 5mm hex bolt and 10mm nut, and locate the shaking tray assembly back to its original position.