



User's Manual

**Premium Compact
Stackable Shaking Incubator
Orbital Model**

This Manual applies to:

Modes: Incu-Shake Compact



Incu-Shake Compact



**UK
CA**

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1. INTRODUCTION

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. SciQuip shall have no obligation and responsibility for any damage on the instrument caused by users for failing to comply with the operation instruction and the environmental requirements stated in this specification.

SciQuip is entitled to modify the content of the specification at any time without appropriate notification.

SciQuip 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 spaces in the labs are spacious and expensive. The Incu-Shake Compact is ideal for benchtop and under-bench use, but still up to two units can be stacked for maximized shaking capacity with minimized floor space. Stacking also can be easily managed at a later time. Each compartment unit operates independently with cooling, large 7 inch TFT touch screen control panel, intelligent precise control of temperature and shaking speed with "ramp and soak" programs and solid operating safety features with as standard, and can be upgraded with more optional choices, such as LED photosynthetic light panel, RS-485, TCP/IP, etc.


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.

SciQuip thanks you for your trust in this product!

2. SAFETY PRECAUTIONS

| | |
|---|--|
|  | <p>WARNING!</p> <p>The section outlines the important safety precautions for both personnel protection and operation of the equipment. Negligence of the following instructions may lead to serious hazards and injury.</p> |
|---|--|

- The machine can be only operated by the trained and authorized person.
- The maintenance can be only conducted by trained person, SciQuip or its authorized agency.
- The maintenance spare parts shall be provided by the manufacturer and SciQuip, and users are not allowed to replace them without authorization.
- It's prohibited to use any materials that may cause overpressure, combustion or explosion in the equipment. Any uncontrolled cultivation of toxic or pathogenic organisms is not recommended for this equipment.
- The loading volume must not exceed 1/3 of the total volume of the flask.
- Reduce the loading or the shaking speed until the equipment runs smoothly, if loud noises or strong vibrations occur.
- Do not expose equipment to inappropriate ambient conditions, such as temperature, or humidity outside the stated operating range.
- The power supply of the incubator shall be well grounded so as to prevent operators from electric striking.
- 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.
- Do not pull out the plug when the unit is in use. Never drag on the wire to unplug the unit.
- A separate branch circuit is recommended to prevent loss of samples due to overloading or failure of other equipment on the same circuit.
- A surge protector is recommended to avoid power-related faults.
- 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 end up with fire as a result of overheating.
- The electric power supply must be cut off in following situations:
 - When the insulation is damaged.
 - When opening the door of electrical power box. Opening the top/back cover without cutting off power supply might result in electric shock.
 - When replacing the fuse. Replacing the fuse without cutting off the power supply will probably result in electric shock.
 - When a malfunction occurs, mishandling will result in the further damage of the equipment or accidental injury.
 - If you do not use the unit for a long period of time.

- Wear personal safety kits, such as safety glasses, safety gloves, when operating temperature is above 50°C.
- Always keep the work place clean and tidy to avoid possible health hazards.

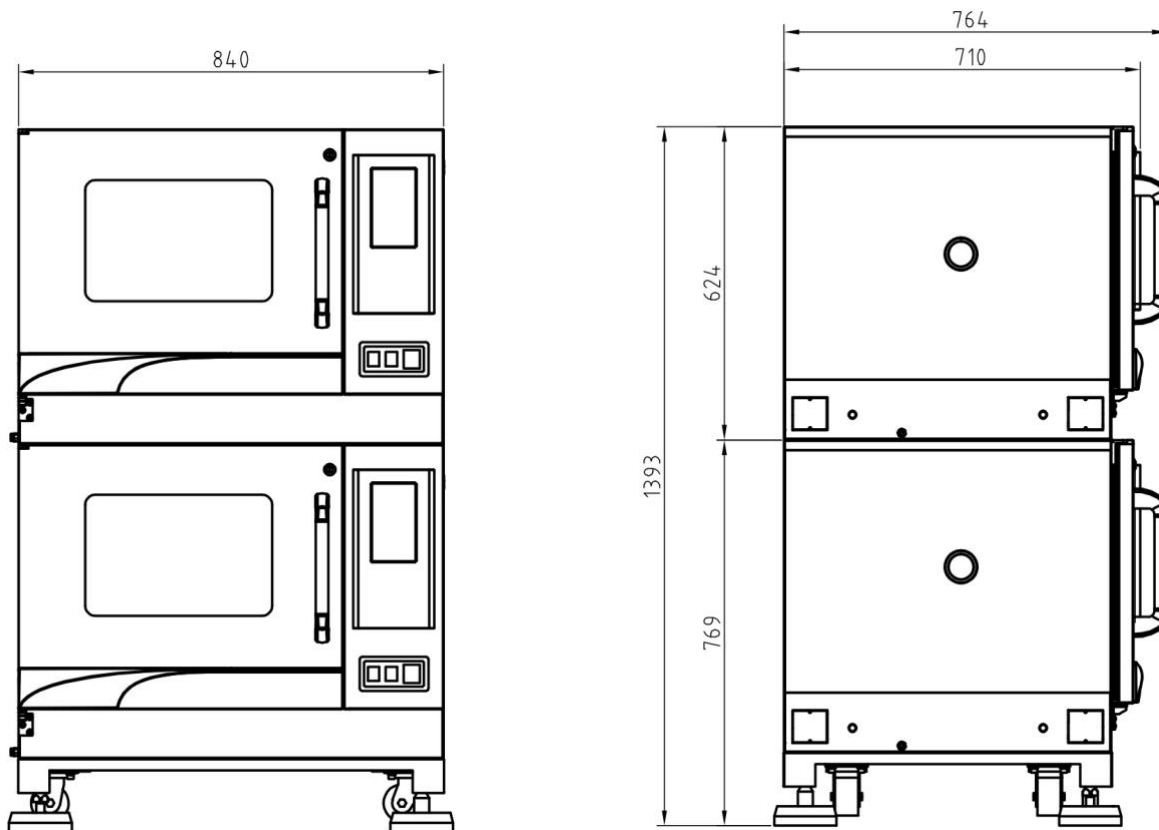
3. ENVIRONMENTAL REQUIREMENTS

- Best working temperature shall be 18°C--30°C, and humidity no more than 80%RH.
- In consideration of ventilation, heat dissipation and other factors, a minimum of 20 cm space shall be reserved in the surrounding of the equipment during installation to facilitate adequate convection of air around the unit.
- Indoor use only. Do not locate the unit exposed to direct sunlight or near heating /cooling ducts.
- The incubator shall be placed on a flat, solid and fire-retardant platform which can support its weight.
- The unit must be kept away from electromagnetic interference sources.
- There shall be no inflammable, explosive, corrosive, toxic or harmful gas that may cause sharp temperature change in the vicinity of the equipment.
- SciQuip only commits that the incubator can operate normally in the place where the elevation is less than 2000m.
- The power supply voltage of this equipment shall be allowed to change within $\pm 10\%$ of the rated working voltage.
- The transient over-voltage of the power supply shall be Class II.
- The pollution degree is Class II. Please keep the chamber clean. Regular cleaning is required.

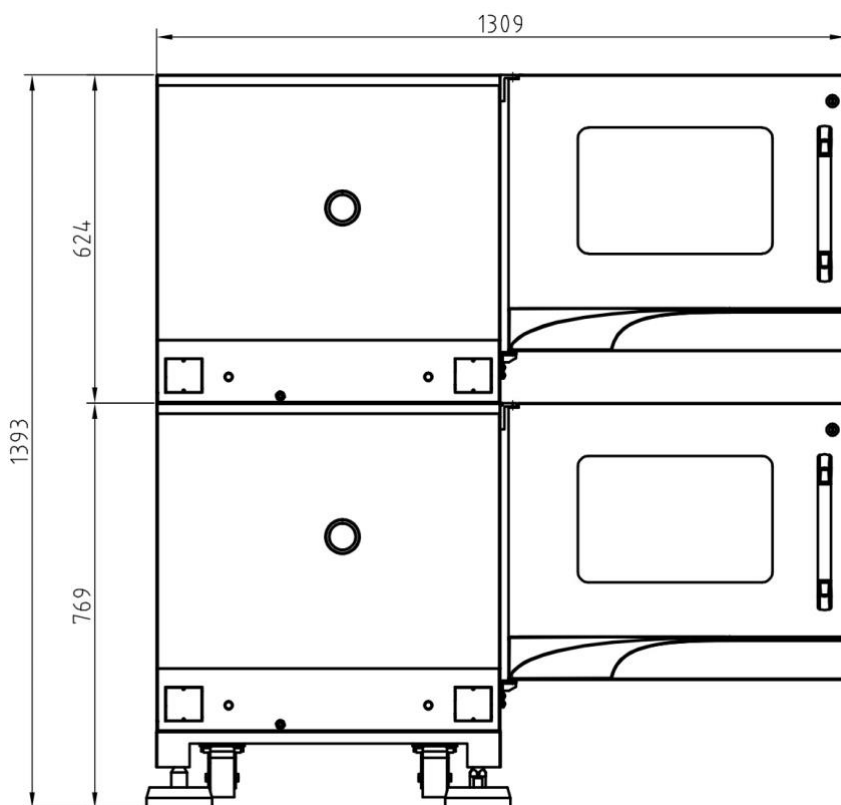
4. TECHNICAL DATA

4.1 Dimensions:

- Front and side view of 2 units stacked with doors closed

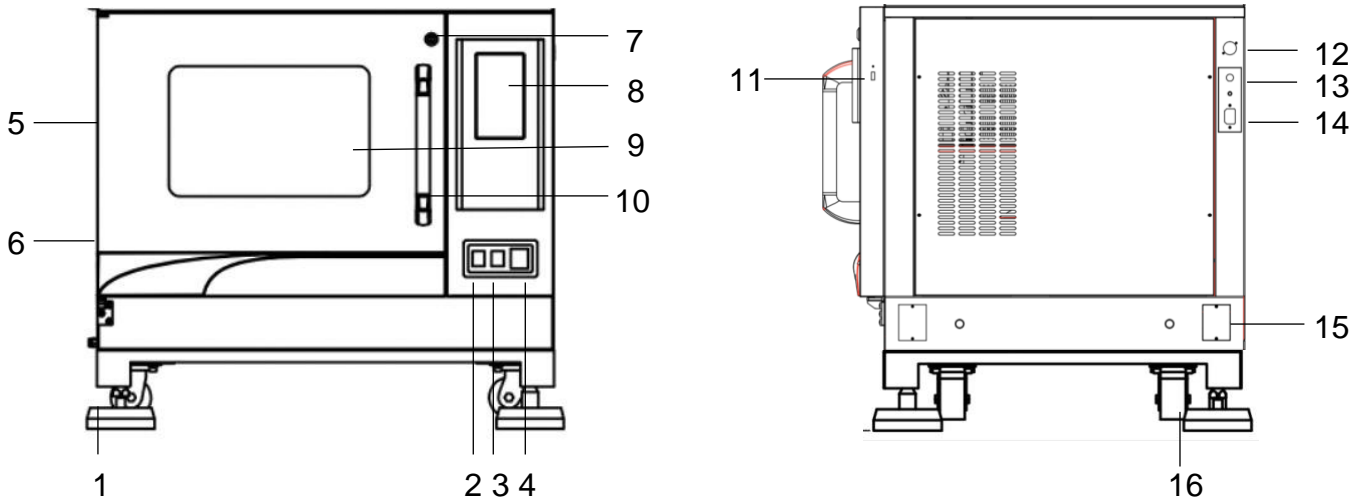


- Side view of 2 units stacked with doors open



4.2 Standard Functions

4.2.1 Main Unit



- | | | | |
|---|----------------------------|----|---------------------------|
| 1 | Foot Block | 9 | Glass Window |
| 2 | UV Light Switch | 10 | Door Handle |
| 3 | Illumination Light Switch | 11 | USB Interface |
| 4 | Main Trip Switch | 12 | TCP/IP Interface (option) |
| 5 | Access Port Door | 13 | Fuse |
| 6 | Drain Outlet | 14 | Main Power Socket |
| 7 | Door Lock | 15 | Stacking Port |
| 8 | Touch Screen Control Panel | 16 | Caster Wheels |

4.2.2 Door

The elements on the door include

- Observation Glass Window
- Door Handle
- Door Lock

4.2.3 Inner Working Chamber

The elements inside the inner working chamber

- Illumination Light
- Stainless Steel Chamber Wall
- Shaking Mechanism
- Static Shelf
- Ventilation Grilles (with cross flow fans behind the back wall)
- PT100 Temperature Sensor (behind the back wall)
- UV Sterilization Light (behind the back wall)

4.2.4 Shaking Control

The direct beltless driving shaking system ensures smooth and reliable orbital shaking movement with a speed range between 30-300rpm. The orbital diameter is adjustable from 1mm to 50mm continuously. The loading weights must be below the maximum rated, otherwise, it will prevent the shaking tray from smooth movement, and eventually increase the wear out the bearings and joints.

4.2.5 Temperature Control

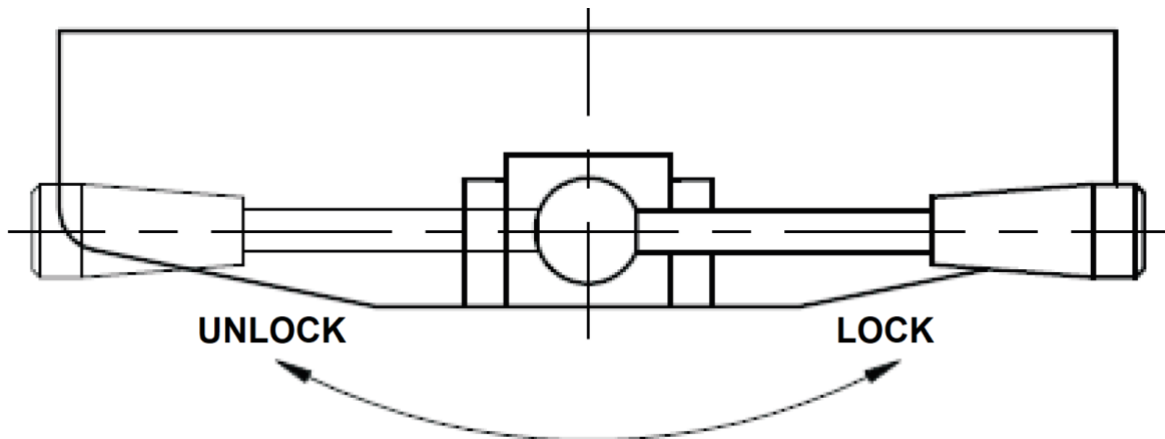
The heaters are behind the back wall. The temperature is controlled with a PT100 temperature sensor. The heat generated is distributed via cross flow fan evenly across the inner working chamber.

4.2.6 Control Electronics

The microprocessor controller at the front panel is designed to service the precise control requirements of the working chamber environment, providing optimum programmable conditions for culture growth. The microcomputer is with 7" large touch screen to permit efficient operator entry and settings of data.

Each stack of unit is operated independently with its own controller.

4.2.7 Shaking Tray Operation



The shaking movement of the tray is interrupted as soon as the door is opened by more than 20° of angle. In the same time, both the circulating fan and heater stops working at the same time when door is opened.

To unlock, turn the handle of the locking device to the left.

To lock, turn the handle of the locking device as far as possible to the right.

Shaking movement, circulating fan, and heating controlling resumes once the door is closed.

4.2.8 Specifications

| Machine | | Shaking Unit | |
|---|---|-------------------------|----------------------------------|
| Outside (WxDxH) | 840x764x625mm | Drive Type | Direct Beltless Driving System |
| Inside (WxDxH) | 570*505*418mm | Tray Size (WxD) | 500x400mm |
| Volume | 120L | Maximum Load | 15kg |
| Net / Gross Weight | 120kg/165kg | Speed Range | 30-300 rpm |
| Control Panel | TFT Touch Screen | Speed Accuracy | ±1 rpm |
| Illumination | LED | Timer | 0-9999 mins |
| Language | English | Shaking Mode | Orbital |
| Ambient TEMP. | 5-35°C | Shaking Diameter | 1-50mm Stepless Adjustment |
| UV Light | 254nm, 11W | Temperature | |
| Noise Level | <55 dB (1m above floor) | Control Mode | Fixed Value & Program |
| Power | 765W | TEMP. Range | Ambient-15 to 60°C (Min. 4°C)# |
| Electricity | AC 220-240 Volt, 50/60Hz | TEMP Accuracy | 0.1°C |
| Data logging | USB port | TEMP. Uniformity | ±0.5°C @37°C |
| Static Shelf | Standard, 1 piece | Principle of Sensor | PT100 |
| Base Stand | Standard: H 15cm Options: H 35cm or H 50cm | Air Circulation | 360m3/Hour |
| Key Lock | Yes, standard | Recovery (@37°C) | 8 mins (30 Seconds Door Opening) |
| Photosynthetic Lighting | | | |
| Part NO. | P5031RB | P5031WW | |
| Light Type | LED, 50% Red, 50% Blue | LED, 100% Warm White | |
| Spectrum | Red: 640-660nm, Blue: 430-450nm | 4000k:400-700nm | |
| Light Intensity | Up to 350 μmol/(m2*s) | Up to 220 μmol/(m2*s) | |
| Control | Yes, Individually, from 0-100% output | Yes, from 0-100% output | |
| Power | 120W | 60W | |
| Control Mode | Fixed Value & Programmable | | |
| Dimensions (WxDxH) | 550x430x10mm | | |
| # Min. 15°C when Photosynthetic Lighting option is applied. | | | |

5. PREPARATION AND START-UP

5.1 Unpacking

At delivery, examine the exterior for physical damage while the carrier’s representative is present. If exterior damage is present, carefully unpack and inspect the equipment and all accessories for damage. If there is no exterior damage, unpack and inspect the equipment within five days of delivery. If you find any damage, keep the packing materials and immediately report the damage to the carrier. Do not return goods to the manufacturer without written authorization. When submitting a claim for shipping damage, request that the carrier inspect the shipping container and equipment.

5.2 Lifting / Handling

The heavy and care should be taken to use appropriate lifting devices that are sufficiently rated for these loads. Units should only be lifted from their bottom surfaces. Doors, handles and knobs are not adequate for lifting or stabilization. The units should be completely restrained from tipping during lifting and transport to prevent shifting and damage.

The depth of the incubator is 764mm, the door handle can be removed, so that the depth reduces to 710mm.

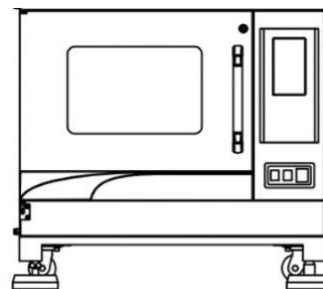
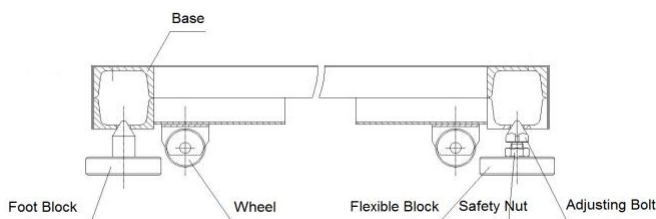
5.3 Leveling the Units

5.3.1 Before starting your equipment, the unit must be placed horizontally on a solid, flat floor, and elevated and leveled with three foot blocks and one flexible block (with adjustable bolt). 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 below procedures:



Safety instruction!

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



5.3.2 Unscrew the safety nut on the flexible block first, screw down the adjusting bolt of the flexible block, so that it will leave some gap when it fits underneath the hole on the base.

5.3.3 There is one hole on each corner of base of the unit, locate each of them.

5.3.4 Use lifting tools (pallet jack, scissor jack, etc) to elevate the unit, and place the four foot blocks right underneath the holes on each corner.

- 5.3.5 Lay down the unit, check and adjust the portions of the foot blocks and make sure the tips of the blocks sits firmly in the holes. Make sure hands off the unit before the unit is laid down! Do be careful of your hand!
- 5.3.6 Use a spanner to unscrew the adjusting bolt, raising the height of the flexible block, until feeling some strength, and the tip of the bolt sits firmly in the hole.
- 5.3.7 Make sure the unit is elevated leveled and sits firmly on the four blocks. Try setting the unit at its medium speed, e.g. 150rpm, slowly increase the speed and adjust the adjusting bolt until no vibration is detected.
- 5.3.8 Finally screw the safety nut of the flexible block, lock up the adjusting bolt.

5.4 Preliminary Cleaning

Each new equipment was thoroughly cleaned prior to leaving the factory. It is recommended; however, before installation, SciQuip recommends decontaminate all surfaces within the interior chamber, outer door and gasket. They can be wiped down with a disinfectant of 70 percent alcohol or similar non-corrosive antimicrobial agent. After cleaning, dry all interior components with a sterile cloth as necessary. **Absolutely no chlorinated or halogen materials are to be used in the chamber.**

5.5 Electrical

Each unit is equipped with a trip switch to avoid power-related faults. Whereas, the electrical supply circuit to the incubator must conform to all national and local electrical codes. Plug the power plug securely into a grounded power source. **VOLTAGE SHOULD NOT VARY MORE THAN 10% FROM SERIAL PLATE RATINGS.** A separate branch circuit is recommended to prevent possible loss due to overloading or failure of other equipment on the same circuit.

5.6 Connect the Power Supply

Connect AC power via power wire, turn on the trip switch to start up the equipment after the connected power supply meets the above stipulated requirements.

5.7 Installation of Flask Clamps (Applies P6040 predrilled tray)

The tray is predrilled with threaded holes for different sizes of **Erlenmeyer flask clamps***. To install the clamps onto the platform tray, please follow the instructions below,

- Stop the unit from shaking and pull out the platform tray
- Use the screw driver to fix the O clamps with screws onto the platform. (Flask Clamp ≥ 1000ml, 4 screws at corners, Flask Clamp < 1000ml, 1 screw in the center)
- Please make sure all screws are securely fastened before turning the unit back on.
 - * Only use SciQuip "O Clamps" for this tray.
- Maximum loading capacity with P6040 predrilled tray

| Flask (Pcs) | 50ml | 100ml | 250ml | 500ml | 1000ml | 2000ml | 3000ml | 5000ml |
|-------------|------|-------|-------|-------|--------|--------|--------|--------|
| Max Loading | 33 | 33 | 23 | 14 | 9 | 6 | 4 | 2 |

For Erlenmeyer Flasks only. Flask dimensions may reduce max. capacity.

5.8 Installation of Sticky Mat (Applies P6041 plain tray)

The tray is specially designed for use with SciQuip Sticky Mats. The Sticky Mat is used for attaching vessels, such as flasks, bottles, dishes etc onto the shaking platforms for all shaking equipment, for example, shakers, rockers as well as shaking incubators. It is as standard 20 x 20 cm in size and 4 pcs as maximum, can be used to cover the shaking platforms replacing the traditional flask clamps. The Sticky Mats can be easily removed and repositioned by simply peeling off the shaking tray surface. With proper care, the Sticky Mat can be used for several years.


- Before installing the Sticky Mat, clean the surface of the platform tray, making sure the platform is completely undamaged, clean and oil-free.
- Moisturize the platform tray by spray bottle or wet towel.
- Remove one of the two plastic sheet covers of the Sticky Mat. Dip the sticky mat with water.
- Install the Sticky Mat onto the platform tray. Use the ruler or hard card to scrape and squeeze out all the water and bubbles.
- Wait for 12 hours and peel off the top sheet cover.
- The Sticky Mat is now ready for loading.
- Maximum loading capacity with P6041 plain tray with Sticky Mats

| Flask (Pcs) | 50ml | 100ml | 250ml | 500ml | 1000ml | 2000ml | 3000ml | 5000ml |
|-------------|------|-------|-------|-------|--------|--------|--------|--------|
| Max Loading | 53 | 42 | 23 | 14 | 9 | 6 | 4 | 2 |

For Erlenmeyer Flasks only. Flask dimensions may reduce max. capacity

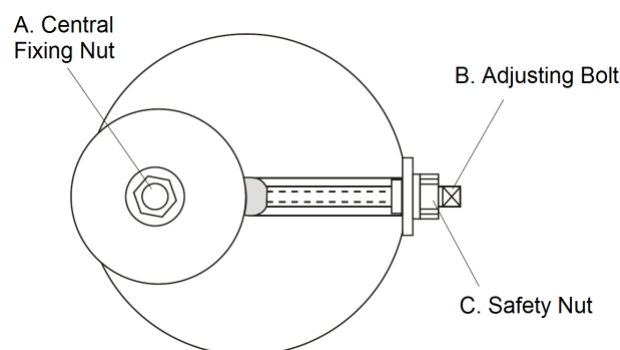
5.9 Operation of Shaking Diameter Adjustment

The incubator has an adjustable shaking diameter of Ø1-50mm. To adjust it, follow the instructions below,



Attention:

Power supply must be disconnected before performing the following operations!



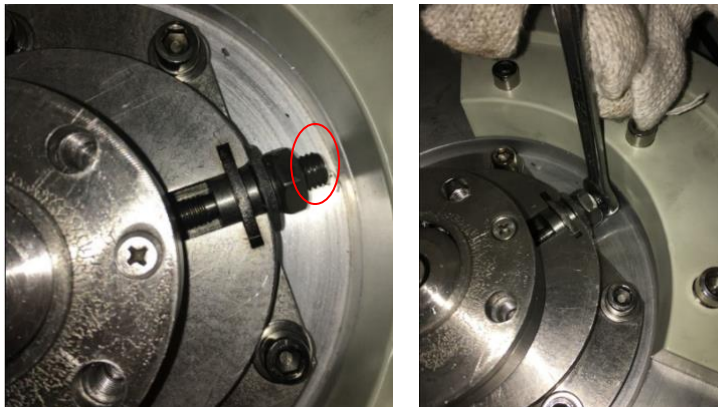
- 5.9.1 Tools needed: 17*19 spanner, 8*10 spanner, Allen key 6mm, Allen key 8mm
- 5.9.2 Turn off the unit, open the glass door, pull out and remove the shaking tray,
- 5.9.3 Use the 8mm Allen key to loosen the (A) central Allen screw.



5.9.4 Loosen the (C) safety nut with 17*19 spanner



5.9.5 Use the 8*10 spanner to rotate the (B) adjusting bolt clockwise to decrease the shaking diameter, but anti-clockwise to increase.



5.9.6 When adjustment is done, tighten the (B) adjusting bolt and (A) central Allen screw.

5.9.7 Install the base tray and shaking tray back in place.



Attention:

The maximum shaking speed should decrease when the shaking diameter is increased. Please see the chart below for the chart of ratio between speed and shaking diameter.

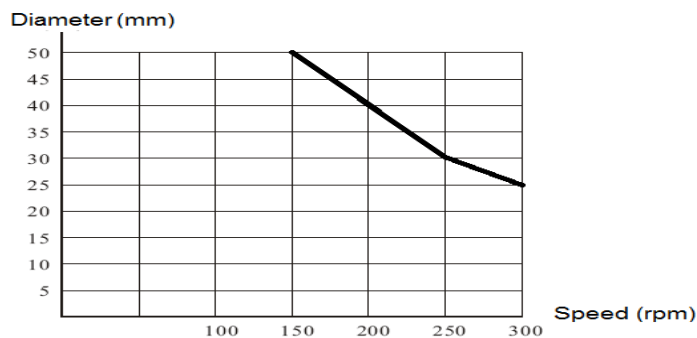



Chart of Ratio Between Speed and Shaking Diameter



5.10 Extra For Refrigerated Units

| | |
|---|--|
|  | <p>ATTENTION:</p> <p>The nominal cooling capacity can only be reached if the ambient temperature at the cooling aggregate is below 30 °C.</p> |
|---|--|

After transport or moving –**DO NOT USE** this unit for at least **24 Hours, unless you are a 100% sure that the unit has been moved in an upright position only.**

If the equipment is continuously used at low temperatures, condensate can occur inside of the incubator. It is recommended that you wipe condensations out, or-if possible-heat up the incubator to evaporate this small amount of condensation once every 10 days of operations.

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.

| |
|---|
| <p>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.</p> <p style="text-align: center;">   </p> <p>DO NOT USE ANY CHLORINATED OR HALOGEN MATERIAL- AS THIS IS HARMFUL TO THE POLISHED STAINLESS STEEL!!!</p> |
|---|

5.11 Modbus TCP/IP Protocol (Option)

The unit communicates with PC through TCP/IP Interface with Modbus protocol. The software saves duplex communication, operating status, date.

- Physical Layer: TCP/IP
- IP Address (Default): 192.168.0.7
- Port: 502
- Connection: Connect the ethernet cable to the TCP/IP interface on the right side, and the other end to the PC terminal or other transmission device.



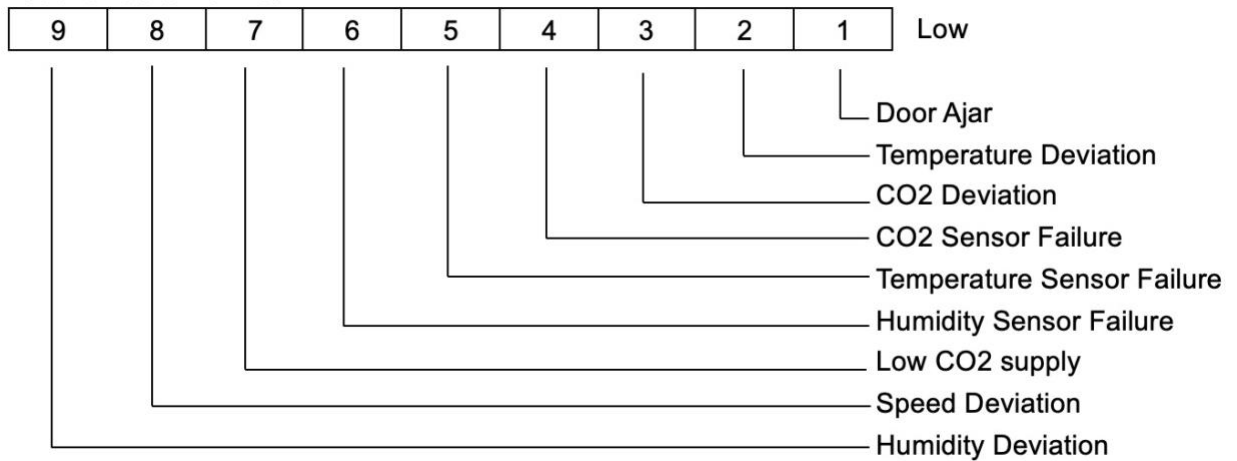
- Log In: To access the admin page, type 192.168.0.7 into your web browser's address bar, and press enter.
Authentication Log in:
 Username: admin
 Password: admin

- **Change IP Address:** Click “Local IP Config” in the sidebar;
Type in the new IP address in “Static IP”, and click “Save” to save and exit.

Data format and meaning of each register (reading multiple input registers)

| Address | Data Content | Format | Unit | Remarks |
|---------|----------------------|---------|------------|-----------------------------|
| 30012 | Operating Status | 1 byte | RUN/STOP | 1=RUN/0=STOP |
| 30019 | Door Ajar | 1 byte | OPEN/CLOSE | 1=OPEN/0=CLOSE |
| 30020 | Run Time | 2 bytes | min | Max. 65535 mins |
| 30021 | Measured Temperature | 2 bytes | °C | 1 Decimal |
| 30023 | Measured CO2 | 2 bytes | % | 1 Decimal |
| 30025 | Red Light % | 2 bytes | % | |
| 30028 | Fault Alarms | 2 bytes | | See below for more details* |
| 30029 | Measured Humidity | 2 bytes | %RH | 1 Decimal |
| 30030 | Measured Speed | 2 bytes | r/min | |
| 30031 | Bule Light % | 2 bytes | % | |

***30028 Fault Alarms:**



6. OPERATING THE UNIT

Once the equipment is properly installed with all utilities connected, turn on the power switch on the left of the equipment.

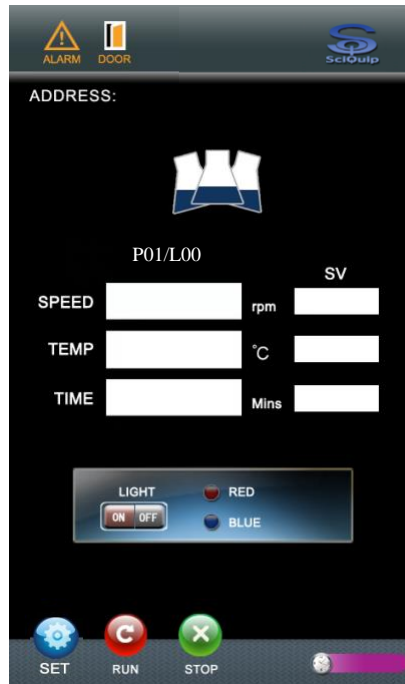
When power is applied, the incubator will first display the "welcome page" and then LCD will display the "home page" when the system is under working conditions.

Afterwards, user can set parameters via setting menus. After users confirm the setting of parameters, the incubator can start controlling the general parameters, such as temperature, speed at the value set by the user.



Welcome Page

6.1 Home Page Summary



“Stop” button:

Press this to stop the operation. When the incubator is in operation, press this button to pause. Press it again, to stop the current operation.



“Run” button:

Press this button to start the operation. When the unit is paused, this will twinkle; press it again to resume the operation.



“Set” Button:

Press it to enter the Set Menu page Settings.



“Clock Time” Display:

It displays the actual clock time.



“Alarm” Status:

Once the conditions of alarms are fulfilled, the alarm is declared, and indicator will be lighted.



“Door” Status:

This indicator will be lighted if door is opened or closed improperly.



"Address" Status:

This indicates the current serial address when the incubator is connected to any communication protocols, e.g. RS-485.



“Shaking Flask” Status:

The illustration of “flask” indicates the status of the unit; the flask remains still when unit is stopped; or keeps swinging when it’s shaking.



Photosynthetic Lighting Switch:

Press it to enable or disable the photosynthetic LED lighting function.



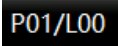
Red Light Indicator:

The indicator lights up when the red light is on, with display of current lighting output value in percentage.



Blue Light Indicator:

The indicator lights up when the blue light is on, with display of current lighting output value in percentage.



“Control Mode” Status:

This box indicates the status of the current control mode, fixed value mode or programmable mode.

If it is controlled under Fixed Value mode, no display.

If it is controlled under Programmable mode, it displays the current segment number and remaining cycle times.



Special Remind!

Under programmable mode, the “SEG” box shows as followings, **P”m”/L”n”**,

m: Current segment No.

n: Remaining cycle times.



“Speed” Display:

It displays the current operating speed in rpm.



“Temperature” Display:

It displays the current operating temperature in °C.



“Time” Display:

It displays current accumulative running time in minutes.



“SV” Column Display:

It displays the current set points of operating parameters, Temperature, Speed, and Timer.



Special Remind!

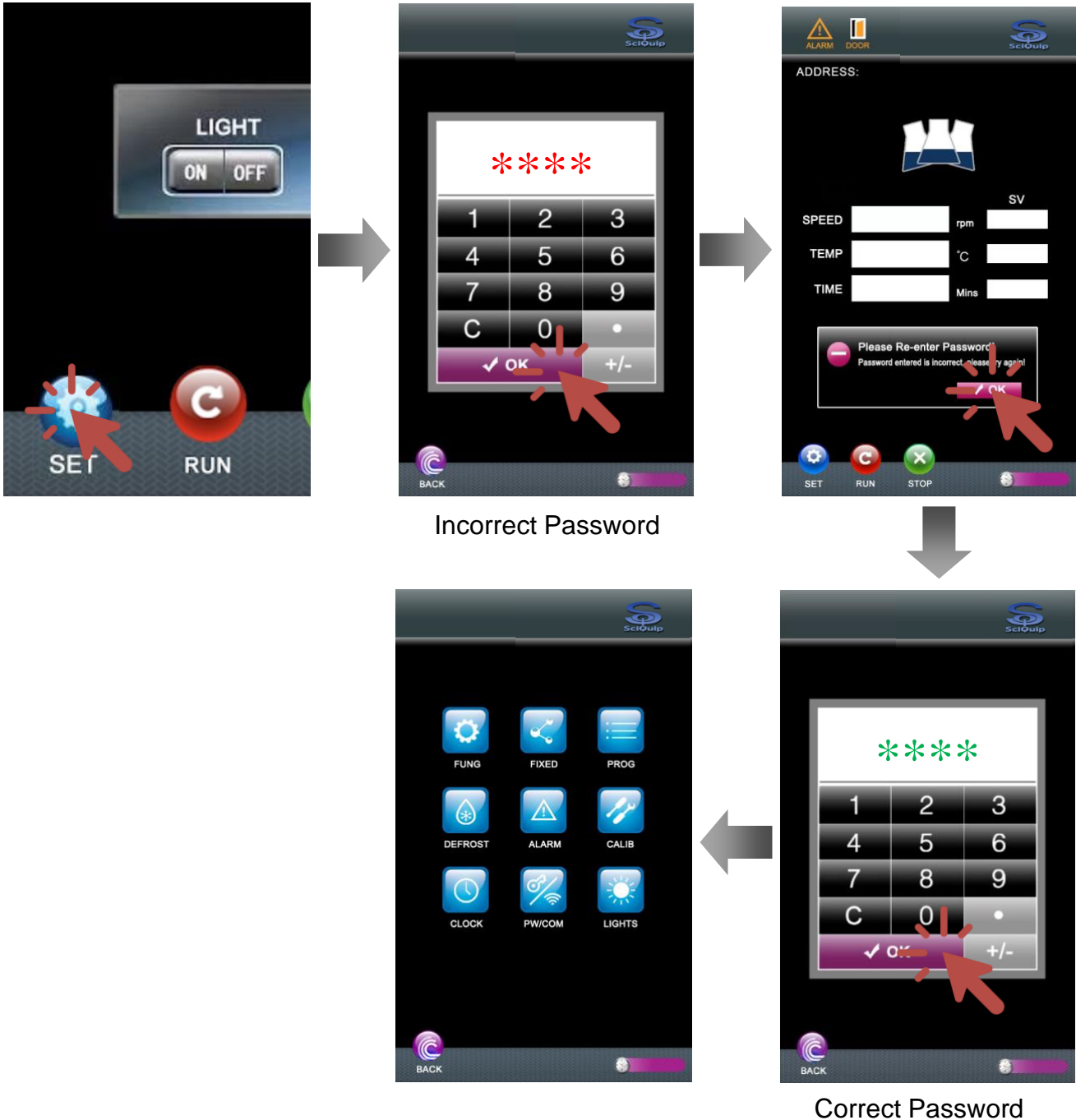
Under Fixed Value mode, the “Time” box in the “SV” column shows the “Timer” setpoint;

Under programmable mode, the “Time” box in the “SV” column shows the total time of “Ramp Time” + “Hold Time” of the current segment.

6.2 Set Menu Page Summary

The Set Menu page is the key gateway for accessing the collection of functions for the incubator operations.

The access to the Set Menu page are protected by password. Press the “SET”, and enter the Operator Password (Factory Default: 6666) or Admin Password (Factory Default: 9999) to get access to the Set Menu page.

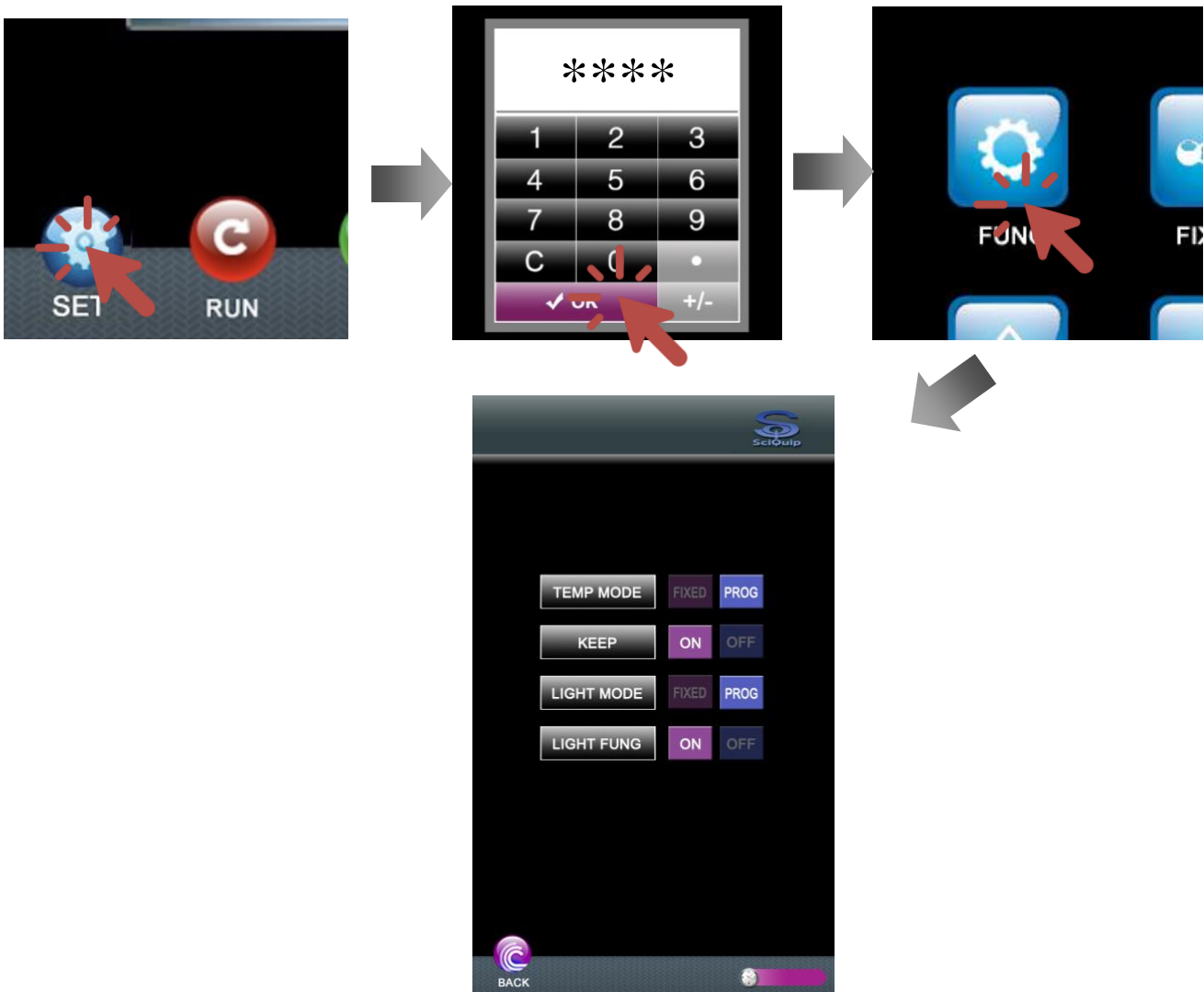


| Key Name | Functions | Related Chapter |
|----------------|--|-----------------------|
| FUNC | Switches of all functional modules, and control models | 6.3 |
| FIXED | Settings of operating parameters for fixed value control mode | 6.4.1 |
| PROG | Settings of operating program for programmable control mode. | 6.4.2 |
| DEFROST | Settings of parameters for defrost function | 6.6 |
| ALARM | Settings of deviations for all operating parameters for alarm conditions | 7 |
| CALIB | Calibrating Temperature, Speed (Factory default) | |
| CLOCK | Settings of the real clock time | 6.7 |
| PW/COM | Passwords Management & Communication address setting | 6.8 |
| LIGHTS | Settings of photosynthetic lighting functions | 6.5 |

6.3 FUNC Page Settings

Under the FUNC page, control modes and other functional modules can be changed or switched easily with finger touches.

The FUNC page are accessible by pressing the “FUNC” icon in the "SET" page.



6.3.1 CTRL MODE-- Switch of Control Mode - Temperature & Speed

The incubator can be set to run with fixed functional parameters settings, or with program up to 10 different segments, each with their own Ramp Time, Ramp End Temperature, Hold Time and Speed.

To select between Fixed Value mode and Programmable mode, follow the below steps,

- Press "Stop" button in the home page to stop the current operation.
- Enter "FUNC" page.
- Press the "CTRL MODE" to switch the mode between "FIXED" and "PROG".



Special Remind!

Make sure the unit is stopped (by pressing "STOP") before changing the state of "CTRL MODE".

6.3.2 KEEP-- Switch of Keep Function-Temperature Holding Function

This function will enable or disable the system to keep constant temperature controlling at the temperature setpoint while the system is not in operation, or once the timer runs out.

With this function enabled, the unit can be used for static incubation while it's in standby mode.

Under Programmable mode, the temperature will remain under control at the ramp end temperature setpoint of last segment even when the program operation is finished.

If it is disabled, temperature would be no longer under control as shaking motion stops.

To switch this function, follow the below steps,

- Press "Stop" button in the home page to stop the current operation.
- Enter "FUNC" page.
- Press the "KEEP" to enable/disable the temperature holding function

6.3.3 LIGHT MODE-- Switch of Control Mode - Photosynthetic Lighting (Option)

When equipped with LED Photosynthetic Lighting, the lighting function can be set to run under fixed value mode with fixed functional parameters settings, or under programmable mode, with program up to 10 different segments, each with their own Ramp Time, Ramp End Light Outputs, Hold Time, to simulate natural environment.

This function will enable or disable the photosynthetic lighting control system.

To switch this function, follow the below steps,

- Press "Stop" button in the home page to stop the current operation.
- Enter "FUNC" page.
- Press the "LIGHT MODE" to switch the photosynthetic lighting control between "FIXED" and "PROG" mode

- Switch to "PROG " mode. The program will start operating according to the saved lighting program. Switch to "FIXED" to exit the "PROG" mode.
- Switch to "FIXED " mode. The program will start controlling at the fixed light outputs settings. Switch to "PROG" to exit the "FIXED" mode.

6.3.4 LIGHT FUNC-- Switch of Photosynthetic Lighting Control Function (Option)

This function will enable or disable the photosynthetic lighting control system.

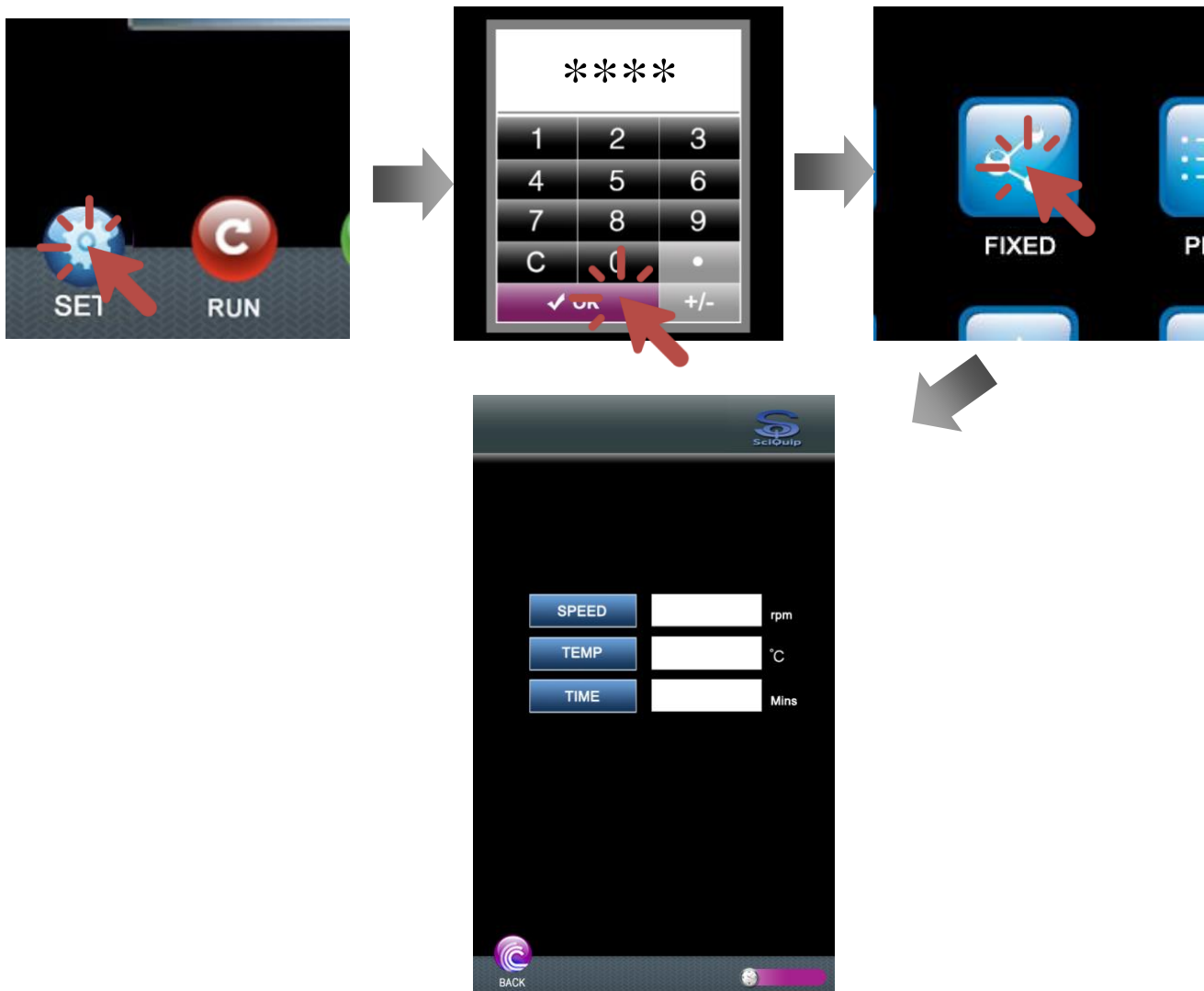
To switch this function, follow the below steps,

- Press "Stop" button in the home page to stop the current operation.
- Enter "FUNC" page.
- Press the "LIGHT FUNC" to enable/disable the photosynthetic lighting control function.

6.4 Operating Temperature and Speed System

6.4.1 Operating Under Fixed Value Control Mode

Under fixed value mode, the incubator controls constantly with fixed setting values of general functional parameters, such as shaking speed, temperature, and timer.



To set the general parameters under fixed value control mode, follow the below steps,

- Press "Stop" button in the home page to stop the current operation.
- Switch the "CTRL MODE" in the "SET" page to "FIXED" mode. Press "SET" in the home page.
- Press "Fixed" in the "SET" page to start setting the general parameters (Excluding Photosynthetic Lighting)

SPEED—Speed Set button

Press it and use the keyboard to enter the speed set value, and press “OK” to confirm and save. Set range from 30-300rpm.

TEMP—Temperature Set button

Press it and use the keyboard to enter the temperature set value, and press “OK” to confirm and save. Set range 4.0-60.0°C.

TIME—Timer Set button


Press it and use the keyboard to enter the timer set value, and press “OK” to confirm and save. Set range:0-9999mins

Back—“Return” Button

Press it to exit the current page after all settings are finished.

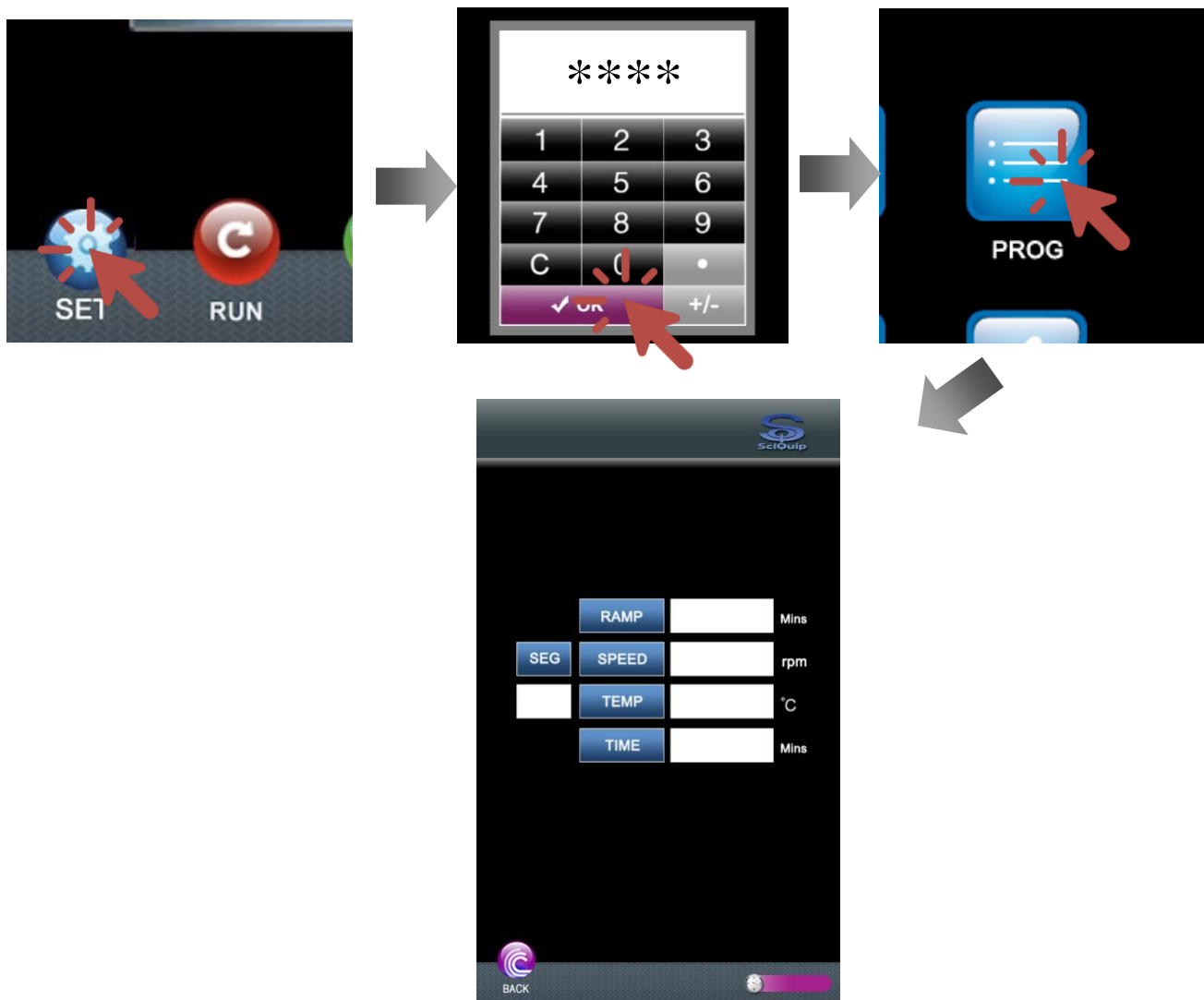
- **Start the operation:** Press the "RUN" button in the home page to start the fixed value operation , the "Shaking Flask" icon will start swing. The shaking motion of the shaking tray can be observed through the front window. The temperature controlling starts functioning to reach their setpoints. Time starts counting.
- **Pause the operation:** During the operation, the incubator can be paused by pressing the "STOP" button. Once it pauses, the "RUN" button keeps twinkling, the shaking tray stops shaking motion, the timer pauses counting. But the temperature remains under control. Press the "RUN" button to resume the current operation under fixed value mode.
- **Stop the operation:** When the operation is paused, press the "STOP" button once again, it will stop the current operation. Once it's stopped, the "Shaking Flask" stops, the "RUN" button dims, the shaking tray stops shaking motion, the timer stops and will be reset.

The temperature controlling will also be switched off. However, if the "KEEP" in the "FUNC" page is switched on, these functions will remain under control at their setpoints even when the operation is stopped.

| | |
|---|--|
|  | <p>Special Remind!</p> <ul style="list-style-type: none"> ◆ Press the “C” on the key board to clear the entry. ◆ Setting of each parameter must be confirmed and saved by pressing “OK” button. |
|---|--|

6.4.2 Operating Under Programmable Control Mode

This incubator can operate according to stored program to meet various requirements of professional experiments. Under programmable control mode, it can be programmed to save up to 10 different segments, each with their own Ramp Time, Ramp End Temperature, Hold Time and Speed. At the end of the settings, set the Hold Deviation and Cycle Times to complete the settings.



To set the general parameters under "Programmable" control mode, follow the below steps,

- Press "Stop" button in the home page to stop the current operation.
- Switch the "CTRL MODE" in the "SET" page to "PROG" mode. Press "SET" in the home page
- Press "PROG" in the "SET" page to start setting the general parameters (Excluding Photosynthetic Lighting)

SEG—Segment No.

The function indicates the serial number of current segment. No setting required.

RAMP—Ramp Time

This function indicates the time duration required for temperature to reach from current actual value to the ramp end (temperature) value. Use the keyboard to enter the ramp time from 0-9999mins.

SPEED—Segment Speed

This function indicates the speed set for the segment. Use the keyboard to enter the segment speed at 0rpm or from 30-300rpm.

TEMP—Ramp End Temperature

This function indicates the ideal temperature value for the unit to reach for the segment. Use the keyboard to enter the ramp end temperature from 4-60°C.

HOLD—Hold Time

This function indicates the time of hold step, which is the length of time that the unit has to maintain the (Ramp End) Temperature for the segment. Use the keyboard to enter the hold time from 0-9999mins.

LAST—“Last” Button

Press it to return to the set page of previous segment.

NEXT—“Next” Button

Press it to forward to the set page of next segment.

Setting a Termination Point for Your Program!

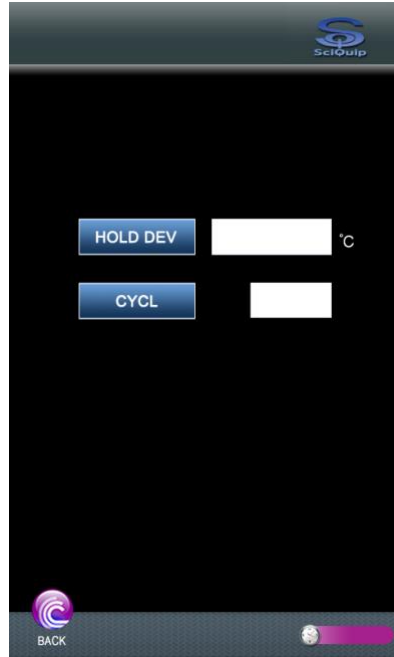
The program can run with up to 10 segments. However, if the total number of segments are less than 10, it is necessary to set a termination point for the program.

To do so, please set the "Ramp" time of the next unused segment as "-1" (End) or "-2 (Cycle)" by pressing "Decrease" button when the "Ramp" indicator is showing as "0".

By setting as "-1" (End), the program will finish here.

By Setting as "-2 (Cycle)", the program will keep running from the start of the program, according to the "Cycle times" setting (See below)

Once the termination point is set, keep pressing “NEXT”, until the following page appears.

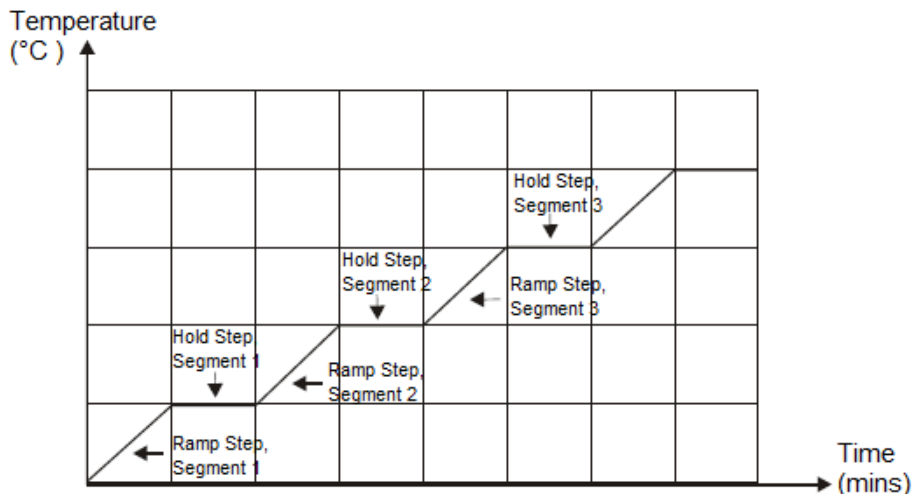


HOLD DEV—Hold Deviation

This function indicates the temperature deviation that the incubator may have at the end of each "Ramp Time" before starting the "Hold Time", in another word, the difference between actual temperature and desired "Ramp End Temperature", which activates the "Hold Time". If it's set as "0", "Hold Time" will start counting down as soon as the "Ramp Time" dues. Use the keyboard to enter and press "ENT" to confirm and save.

CYCL—Cycle Times

This function indicates the number of times for the whole program to run repeatedly if the whole program has a termination point as "Cycle (Step)", if it's set as "1" cycle, the program will run for 1 repeat, so a total of 2 times! Use the keyboard to enter between 0-99 times.



Once the program settings are saved, the unit is ready for "Programmable" control mode.

- Start the operation: Press the "RUN" button in the home page to start the programmable operation , the "Control Mode" status shows the "Pxx/Lxx", the

"Shaking Flask" icon will start swing. The shaking motion of the shaking tray can be observed through the front window. The temperature control starts from the "Segment 1". Time starts counting from the "Ramp Time" of "Segment 1".

- Pause the operation: During the operation, the incubator can be paused by pressing the "STOP" button. Once it pauses, the "RUN" button keeps twinkling, the shaking tray stops shaking motion, the timer pauses counting. The temperature remains under control at the setpoint at the time of the pause operation. Press the "RUN" to resume the current operation under programmable mode.
- Stop the operation: When the operation is paused, press the "STOP" button once again, it will exit the current program operation. Once it's stopped, the "Shaking Flask" stops, the "RUN" button dims, the shaking tray stops shaking motion, the timer stops and will be reset.
- The temperature controlling will also be switched off. However, if the "KEEP" in the "FUNC" page is switched on, the temperature will remain under control at their setpoints of last segment even when the program operation is stopped.

6.5 Operating Photosynthetic Lighting System (Option)

The photosynthetic lighting system features LED lighting panel with specific light spectrums that is most productive for algae growth. The standard light panel generate blue and red lighting. White LED light option provides similar lighting spectrum like daylight.

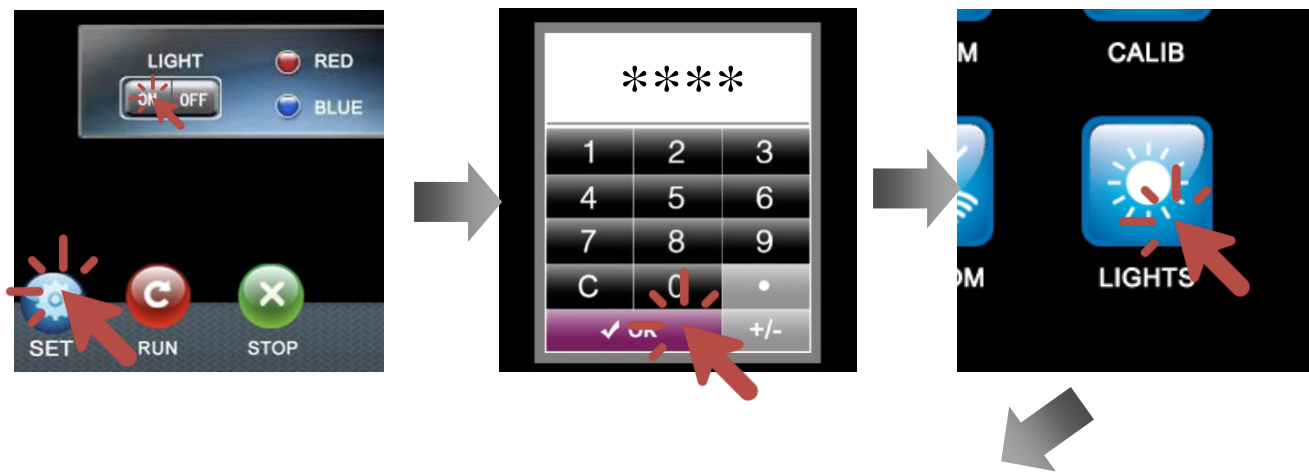
Each color of the light can be controlled under fixed value mode, or programmable mode, which runs day/night cycles.

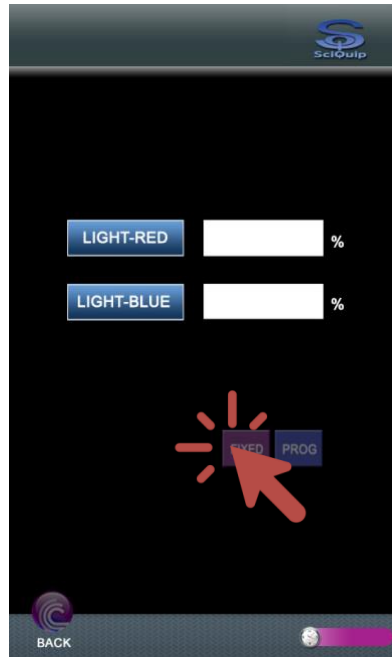
Each color light intensity can be set with the range of 0-100% power output.

The lighting panel is protected by acrylic housing, which makes it easy to clean and water proof.

6.5.1 Operating Under Fixed Value Control Mode

There is an individual set page for photosynthetic lighting system, which include settings under both Fixed Value and Programmable control mode.





To set the lighting outputs of under "Fixed Value" control mode,

- Press "SET" in the home page
- Press "LIGHTS" in the "SET" page to start setting the photosynthetic lighting system
- Press the switch to switch the control mode to "FIXED"

LIGHT-RED — Red Light Output button

Press it and use the keyboard to enter the red light output set value, and press "OK" to confirm and save. Set range 0-100%.

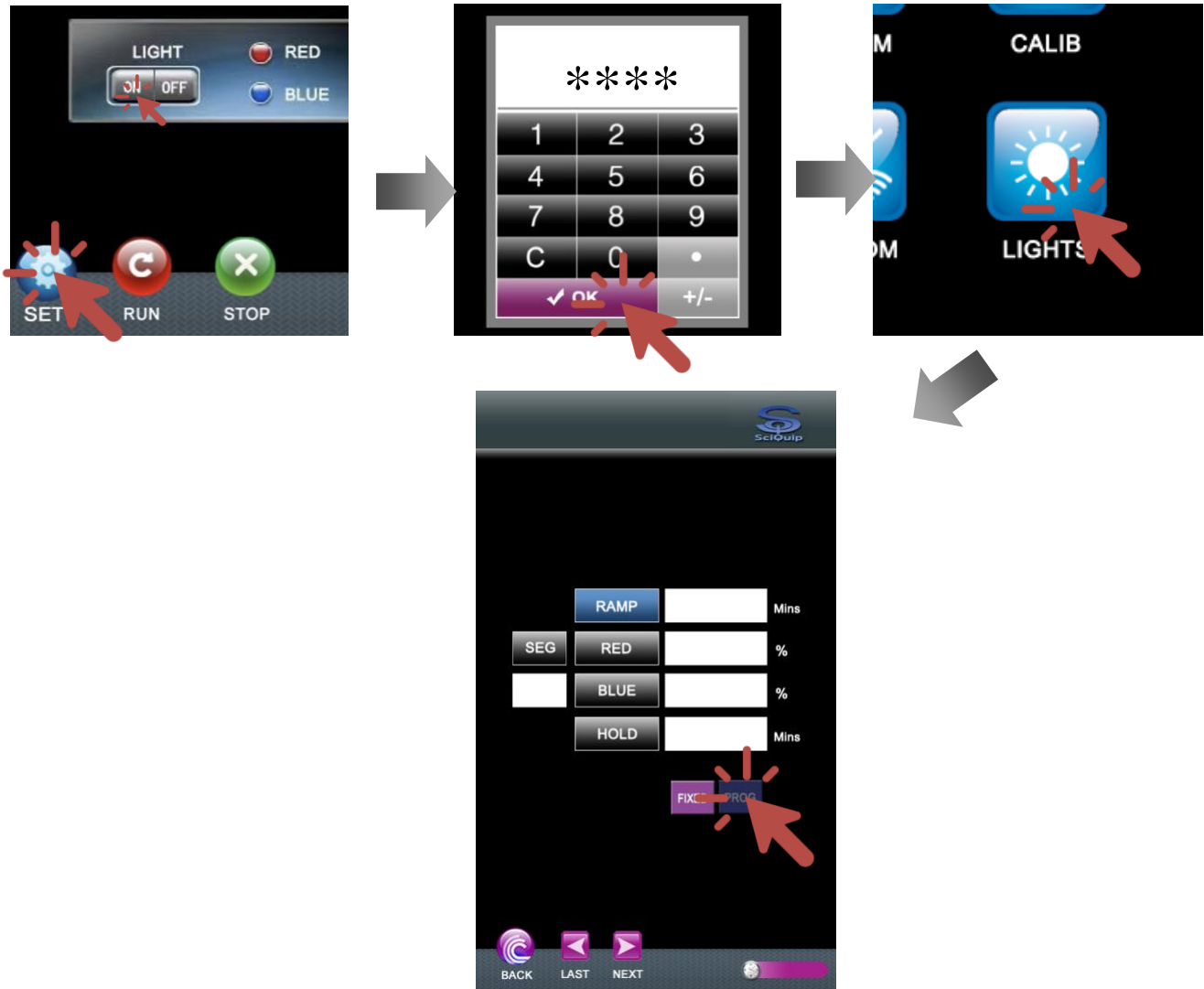
LIGHT-BLUE — Blue Light Output button

Press it and use the keyboard to enter the blue light output set value, and press "OK" to confirm and save. Set range 0-100%.

- Switch the "LIGHT MODE" in the "SET" page to "FIXED " mode.
- Press "LIGHT" switch in the home page to switch "ON" the lighting system.
- Press the switch again to switch "OFF" the lighting system.

6.5.2 Operating Under Programmable Control Mode

With the "Programmable" control mode, the photosynthetic lighting system can simulate and run day/night cycles. Together with the other operating parameters, the incubator can create reproducible conditions of "natural" environment.



To set the lighting outputs of under "Programmable" control mode,

- Press "SET" in the home page.
- Press "LIGHTS" in the "SET" page to start setting the photosynthetic lighting system.
- Switch the control mode to "PROG".

SEG—Segment No.

The function indicates the serial number of current segment. No setting required.

RAMP—Ramp Time

This function indicates the time duration required for light output to reach from current actual value to the ramp end light output value. Use the keyboard to enter the ramp time from 0-9999 mins.

RED—Ramp End Red Light Output button

This function indicates the ideal red light output for the system to reach for the segment. Use the keyboard to enter the ramp end red light output from 0-100%.

Blue—Ramp End Blue Light Output button

This function indicates the ideal red light output for the system to reach for the segment. Use the keyboard to enter the ramp end red light output from 0-100%.

HOLD—Hold Time

This function indicates the time of hold step, which is the length of time that the unit has to maintain the (Ramp End) light outputs for the segment. Use the keyboard to enter the hold time from 0-9999mins.

LAST—“Last” Button

Press it to return to the set page of previous segment.

NEXT—“Next” Button

Press it to forward to the set page of next segment.

- **Start the program operation.**

Switch the "LIGHT MODE" in the "SET" page to "PROG " mode. The program will start according to the saved program.

- **Pause the program operation**

To pause the program that is in operation, press the "LIGHT" switch in the home page to "OFF". The timer will be paused. Switch the "LIGHT" to "ON" to resume the current program.

- **Exit the program operation**

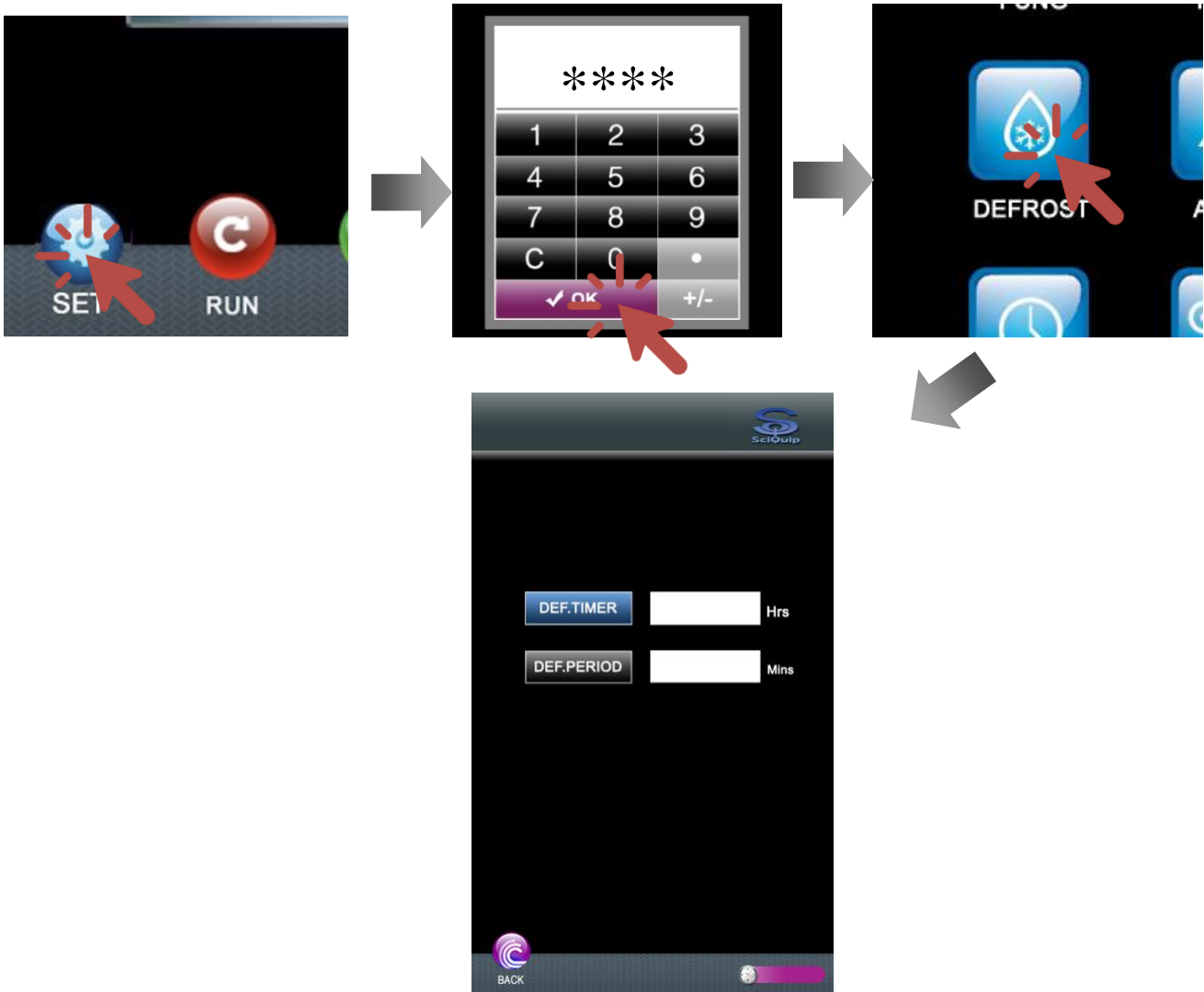
Different from the temperature and speed system, there is no need to set a termination point for the program. So the program will keep running in cycles continuously until it's switched off manually.

To manually exit the program that is in operation, switch the "LIGHT MODE" in the "SET" page to "FIXED " mode. The program will exit the current program operation, and switch back to Fixed Value control mode.

6.6 Setting Defrosting Cycle

This unit is equipped with automatic defrosting function. When the incubator is set to run at lower temperature set point, proper settings of defrosting cycle will optimize the performance in long term operation.

When the defrosting cycle is running, the circulating fan stops running, and control system activate the defrosting cycle.



To set the automatic defrosting cycle,

- Press "SET" in the home page
- Press "DEFROST" in the "SET" page to start setting the auto defrosting cycle parameters,

DEF.TIMER—Defrosting Frequency


This function indicates the time interval between two defrosting cycles. Use the keyboard to enter the set value between “1-50” hours and press “OK” to confirm and save. Set it as “0” to disable the auto defrosting function. Once the “defrost timer” is set, the unit will automatically perform the defrosting cycle accordingly.

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.

DEF.PERIOD —Defrosting Time

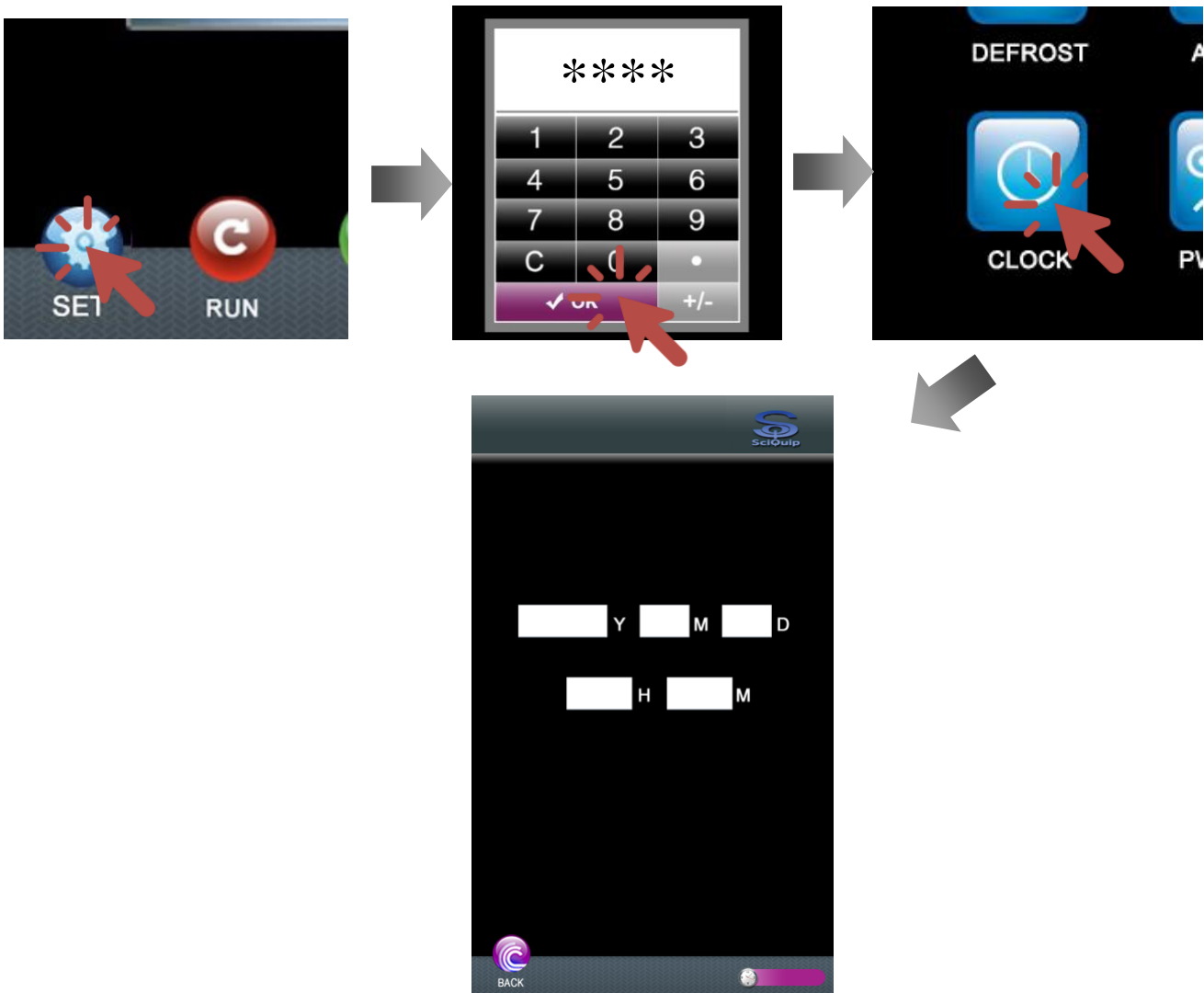
This function indicates the time duration for each single defrost cycle both under auto and manual operations. Use the keyboard to enter the set value between “1-20” mins and press “OK” to confirm and save. Set it as “0” to disable the defrosting function.

When the ambient temperature is higher than 25°C, like in summer, the recommended setting is 2-3 minutes. As ambient conditions may vary, therefore, always try to find the most appropriate settings for specified ambient condition.

| | |
|---|---|
|  | <p>Attention:</p> |
| | <p>It is considered as normal, that the actual temperature slightly deviates during defrosting, and will be stabilized shortly after defrosting cycle finishes.</p> |

6.7 Setting Clock Time

There is real clock time display in the right below corner of the homepage. To set the clock time,



- Press "SET" in the home page
- Press "CLOCK" in the "SET" page to start setting the Year, Month, Day, Hour and Minute.

6.8 Password Management Setting

The incubator is equipped with dual password protection against unauthorized changes to the critical operational parameters. The access to the Set Menu page are protected by passwords.

Dual password management system:

6.8.1 Operator Password (OP PW):

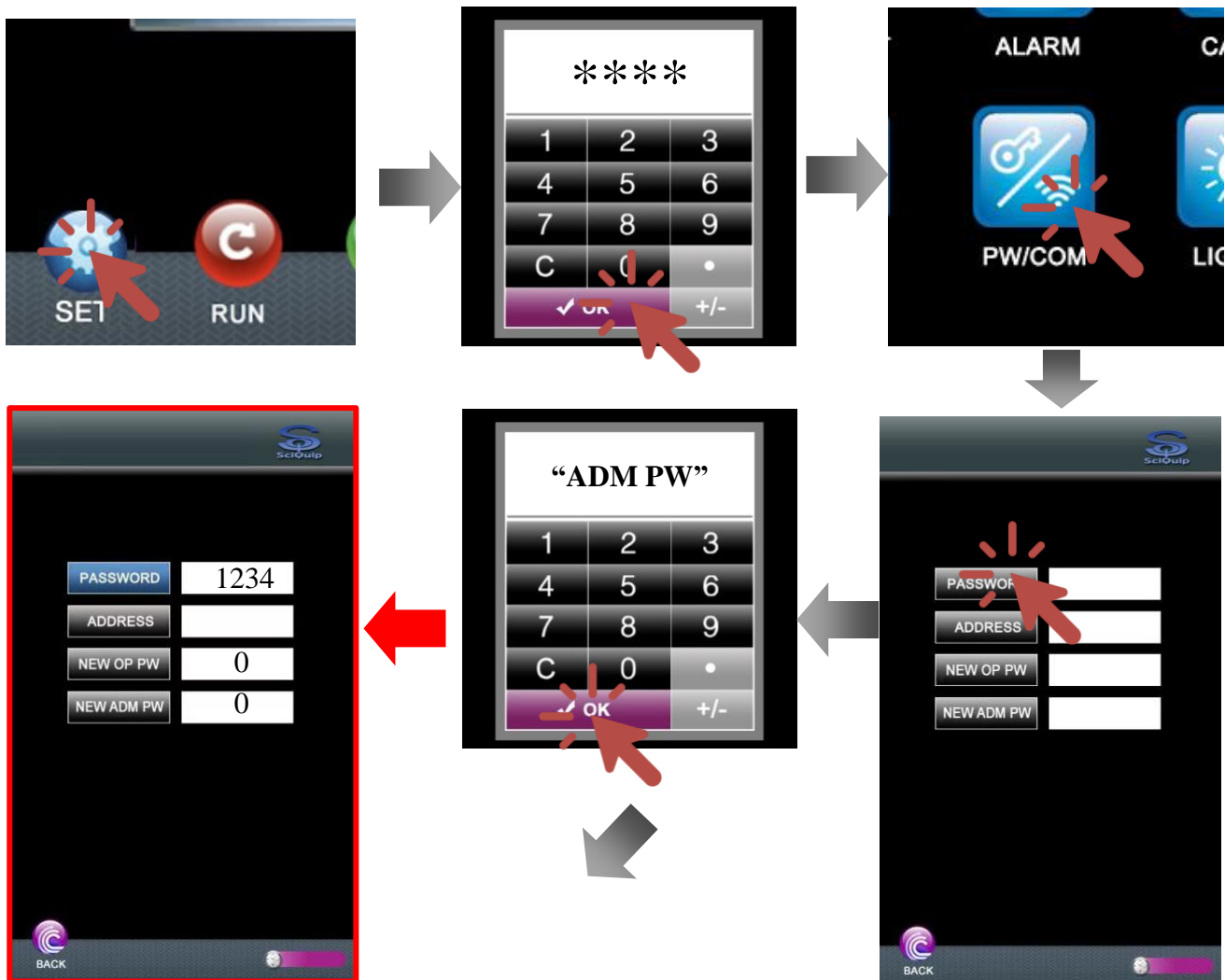
This is the password that allows access functions in all menu pages, except "CALIB" page and password settings in the "PW/COM" page.

Factory Default: "6666"

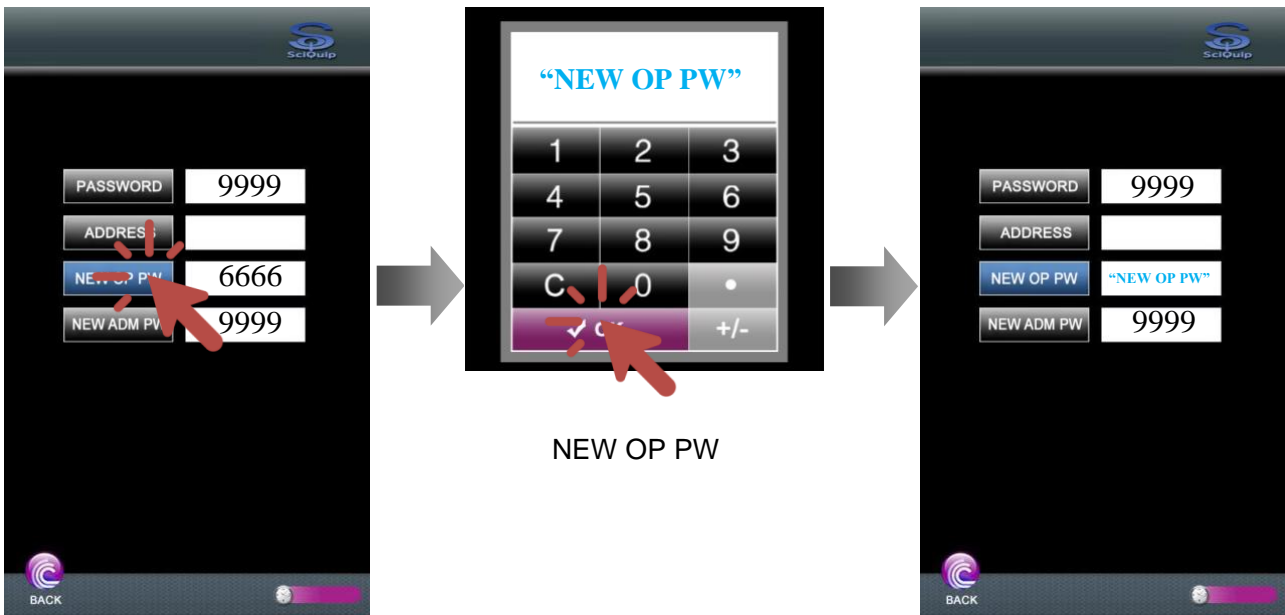
6.8.2 Administrator Password (ADM PW):

This is the password that allows access functions in all menu pages, including "CALIB" page and reset of both "NEW OP PW" and "NEW ADM PW" in the "PW/COM" page.

Factory Default: "9999"



Incorrect Password; e.g, "1234"



Correct Password, e.g, 9999

6.8.3 Set Operator Password (OP PW):

- To reset the Operator Password, enter “Set” Page, enter “Password” page for password management
- Press “Password”, and enter the current Administrator Password (ADM PW).
- If the password entered is invalid, the “NEW OP PW” and “NEW ADM PW” will keep showing as “0”.
- If the password entered is correct, the “NEW OP PW” and “NEW ADM PW” will show as the current passwords.
- Press the “NEW OP PW” to set the new Operator Password (4 digit), press “OK” to save.

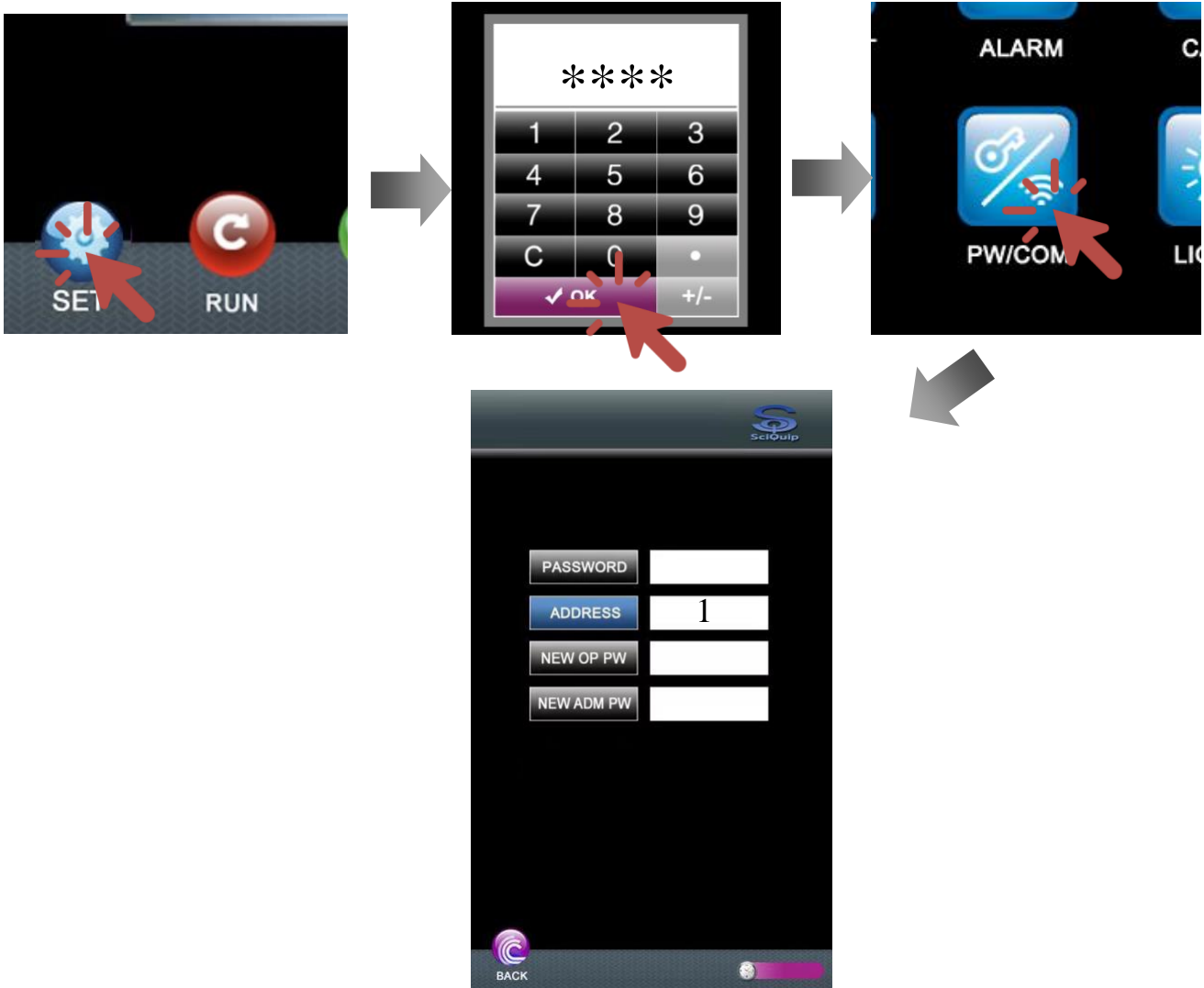
6.8.4 Set Administrator Password (ADM PW):

- Contact SciQuip or its authorized distributor for more information.

6.9 Setting Communication Address (Option)

The incubator is equipped with RS485 communication function for data logging. To enable the function, make sure the connections between the incubator and the communication kit is proper and secure. See individual setup manual for detailed instructions.

Moreover, once the connection is done, communication address needs to be set in the "PW/COM" page,



- Press "SET" in the home page
- Press "PW/COM" in the "SET" page to set the door locking function and communication address for RS485 connection.
- Press this button and enter the address of this unit for RS485 communication. The address can be set as any number within the range of 1-250. Press "Ok" in the keyboard to confirm and save the address.

6.10 Using USB Data Logging System

- The incubator is equipped with USB interface data logging system, which saves all the operational data automatically into mobile drive, for example, USB drive.
- Plug a USB 2.0 mobile drive into the interface on the side of the front door.
- The red LED indicator shall light up during recognition or while the data is being recorded. Do not unplug the USB drive while the red LED indicator is on.



- After the first data record is saved, the system will create a folder (NO"XXX") in the root folder. "XXX" is based on the "Address" set in "COM" menu. For example, if the unit address is set as "1" the folder name will be "NO001".
- All data are saved and exported as csv. format in the folder "NOxxx".
- The operating data is recorded once a minute. The system can export a maximum of 6 days of data. Once the maximum limit is reached, the earlier data will be overwritten by the new data.

6.11 Using Illumination & UV Light

To switch on the Illumination light, press the illumination light switch on the front panel.


The incubator is equipped with a UV light behind the back panel of the inner chamber. The air is sterilized when passing through the back plenum. As it is not exposed to the inner chamber, so it is safe to switch on the during the operation.

To switch on the UV light, press the UV light switch next to the illumination light switch.

6.12 Using Sticky Mat


The Sticky Mat is used for attaching vessels, such as flasks, bottles, dishes etc onto the shaking platforms for all shaking equipments, for example, shakers, rockers as well as shaking incubators. It is as standard 20 x 20 cm in size and can be used to cover the shaking platforms replacing the traditional flask clamps. The Sticky Mat can be easily removed and repositioned by simply peeling off the shaking tray surface. With proper care, the Sticky Mat can be used for several years.

6.12.1 Loading/Unloading the Sticky Mat

| | |
|---|--|
|  | <p>ATTENTIONS :</p> <ol style="list-style-type: none"> 1. The Sticky Mat is only used for undamaged, unscratched cultivation vessels with large, clean, dry and flat bottom. 2. Make sure the Sticky Mat is undamaged, clean, dry and oil free. |
|---|--|

Load vessels onto the surface of the Sticky Mat by pressing them firmly into designated place. Tilt each vessel gently to check that they are adhering firmly.

To unload the vessels, tilt the neck of the vessel gently to one side. Wait until the vessel has detached from the Sticky Mat. Large vessels may take about 20-30 seconds to be detached.

| | |
|---|--|
|  | <p>ATTENTIONS :</p> <p>For unloading vessels with large bottom, squirt a few drops of water along the edge of the vessel. Tilt the neck of the vessel gently to one side.</p> |
|---|--|

6.12.2 Uninstalling the Sticky Mat

Release the Sticky Mat from one side of the tray and then pull upwards at an angle until it's completely detached from the shaking platform.

6.12.3 Adhesive Strength

The Sticky Mat will lose the adhesiveness temporarily when in contact with water, but the full strength of adhesiveness will come back once it becomes completely dry.

Clean up any spills as fast as possible. If water spills comes in contact with the Sticky Mat, do not start operation until it's dried completely.

To ensure the full adhesive strength, the recommended temperature range of the Sticky Mat is 18-45°C


Ensure the chamber is free of condensation during humidification. The vessels may become unstuck from the mat, if there is condensation inside the incubation chamber.

6.12.4 Safety

To ensure the safety of use of Sticky Mat, only use flasks and vessels of high quality, for example, Schott Duran® Borosilicate glass, Corning® Polycarbonate vessels. The use of all other materials or quality levels is in the responsibility of the user.

It is recommended that test the Sticky Mat with each type of vessels to be used, under the same condition (Speed, temperature, etc) for a short time period. Do not use it for this application If any movements or dislodgements are detected.

During high speed operations, the Sticky Mat is less secure than the flask clamps. Refer to the below table for the maximum speed to use with a combination of shaking diameter and flasks.

| | |
|---|---|
|  | <p>ATTENTIONS :</p> <ol style="list-style-type: none"> 1. The following speed values are only valid for vessels with 20% filling level. 2. Sticky Mat and vessels have to be totally intact, dry and oil-free. |
|---|---|

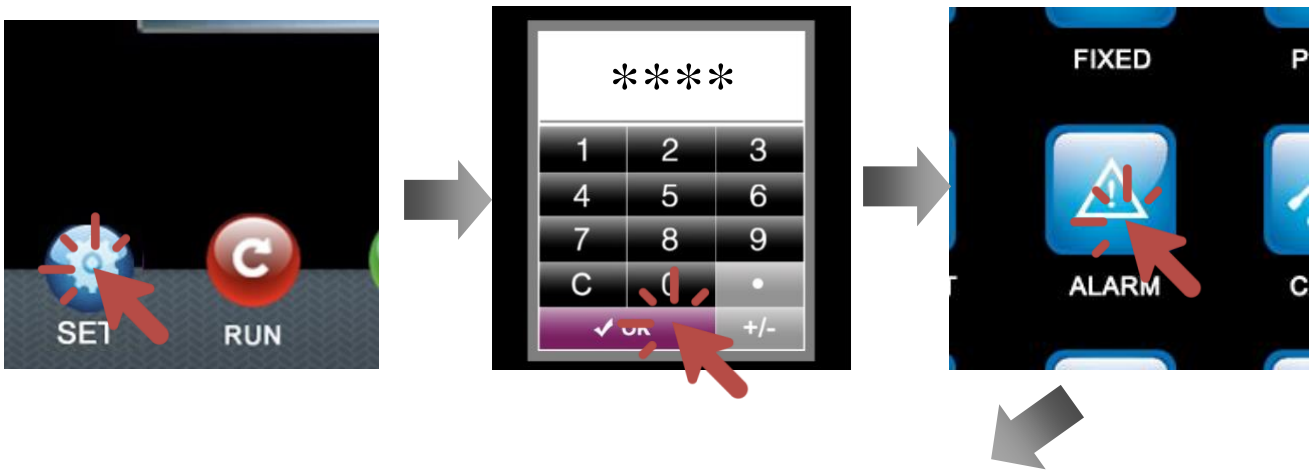
| Flask Size | Max Speed @ Shaking Diameter 25-50mm | Max Speed @ Shaking Diameter <25mm |
|------------|--------------------------------------|------------------------------------|
| 50-750ml | 250rpm Max | 250rpm Max |
| 1000ml | 250rpm Max | 300rpm Max |
| 2000ml | 250rpm Max | 300rpm Max |
| 3000ml | 300rpm Max | 300rpm Max |
| 5000ml | 250rpm Max | 300rpm Max |

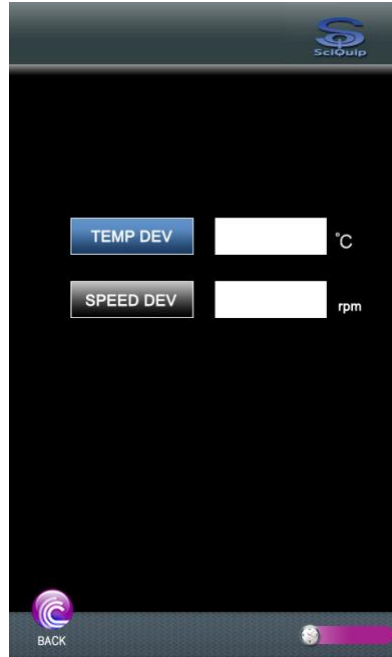
7. ALARMS

A sophisticated alarm system monitors all system parameters for any fault condition. At the same time, built in alarm delays protect the user from nuisance alarms created by routine use such as door openings. A list of alarm descriptions, the conditions they look for, and how they are delayed and displayed are in the table below:

| Alarm Description | Condition Detected | Delay* | Alarm Rings Back | Other Notes |
|-----------------------------------|--|---|------------------|--|
| Temperature Deviation | Temperature reading deviates by \pm Deviation value setpoint | 4 Minute Delay of Continuous Abnormal Reading | Yes, 5 Mins, | Display shows "Alarm: Temperature!"; Display continues to show Temperature reading |
| Speed Deviation | Speed reading deviates by \pm Deviation value setpoint | 1 Minute Delay of Continuous Abnormal Reading | Yes, 5 Mins, | Display shows "Alarm: Speed!"; Display continues to show speed reading |
| Temperature Sensor Failure | Faulty Temp Sensor Detected | No Delay | Yes, immediately | Text Display "Alarm: Temperature Sensor Failure!"; Heating will be disabled |
| Door Ajar | Front Door Open | 1 Minute Delay of Continuous Door Ajar status | Yes, 4mins | Display shows "Alarm: Door Ajar!"; Heating/Cooling is disabled, internal fan shuts down, shaking motion stops. |

If dry contact alarm output is installed, the connection will be closed circuited when the alarm is activated; and open circuited when the alarm is deactivated.





7.1 TEMP DEV—Alarm Deviation Temperature

This value determines the maximum deviation, measured in temperature (°C), which the chamber is permitted above/below once the incubator reaches the specified set point before an alarm condition is declared. Use the keyboard to enter and press “BACK” to confirm and save.

7.2 SPEED DEV—Alarm Deviation Speed

This value determines the maximum deviation, measured in speed (rpm), which the shaking is permitted above/below once the incubator reaches the specified set point before an alarm condition is declared. Use the keyboard to enter and press “BACK” to confirm and save.



Special Remind!

The alarm will be deactivated if the alarm value is set as “0”!

8. MAINTAINING THE UNIT

Your SciQuip incubator is nicely designed to minimize performance problems. However, regular maintenance is very important for continuous trouble free operation.

Other than regular cleaning, a full set of maintenance checks should be conducted on a regular basis,

Wear personal safety kits, e.g. safety gloves, safety goggles, safety shoes, etc when the maintenance is performed.

Any work of the electrical system must be only carried out by qualified electricians.

Enough spaces must be provided before performing the works.

Follow internal safety regulations.

8.1 Recommended Daily Maintenance Checks

- Check the internal lighting, change the light bulb if necessary.
- Check the Temperature, Speed displays versus set-points.
- Check for and correct any alarm condition.
- Check the lighting panel, report for replacement if necessary (Lighting System Option)

8.2 Recommended Annual Maintenance Checks

- Perform a complete calibration of the temperature, speed systems.
- Replace the UV light bulb.
- A full validation is recommended for GMP facilities each time a unit is installed, moved or undergoes significant repair.

8.3 Recommended as Required

- Disinfect all interior surfaces with a general purpose laboratory cleaning agent.
- Clean / replacing Sticky Mats
- Clean the cooling condenser.

8.4 Replacing the Fuse

- Before changing the fuse, main power must be disconnected.
- Two spare fuses are provided with this unit in an accessory pouch.
- The fuse case is located right next to the power plug socket on the right hand side of the unit.
- Unscrew the case cap to remove the faulty fuse.
- Insert the new fuse and screw on the case cap.

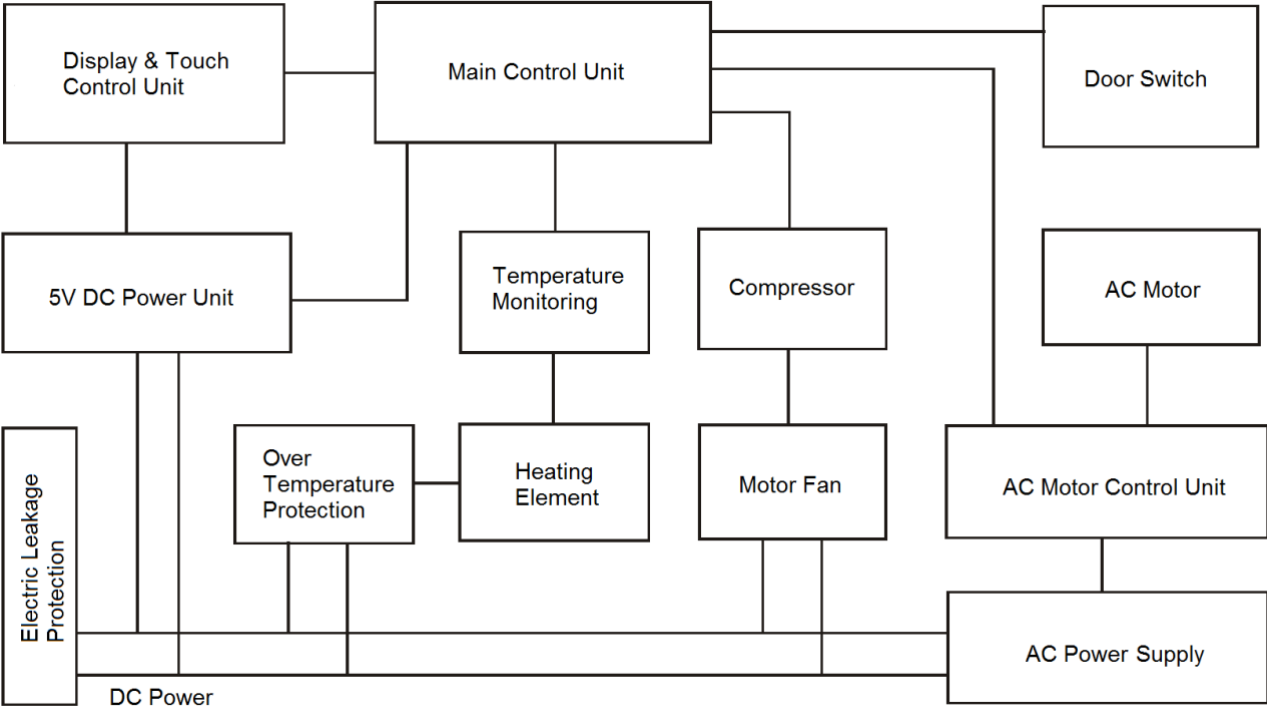
8.5 Cleaning Cooling Condensers

- The surface of the condenser fins of the cooling system must be kept clean and free of dust to ensure optimum heat dissipation
- To clean the fins and copper tubing of the condenser, use vacuum cleaner or feather duster for gentle cleaning.

8.6 Cleaning and Replacing the Sticky Mat

- To clean the sticky mat, scrub the surface gently with scouring pad until there is no residual on the mat. Disinfect with quaternary ammonium compounds.
- The adhesive strength of the Sticky Mat can last for several years if the Sticky Mat is properly cared. However, the life span varies upon the frequency of use, maintenance, and the environment where it's used. When if the adhesiveness of the Sticky Mat cannot be restored by cleaning, it must be replaced.
- After extended period of time, it will become difficult to remove the vessels off the Sticky Mat. In this case, do not use excessive force to do so, as this will result in damaging the Sticky Mat. To avoid possible damages, use small amount of water around the bottom of the vessel, once the vessels start dislodging, slowly pull off the mat.
- Avoid exposure to direct sunlight.

9. ELECTRONIC CONTROL SYSTEM



10. TROUBLE SHOOTING

| 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 side cooling compartment of the unit |
| | The fuse is broken | Replace fuse with new one of same specification |
| | Malfunction of the main power board system | 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 |
| | The circulation 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 (part of) the ventilation opening |
| | The circulating 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 | 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 shaking movement 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 shaking movement of platform is out of control | Malfunction occurs with control circuit | Notify distributor for repair service |

| | | |
|--|---|---|
| The platform keeps shaking after the door is opened | The door switch has short circuited | Notify the distributor to replace the door switch |
| 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 is not responsive | Equipment is disturbed by high frequency. | 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 | Make sure the latches is securely locking the platform in place |
| | 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 | Set the temperature to high temperature, e.g. 60°C, and run for 2 hours to dry the chamber. Set auto-defrosting cycles. |

11. AFTER-SALE SERVICE

Please review this section before requesting warranty service. At SciQuip, one of our primary goals is to provide customers with high levels of personal service and top quality products, delivered on time, backed by technical service and supported for the life of the product.

Before contacting us for warranty service, please be aware that there are repairs that are not covered under warranty.

WARRANTY DEFINED

SciQuip Scientific Pty Ltd and its authorized local dealers (herein after SciQuip) hereby warrant that equipment manufactured by SciQuip is free from defects in materials and workmanship when the equipment is used under normal operating conditions in accordance with the instructions provided by SciQuip.

COVERED:

Parts and labor for a period of one year from date of shipment.

Any part found defective will be either repaired or replaced at SciQuip's discretion, free of charge, by SciQuip in Shanghai, China, or by its authorized dealers in where SciQuip has its distributors. Parts that are replaced will become the property of SciQuip.

If SciQuip factory service personnel determine that the customer's unit requires further service, dependent of the model involved, SciQuip may, at its sole discretion, provide a service technician to correct the problem, or require the return of the equipment to the factory or authorized service depot.

SciQuip will have the right to inspect the equipment and determine the repairs or replacement parts necessary. The customer will be notified, within a reasonable time after inspection, of any costs incurred that are not covered by this warranty prior to initiation of any such repairs.

NOT COVERED:

Calibration of control parameters.

Improper installation; including electrical service, gas and water supply tubing, gas supplies, room ventilation, unit leveling, facility structural inadequacies or ambient conditions that are out of specification.

Cost of express shipment of equipment or parts.

Any customer modifications of this equipment, or any repairs undertaken without the prior written consent of SciQuip, will render this limited warranty void.

SciQuip is not responsible for consequential, incidental or special damages; whether shipping damage or damages that may occur during transfer to the customer's point of use. When the equipment is signed for at the customer's site, ownership is transferred to the customer. Any damage claims against the shipping company become the responsibility of the customer.

Repairs necessary because of the equipment being used under other than normal operating conditions or for other than its intended use.

Repair due to the customer's failure to follow normal maintenance instructions.

Parts considered consumable; including: light bulbs, filters, gases, etc.

Damage from use of improper water quality. Force Majeure or Acts of God.

Damage from chemicals or cleaning agents detrimental to equipment materials.



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