



**LOW TEMPERATURE  
DIURNAL ILLUMINATION  
INCUBATOR**

**SRI21D SRI21D-2**

Previously designated as:  
LI15 LI15-2

INSTALLATION AND OPERATION MANUAL

Revised 11/2013  
4861575

**Sheldon Manufacturing Inc.** P.O. Box 627 Cornelius, Oregon 97113  
EMAIL: [tech@Shellab.com](mailto:tech@Shellab.com) INTERNET: <http://www.Shellab.com/~Shellab>  
1-800-322-4897 (503) 640-3000 FAX (503) 640-1366

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These units are general purpose Biochemical Oxygen Demand (BOD) incubators for professional, industrial or educational use where the preparation or testing of materials is done at approximately atmospheric pressure and no flammable, volatile or combustible materials are being heated. These units are not intended for hazardous or household locations or use.

# RECEIVING AND INSPECTION

*Your satisfaction and safety require a complete understanding of this unit. Read the instructions thoroughly and be sure operators are given adequate training before attempting to put the unit into service. This equipment must be used only for its intended application; any alterations or modifications will void your warranty.*

- 1.1 Inspection:** The carrier, when accepting shipment, also accepts responsibility for safe delivery and is liable for loss or damage. On delivery, inspect for visible exterior damage, note and describe on the freight bill any damage found, and enter your claim on the form supplied by the carrier.
- 1.2** Inspect for concealed loss or damage on the unit itself, both interior and exterior. If necessary, the carrier will arrange for official inspection to substantiate your claim.
- 1.3 Return Shipment:** Save the shipping crate until you are sure all is well. If for any reason you must return the unit, first contact your customer representative for authorization. Supply nameplate data, including model number and serial number. Please see the manual cover for information on where to contact Customer Service.
- 1.4 Accessories:** Verify that your accessory package is complete. Each unit is equipped with a key and four (4) shelves.

**WARNING:** Never use this unit for the growth, cultivation, incubation or storage of **fruit flies** (*drosophila melanogaster*). This unit is not designed for use with **fruit flies**. Improper use of this unit, including use with **fruit flies**, will void any warranty. *Other units are specifically manufactured for **fruit fly** application, and you should consult your dealer or the manufacturer in order to identify another model suitable for your application.*

# INSTALLATION

*Local city, county, or other ordinances may govern the use of this equipment. If you have any questions about local requirements, please contact the appropriate local agency. Installation may be performed by the end user. It is unnecessary for this unit to be installed by a technician.*

*Under normal circumstances this unit is intended for use indoors, at room temperatures between 18° and 28°C, at no greater than 80% Relative Humidity ( at 25°C ) and with a supply voltage that does not vary by more than 10%. Customer service should be contacted for operating conditions outside of these limits.*



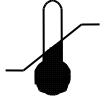






*This unit should remain upright for 24 hours prior to operating. This will allow the oil to settle in the compressor.*

- 2.5 Power Source:** See the incubator's serial/data plate for the voltage, cycle, phase and ampere requirements. VOLTAGE SHOULD NOT VARY MORE THAN 10% FROM THE DATA PLATE RATING. These units are intended for 50/60 Hz application. Electrical supply to the unit must conform to all national and local electrical codes. A separate circuit is recommended to avoid overloading or failure of other equipment on the same circuit.
- 2.6 Location:** When selecting a site for the incubator, consider all conditions which may affect performance, such as extreme heat from steam radiators, stoves, ovens, autoclaves, etc. Avoid direct sun, fast-moving air currents, heating/cooling ducts, and high traffic areas. To ensure air circulation around the unit allow a minimum of 20cm between incubator and any walls or partitions which might obstruct free air flow.
- 2.7 Lifting / Handling:** These units are 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 unit should be completely restrained from tipping during lifting or transport. All moving parts, such as shelves and trays should be removed and doors need to be positively locked in the closed position during transfer to prevent shifting and damage.
- 2.8 Leveling:** The unit must sit level and solidly. Turn the leveling feet counterclockwise to raise level. If the unit must be moved, turn the leveling feet in all the way to prevent bending or damage.
- 2.9 Cleaning:** The incubator's interior was cleaned at the factory, but not sterilized. Remove all interior parts, including shelves and clean thoroughly with a disinfectant that is appropriate for your application. Regular periodic cleaning is required. Special care should be taken when cleaning around sensing heads to prevent damage. DO NOT USE chlorine based bleaches as this may damage the incubator interior. DO NOT USE spray cleaners that might leak through cracks and openings and get on electrical components, or that may contain solvents that will harm coatings.

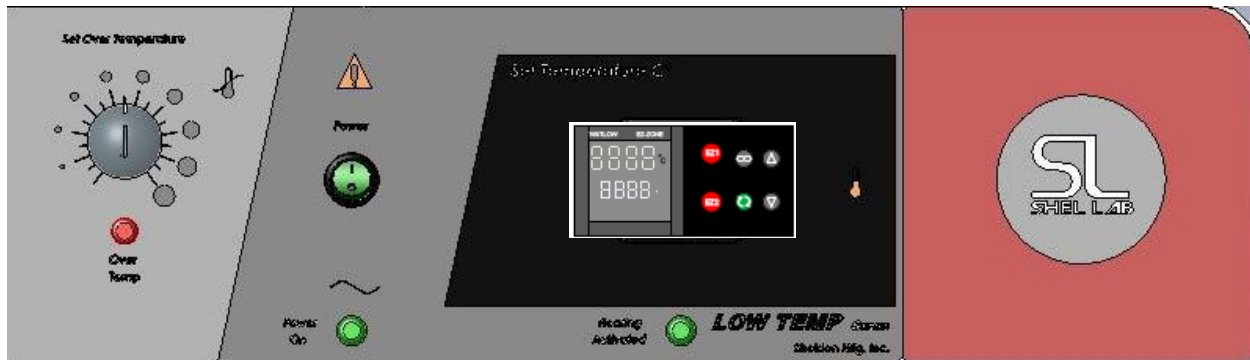
**WARNING:** *Never clean the unit with alcohol or flammable cleaners with the unit connected to the electrical supply. Always disconnect the unit from the electrical service when cleaning and assure all volatile or flammable cleaners are evaporated and dry before reattaching the unit to the power supply.*

## GRAPHIC SYMBOLS

Your incubator is provided with a display of graphic symbols on the control panel which are designed to help identify the use and function of the adjustable components.

-  1. Indicates that you should consult your manual for further description and discussion of a control or user item.
-  2. Indicates “**Temperature**”
-  3. Indicates “**Overtemperature**”
-  4. Indicates “**Degrees Centigrade**”
-  5. Indicates “**AC Power**”
-  6. Indicates “**Manual Adjustment**”
-  7. Indicates “**Potential Shock Hazard**” behind partition
-  8. Indicates “**Earth Ground**”
-  9. Indicates “**Unit should be recycled**” (Not disposed of in land-fill)

## CONTROL PANEL OVERVIEW



The SRI21D (LI15) comes with one control (Watlow PM) that can be set to do all light and temperature setting functions. It has an ON/OFF Power Switch to turn the unit ON or OFF and one Over Temperature Protection for High Temperature Limit.

- 4.1 **Power Switch:** The main power I/O (on/off) switch controls all power to the unit and must be in the I/On position before any systems are operational.
- 4.2 **Main Temperature Control:** This control is marked SET TEMPERATURE and AM/PM LIGHT CONTROL. It has two digital displays. Top Display reads PROCESS TEMPERATURE and bottom display reads SET POINT TEMPERATURE. The control is a 40-Step Ramp and Soak Programmable Control with two (2) Event Outputs.
- 4.3 **Over Temperature Thermostats:** This control are marked SET OVER TEMPERATURE and are equipped with adjustment knob and graduated dial. Completely independent of the Main Controller, the Thermostat guards against any failure which would allow temperature to rise past the Main Controllers set point. If temperature rises to the Over Temperature set point, this thermostat takes control of the heating element and allows continued use of the incubator until the problem can be resolved or service can be arranged. It is not recommended that the unit be allowed to operate for an extended period of time using only the Over Temperature thermostat as temperature uniformity will suffer.
- 4.4 **HEATING Light:** Marked HEATING ACTIVATED, this pilot light indicates when the Main Controller has activated the heating elements to reach and maintain set point temperatures.
- 4.5 **OVERTEMP Light:** Marked OVER TEMPERATURE ACTIVATED, this pilot light indicates when the Over Temperature Thermostat has been activated. Under normal operating conditions this pilot light should never come on.
- 4.6 **Circuit Breaker:** Located on the rear bottom next to the cord inlet provides protection against power source variations. Protection is in addition to the automatic high temperature limit designed into the heating element. If the Circuit breaker opens, the unit will shut down and the cause should be determined and corrected before resetting the circuit breaker.

# OPERATION

*The refrigeration system, heater, and air circulating fan are used in conjunction with the temperature control circuit to achieve sensitive temperature control. The temperature sensor located in the air stream senses any temperature deviation from the control point, and heat is provided to maintain desired temperature. The circulating fan provides even air distribution throughout the chamber and assures temperature uniformity.*

Regardless of the temperature maintained, the refrigeration system operates continuously. This constant operation minimizes component failures which are more frequently associated with a cycling type operation. Note that a factory set Low-Limit Thermostat will shut off the compressor when temperatures reach around 1°C so samples will not freeze.

- 5.1 Plug incubator into electrical service corresponding to data plate rating located on the side of the unit. Turn the power switch to the ON position and turn the Overtemperature Thermostat to its maximum position, clockwise using a coin or flat edged tool.
- 5.2 Place a certified reference thermometer (not supplied) in the center of the chamber. Be certain the thermometer is not touching any shelving or chamber walls. Taping the thermometer to a petri dish raises it off the shelf and keeps the scale in view. Placing a reference thermometer in the chamber at this stage of operation will allow for calibrating the control without the loss of processing time.
- 5.3 **Loading Procedure:** Adequate spacing should be allowed between items whenever possible. Proper spacing will allow maximum air circulation, which is necessary for temperature uniformity.
- 5.4 **Frost Buildup:** Excessive frost buildup on the evaporator coil located on the lower rear wall can affect temperature uniformity. Liquid containers should never be placed in the chamber without covers. The evaporation of moisture within the chamber will only add frost and hasten the need for defrosting. Defrosting instructions are available in Maintenance Section 6.

# WATLOW PM CONTROLLER START GUIDE

The *SRI21D (LI15)* comes from the factory preprogrammed to run a 12 hour day and 12 hour night cycle using one setpoint. The setpoint from the factory is 20 degrees C and the program is set to start the day cycle first.

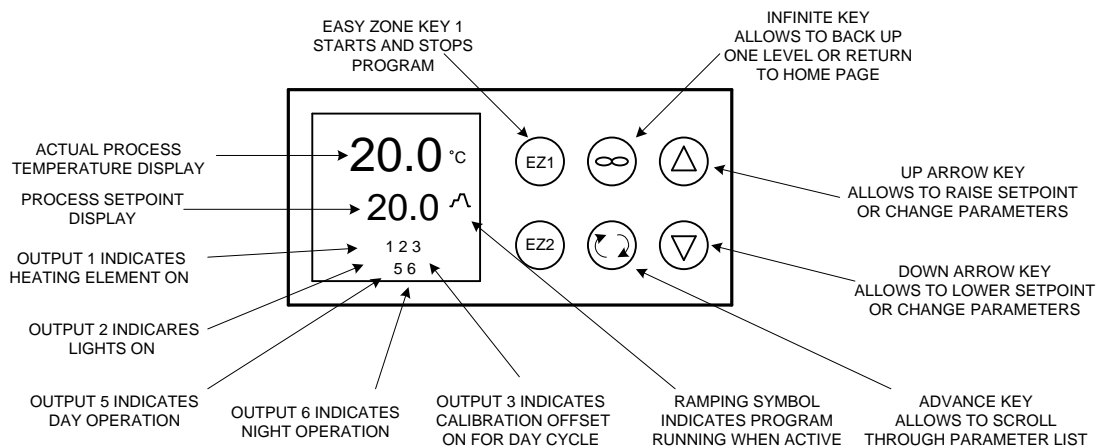
## Before Getting Started

Before getting started, it's a good idea to become familiar with the control display and keys, terms, and factory steps. Doing so will make getting started easier.

### Controls

Normal Display Mode

## CONTROLLER KEYS AND DISPLAYS



### Keys

Easy Zone Key 1	Starts and stops program
Infinite Key	Backs up one level or returns to normal display mode
Up Arrow Key	Raises Setpoint or changes parameters
Ramp Symbol	Indicates program is running when active
Down Arrow Key	Lowers Setpoint or changes parameters
Advance Key	Scrolls through parameter list
Easy Zone Key 2	Not in use but can be programmed
Output 1	
Active Heating Element Light On	Indicates heating element is ON
Output 3	
Active Calibration	Indicates calibration is ON for Day Cycle
Output 5	
Day Cycle is active	
Output 6	
Night Cycle is active	
Process Setpoint Display	Factory preprogrammed Setpoint
Actual Process Temperature Display	Factory preprogrammed Setpoint



## **Terms**

<b>A1</b>	Analog 1 input menu
<b>CLoC</b>	Setting hour, minutes, seconds for run time
<b>dOW</b>	Day Of Week
<b>ED</b>	Every Day
<b>ENT1</b>	Event output 1
<b>ENT2</b>	Event output 2
<b>Event Timer</b>	Factory installed timer (internal)
<b>gLbL</b>	Global menu
<b>HoUr</b>	Hour of day / night
<b>i.CA</b>	Calibration offset
<b>JC</b>	Jump Count
<b>JL</b>	Jump Loop
<b>JS</b>	Jump Step
<b>Min</b>	Minutes
<b>SoAH</b>	Soak
<b>oPEr</b>	Operation page
<b>P1 PROF</b>	Profile 1 of 4
<b>rtCSet</b>	Real Time Clock Set
<b>SEC</b>	Seconds
<b>S.tyP</b>	Active step type
<b>Ti</b>	Time
<b>t.SPI</b>	Target set point
<b>Usr.s</b>	User set
<b>UStp</b>	Unused Step
<b>1P1, 2P1, 3P1, etc.</b>	# indicates step, P1 indicates Profile 1

## Getting Started

There are four parts to setting up and running your SRI21D (LI15). Each part has instructions for powering up the unit, setting the temperature setpoint, calibrating the offset value for day cycle and storing it into memory, and calibrating the offset value for the night cycle and storing it into memory.

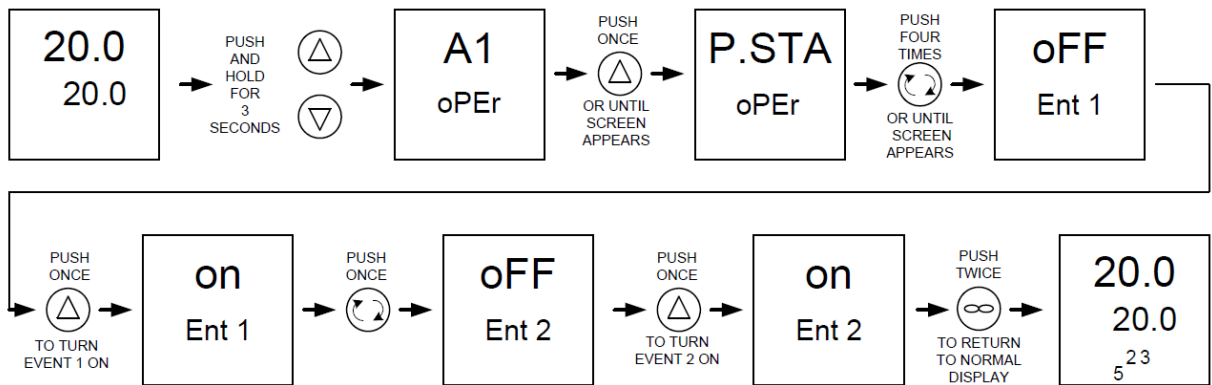
### Powering Up Unit

To power up the unit, do the following:  
On the front panel, turn the power OFF.  
Plug the unit into a dedicated power source.  
Turn the power ON.

The Power On light appears.  
Turn the Set Over Temperature knob clockwise all the way over.

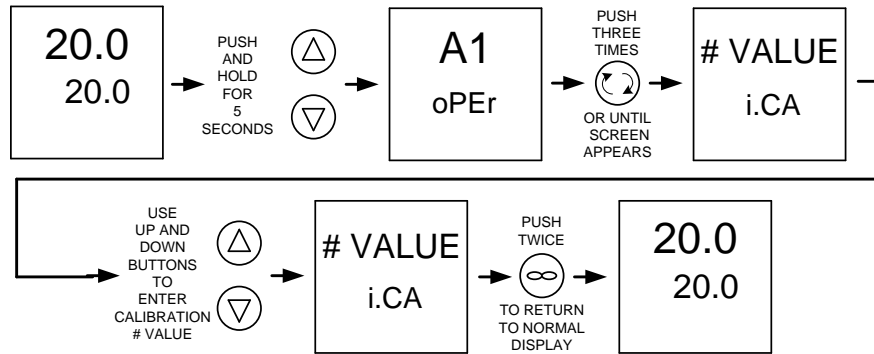
## SETTING AND CALIBRATING DAY CYCLE

Use the up/down arrows to choose desired Setpoint. After Setpoint is entered, turn ON both Event Outputs.  
To simulate Day Cycle, turn on Event Outputs following direction below.



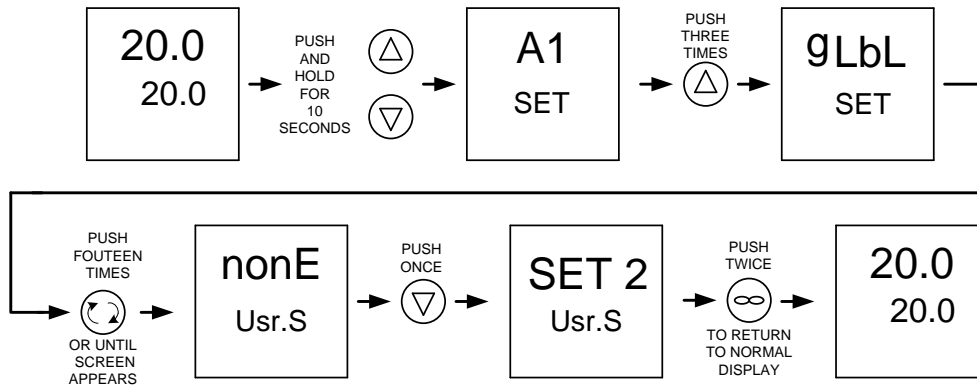
Outputs 2,3, and 5 should be illuminated in the Bottom Display and light in incubator should be on. Allow unit to stabilize for several hours before calibrating.

BEFORE CALIBRATION IS MADE MAKE SURE THAT INDICATOR 2, 3, 5, AND RAMP SYMBOL ARE ON INDICATING DAY CYCLE ACTIVE. FIGURE OUT # VALUE OF OFFSET (ACTUAL TEMPERATURE MINUS PROCESS DISPLAY TEMPERATURE). BELOW SHOWS WHERE AND HOW TO ENTER THE OFFSET # VALUE.



AFTER THE OFFSET HAS BEEN ENTERED ALLOW UNIT TO STABILIZE. RECHECK TEMPERATURE AGAIN AND IF CALIBRATION IS WITHIN EXCEPTABLE LIMITS THE OFFSET # VALUE NEEDS TO BE STORED INTO MEMERY OR IT WILL REVERT BACK TO THE LAST # VALUE ON THE NEXT SWITCHING CYCLE.

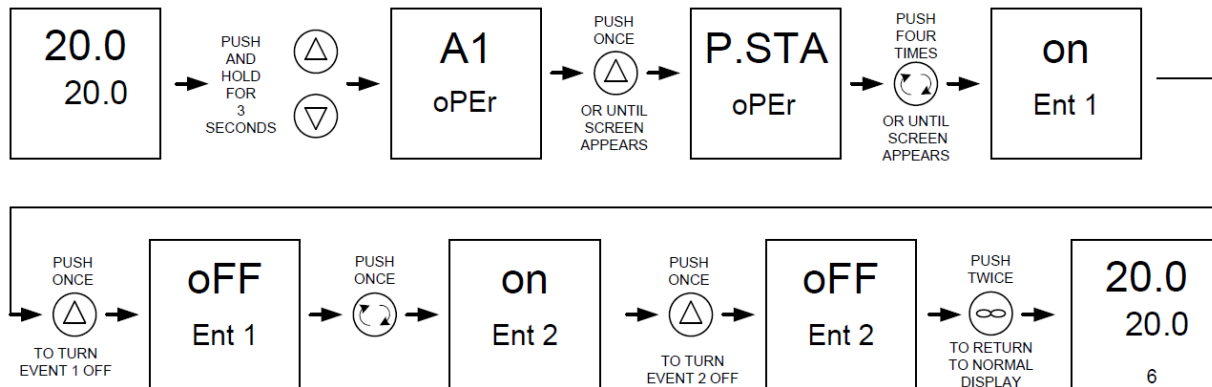
BELOW SHOWS HOW TO STORE OFFSET # VALUE FOR THE DAY CYCLE



SELECTING SET 2 UNDER Usr.S SAVES THE OFFSET CALIBRATION FOR THE DAY CYCLE.

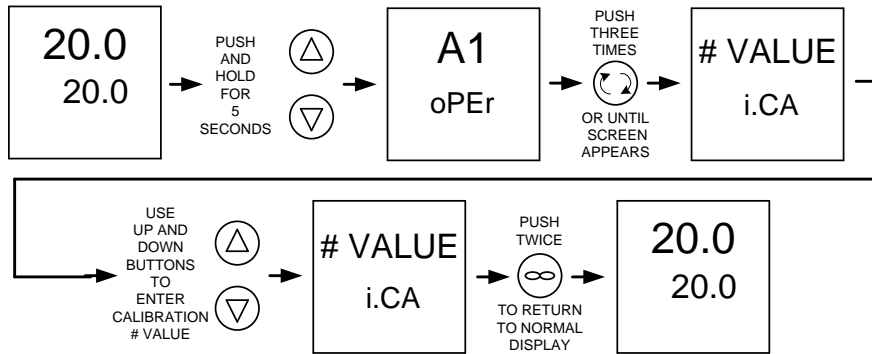
## SETTING AND CALIBRATING NIGHT CYCLE

Use the up/down arrows to choose desired Setpoint. After Setpoint is entered, turn ON both Event Outputs. To simulate Day Cycle, turn Event Outputs OFF to simulate Night Cycle. To turn OFF the Event Outputs, follow directions below.



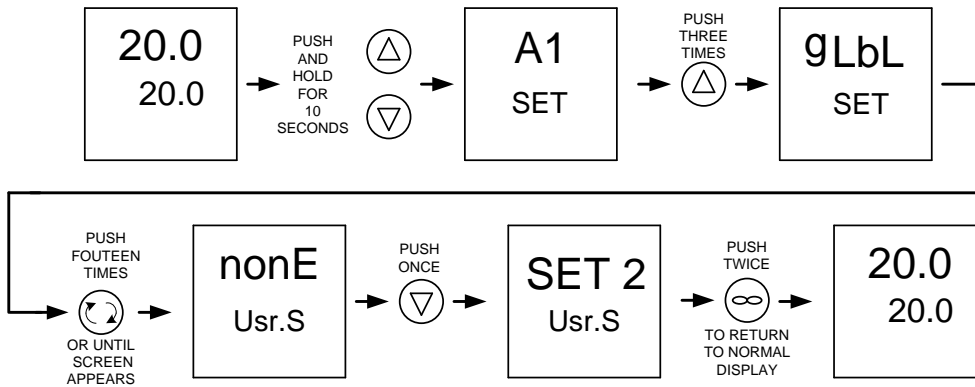
Outputs 2,3, and 5 should be OFF and 6 should be illuminated in the bottom of display. The lights inside incubator should be off. Allow unit to stabilize for several hours before calibration.

BEFORE CALIBRATION IS MADE MAKE SURE THAT INDICATOR 2, 3, 5, AND RAMP SYMBOL ARE ON INDICATING DAY CYCLE ACTIVE. FIGURE OUT # VALUE OF OFFSET (ACTUAL TEMPERATURE MINUS PROCESS DISPLAY TEMPERATURE). BELOW SHOWS WHERE AND HOW TO ENTER THE OFFSET # VALUE.



AFTER THE OFFSET HAS BEEN ENTERED ALLOW UNIT TO STABILIZE. RECHECK TEMPERATURE AGAIN AND IF CALIBRATION IS WITHIN EXCEPTABLE LIMITS THE OFFSET # VALUE NEEDS TO BE STORED INTO MEMERY OR IT WILL REVERT BACK TO THE LAST # VALUE ON THE NEXT SWITCHING CYCLE.

BELOW SHOWS HOW TO STORE OFFSET # VALUE FOR THE DAY CYCLE



SELECTING SET 2 UNDER Usr.S SAVES THE OFFSET CALIBRATION FOR THE DAY CYCLE.

## SETTING OVER TEMPERATURE LIMIT (OTL)

If using two different temperatures, pick the cycle with the higher Setpoint.

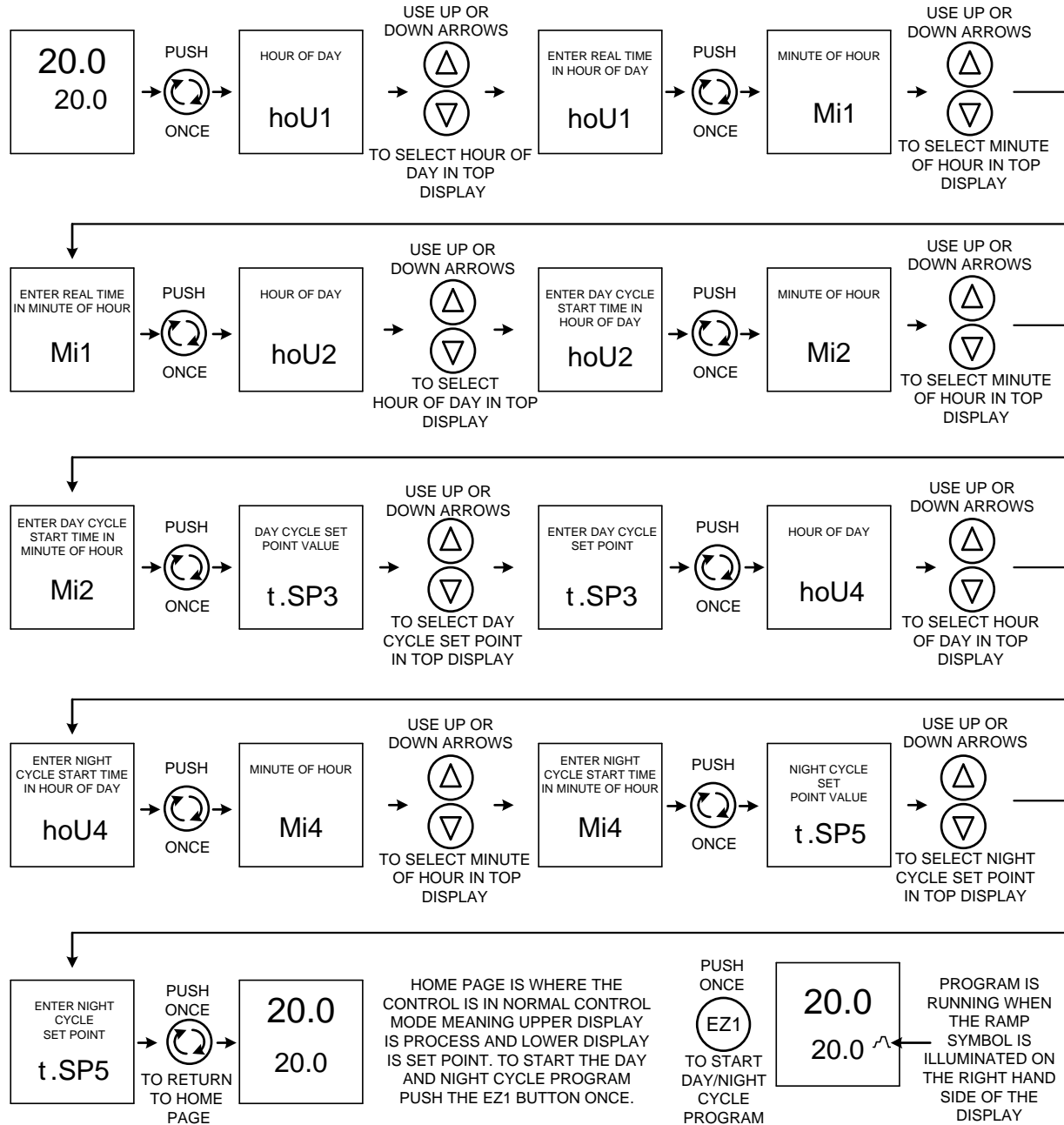
1. Allow unit to stabilize.
2. Turn OTL counter clockwise slowly until the OTL Light illuminates.
3. Turn OTL clockwise slowly until the OTL light goes out.
4. OTL is now set.

## PROGRAMING THE DAY AND NIGHT CYCLE

PROGRAMING THE DAY AND NIGHT CYCLE IS DONE IN JUST 8 EASY STEPS. THE FIRST TWO STEPS IS ENTERING THE REAL TIME IN HOURS AND MINUTES OF THE DAY. THE NEXT THREE STEPS IS ENTERING THE DAY CYCLE START TIME IN HOUR AND MINUTES OF THE DAY PLUS THE SET POINT IN WHICH THE DAY CYCLE WILL RUN. THE LAST THREE STEPS IS ENTERING THE NIGHT CYCLE START TIME IN HOUR AND MINUTES OF THE DAY PLUS THE SET POINT WHICH THE NIGHT CYCLE WILL RUN. BELOW ARE INSTRUCTIONS ON HOW TO SCROLL THROUGH THE 8 STEPS AND HOW TO CHANGE THE TIMES AND SET POINTS FOR THE REAL TIME, DAY CYCLE, AND NIGHT CYCLE.

Hou1 = REAL TIME IN HOURS OF DAY  
 Mi1 = REAL TIME IN MINUTES OF DAY  
 Hou2 = DAY CYCLE START TIME IN HOURS OF DAY  
 Mi2 = DAY CYCLE START TIME IN MINUTES OF THE HOUR

t.SP3 = DAY CYCLE SET POINT VALUE  
 Hou4 = NIGHT CYCLE START TIME IN HOURS OF THE DAY  
 Mi4 = NIGHT CYCLE START TIME IN MINUTES OF THE HOUR  
 t.SP5 = NIGHT CYCLE SET POINT VALUE



WHEN STARTING THE DAY AND NIGHT CYCLE IT WILL ALWAYS WAIT FOR THE DAY CYCLE FIRST. IF THE DAY TIME ENTERED IS EARLIER THAN THE PROGRAM START TIME ( THE TIME YOU PUSH THE EZ1 BUTTON) THE PROGRAM WILL WAIT TILL THE NEXT DAY TO START.

# MAINTENANCE

*The design of the chamber is such that periodic maintenance is kept to a minimum. NO lubrication or adjustments of components is needed. If the incubator is used frequently at temperatures below ambient room temperature or in any manner that increases moisture build-up within the chamber, a frequent defrosting schedule is recommended.*

- 6.1 Defrosting:** Frost can appear inside the unit due to moisture accumulating and condensing on the coldest surface. The unit should be defrosted and cleaned on a regular basis. The unit can be defrosted either manually or automatically. The water drains from the chamber into an evaporation pan. Make sure to completely dry out the interior when defrosting is complete.
- A. Manual Defrost:** Turn the unit off, open the door and allow the frost to melt. Then clean the chamber following the directions in 6.2.
  - B. Automatic Defrost:** the automatic defrost switch is located on the back of the unit. It is an ON/OFF switch. In the ON position, the frost sensor is **activated** once every twelve (12) hours. If the sensor detects frost, the compressor is shut down until the frost has melted, and then the compressor is reactivated. The amount of time the compressor is shut down is roughly one-half hour. During this time, the temperature in the chamber will spike and the Main temperature Controller will cycle off, shutting down the heating element. When the compressor is activated, the temperature will stabilize at set point.
- 6.2 Cleaning:** Clean the incubator chamber on a regular basis. Remove all interior parts and clean thoroughly with a disinfectant that is appropriate for your application. Shelving should be cleaned with the same solution. Special care should be taken when cleaning around sensing heads. **DO NOT USE** chlorine based bleaches or abrasives as this can damage the interior. **DO NOT USE** spray cleaners that might leak through openings and cracks and get on electrical parts or that may contain solvents that will harm coatings.

**WARNING:** *Never clean the unit with alcohol or flammable cleaners with the unit connected to the electrical supply. Always disconnect the unit from the electrical service when cleaning and assure all volatile or flammable cleaners are evaporated and dry before reattaching the unit to the power supply.*

- 6.3 Compressor Compartment:** Located at the back bottom of the unit, the compressor compartment can collect dust which will inhibit proper air flow. This compartment should be vacuumed out at least once every six (6) months to ensure maximum efficiency.
- 6.4 Electrical Components:** There is NO maintenance to electrical components. If the incubator fails to operate as specified, please review Section 7.0 Troubleshooting, prior to calling for service.

# TROUBLESHOOTING AND SERVICE

*When troubleshooting, always make a visual inspection of the incubator and it's control console to find loose or disconnected wires which may be the source of the trouble. In the event the incubator does not operate properly, check the following before calling for service.*

## TEMPERATURE

Temperature too high

- 1/ controller set too high-see section 5.5
- 2/ controller failed on – call Customer Service

Temperature too low

- 1/ Overtemperature Thermostat set too low – see section 5.8
- 2/ controller set too low – see section 5.5
- 3/ unit not recovered from door opening – wait for display to stop changing.
- 4/ element failure – see if HEATING light is on; compare current draw to data plate.
- 5/ controller failure – confirm with front panel lights that controller is calling for heat.
- 6/ Overtemperture Thermostat failure – confirm with front panel lights that Thermostat is operating correctly.
- 7/ loose connection – check shadow box for loose connections.

Unit will not heat over a temperature that is below set point

- 1/ confirm that fan is moving and that amperage and voltage match data plate – check fan motor and feel for air movement in chamber
- 2/ confirm that set point is set high enough –turn Thermostat all the way clockwise and see if HEATING light or OVERTEMP light comes on
- 3/ check calibration – using independent certified thermometer, follow instructions in section 5.6

Unit will not heat up at all

- 1/ verify that controller is asking for heat by looking for controller light – if pilot light is not on continuously, there is a problem with the controller.
- 2/check amperage – amperage should be virtually at maximum rated (data plate) amperage.
- 3/ do all controller functions work?
- 4/ is the Thermostat set high enough? – for diagnostics, should be fully clockwise with the pilot light never on.
- 5/ has the fuse/circuit breaker blown?

Indicated chamber temperature unstable

- 1/  $\pm 0.1$  may be normal
- 2/ is fan working? – fan must operate for uniformity
- 3/ is ambient room temperature radically changing – either door opening or room airflow from heaters or air conditioning ? – stabilize ambient conditions.
- 4/ sensor miss-located, damaged or wires may be damaged - check mounts for control and Thermostat sensors, then trace wires or tubing between sensors and controls.
- 5/ calibration sensitivity – call Customer Service
- 6/ Overtemperature set too low – be sure that Thermostat is more than 5 degrees over desired set point; check if OVERTEMP pilot is on continuously; turn controller knob completely clockwise to see if problem solved then follow instructions in owner's manual for correct setting – see section 5.8
- 7/ electrical noise – remove nearby sources of RFI including motors, arcing relays or radio transmitters.
- 8/ bad connection on temperature sensor or faulty sensor – check connectors for continuity and mechanical soundness while watching display for erratic behavior; check sensor and wiring for mechanical damage.
- 9/ bad connections or faulty relay – check connectors for mechanical soundness and look for corrosion around terminals or signs of arcing or other visible deterioration.

Display and reference thermometer don't match

- 1/ calibration error – see section 5.9
- 2/ controller failure – evaluate if pilot light is operating correctly
- 3/ allow at least two hours to stabilize.
- 4/ see if reference thermometer is certified.

Calibrated at one temperature, but not at another

Refer to Section 5.9

## REFRIGERATION

Temperature can't get up to set point

- 1/ assure that power is going to heating coils.
- 2/ confirm that evaporator is calling for heat (check front panel light).
- 3/ if light not coming on, check control set point and Thermostat set point .
- 4/ confirm that fan is operating and airflow is not blocked.
- 5/ reset by turning unit off and on.

Unit won't cool



If the compressor is running:

- 1/ see if condenser is cold but free of ice.
- 2/ be sure that fan is circulating air in the chamber and over the compressor.
- 3/ confirm proper sensor location and operation.
- 4/ look for leaks in the chamber or around the door gasket.
- 5/ assure ample room around the unit as described in Installation section 2.2
- 6/ If 1 through 7 has been tried and still not functioning correctly, call customer service.

If compressor isn't running:

- 1/ if too cold inside adjust "cold control" located outside on bottom right rear
- 2/ check for non-operating relay
- 3/ confirm that compressor cooling fan motor is operable.
- 4/ check if motor has voltage to it.
- 5/ see if refrigeration is running too hot and thermal cutoff activated:
  - a- dirty coil or poor circulation
  - b- coil next to heat source
  - c- ambient temperature too high

Ice build up in chamber

- 1/ Remove any open or exposed water in the chamber
- 2/ Search for leak in door gasket.
- 3/ Door being opened too often.
- 4/ Open container inside the chamber.
- 5/ Check tightness of seal around all chamber wire and plumbing access to outside.
- 6/ Turn defrost switch on, Note: defrost switch must be turned off for best temperature uniformity; If no defrost option available, call Customer Service.

Making noise

- 1/ assure that fan is not miss-aligned.
- 2/ Steady internal clicking may be broken spring or valve – call Customer Service.

## MECHANICAL

Motor doesn't move

- 1/ if shaft spins freely: check connections to motor and check voltage to motor.
- 2/ if shaft rubs or is frozen, relieve binding and retest.

Motor makes noise

- 1) Make sure that the fan or blower wheel is not contacting its housing. Adjust the motor mounting bracket position to re-center the fan or blower wheel, if necessary.
- 2) Check the fan or blower wheel for damage or out of balance condition. Replace the fan or blower wheel if it is damaged or out of balance.
- 3) Turn the motor shaft to make sure that it spins freely. If it binds or the bearings make a rubbing or scrapping sound then replace the motor.

Door not sealing

- 1/ Confirm that unit has not been damaged and body is square.

## OTHER

Unit heating all the time

- 1/ Adjust set point to room temperature. If the light goes out but is still heating, replace the solid state relay.
- 2/ if cannot change any condition on the front panel, call Customer Service.

Front panel displays are all off

- Check for wire damage.

Unit or wall fuse/circuit breaker is blown

- 1/ check wall power source.
- 2/ compare current draw and compare to specs on data plate.
- 3/ see what other loads are on the wall circuit.

Unit will not turn on

- 1/ check wall power source.
- 2/ check fuse/circuit breaker on unit or in wall.
- 3/ see if unit is on, e.g., fan or heater, and just controller is off.
- 4/ check all wiring connections, especially around the on/off switch.

Contamination in chamber

- 1/ see cleaning procedure in operator's manual
- 2/ develop and follow Standard operating procedure for specific application; include definition of cleaning technique and maintenance schedule.

## Service

If none of the suggestions listed above have solved the problem, Customer Service should be contacted for assistance.

Call 1-800-322-4897 and have the model number, serial number and voltage (listed on the data plate on the side of the incubator) as your service representative will require it.

## PARTS LIST

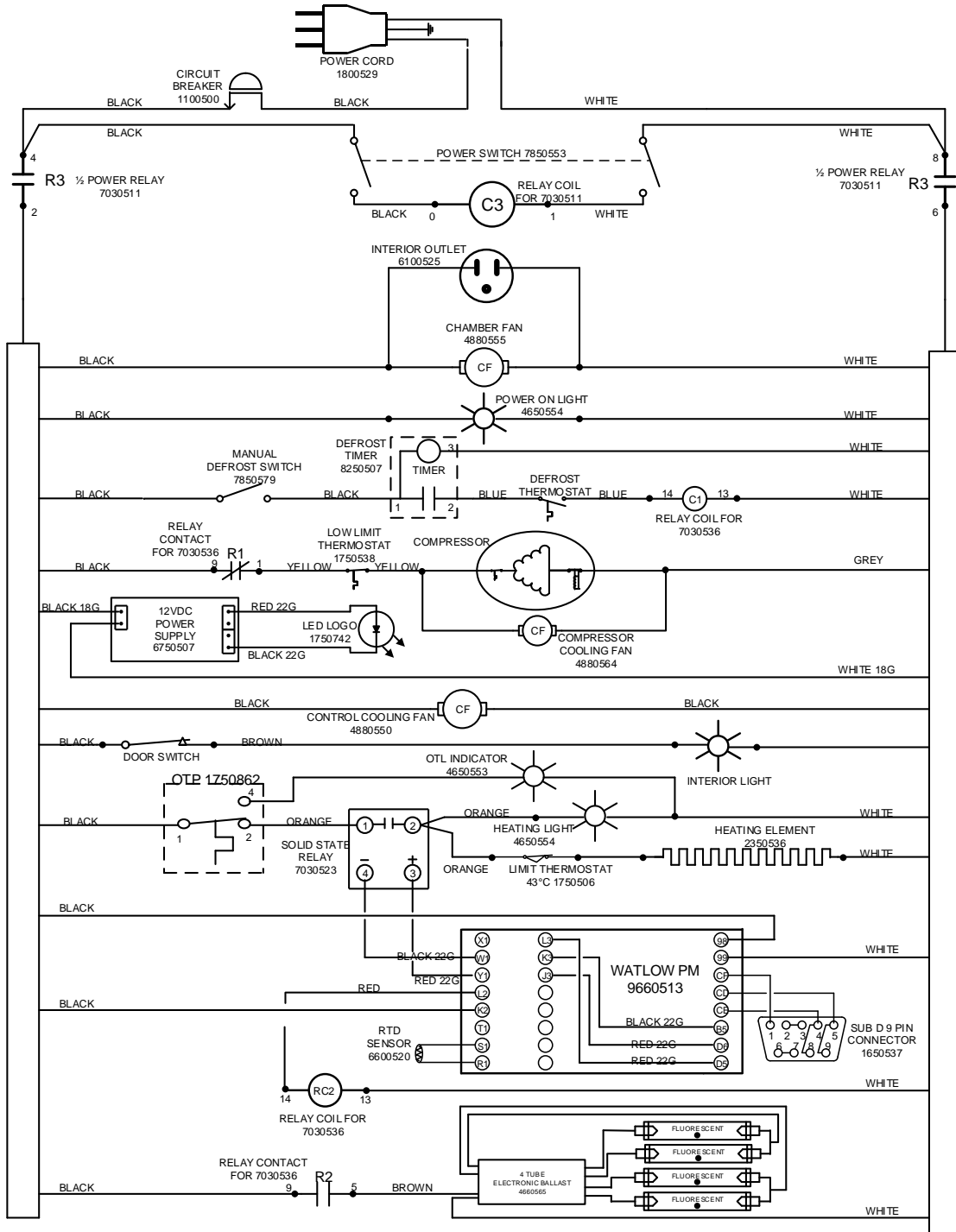
<b>Description</b>	<b>115V</b>	<b>220V</b>
Circuit Breaker (20 amp)	1100500	1100500
Control Relay	7030536	7030536
Cooling Fan	4880564	4880564
Cord Set, European	NA	1850500
Cord Set, USA	1800529	1800537
Defrost Switch	7850579	7850579
Defrost Heater	2350536	2350536
Florescent Bulbs	4650538	4650538
Florescent Light Ballast	4660505	4660505
High Limit Control	1750862	1750862
Interior Outlet	6100525	6100526
Interior Outlet, European	NA	6100531
Low Limit Control	1750538	1750538
Main Temperature Control	9660513	9660513
Pilot Light, Green	4650554	4650554
Pilot Light, Red	4650553	4650553
Power Switch	7850532	7850532
Relay	7030511	7030520
Step Down Transformer	NA	8350521
System Logic Relay SSR	7030533	7030533
Thermal Limit Control, Non-Adjustable	1750506	1750506
Timer Defrost	8250507	8250507
Venting Fan	4880550	4880550

# Unit Specifications

<b>Shipping Weight</b>	400 lbs.
<b>Net Weight</b>	280 lbs.
<b>Exterior LxDxH (in.)</b>	34.5 x 32 x 77
<b>Interior LxDxH (in.)</b>	27 x 23.5 x 57
<b>Capacity</b>	20.3 Cubic Ft
<b>Capacity</b>	257 Bottles
<b>Temperature Range</b>	0 to 45°C
<b>Temperature Uniformity</b>	±.5° @ 20°C

# Wire Diagram

## SRI21D (LI15) 100-120V



# Wire Diagram

## SRI21D-2 (LI15-2) 220-240V

