# Operation Manual

## Super Air Series
## Veterinary Smart Intensive Care Unit

**For Veterinary Use Only**

Manual Revision: 2_Feb 25

# Table of Contents

# 1. Intended Use and Product Introduction

**The Super Air Smart ICU is for veterinary use only.**

**This veterinary system offers a spacious, comfortable environment with advanced features tailored for patient critical care, oxygen therapy and beyond. Key features include effective oxygenation and $CO_2$ management for patients, real-time air purification, and a highly durable, rust-free stainless steel structure with thick insulation for superior energy efficiency. It is ideal for treating patient's cardiopulmonary diseases, infectious conditions, and postoperative recovery, providing essential support in various settings of veterinary care, from emergency hospitals to general clinics. Its modular, user-friendly design also supports easy maintenance, enhancing operational reliability and ensuring safety of patients at an entirely new level.**

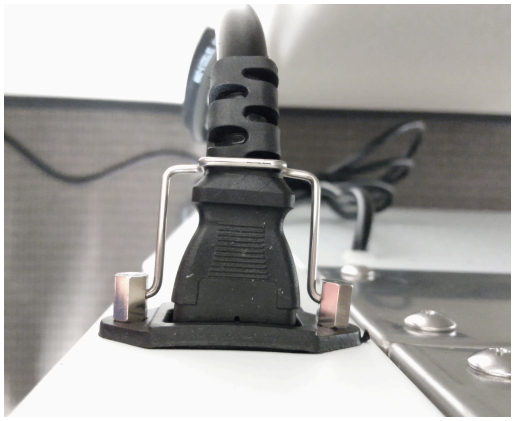
# 2. Product Configuration

# 3. Initial System Setup

## 3.1 Connecting Power and Preparing the ICU to be Turned On

**Step 1:**

Plug the power cord into the Power Port located near the right rear corner of the unit and fasten the Metal Clip that is attached to the ICU onto the plug.



**Step 2:**

Locate the Circuit Breaker on the left sides of the Upper and Lower ICU. These Circuit Breakers will be found on the left sides of the ICU near the area where the power plug connects to the unit. Turn on the Circuit Breaker switch by pulling the switch lever upwards.


**Note:**

Make sure the electrical socket meets the ICU electrical requirements and is a 3-prong connector where the 3rd pin is a ground wire.

## 3.2 Connecting the ICU to the Oxygen Source

**The Super Air ICU can use both the Oxygen Tank (or central Oxygen Supply Outlet) and the Oxygen Concentrator as a source of Oxygen.**

*The following steps below will be the detailed connection instructions as it relates to the **Super Air - C1 or C2 Single ICU**.*

**Option A - Connecting your facility's green medical grade Oxygen hose with DISS female adapter to the Oxygen Tank (or central Oxygen Supply Outlet)**

Step A1:
Use the facility's green medical grade Oxygen hose that has the DISS female adapter.

Step A2:
Connect the Oxygen hose to the Oxygen tank.

## Important Note:

The Oxygen supply from the Tank or the facility's wall outlet must be at the pressure of **50psi or lower. Ignoring this supply pressure requirement may potentially cause critical system damage to the ICU.** Make sure to check the pressure of your Oxygen

source and **use the appropriate pressure regulator to properly set the gas supply pressure into the ICU's O2 inlet port at 50psi or lower.**

**Note: Connecting to the oxygen source may require different adapters if the existing configuration of the oxygen source connector is not compatible with the provided oxygen hose and DISS adapter. Also note that the images shown are with DISS connector of the Oxygen tank and that depending on facility's outlet type, connecting to the oxygen source may require corresponding or appropriate adapters.*

Step A3:
Connect the other end of the green medical grade Oxygen hose to the DISS male Oxygen connector of the ICU (location shown below).

## 3.3 Turning on the Oxygen Source

Step 1:

Prior to activating your Oxygen source, make sure to first completely open the flowmeter of the ICU shown in the picture below counterclockwise.

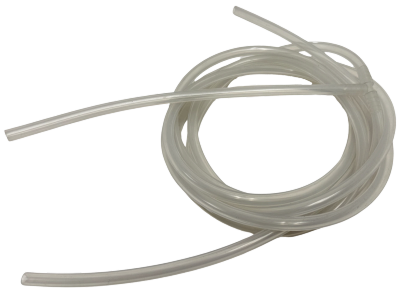

Step 2:

Then begin activating your Oxygen source, either Oxygen Tank or Oxygen Concentrator that you have connected with the ICU.

Step 3:
Adjust the volume on the O2 concentrator.

## 3.4 Connecting the Drain Tube to the A/C Condensation Drainage Ports

Step 1:
For a single ICU, take a silicon drain tube out of the 3-way assembly shown below.



Step 2:
Connect the drain tube to the tapered A/C Condensation Drainage port of the air-conditioner unit located at the left side of the air-conditioner unit as shown below.

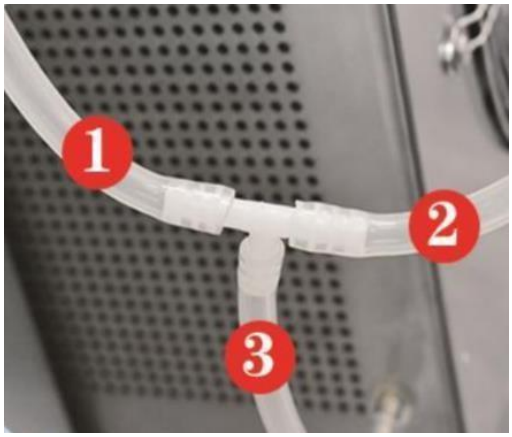
collection pan example

Step 3:
Then place the other end of the drain tube to a drain in the floor or into an appropriate drip collection pan.

**For Air-C1-Twin or Air-C2-Twin**

Step 1:

Use the 3-way drain tube assembly shown in the picture below. The drain tube 1 will connect to the A/C Condensation Drainage port of the upper ICU, the drain tube 2 will connect to the A/C Condensation Drainage port of the lower ICU, and the drain tube 3 will lead to a drain in the floor or into an appropriate container or tray.




To ensure proper drainage, place the drain tubes in a way to allow the water to flow all the way down and out of the end of the drainage tube without any bends in the tube where water can collect and block the flow of water inside of the tube.

### Attention regarding the use of a Drainage Container or Tray:

1) The water level of the drainage container (or tray) should be lower than the outlet position from the lower ICU drain tube in such a way to avoid the water from becoming backed up in the line and forcing water back into the machine.

2) When using the drainage container or tray, it is important to check the water storage container or tray every 2 to 3 days and empty it in time to avoid overflow and backflow into the ICU.

3) Observe the amount of water inside of the container or tray every time you pour it. If you find that there is no water in the container after use, it is possible that the drain tube may be blocked. As a precaution, check the A/C Condensation drain tubes and ensure that the tube is freed of any clogs early enough to allow all of the liquid from condensation to always drain through and out of the tube without any restrictions inside of the line and prevent internal damage to the ICU.

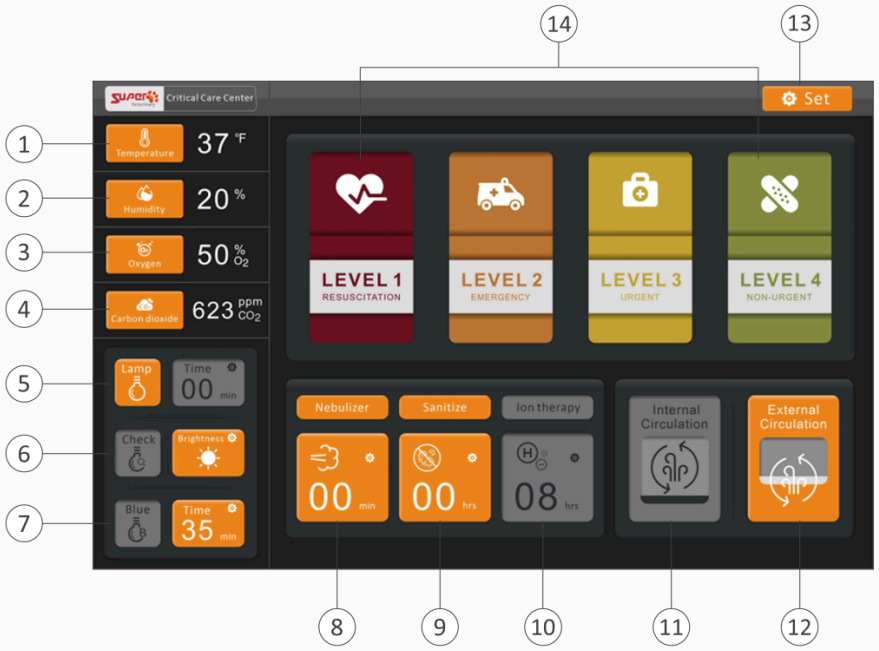
# 4. Start Up & System Operation

## 4.1 Powering on and off the ICU

Press the On/Off button at the top left side of the front of the ICU to turn it on, and then unlock the screen by sliding your finger from the right to the left on the controller screen. Unlocking the screen will give you the ability to adjust the setting on the ICU.


The controller screen will then open and display as shown in the figure below:

## Controller Screen diagram




① Temperature/ Temp Setting
② Humidity
③ Oxygen/ $O_2$ Setting
④ $CO_2$
⑤ Lamp / Yellow Light
⑥ Check / White Light
⑦ Blue Light
⑧ Nebulizer
⑨ Sanitization
⑩ Ionization
⑪ Internal Circulation
⑫ External Circulation
⑬ Setting / Calibration
⑭ Triage Tags

## ICU Power On Steps

**Step 1:**
Press the ICU power switch and wait for the display menu to appear on the screen.

**Step 2: Ensure no oxygen is entering the ICU**
Look at the bottom right hand corner on the display and verify that the ICU is in 'External Circulation' mode. Verify that oxygen is not yet flowing into the ICU from the Oxygen Concentrator or any alternate oxygen source connected to the ICU. Even if the Oxygen Concentrator is off, residual oxygen in the [BLANK] can affect the oxygen calibration if the ICU's flowmeter is in the open position. If the ICU is connected to a wall-mounted oxygen port or oxygen tank, positive pressure from the wall system can enter if the flowmeter is left open. Therefore, make sure the oxygen flow meter on the ICU reads 0 and is set to the closed position. Then, check that the oxygen level on the touchscreen displays 21%.

- If the oxygen concentration reading on the left side of the display is not at 21%, open the chamber door and wait for 3-5 minutes and then try checking the oxygen concentration level again. If after that time the oxygen concentration level continues to not be at 21%, proceed

to perform the daily calibration of the oxygen sensor(refer to the daily calibration instructions located at section 7.1).

- If the oxygen concentration stabilizes at 21%, proceed to Step 3.
- If the oxygen concentration still does not reach 21%, proceed to perform the daily calibration of the oxygen sensor (refer to the daily calibration instructions located at section 7.1).

**Step 3:**
Rotate the oxygen flowmeter knob counterclockwise to open the flow meter.

**Step 4:**
Place the patient in the chamber and close the door.

**Step 5:**
Power on the oxygen concentrator (or open the central oxygen supply valve or oxygen tank) and adjust the ICU's flow meter to the desired flow rate.

**Step 6:**
Switch the ICU to 'Internal Circulation' mode.

**Step 7:**
Set the target oxygen concentration based on clinical requirements (the default setting is 45%).

**Step 8:**
Set the target temperature based on the clinical case needs (the default temperature is 78°F).

**Step 9:**
Confirm that the oxygen concentration is rising.

## ICU Power Off Steps

**Step 1:**
Switch the ICU to 'External Circulation' mode and open the ventilation window for ventilation.

**Step 2:**
Rotate the ICU oxygen flowmeter knob clockwise to close the oxygen flow meter.

**Step 3:**
Power off the oxygen concentrator (or close the central oxygen supply valve or oxygen tank)

**Step 4:**
Wait until the oxygen concentration on the touchscreen displays 21%.

**Step 5:**
Remove the patient from the chamber.

**Step 6:**
Press the ICU power switch to turn off the ICU. The fan will continue circulating the air after the ICU is turned off and will continue circulating the air until the Circuit Breaker switch is shut off or the power plug is disconnected.

## 4.2 Adjusting the Parameters

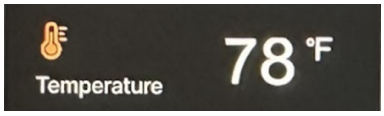
The following section outlines how to adjust environmental parameters within the ICU, including temperature, humidity, oxygen concentration, and CO2 levels.

### 4.2.1 Adjusting the Temperature

"**TEMP**" is to set/display the temperature in the ICU chamber.

**Step 1:**

Click the following icon:




You will then see the following:

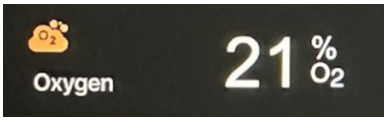

**Step 2:**

You may increase and decrease the temperature by clicking on the "+"or "-" icons on the

display and then click on the orange “Confirm” rectangle.

### 4.2.2 Adjust OXYGEN Concentration

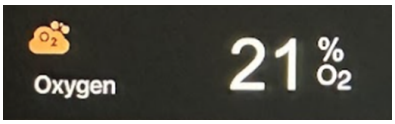
“**Oxygen**” icon




This is a selection that is used to set and display the oxygen concentration in the chamber. The default oxygen concentration preset value is 45%.

**Adjusting the Oxygen Value inside of the ICU chamber**

You can also adjust the value by clicking the ‘Oxygen’ icon as illustrated below.

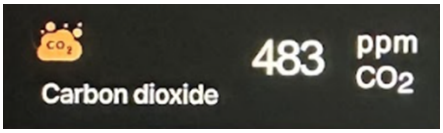



You will then see the following:


Here you may increase and decrease the oxygen concentration value needed by clicking “+” or “-” icon and then clicking “Confirm”.

### 4.2.3 Controlling the CO2

**"CO2" Icon**

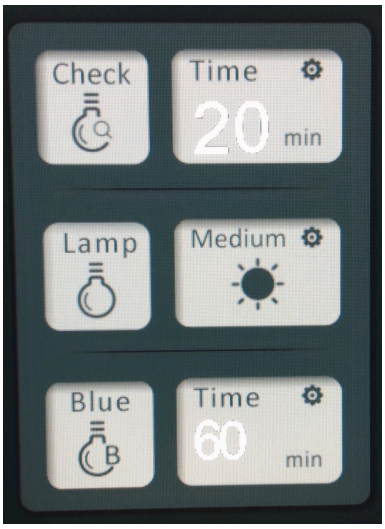



This represents the CO2 concentration within the ICU chamber. When the CO2 concentration goes higher than 2000PPM, the system will automatically switch to the

external circulation to discharge the carbon dioxide. When the CO2 concentration goes down to 600PPM, the system will switch back to the internal circulation mode.

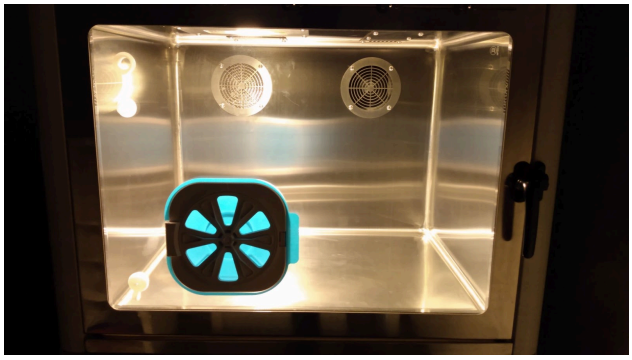
## 4.3 Managing the Chamber Light System

The picture below is the combination of the 3 different light management systems for the ICU chamber.:




These 3 light systems will be described in more detail in the following section:

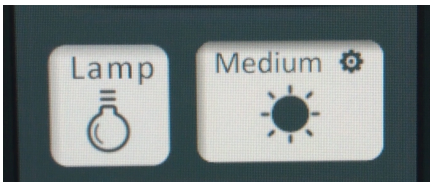
### 4.3.1 Warm Lamp – Yellow Light



This section is used for turning on, controlling and setting
how long the Warm Lamp – Yellow Light will remain on after it is turned on.

The Warm Lamp – Yellow Light which appears orange or yellow in color is used in cases for the general checking of the patient inside the cabin.

When looking for the Warm Lamp - Yellow Light setting, see the following two icons shown below on the left side of the display.



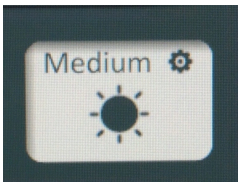

**Step 1:**

Click on the “Lamp” labeled icon shown below:


The icon will turn to an orange color and the “Warm Lamp – Yellow Light” LED lamp light inside the cabin will turn on.
The system will automatically turn off the light after 20 minutes, and the icon become grey again.

**Step 2:**

Click icon shown below to adjust the brightness and lighting-on time:

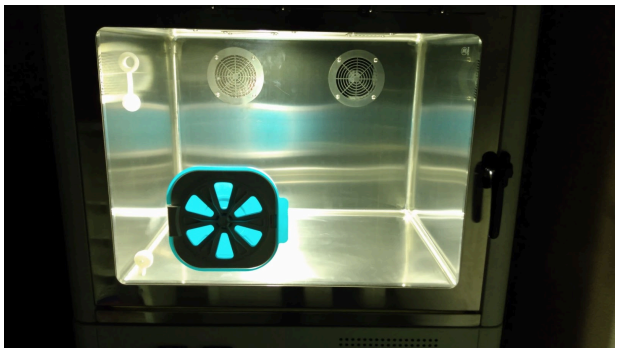



After clicking on the icon you will see the following window open up:


Click on one of the three following brightness icons (it will appear gray at first and the default setting is medium):


Three brightness levels can be selected as: Low, Medium, High. Click the “+” and “-” to set lighting-on time. The setting range is 1 to 60 minutes in 1 minute increments. Once you have made your selection, press the “Confirm” icon.

### 4.3.2 Examination Lamp – White Light



This section is used for turning on, controlling and setting how long the examination light will remain on after it is turned on.

The examination lamp which appears bright white in color is used for visually checking the patient inside the cabin in detail.

When looking for the Examination Lamp – White Light setting, see the following two icons shown below on the left side of the display.

**Step 1:**

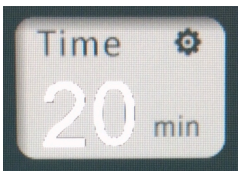
Click on the “Check” labeled icon shown below:


The icon will turn to an orange color and the Examination Lamp – White Light LED lamp light inside the cabin will turn on.

The system will automatically turn off the light after 20 minutes(unless the timer was set to a different time), and the icon will become grey again.

**Step 2:**

Click icon shown below to adjust the brightness and lighting-on time:




You will then see the following interface to allow you to adjust the brightness levels and for how long the lighting remains on:

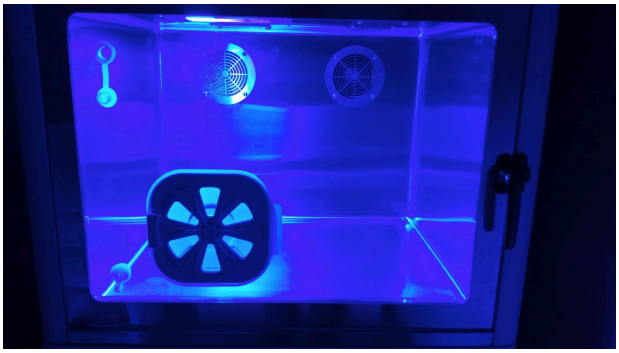

**Step 3:**

Click on one of the 3 following brightness icons (it will appear gray at first and the default setting is medium):

**Step 4:**

Click on the “+” and “-” icons to set the lighting-on time. The setting range is from 1 to 60 minutes in 1 minute increments. Once you have made your selection, press the “Confirm” icon.


### 4.3.3 Therapy Lamp - Blue Light



This section is used for turning on, controlling and setting how long the Therapy Lamp - Blue Light will remain on after it is turned on.

The Therapy Lamp - Blue Light which is blue in color is used for the treatment of jaundice or post surgery wound healing on patients.

When looking for the Therapy Lamp - Blue Light setting, see the following two icons shown below on the left side of the display.


**Step 1:**

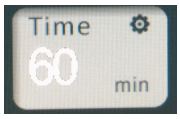
Click on the “Blue” labeled icon shown below:


The icon will turn to an orange color and the Therapy Lamp - Blue Light LED lamp light inside the cabin will turn on.

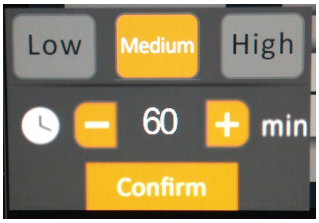
The system will automatically turn off the light after 60 minutes(unless the timer was set to a different time), and the icon will become grey again.

**Step 2:**

Click icon shown below to adjust the brightness and lighting-on time:




You will then see the following interface to allow you to adjust the brightness levels and for how long the lighting remains on:




This icon lets you turn on the blue light, and the icon will turn into an orange color when it is selected.

**Step 3:**

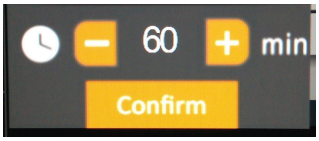
Click on one of the following three brightness icons at the top (it will appear gray at first and the default setting is medium):


Three brightness levels can be selected as the following:

**Low, Medium** and **High**. Select the brightness level that you prefer by touching the brightness level that you want.

**Step 4:**

Click on the “+” and “-” icons to set lighting-on time. The setting range is from 60 to 600 minutes in 60 minute increments. Once you have made your selection, press the “Confirm” icon.

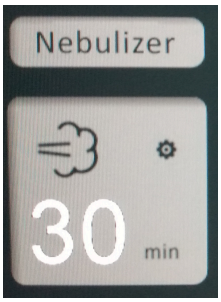



## 4.4 Nebulization, Sanitization and Ion-Therapy


**to the Nebulizer - (Administering treatment to the patient via Inhalation)**

### 4.4.1 Connecting

Note the following set of icons:




This icon is used to control the Nebulizing function and its working time.
To use the Nebulizing Function, proceed with the following steps:

**Step 1:**

Connect the orange connector of the nebulizer accessory kit onto the metal head included with the unit (pay close attention to the position of both connectors in the image below):

**Step 2:**

Connect one end to the Nebulization port of the ICU chamber.



**Step 3:**

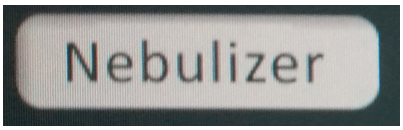
Connect the other end to the nebulizer cup, remove the white silicone stopper/cover from the door and put the nozzle on the cup into the hole as illustrated below.
(Note: The liquid in the atomizing cup must not be higher than the maximum mark on the cup)


**Step 4:**

Setting the Atomization and Atomization time.

**Step 4a:**

Click on the following icon:




This will turn on the atomization function and the icon will change from gray color to orange color. The default atomization time is 30 minutes.

**Step 4b:**

Click on the following icon:

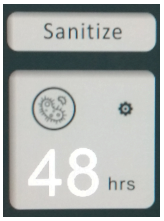

You will then see the following interface:


This interface will allow you to adjust the atomization time.

**Step 4c:**
Click on the “+” and “-” icons to set the atomization time. Once you have made your selection, press the “Confirm” icon.

### 4.4.2 Sanitization of the ICU Chamber

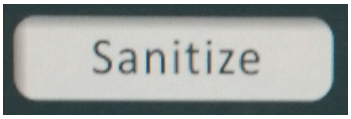
Note the following icon:




This icon is used to control the Sanitize function and its working time.
To use the Sanitize Function, proceed with the following steps:

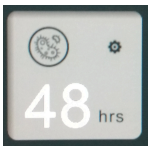
**Step 1:**

To control the sanitization function and its working time,
click on the following icon to turn it on:




The icon will then turn from a gray color into orange color.
**Step 2:**

Click on the following icon (it may be gray):




You will then see the following interface:


This will allow you to set the time for how long you want the sanitization function to remain on.

**Step 3:**

Adjust the sanitization time by clicking the “+” and “-”. The time here can be made in 6 hour increments from 6-96 hours. The default time is 48 hours. Once you have made your selection, press the “Confirm” icon. You may also use the system default time if you prefer.

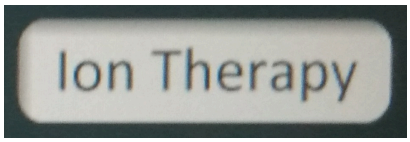
### 4.4.3 Ion-Therapy: For reducing the impact of reactive oxygen species (ROA), helps with recovery and is good for SPO2.

Note the following icon:


This icon is used to control the ion therapy function and its working time.
To use the Ion Therapy Function, proceed with the following steps:

**Step 1:**

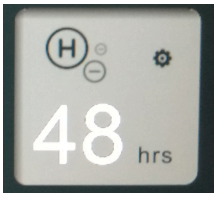
To turn on the therapy function, click on the following icon:




After clicking on the icon, the icon will turn orange.

**Step 2:**

Click the following icon:




You will then see the following interface:

**Step 3:**

Adjust the time by clicking the “+” and “-”. The time can be adjusted in 12 hour increments. Default setting is 48 hours Once you have made your selection, press the “Confirm” icon or you may use the system default time.

## 4.5 Internal & External Circulation Modes


When the ICU is turned on, the default mode is **External Circulation (also known as ‘A Mode’)**, and the icon that indicates this is highlighted in orange when active.
Under this setting, the oxygen concentration in the air within the inside and outside of the ICU chamber is the same due to the ventilation that is taking place. To switch from ‘External Circulation’ to ‘Internal Circulation’, you may click the icon labeled “Internal Circulation” to turn on the Internal Circulation Mode.

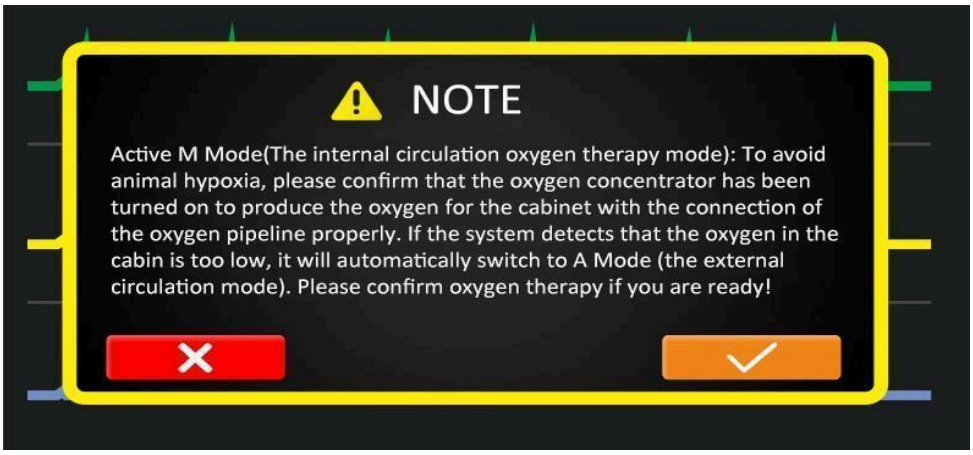
If the patient needs a richer oxygen environment, select the **Internal Circulation** icon (also known as ‘Active M Mode’),

### Note:

**Internal Circulation**: this mode should be active when the ICU is connected to an oxygen source and intended to provide the chamber higher oxygen level than 21%.

**External Circulation: t**his mode should be active when intended to circulate ambient air into the ICU chamber via the ventilation system that is built into the ICU for CO2 management, refreshing the chamber or when a patient is discharged from the ICU chamber.

Once you select 'Internal Circulation', you will see the following popup message appear:




This is essentially a reminder to check to make sure that you have oxygen entering the chamber from your oxygen source for the patient to be able to breathe intended level of oxygen when using Internal Circulation mode.

**Pay special attention and reconfirm the following:**

- Confirm the ICU is connected correctly with a working and running your Oxygen source.
- Check that your Oxygen source has been turned on and active.
- Check that the Flowmeter on the ICU has been completely open.

Once all of the above bullet points have been confirmed OK, you can select the "√" box that is colored orange to enter into Internal Circulation mode. Otherwise clicking on the "X" box that is colored red will keep on the External Circulation mode in the ICU.

## 4.6 Precautions – Properly Starting Up the ICU

1) Turn on the ICU;
2) While the chamber is empty and prior to turning on the oxygen source, first make sure the **external circulation** is active and that the flowmeter on the ICU is closed by turning the knob clockwise.
3) Wait for about 1-2 minutes;
4) Observe the oxygen concentration. It should be **21%** (if the oxygen concentration < 21%, oxygen sensor calibration will be required. If oxygen concentration is normal, you can then completely open the flowmeter of the ICU by turning the knob counterclockwise, then tturn on and activate your oxygen source.

5) Set the parameters (Oxygen level, Temperature, etc.) based on your requirements for the patient.
6) Carefully place the patient into the ICU chamber.

**Note:**

Parameters such as oxygen concentration need to be observed regularly during treatment.

## 4.7 Precautions – Tips to Adjust Oxygen Concentration

- Each ICU chamber of Model C1-S, C1-T, C2-S and C2-T requires at least 5 LPM (liters per minute) of oxygen flow. For faster oxygenation, greater oxygen flow from your oxygen source may be required.
- The lower chamber of Model C4 independently requires at least 10 LPM (liters per minute) of oxygen flow. Each upper chamber of Model C4 requires at least 5 LPM (liters per minute) of oxygen flow.
- When using single chamber, always open the flowmeter on the ICU completely to allow for more oxygen flow.
- When using C1-T or C2-T with a single oxygen source, you can evenly set 5 LPM of the oxygen flow by adjusting each flowmeter of both upper and lower ICU chambers.
- **Special Note:** When needing to adjust oxygen flow for any one of the cabins,

  please
  adjust **everything together**, which means zero the oxygen first for the space under using, then turning on and adjusting the oxygen flow together for different spaces to avoid inaccuracy caused by gas pressure in the pipeline.

**We have several different models, they are:**

- **C1-S - Super Air-C1 Single - One Chamber for one patient**
- **C1-T - Super Air-C1 Twin - Two Chambers for two patients**
- **C2-S - Super Air-C2 Single - One Chamber, dividable for up to two patients**
- **C2-T - Super Air-C2 Twin - Two Chambers, dividable for up to four patients**
- **C4-T - Super Air-C4 Twin - Three Chambers for up to three or four patients (the lower chamber is dividable)**

## 4.8 Ending Treatment & Powering Off the ICU

**Proper steps to end treatment and turn off the ICU:**

1) Turn on the external circulation & open the care window
2) Turn off the Oxygen source & flowmeter of the ICU
3) Wait for the oxygen concentration in the chamber to 21%
4) Taking the patient out
5) Power off the ICU

## 4.9 Paying Special Attention to the ICU:

The key role of the ICU is to provide a good environment that is suitable for the patients it accommodates. Therefore, when using the ICU, please follow this important principle - Let the ICU do its job of slowly transitioning the oxygen and temperature levels inside of the chamber that it was originally set at to match the oxygen and temperature levels outside of the ICU so that the patient inside of the ICU may gradually and properly acclimate to the new temperatures and oxygen levels in the outside environment thus preventing the patient from experiencing any sort of shock due to an abrupt change in their environment.

Below is the operation for the “ICU care for surgery” to help you understand how to use the ICU correctly.

Before surgery, open the ICU to make any needed settings and preparations. After the surgery, put the patient directly to the ICU already with appropriate environment standby, and observe regularly.

The specific steps are described below:

1) Turn on the ICU, keep the chamber door open when it is empty, wait for 1 to 2 minutes, and then observe whether the oxygen concentration is normal (21%). (If there is an abnormality, higher or lower than 21%, a ‘Oxygen Sensor Calibration’ will be required.)

2) Open the oxygen flowmeter of the ICU, then turn on your oxygen source and set the appropriate flow rate. Close the chamber door, select and activate Internal Circulation, and then set the required oxygen concentration and temperature levels.

When needing to end the ICU treatment, refer to the following:

Re-adjust the temperature and oxygen concentration first, especially the oxygen concentration

level. Once the oxygen concentration inside the ICU and outside the ICU(~21%) both match, open the door and take the patient out.

The specific steps are described below:

1) Adjust the temperature (if necessary), activate the External Circulation, close the flowmeter of the ICU, and allow the oxygen concentration to decrease slowly to the ambient level (~21%).
2) Turn off and deactivate your oxygen source.
3) After 2-3 minutes, observe that the oxygen concentration drops to about 21%. Open the door and take out the patient.
4) Then turn off the ICU.

It is recommended to let the patient gradually adjust to the outside environment by keeping the patient inside the ICU, while turning on 'External Circulation' and not immediately removing the patient until the Oxygen and Temperature readings on the display of the ICU match the Oxygen and Temperature of the air outside of the ICU.

# 5. Specifications

Common (All Models)

| Items | Specifications |
|---|---|
| Controller | 10-inch Color LED Touch Screen |
| O2 Concentration Control and Range | 21 – 80%vol. |
| CO2 Concentration Monitoring Range | 400 – 2000PPM (± 10PPM) |
| Temperature Control and Range | Air-conditioner for AIR heating and cooling / 59 – 99°F |
| Humidity Monitoring Range | 55 – 75%RH |

| | |
|---|---|
| Nebulization | Timer 1 – 60min (adjustable)<br>Maximum atomization rate = 0.2ml/min<br>Mist particles (0.5 – 2um)<br>Noise ≤ 40dB(A) |
| Examination Lighting (White/Check) | Timer, 1 – 60min, adjustable by min / Brightness, 3 levels |
| Warm Lighting (Yellow/Lamp) | Timer, 1 – 60min, adjustable by min / Brightness, 3 levels |
| Therapy Lighting (Blue) | Timer, 60 – 600min, adjustable by hour / Brightness, 3 levels<br>415nm blue light Inhibits the growth of bacteria and reduces skin inflammation |
| Operational Temperature | 14 – 104°F room temperature |
| Power Supply Voltage | AC 100 ~ 120, 50/60Hz |
| Backup Battery | 6000mAH / (approx. 30 minutes) |
| Power Consumption | 300W (typical) / 600W (max) |
| Main Material | 304 Stainless Steel |

Model-specific

| Super Air C1-S, C1-D, C1-T | |
|---|---|
| Items | Specifications |
| Chamber and internal dimensions | Air-C1-S: 1 Chamber / 27.2”W x 19.5”D x 20.5”H<br>Air-C1-D: 1 Chamber / 27.2”W x 19.5”D x 20.5”H<br>Air-C1-T: 2 Chambers / 27.2”W x 19.5”D x 20.5”H (each) |
| Controller | Air-C1-S: 1 Controller<br>Air-C1-D: 1 Controller<br>Air-C1-T: 2 Controllers |
| Nebulizer Port | Air-C1-S: 1 Port<br>Air-C1-D: 1 Port<br>Air-C1-T: 2 Ports |
| Stand(Stroage) | Air-C1-S: No<br>Air-C1-D: Yes<br>Air-C1-T: No |
| External Dimension | Air-C1-S: 34.8”W x 30.3”D x 35.8”H<br>Air-C1-D: 34.8”W x 30.3”D x 67.6”H (Including Stand)<br>Air-C1-T: 34.8”W x 30.3”D x 67.6”H |
| Max Power Outlet Capacity (Total) | 600W (C1-S & C1-D) / 600W + 600W (C1-T) |

| Super Air C2-S, C2-D, C2-T |
|---|

| Items | Specifications |
|---|---|
| Chamber and internal dimensions | Air-C2-S: 1 Chamber / 42.0”W x 24.6”D x 24.0”H / Dividable<br>Air-C2-D: 1 Chamber / 42.0”W x 24.6”D x 24.0”H / Dividable<br>Air-C2-T: 2 Chambers / 42.0”W x 24.6”D x 24.0”H / Dividable (each) |
| Controller | Air-C2-S: 1 Controller<br>Air-C2-D: 1 Controller<br>Air-C2-T: 2 Controllers |
| Nebulizer port | Air-C2-S: 2 Ports<br>Air-C2-D: 2 Ports<br>Air-C2-T: 4 Ports |
| Stand(Stroage) | Air-C2-S: No<br>Air-C2-D: Yes<br>Air-C2-T: No |
| External dimensions | Air-C2-S: 49.3”W x 34.8”D x 39.0”H<br>Air-C2-D: 49.3”W x 34.8”D x 74.2”H (Including Stand)<br>Air-C2-T: 49.3”W x 34.8”D x 74.2”H |
| Max Power Outlet Capacity (Total) | 600W (C2-S & C2-D) / 600W + 600W (C2-T) |

| Super Air C4 | |
|---|---|
| **Items** | **Specifications** |
| Chamber and internal dimensions | 3 Chambers<br>Upper: 2 Chambers / 21.5”W x 28.0”D x 20.4”H / Each<br>Lower: 1 Chamber / 47.9”W x 28.0”D x 28.3”H / Dividable |

| | |
|---|---|
| Controller | 4 Controllers |
| Nebulizer port | 4 ports |
| Stand(Stroage) | No |
| External dimensions | 55.2”W x 34.8”D x 75.4”H |
| Max Power Outlet Capacity (Total) | 600W + 600W + 600W |

# 6. Cleaning & Maintenance

- Clean the ICU chamber in time after each treatment. You can use gauze moistened with medical alcohol to wipe away the dirt. Since there are electronic devices in the chamber, high-pressure water guns or flames cannot be used.

- As necessary, you can run the disinfection function (refer to section 3.4) after cleaning the chamber for disinfection.

- Empty the container of the air conditioner condensed water on the same day or, as needed, 2 - 3 days when it is running. If no condensed water is found in the container, it is suspected that the air conditioner drainpipe is blocked. Clear the tube in time to allow the condensed water to drain smoothly and to prevent damage to the machine.

- If you have not used the ICU for a long time, you will need to turn it on and let it run to charge the emergency battery. The screen of the ICU may begin to flicker when the emergency battery is low. Another thing to bear in mind is that the emergency battery will become easily damaged if it is not charged over a long period of time.

- After each use, turn off the oxygen source, activate the external circulation and open the door to make the oxygen concentration in the ICU chamber about ~21%, and then power off.

## 6.1 Instructions to Perform the Daily Oxygen Sensor Calibration

Every time when turning on the machine, the external circulation must be kept on for about 1 - 2 minutes (before turning on the oxygen supply) and observe the existing oxygen concentration inside of the chamber. If the oxygen concentration is found to be less or greater than 21%, the oxygen sensor will need to be calibrated (Daily Calibration).

To calibrate Oxygen sensor, follow the steps below:

**Step 1:**

Open the ICU door to allow air in (Ensure the oxygen supply is turned off).

**Step 2:**

Click the “SET” button in the upper left corner of the interface.

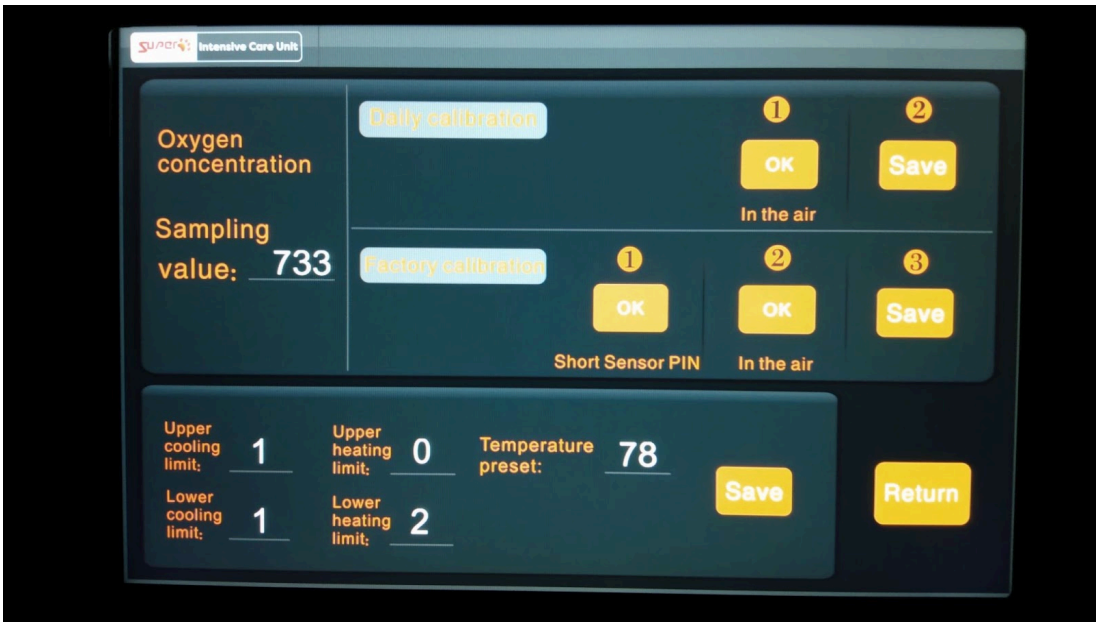

**Step 3:**

Enter the password “66” and then press the “Enter”  key.
The system will automatically enter the ‘calibration interface’.

**Step 4:**

After entering the calibration interface on the display(should look like the image below), please do not click on any buttons first and wait for a few minutes (1-3 min) to let the oxygen

concentration gradually stabilize meaning the value no longer changes and the fluctuation range is around 1 to 2.




**Step 5.**
Then click on “**OK**” button above the text that says "*In the air*”.

**Step 6.**
Then click the "**Save**" button.


**Step 7**.
Then click the "**Return**" button to return to the main page


After calibration, the oxygen concentration will recover to ~21%. At this time, you can start using the ICU.

## 6.2 Instructions to Perform the Oxygen Sensor Factory Calibration

**Step 1.**

Close the flowmeter on the ICU

**Step 2.**

Open the ICU Door and see the two vent openings inside of the unit.

**Step 3.**

Using a phillips screwdriver, remove the screws from the metal cover off of the vent hole on the left side

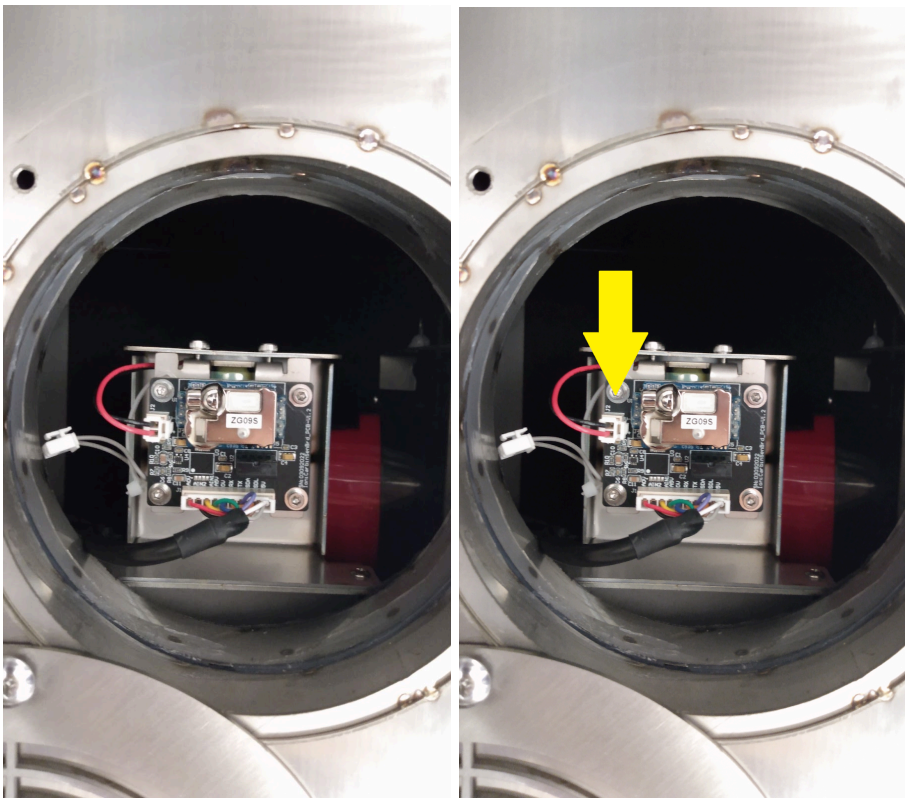
(with the flashing light inside) and leave the bottom left side screw loosened but still attached.

**Step 4.**

Let the metal plate hang off of the one screw that is still attached to the metal wall.

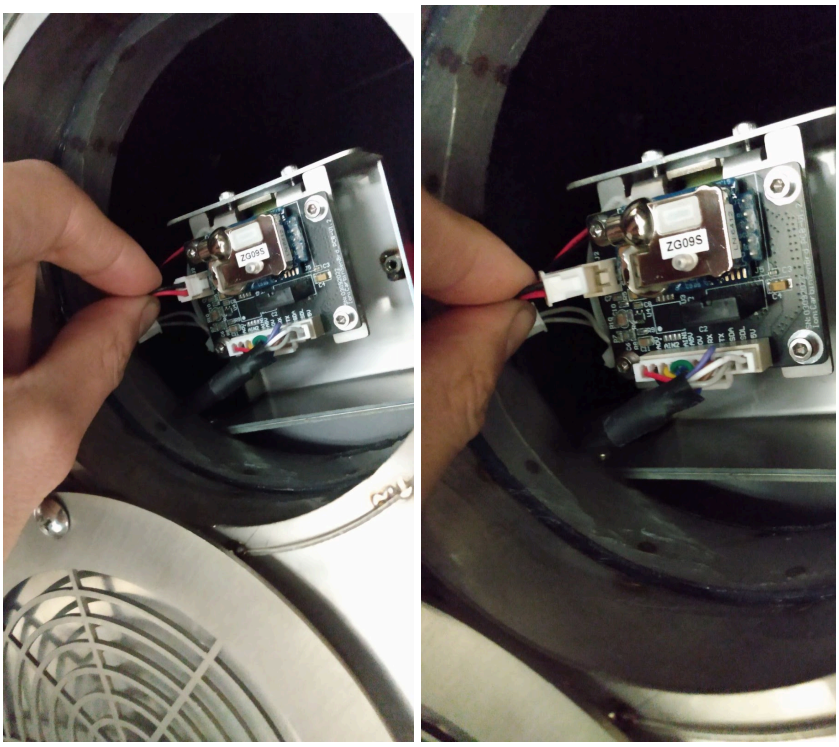
**Step 5.**

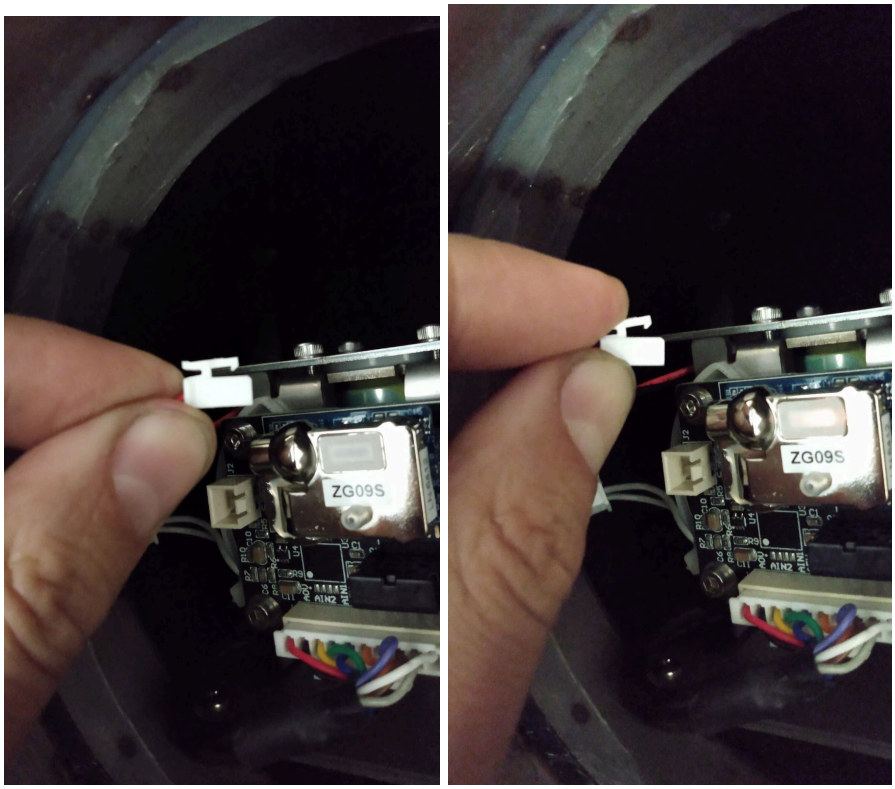
See the red and black wire plugged into the front of the PCB inside of the hole.



**Step 6.**

Unplug the connector with the red and black wire attached to it from the PCB that it is connected to

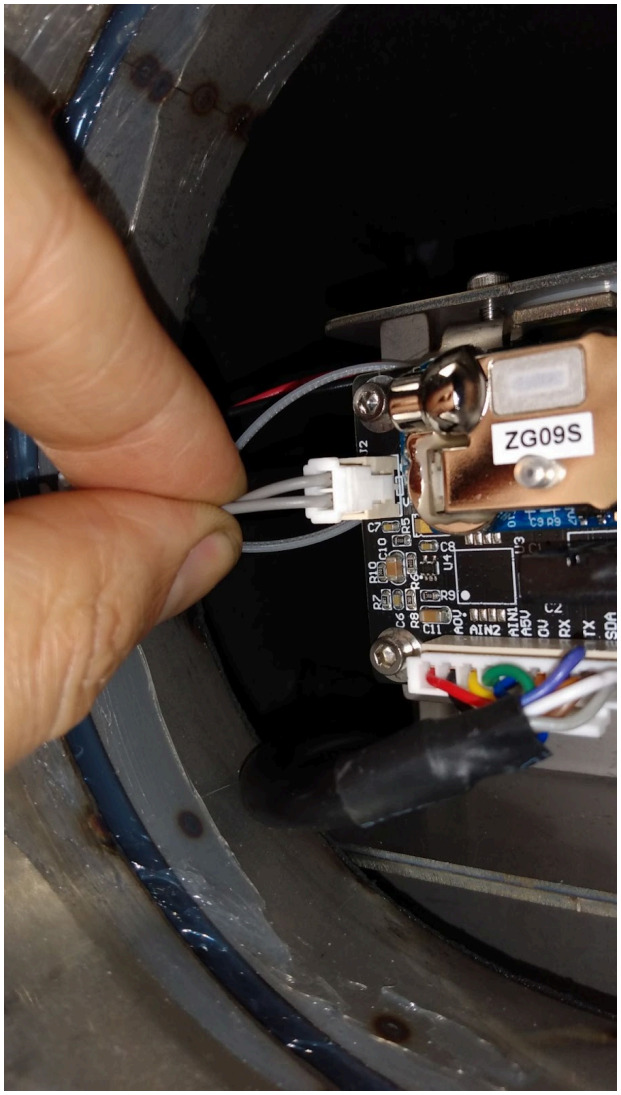



*Please note that to be able to pull out the connector with either the red and black wire or the gray wire, you'll need to press down on the white plastic lever on it to 'unlock the connector' first.*

**Step 7**

Plug in the other connector(with a single wire that comes out and reconnects back into itself) that is typically a single white wire that runs from and connects back into the connector that is zip tied to the red and black wired connector(see images below).


**Step 8.**

Go to the display and click on the “SET” button in the upper right corner of the interface.


**Step 9.**

Next you will see a display that is asking for a password.


**Step 10.**

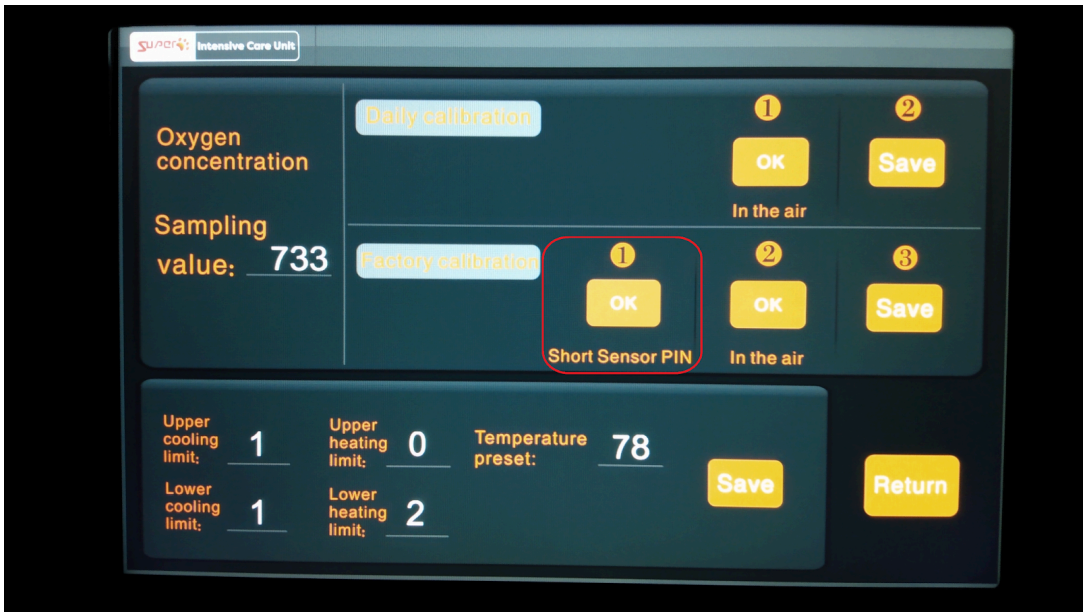
Enter the password “66” and then press the “Enter”  key.


The system will then enter the ‘calibration interface’ as illustrated in the next step.

**Step 11.**

Click on the Yellow button that has “**Short Circuit Pin**” written on it.

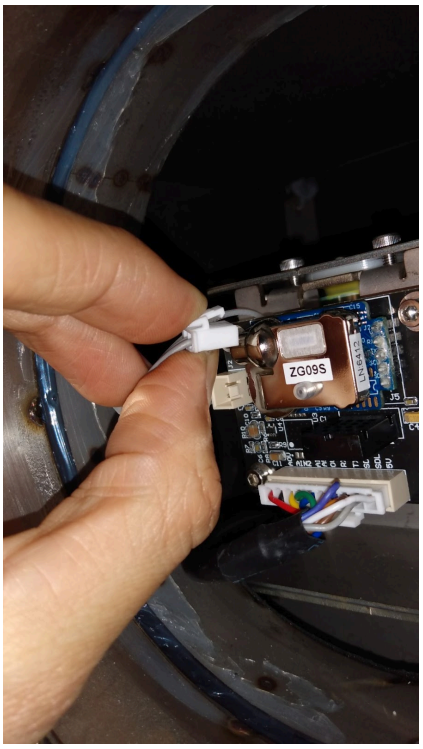
and make a note of the numerical value on the left.




**Step 12.**

Return back to the opening inside of the ICU, disconnect the connector that you just had connected and plug the connector with the red and black wire back into it.


ZG09S


ZG09S


ZG09S

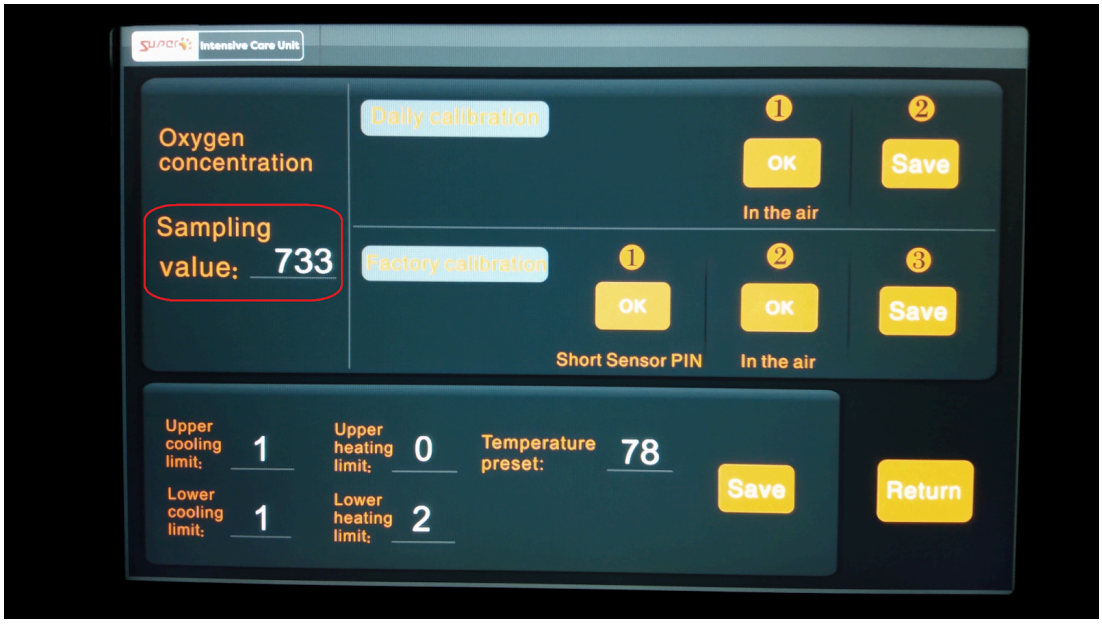

ZG09S

**Step 13.**

Return back to the display and note that the “Sampling Value” on the left are now higher than before.

**Step 14.**

wait for around 1-2 minutes until the number for the ‘Sampling Value’ to become stabilized.

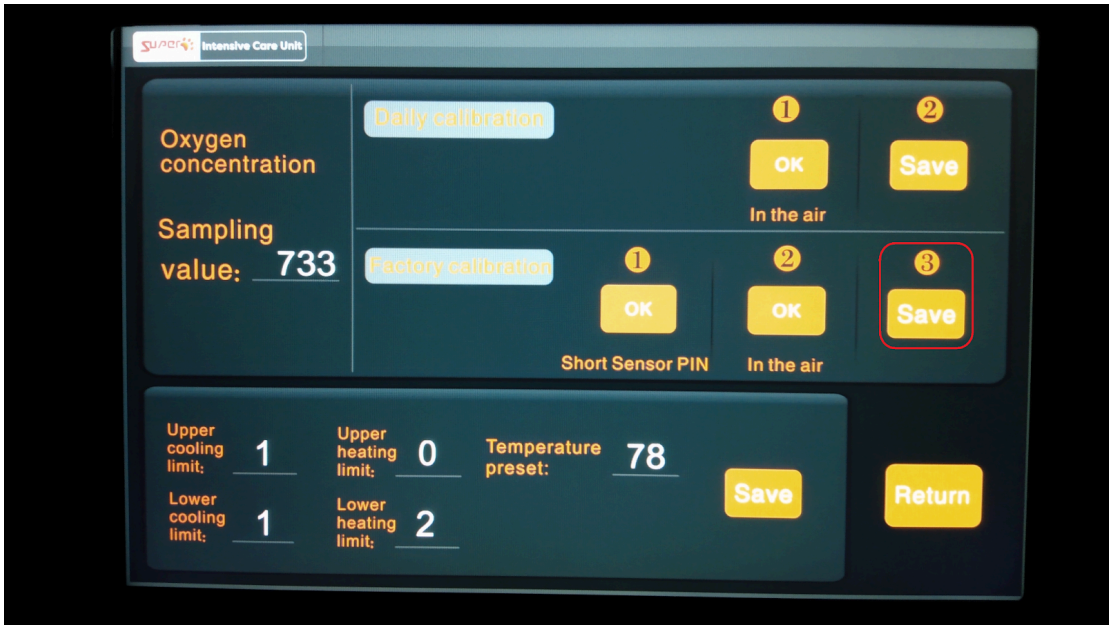



**Step 15.**

Click on the orange button below In the air that has “**Ok**” written on it

**Step 16.**

Click on the orange button that has “**Save**” written on it.




**Step 17.**

Click on the orange button that has “**Return**” written on it

**Step 18.**

Return to the main view on the display and see the O2 parameter on the display

The Factory Calibration has now completed and the O2 readings should now be reading at 21%

**Step 19.**

Return the metal vent cover inside of the ICU back to its original position and screw in the 3 screws and retighten the loose 4th screw.

# 7. Trouble Shooting

| **Problems** | **Solutions** |
|---|---|
| Oxygen concentration cannot reach the set value | When turning on the machine, make sure the oxygen concentration is normal at 21% **(under external circulation & oxygen supply off)**. If the oxygen concentration is found < 21%, then consider whether the oxygen sensor needs calibration. Please pay special attention to the process of turning on and off the ICU (clause 4.1, Page 16 and 17 in this manual). Avoid sensor calibration deviations.<br><br>After confirming the oxygen concentration is 21%, you can then check below:<br><br>1. Check if the internal circulation is open, and that the ICU door is securely closed and the white vents on the door are closed.<br>2. Check the status of the oxygen source and verify that the oxygen flow meter parameter settings are |

| | |
|---|---|
| | correct.<br>3. Check whether the oxygen source is securely connected between the Oxygen Concentrator and the ICU(s).<br>If not resolved, please contact the Bionet America ICU support team for after-sales service support. |
| Unit does not turn on | 1. Check that the power source is supplying power.<br>2. Ensure that the power plug is in good condition and is securely plugged into the power socket on the machine and locked into position with the metal clip on the machine. |

| | |
|---|---|
| Battery message on the screen (Running off Emergency Battery) | Check that the power cable is securely plugged into the ICU a and the outlet and that the power outlet is supplying power.<br>1. Make sure that the metal clip on the machine is latch onto the power plug that is inserted into the machine so that it won't easily be pulled out.<br>2. Circuit breaker is switched on in the up position… |

| | |
|---|---|
| The Air Inside of the chamber does not Heat Up | Check that the unit has the circulation setting is set to 'internal circulation'.<br>*Note: Verify that you have set the value of the temperature setting on the ICU to a higher setting than the ambient air outside of the unit.*<br>1. Open the ICU and place your hand at the opening for the fan on the right side to verify that air is blowing. If air is not blowing even though the A/C had been set to on, then the A/C module may need to be replaced.<br>2. Place your hand at the fan on the right side to verify that hot air is blowing out. |

| | |
|---|---|
| | 3. If only cold air is blowing, then the A/C module may need to be replaced. |

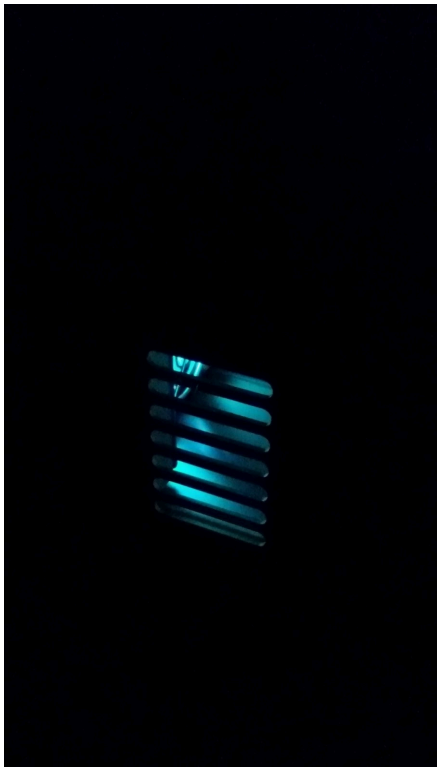
| | |
|---|---|
| The Air inside of the chamber does not cool | 1. Verify that the air circulation setting is set to internal circulation.<br><br>2. Verify that you have set the value of the temperature setting on the ICU to a colder setting than the ambient air outside of the unit.<br><br>3. Open the ICU and place your hand at the fan on the right side to verify that air is blowing.<br><br>4. Place your hand at the fan on the right side to verify that cold air is blowing out.<br><br>5. Place your hand at the fan opening at the rear of the unit to see if hot air is blowing out<br><br>6. Place your hand flat against the metal place on the AC module in the area to the right of where the fan opening is. You should be able to feel a slight vibration. |

| | |
|---|---|
| O2 reading is either below or above 21 % | 1. Was 'Daily Calibration' performed on O2 today on this ICU? If not, perform the 'Daily Calibration' (refer to section 6.1 in the manual) on the ICU and recheck the O2 reading. If Daily Calibration has already been done skip to step 2.<br><br>2. Ensure that the Flowmeter on the ICU and the Oxygen Supply are both opened and that the Oxygen Supply is turned on.<br><br>3. Make sure that the circulation setting has been set to 'Internal Circulation'. |

| | |
|---|---|
| | 4. Wait approximately two minutes and recheck the O2 reading again.<br><br>5. If the O2 is still reading below or above 21% then proceed to do the **Oxygen Sensor Factory Calibration** on the ICU (refer to section 6.2. in the manual).<br><br>6. Turn on the Flowmeter on the ICU.<br><br>7. Go to the Oxygen Concentrator, make sure the switch is turned on<br><br>8. Check the Oxygen Concentrator and make sure that the metal ball indicator inside of the Flowmeter is set to just below the red line. |

| | |
|---|---|
| Nebulizer does not work | 1. Check that Nebulizer is turned on by selecting the Nebulizing Icon on the display<br><br>2. Ensure a Nebulizing cup is filled no more than the max level and inserted into the opening on the door of the ICU chamber.<br><br>3. Ensure that the line is connected to the Nebulizing port on the ICU and to the Nebulizing cup. You should hear some air blowing. |

| | |
|---|---|
| Ionizer does not work | 1. Turn on the ionizer by either touching the ‘Sanitize’ or ‘Ion Therapy’ button on the display and open the doors to look inside or look through the door at the ceiling of the chamber.<br><br>2. Check the vent on the ceiling inside of the chamber to see if there is a blue light that is on inside of the vent.<br><br>   |

| | |
|---|---|
| |   <br><br>1. If no blue light is present when looking at the inside ceiling of the ICU chamber and if further instructions for checking are needed, contact Bionet America ICU Support Team.<br><br>2. If all cables are secure and there is still no blue light present inside of the ceiling vent when turning on the Ionizer, the Ionizer module may need to be replaced. |

| | |
|---|---|
| Doesn't switch from External Circulation to Internal Circulation | 1. Check Oxygen Concentration. See if it is below 21 %.<br><br>2. If the Oxygen concentration is not below 21%, recalibrate the Oxygen Sensor on the unit using the "Daily Calibration" menu |

# 8. Warranty

## 8.1 Warranty Registration

### IMPORTANT!

Thank you for purchasing the Super Air Smart ICU. To activate your warranty and ensure the best service experience, please complete your registration **within 10 days of the product installation**.

By registering, you will:

1. Verify your warranty coverage.
2. Gain access to customer support and service updates.
3. Receive exclusive product information and tips.

Please visit the following link or scan the QR code to complete your warranty registration. Please have your product serial number handy.

https://bionetus.com/icu-registration/

If you have any questions, contact us at 1-877-924-6638 or e-mail to;
icu-support@bionetus.com

## 8.2 Warranty period and conditions

The warranty applies exclusively to service parts and is valid for a period of 24 months from the date of purchase invoice. Please note that this warranty covers parts only and explicitly excludes labor costs, which are the responsibility of the customer. Additionally, warranty validation requires the completion of a warranty registration, including all necessary installation information.

### 8.3 Situations not covered by warranty

For failures caused by the following reasons, no free service is provided:

- Failure caused by unauthorized disassembly and modification
- Damage caused by accidental factors or improper use
- Failure caused by lack of reasonable maintenance or failure to meet environmental usage requirements
- Damage caused by failure to operate normally in accordance with the instruction manual
- Damage caused by human factors
- Damage caused by local voltage instability
- Failure or damage caused by force majeure such as fires or earthquakes, etc.

# 9. Frequently Asked Questions about handling of the ICU

**1) Where do I check the battery power level on this machine?**

The ICU chamber does not have a battery indicator, because the battery in the ICU is made for back-up only, will last only approximately 30 minutes with External Circulation and is charged whenever the machine is turned on, so normally it will always be fully charged. If the ICU is not used for a long time, you'll need to turn the ICU on regularly to charge the battery. Otherwise, screen flickering (the screen switching back and forth) may happen, reminding you that the backup power supply is low.

The backup battery is intended to provide temporary power during a power outage. It should not be used for prolonged periods and users are warned against continuous use.

**2) Is there a password for the setting page?**

Yes, but normally there is no need to use it. This is used to calibrate the parameters from sensors. Only when the Oxygen sensor deviates during use, we need to enter the setting page and recalibrate parameters to ensure accuracy. You can refer to Clause 7.1 about calibration (Daily Calibration) steps.

**3) If patients have been in the ICU for 24 hours, how often should we turn on the disinfection and ion-therapy function?**

You can turn them on all the time for real-time disinfection and deodorization.

Ion therapy is good for SPO2, which helps recovery. Additionally, the ion can reduce ROS (reactive oxygen species).

**4) During blue light treatment, does the patient need to cover its eyes?**

In most cases it is fine but if the patient continuously stares at the blue light with curiosity, it is recommended that the patient's eyes are covered, or the patient is fitted with shaded glasses.

**5) How do you lift and move the upper and lower ICU?**

A forklift or special hoist connected with straps that are securely wrapped around the ICU can easily lift and move the ICU. If this is not an option, then it is recommended that at least 4 strong and healthy adults lift the ICU. The ICU may be pushed on its wheels if it has wheels underneath it (also verify that the wheel lock latch has been unlocked first) and that there is a firm surface to roll the ICU upon.

**6) My ICU won't fit through the doorway or window. Is there anything I can do to make it fit?**

Yes, you may detach the A/C unit at the back of the unit by unscrewing the 4 bolts that hold it and by placing the A/C module on top of the ICU while moving it. For additional space, you may also remove the doors on the unit by unscrewing the two screws holding each of the two door hinges to the machine.

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