User's Manual

Economic Horizontal Shaking Incubator

This Manual applies to:

Modes: ZWY-111B , ZWY-211B ,ZWY-111G , ZWY-211G , ZWY-111C , ZWY-211C , ZWY-111D , ZWY-211D , ZWF-111 and ZWF-211

Thanks !

Thank you very much for purchasing one of our economic shaking incubators, specially designed for you-the lab professional. Your choice indicates that you have very high requirements on style and performance of this type of incubators.

LABWIT shaking incubators have achieved a good reputation and trust among various clients for its advanced temperature controlling technology, sound framework design, excellent molded exterior and outstanding professional workmanship. These products have been exported through most leading companies into European, American and East Asian markets.

The horizontal floor shaking incubators have a number of advanced specifications like an intelligent precise control of temperature and shaking speed through the standard control panel and solid operating safety features. This large floor model is available all with heavy duty orbital shaking mechanisms that provide smooth start and quiet shaking motion under maximum load with maximum speed.

This equipment is specially designed for the research experiment that involves microbiology, pharmacy and agriculture. It is widely used for cell culturing, hybridization, cell aeration, and solubility studies. Etc.

Since the date of your purchase of this product, after-sale service will always be close to you through your local dealer and/ or the importing company of your region.

Anyhow, no matter what questions you have using our equipment; please do not hesitate to contact us whenever you want.

LABWIT thanks you for your trust in this product!

Reminder

Prior to operation, this manual should be read thoroughly and completely understood-as it might be helpful to master the operation techniques of this unit.

Safety instruction!
Please be sure to follow the instructions, which are important to your safety.

Danger!

Warnings against injury and damage.

1. The electrical supply circuit to the incubator must confirm to all national and local electric codes. Check the serial-data plate for voltage, cycle, phase and amperage requirements before you connect the unit.

2. Only use grounded power source (outlet) to avoid an electric shock or fire, and it is recommended that the equipment has an unobstructed access to a dedicated power source.

3. In case of a problem, do not attempt to repair the product yourself. Do not open the power box to avoid electric shocks.

4. Do not pull out the plug when the unit is in use. Never drag on the wire to unplug the unit.

5. This equipment can sustain a maximum of ±10% nominal voltage fluctuation; Otherwise a power stabilizer is needed.

6. A surge protector is recommended to avoid power-related faults.

7. In case of malfunction or burning smell, the unit must be unplugged immediately. Use a circuit breaker to cut off the power supply. Continuance of abnormal state will result in fire caused by overheating.

8. The electric power supply must be cut off in following situations:

8.1.-When opening the door of electrical power box without cutting off power supply might result in electric shock.

8.2.-When replacing the fuse. Replacing the fuse without cutting off the power supply will probably result in electric shock.

8.3.-When a malfunction occurs, mishandling will result in further damage of the equipment or accidental injury to the user(s).

8.4.-If you do not use the unit for a long period of time.

9. Never touch the glass door and/or inner chamber when the incubator is hot.

Attention!
Instructions for optimal performance

1. Before starting your equipment, the unit must be placed horizontally on a solid, flat floor, and elevated and leveled with four foot blocks.
2. The incubator needs even heat lost on all surfaces in order to maintain small internal temperature variations .As a result, a minimum of 20 cm must be allowed between the rear and sides of the incubator to any obstructions.
3. Do not locate the unit exposed to direct sunlight or near heating /cooling ducts.
4. The unit must be kept away from electromagnetic interference sources.
5. Flasks placed inside the shaking incubator should be placed to avoid (as much as possible) imbalance on the shaking platform
6. Slam the door(s) will probably leads to damage of the equipment.
7. When in operation (the platform is still moving), do not open the lid (too much or too long) as this might affect the temperature inside.
8. The incubator must be kept away from volatile, flammable, explosive liquids or gases
9. Please keep the chamber clean. Regular cleaning is required.

Extra for refrigerated units:

10. After transport of this Shaking Incubator –DO NOT USE IT for at least 24 Hours, unless you are a 100% sure that the unit has been moved in an upright position only.
11. To extend the compressors life and to maintain an excellent performance of your refrigeration system, the condenser of the unit should be cleaned every month.

Clean the shaking incubator before you put it into use and on a regular base.The interior should be wiped down with an appropriate disinfectant, such as 70 % ISOPROPYL ALCOHOL or equivalent.

DO NOT USE ANY CHLORINATED OR HALOGEN MATERIAL- AS THIS IS HARMFUL TO THE POLISHED STAINLESS STEEL !!!

Table of contents

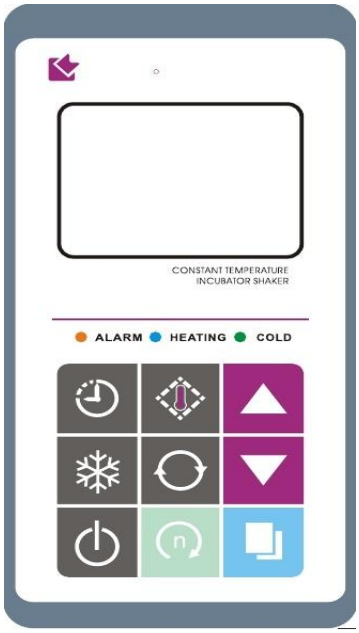
1. Performance Parameters

- Both the interior and exterior are made of robust materials for lifetime operations. The inner chamber is made of high quality #304 stainless steel sheets, with 4 round coved corners. All exposed edges are de-burred to insure no sharp edges. The exterior is cold rolled steel finished with powder coated polyurethane finish, which is resistant to most chemicals and easily cleaned with mild household detergents.
- The ZHICHENG shaking incubator's microprocessor control system uses fast responding PT 100 sensors which commands and executes a special control algorithm that energizes a solid-state switch to supply power to the heaters.
- The control electronics are protected trough a circuit breaker that may trip at 110% of loading rate, but will trip within 1 second at 150% of load rating.
- The compressor (in refrigerated units only) has an independent overload protection.
- CFC-free refrigerant which causes no damage to ozone layer.(Applies on ZWY-2/ZWF-2 models)
- Large doublefold tempered glass window and flourecent light, provide complete visibility of chamber interior.
- Models ZWY-111D and ZWY-211D are equipped with foot pedal for lid opening even when carrying full loads in both hands.
- LCD display presents all actual and (pre)set parameters.
- Electronic timer, from 0 – 9999 Mins, automatic stop, audio/ visual alarm.
- Password protection against unauthorized change of parameters.
- Audible and visual alarms for motor temperature and set point deviations
- Non-violate memory for set point retention after a power interruption.
- "Long-Life" brushless AC motor creates a smooth, quiet and uniformed shaking motion
- High capacity for up to 5L flasks (except ZWY-111B/211B, ZWF-111/211)
- Option: unit equipped with RS-485 interface communication can be connected to local network so that remote data logging and control can be achieved via laptop/ PCs.

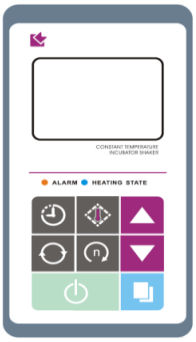
2. Technical Specifications

Model	ZWY-111B	ZWY-211B	ZWY-111C	ZWY-211C	ZWY-111D	ZWY-211D	ZWF-111	ZWF-211
Volume (L)	170		260		300		300	
Mode	Orbital		Orbital		Orbital		Reciprocal	
Temperature (°C)	A+5 to 60	4 to 60	A+5 to 60	4 to 60	A+5 to 60	4 to 60	A+5 to 60	4 to 60
Temper. Accuracy	±0.1℃							
Temper. Uniformity	≤±1℃@37℃							
Tray (mm)	920x500		920x500		940x584		896x530	
Stroke (mm)	26		26		26		1 to 50 stepless	
Speed (rpm)	30-300		30-300		30-300		30-240	
Capacity *	***Glass dimensions may reduce max.capacity**							
50ml	64		82		82		66	
100 ml	64		82		82		66	
250 ml	40		45		52		45	
500 ml	28		33		38		32	
750 ml	23		24		26		23	
1000 ml	15		15		22		15	
2000 ml	-		11		12		11	
3000 ml	-		8		11		11	
5000 ml	-		6		6		6	
Test tube 18ml	208		208		208		208	
Inner dimensions (mm) (WxDxH)	975x565x305		975x565x465		1005x655x435		975x565x515	
Exterior dimensions (mm) (WxDxH)	1200x740x800		1200x740x1000		1260x830x1000		1200x740x1070	
Packing dimensions (mm) (WxDxH)	1320x860x970		1320x860x1170		1380x960x1170		1320x860x1170	
Net Weight (kg)	159		168		248		201	
Gross Weight (kg)	200		213		298		242	
Power (W)	800	1050	950	1150	1550	1800	950	1150
Electricity	220/240Volt 50/60 Hz		220/240Volt 50/60 Hz		220/240Volt 50/60 Hz		220/240Volt 50/60 Hz	
Approval	CE, ISO		CE, ISO		CE, ISO		CE, ISO	

3. Control Panel



Cooling Model



Heating Only Models

Time button:
Button to display the preset time and the status of the power-off recovery function.
Press again to display the remaining time (if Timer is set).
Press it to stop the acoustic alarm when needed

Refrigeration status button (Refrigerated unit only)
Button to display the current refrigerating parameter, defrost timer and the defrost period in turns.

Power button:
Hold this button for 2 seconds to turn the unit on/off the standby mode

Temperature button:
Press this button to display the actual temperature value and the set temperature in turns

Speed button:
Press this button to display the actual speed value and the set speed in turns

Start/Stop button:
Button to start or stop current operation

Increase button:
Press this button and the parameter will increase by one digit, the parameter will keep increasing while this button is held.

Decrease button:
Press this button and the parameter will decrease by one digit, the parameter will keep decreasing while this button is held .

Set/Confirm button:
Press this button to enter the menu of setting, press it at the end of the setting to save and exit.

ALARM

Temperature alarm indicator:
When the temperature inside the chamber is deviated over the preset alarm limit , the indicator flashes and the alarm beeps

HEATING

Heating indicator:
When the heater is connected with power supply, this indicator will be light. This indicator will twinkle when the real temperature close to the preset value

COLD

Refrigeration indicator:
Lights when the cooling system is switched on to cool down the inner chamber.

4. Preparation and Start-up

4.1 Before starting your equipment, the unit must be placed horizontally on a solid, flat floor, and elevated and leveled with four foot blocks. The foot blocks are provided to level as well as “fix” the unit firmly on the floor. To allocate the blocks in position, please do strictly follow the procedures:

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

4.1.1 Lift the front below cover and take it off. (If ZWY-211B/111B, please skip to “Section 4.1.2”.)

4.1.2 Unscrew up the adjusting bolt on the front-left corner.

4.1.3 There is one hole on each of the other three corners of base of the unit, locate each of them.

4.1.4 Tilt or push the unit from its front side, and at the same time, another person is needed to lay the foot block underneath the hole, whose hands must be off the unit before the unit is laid down! Do be careful of your hand!

4.1.5 Lay down the unit and see whether the tip of the block sits firmly in the hole. If not, please re-do the “Section 4.1.4” again. Then lay the other one on the same side.

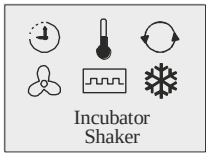
4.1.6 Lay the rest two blocks on the back side of the unit.

4.1.7 Keep unscrewing / screwing the adjusting bolt on the front-left corner with the spanner until the unit is elevated leveled and sits firmly on the four blocks.

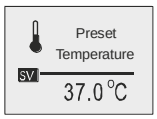
4.2 The shaking mechanism of all reciprocal shaking incubator (ZWF-111/211) needs filled up with Lithium base oil before operation. To do so, remove the front below cover of the outer case, open the lid, and remove the shaking tray so that the whole shaking mechanism can be seen. Then pump the oil by pushing down the bar handle, until seeing the oil overflowing from the holes on the shaking mechanism. Pump the oil frequently to ensure smooth shaking movement.

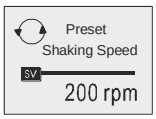
4.3 Turn the main switch which is located on the right side of the unit, power is applied to the Unit and the LCD display shows:

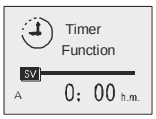
-Incubator Shaker
-Pre-set Temperature
-Pre-set Speed
-Pre-set Time

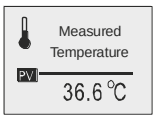


4.3 The screen in turns displays the operating parameter stored in the equipment:
Preset temperature; Preset speed; Preset time; Real temperature.
And now, the microprocessor system has started controlling the temperature according to the preset value.

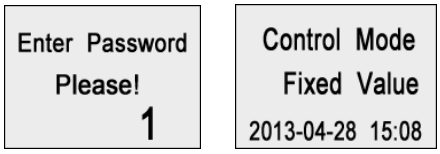






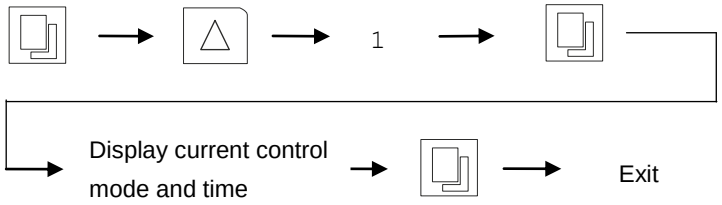


5. Control Mode & Clock Checking

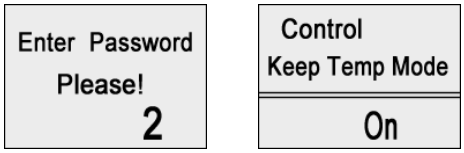


5.1. Press "Set/confirm", press the "Increase" button to "1", then press the "Set/confirm" again. The screen shows the current control mode and current date & time.

5.2. Press "Set/confirm" to exit to the home page

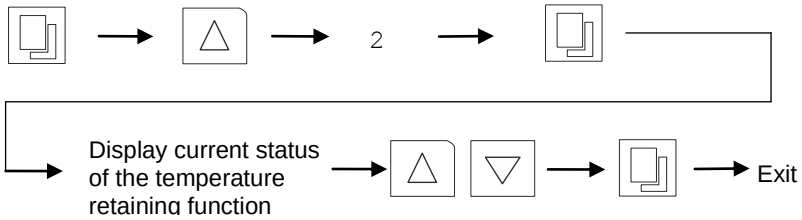


6. Temperature Retaining Switch Setting



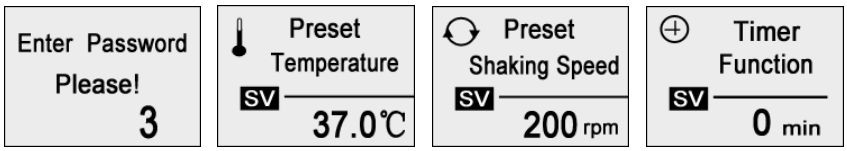
6.1. Press "Set/confirm", press the "Increase" button to "2", then press the "Set/confirm" again. The screen shows the current status of temperature retaining (Keep Temp Mode) function, press "Increase" or "Decrease" to change the setting.

6.2. Press "Set/confirm" to exit to the home page



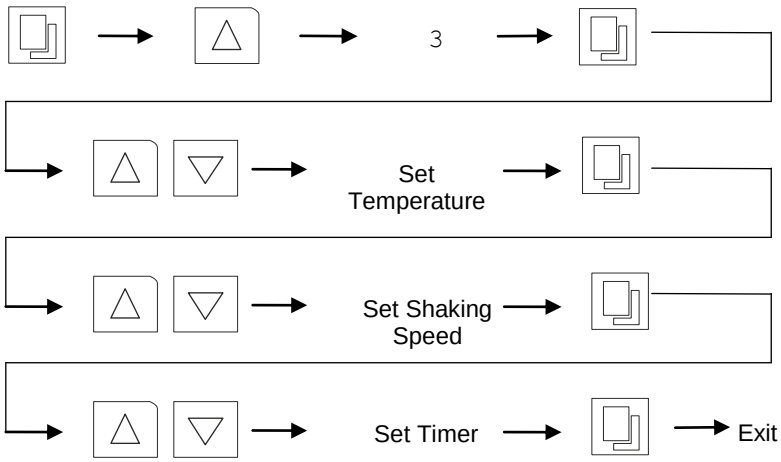
Special Attention!
When the status is "on", the temperature will remain under control at its preset value even when shaking operation has been turned off manually or by timer. Otherwise, when the status is "off", the system will stop both shaking motion and temperature control when operation is stopped.

7. Temperature, Speed, Timer Settings



7.1. Press "Set/confirm", press the "Increase" button to "3", then press the "Set/confirm" again. The screen shows the current temperature preset value, press "Increase" or "Decrease" to change the value; press "Set/confirm" to save and switch to speed page, press "Increase" or "Decrease" to change the value, and press "Set/confirm" again to save and switch to the timer page, press "Increase" or "Decrease" to change the value if necessary. **If Timer is set as "0", the unit will keep running continuously.**

7.2. Press "Set/confirm" to exit to the home page

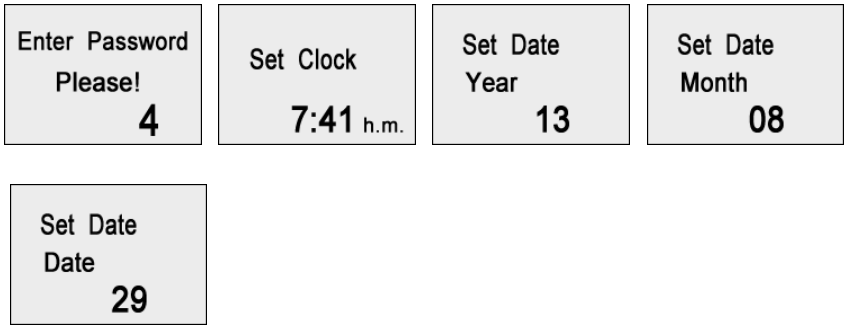


Special Attention!

1. This unit is equipped with "door switch". The temperature control (main heater) will be temporarily disabled when lid is opened. Therefore, always close the lid in time to avoid exceeded heat loss.

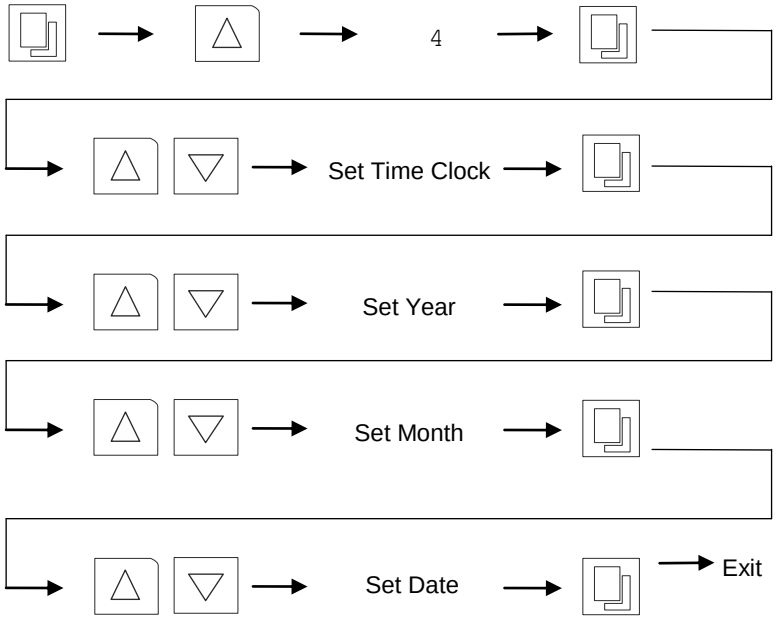
2. The timer can be set within 0-9999mins, the unit stops running when timer is due. Acoustic alarm can be muted by pressing the "Time" button.

8. Date & Time Settings

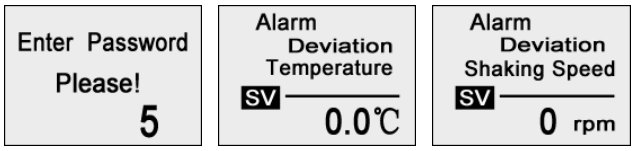


8.1. Press "Set/confirm", press the "Increase" button to "4", then press the "Set/confirm" again. The screen shows the current time clock, press "Increase" or "Decrease" to change the time; press "Set/confirm" to save and switch to "year" setting page, press "Increase" or "Decrease" to set the year, and press "Set/confirm" again to save and switch to the "month" page, repeat the above steps to set "month" and "date".

8.2. Press "Set/confirm" to exit to the home page



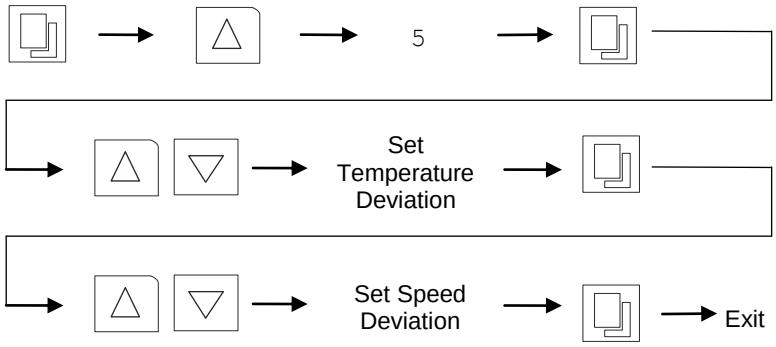
9. Temperature & Speed Alarm Settings



9.1. Temperature and speed alarm is activated when temperature or speed is deviated over limit. The deviation alarm limit can be preset as below,

9.2. Press "Set/confirm", press the "Increase" button to "5", then press the "Set/confirm" again. The screen shows the current "temperature deviation" value, press "Increase" or "Decrease" to change the value; press "Set/confirm" to save and switch to "speed deviation" setting page, press "Increase" or "Decrease" to change the value.

9.3. Press "Set/confirm" to exit to the home page



Special Attention!

1. Deviation alarms can only be activated when unit is running, and once actual temperature or speed has reached its preset value and stabilized for a certain period of time.

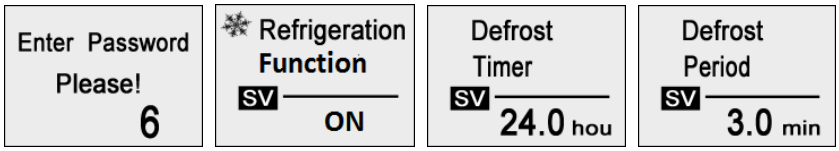
2. Deviation alarm is activated when the actual parameter value exceeds preset value ± preset deviation alarm value. The "Alarm" indicator is lighted, but can be muted by pressing "Run/Stop" button.

3 Deviation alarm can be automatically deactivated once if the parameter value is back within the deviation tolerance range.

10. Refrigeration & Defrost Settings

(Only for refrigerated models)

This unit is equipped with automatic and manual defrosting functions. With proper settings of refrigeration function and auto-defrosting cycle, this unit can be used for continuous operation at low temperature settings. Please note defrosting function will only be activated when actual temperature at 10℃ or below.

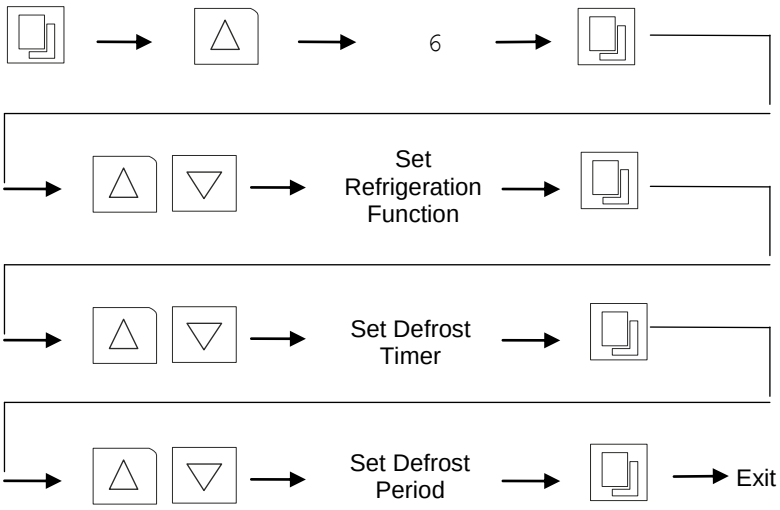


10.1 Press the "Set/Confirm" button, then press the Increase button to “6”, next press the "Set/Confirm" button to display the preset refrigeration function on the screen, SV flashes. Press the "Increase" or "Decrease" button to switch the refrigeration function "On/Off" .

10.2 Press "Set/Confirm" to confirm setting and enter the page of defrost timer setting, press "Increase" or "Decrease" to set the time interval between two defrosting cycles. Set range from 1-240 hours.

10.3 Press "Set/Confirm" to confirm setting and enter the page of defrost period setting. Press "Increase" or "Decrease" to set the time length of each defrost cycle. Set range from 1-24 minutes.

10.4 When setting is finished, press the Set/Confirm button to confirm and store the changed value.



10.5 Explanation for setting auto defrosting cycle:

a) "Defrost Timer" is the time interval between two cycles. For example, if this is set as "6", the unit will defrost once every 6 hours.

To find out the suitable "defrost timer" setting, the frosting time duration should be counted from start of the low-temperature operation to the point that the actual temperature start bouncing up due to the frosting inside the evaporation chamber. Then set the "defrost timer" as somewhere between 1/10-1/5 of the frosting time duration. For example, if the frosting time duration is 20 hours, the "defrost timer" can be set from 2-4 hours. High relative humidity will require more frequent defrosting cycle.

b) "Defrost Period" is the time duration of each defrosting cycle. For example, if this is set as "3", the unit will run a defrosting cycle for 3 minutes.

When the ambient temperature is higher than 25℃, like in summer, the recommended setting is 30 seconds, otherwise, 1 min is considered as adequate. As ambient conditions may vary, therefore, always try to find the most appropriate settings for your own particular ambient condition.

Alternatively, if the set temperature is not so low as critical, in most cases, manual defrosting will be adequate.

c) The proper of defrosting cycle can vary upon actual environmental conditions, preset temperature value and running time. We recommend defrost at least 1-2 times per day, with 3-5 minutes for each cycle.
d) If after a defrosting cycle, there is still some ice inside the evaporator chamber (normally by long term, low temperature operation) the “defrosting timer” needs to be shortened and/or the “defrosting time” must be extended accordingly.
e) During the defrosting process, the actual temperature inside can have a temporary deviation of 3°C to the set point. This is normal, so does not require any action.

10.6 Explanation for setting Manual Defrosting cycle:

Alternatively, during the operation, the unit can run a manual defrosting cycle when necessary. To activate the cycle, press ❄ button and hold for 3 seconds, the unit will start manual defrost for set "defrosting period". To abort, press ❄ button and hold for 3 seconds. Minimum time interval between two manual defrost cycles is 1 min.

Attention:

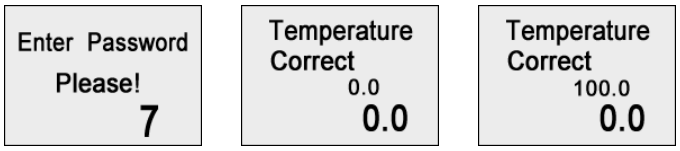
1. The defrosting cycle will only be activated when the following requirement is fullfilled；**Auto defrosting cycle**: when both set and actual temperature is at or below 10℃;**Manual defrosting cycle**: when actual temperature is at or below 10℃.
2. The cooling system keeps running during defrosting cycle, while the motor fan stops.
3. The temperature will silently overshoot during defrosting, and then be stabilized when defrosting terminates.
4. **For better temperature control during continuous low temperature operations, for example, below 10.0°C, the following operations are recommended: Set Defrost Timer: “3” hr, Defrost Period: “0.7” min;**
   Weekly maintenance: Open the door and wipe off the condensation, set the temperature at top value “65°C” and let it run for at least 1 hour to further evaporate the condensations inside the chamber.
5. During defrosting cycle or heating up process, the drip tray should be place at the unit's rear end and emptied on a regular basis.

11. Temperature Calibration

Special Attention!

Temperature of each unit has been carefully calibrated in factory before dispatch.

No further calibration is needed. But if it does, do follow the calibration process strictly or consult your supplier, as wrong operation can interfere the temperature accuracy significantly.



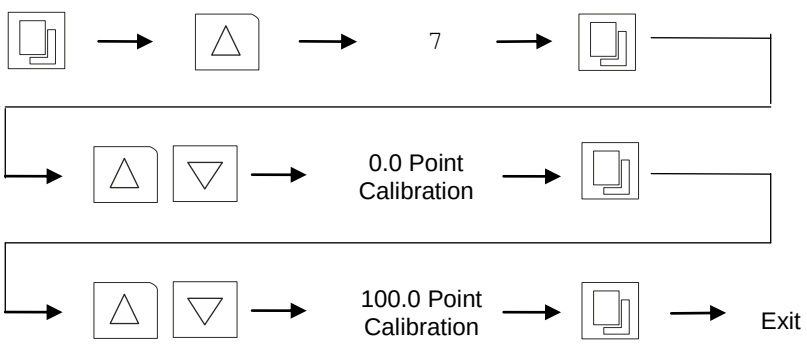
To calibrate the temperature, take a certified calibrated thermometer in a small bottle with glycerin and place that in the geometrical center of the incubator.

11.1 Low Temperature Point Calibration (0.0)

a) Change the set point to lower temperature value, 37°C for HEATING ONLY UNITS (or 8°C for REFRIGERATED UNITS,) and let the incubator run for at least 1 hour– until the temperature is constant, and let the temperature inside of the chamber uniform.
b) Read the temperature on the thermometer through the glass lid; calculate the difference with actual displayed temperature. for example, if reading is 35°C, difference would be 35-37= -2°C, while if reading is 38°C, the difference would be 38-37=1°C
c) Press the "Set/Confirm" button and go with the up arrow to code “7”. Press the Set/Confirm again, to enter the Step 1. "Low Temperature Point Correction (0.0)", the display shows the "Temperature Calibration" with "0.0" and the "Current Calibration Value". Use the up and/or down key to make a further adjustment on the current correction value by the temperature difference calculated above, for "-2°C ", decrease by 2, for "1°C ", increase by 1.
d) Keep pressing "Set/Confirm" button, skip the " High Temperature Point Correction (100.0)" setting, save and exit.
e) The displayed temperature should have changed due to the calibration. Waiting for another one hour to let the temperature stabilize again at 37°C, and check the thermometer value again, and calculate the new difference.
f) if necessary, perform the calibration again until the actual display value equals to the calibrated thermometer value. Thus the Step 1. "Low Temperature Point Correction (0.0)" is completed.

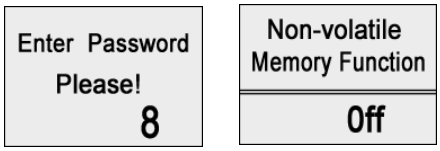
11.2 High Temperature Point Calibration (100.0)

a) If the incubator is to be used for more than one temperature setting, and "High Temperature Point Calibration (100.0)" needs to be performed as well.
b) Change the set point to a higher temperature point as required, for example 60.0°C and let the incubator run for at least 1 hour– until the temperature is constant, and let the temperature inside of the chamber is uniformed
c) Change the enter the code "7" again and press "SET" skip the "0.0", and enter the "100.0" page.
d) Repeat the same procedure, like the "Low Temperature Point Calibration", to correct the high temperature point, until the display value equals to the actual thermometer value. Then the "Step 2 High Temperature Point Calibration (100.0)" is completed.



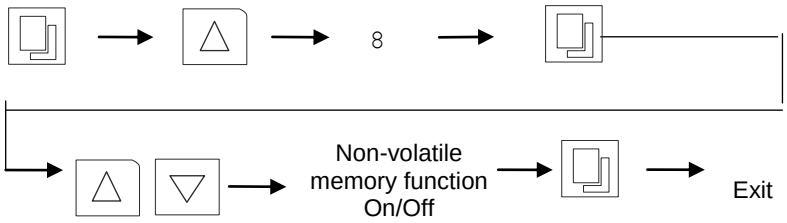
12. Non-Volatile Memory Setting

If the non-volatile memory function is active (ON), the unit will run to the originally temperature, speed and time program when the external power is recovered after a power failure.



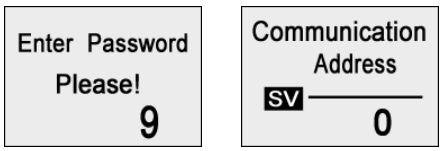
12.1 To set the non-volatile memory function, first press the, then press the Increase button to “8”, next press the "Set/Confirm" button and the screen will display the character ON or OFF. Press the "Increase" or "Decrease" button to change the parameter and press the "Set/Confirm" button to save the change and exit.

12.2 Press the Timer button, if the symbol “A” is displayed on the lower left corner of the screen, it means the non-volatile memory function has been active.



13. Setting of communication address for RS485 connection (Opt)

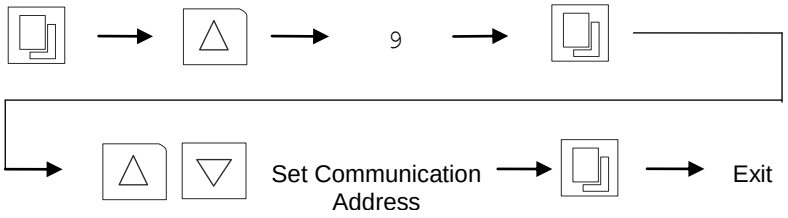
If the RS-485 communication kit is equipped on this product, please follow the instructions below for address setting.



13.1 Press the Change/Confirm button, then press the Increase button to "9", press the Change/Confirm button again to enter the "communication" address setting page.

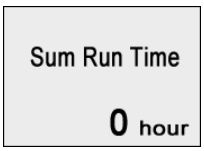
13.2 The screen displays the current communication address, and use Increase or Decrease button to change the address, within the range of 0 to 63

13.3 Press the Change/Confirm button to save and exit



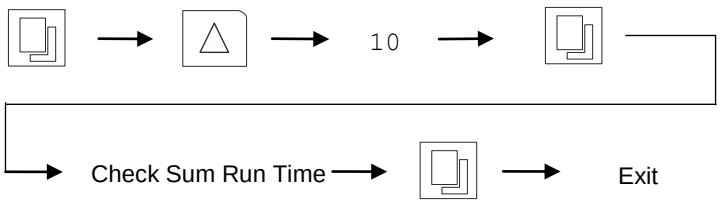
14. Sum Run Time Checking

The total run time of current operation can be checked via following steps. Run time starts counting once "Start/Stop" button is pressed, and stops when pressed again.



14.1 Press "Set/Confirm" button and press the "Increase" button to "10", then press "Set/Confirm" button again to see "Sum Run Time".

14.2 This is the accumulated time of current operation, which cannot be changed.



Special Attention!

The communication address is used as an identifying code for each unit to pair with the software of the PC terminal. Each communication code must be connected to only one unit. Different communication addresses must be used if multiple units are to be connected to the same PC terminal.

15. Operation and Switch off

15.1 When all the above settings are done, press the Start/Stop button and the equipment will run according to the stored settings.

15.2 When during operation, the Start/Stop button is pressed, the platform stops from shaking temporarily. The operation time remains on hold.

15.3 Press the Start/Hold button again to resume operation, the pre-set time starts to count down from the remaining time when the operation was stopped.

15.4 When during operation, if the Start/Stop button is held on, within 3 seconds the remaining operating time will be cleared to zero. Press the Start/Stop button once more, and the unit starts again to count down from the preset operation time.

15.5 While the unit is in use, the current remaining operating time cannot be changed. If however changed at this time, it is invalid with the current operation. Only when the current operation has passed or stopped according to the above method, only if the instrument is re- started the new changed value will be effective.

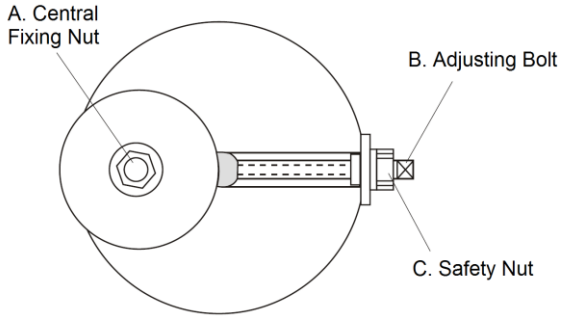
15.6 The equipment can be turned off by holding on the Power button on the control panel for 2 seconds. At this time, the control board is still connected to the power supply, so the main switch on the right side of the equipment must be shut off to end operation completely.

16. Shaking Diameter Adjustment (only for ZWF-111/211)

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

Special Attention!

Power supply must be disconnected before performing the following operations!



16.1 Cut off the main power, remove the shaking tray. Manually turn the shaking mechanism until the position like the picture above.
16.2 Tools needed: 17*19 spanner, 8*10 spanner, allen key (Included in accessory pack)
16.3 Turn off the unit, open the glass door, and pull platform tray out, until seeing the center of the shaking mechanism (as illustrated)
16.4 Turn the main shaking mechanism until you see adjusting bolt (B) and safety nut (C) through the opening.
16.5 Use the Allen key to loosen the (A) central fixing nut.
16.6 Use the 8*10 spanner to hold the (B) adjusting bolt as still, in the meantime, loosen the (C) safety nut with 17*19 spanner
16.7 Use the 8*10 spanner to rotate the (B) adjusting bolt clockwise to increase the diameter, but anti-clockwise to decrease.
16.8 When adjustment is done, tighten the (B) adjusting bolt and (A) central fixing nut.

Special Attention!

The maximum shaking speed should decrease when the shaking stroke is increased. Generally speaking, Max speed not exceed 200rpm at 30mm stroke, 150rpm at 40mm stroke, 120rpm at 50mm.

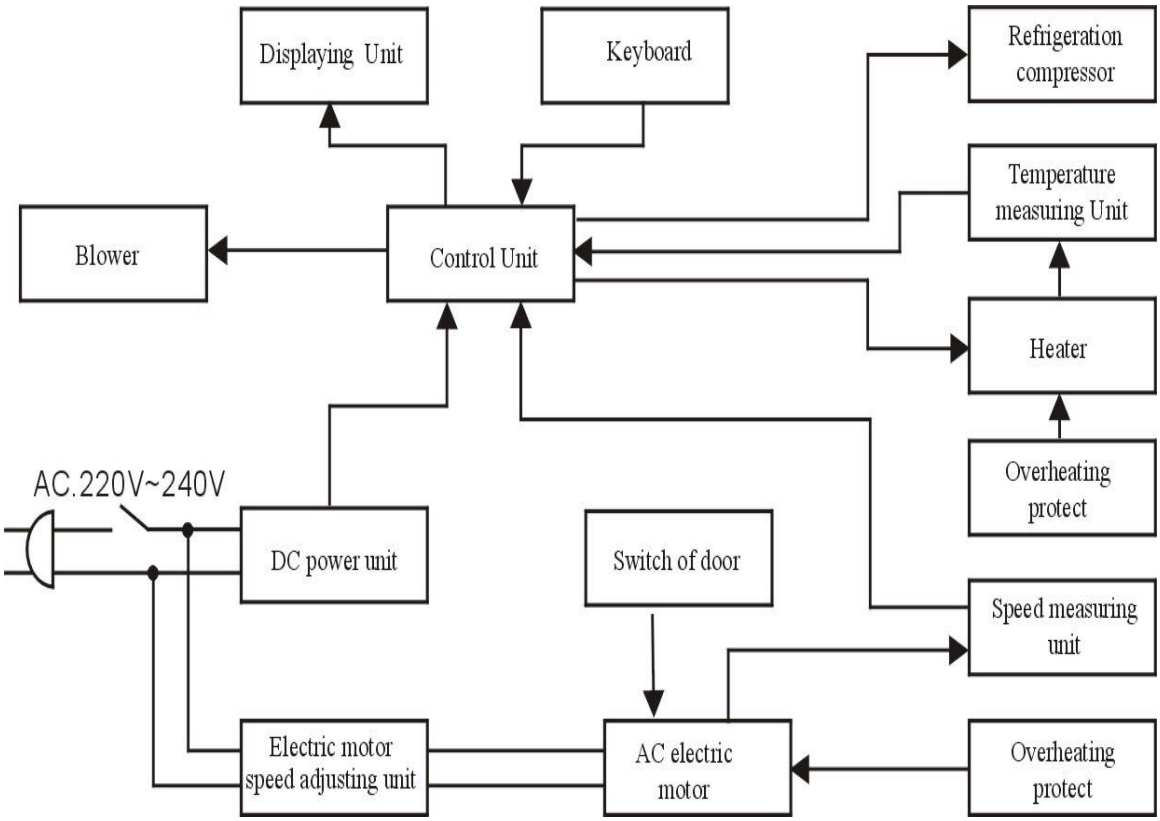
ZHICHENG is not liable for any damages, as a result of not comply with the speed limits above.

17. Trouble Shootings

Error Indicator	Possible cause	Corrections
Power on , No display	Power supply is not connected	Check the power supply system to see if there is voltage on the line
	Plug has no access to socket	Plug in firmly
	The power switch has not been turned on.	Turn on the power switch on the right side of the unit
	The fuse is broken	Replace fuse with new one of same specification
	Circuit occurs mall function of power box	Notify distributor for repair service
Actual temperature is higher than the set point, high temperature alarm is activated	Unit has not yet reached the required (constant) temperature.	Wait a moment and observe
	Temperature setting is at the blind area of temperature control	Open the ventilation hole
	Improper setting of refrigeration parameter	Set the refrigeration parameter to be “0.5”and close the ventilation opening.
	The ventilation fan is broken	Notify the distributor to replace the fan
	Malfunction occurs with refrigeration system	Notify the distributor to repair the refrigeration system
Actual temperature is lower than the set point. low temperature alarm is activated	Unit has not yet reached the required (constant) temperature	Wait a moment and observe
	The circulation of cold air is excessive	Close(a part of) the ventilation opening
	The ventilation fan is broken	Notify the distributor to replace the fan
	The heater does not work	Notify the distributor to repair the heater
Actual temperature is fluctuating and will not be stable	Improper setting of refrigeration parameter	Refer to Users Guide and reset the refrigeration parameter
	The door (lid) is not closed firmly	Close the door (lid) firmly
	Malfunction occurs with the control circuit	Notify distributor for repair service
Temperature is constant out of control	Malfunction occurs with the control circuit	Notify distributor for repair service
The oscillation of platform is unstable	The platform is in imbalance due to a spoiled object	Remove the object , clear and clean the chamber
	The equipment is not placed horizontally	Adjust the left-back foot leveler install the equipment in a proper way.
	Malfunction occurs with control circuit	Notify distributor for repair /service
The shaking platform does not work	The door switch has not yet made contact	Check the door to see if it is closed firmly
	The platform is blocked with an object at the bottom	Remove the platform and clear the object and clean the inside
	The belt is broken	Notify the distributor to replace the belt
	Malfunction occurs with control circuit	Notify distributor for repair service
The oscillation of	Malfunction occurs with	Notify distributor for repair service

platform is out of control	control circuit	
The platform keeps shaking after the door is opened	The door switch has short circuit ,could be caused by humidity	Use a blower drier to dry the chamber Press the Start/Stop button before opening the door
As the door is closed ,the platform starts shaking but the speed runs high suddenly	Improper operating method	Refer to Users Guide and press the Start/Stop button to operate again
Screen has no response when button on the control keyboard is pressed	Equipment is disturbed by high frequency.	Press the Change/Control button and try other operation mode.
		Restart the equipment-if it does not work:
		Notify the distributor.
The equipment causes a strange loud noise	The equipment is not placed horizontally	Adjust the left back foot to make the equipment stable
	The fixed screw of clamp is loose	Remove the platform and tighten the screw
	The platform is loose	Remove the platform an tighten the screws on the four corners
	There is strange object, like a piece of a bottle, under the platform	Remove the platform ,clear the object and clean the inside
	Mechanical malfunction occurs	Notify the distributor for repair service
The accumulation of frost is fast after refrigeration is started, resulting in the rise of temperature	The refrigerating time is too long and the evaporating chamber is too humid	Refer to Users Guide and conduct a drying maintenance on the evaporation chamber

18. Electronic Control System



19. After-Sale Service.

Since the date of your purchase of this product, after-sale service of LABWIT will always be with you. This product has a one year warranty that starts at the moment of delivery. If any malfunction caused by defective in material or workmanship occurred during the warranty period, LABWIT will provide the parts free of charge. Your distributor will provide professional workmanship and will repair the unit without any charge. When this one year warranty is expired, we will continue to provide you with high quality -life time services.

Please fully fill in the Return Card and send it back to the service department of LABWIT. In this way we can keep you updated about technical improvements that might benefit the future performance of your equipment.

For repair service, please contact your local dealer or log-in on our website