

## "Junior" Heater Sauna Series Models 1.7, 2.2, 3.0 (1517-17-02, 1517-22-02, 1517-30-02) with "SaunaLogic" Control

Read all instructions carefully before installation. Please leave all instructions and warranty with the owner.

### WARNING

*Prolonged exposure to elevated temperatures is capable of inducing hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches several degrees above the normal body temperature of 98.6°F. The symptoms of hyperthermia include an increase in the normal temperature of the body, dizziness, lethargy, drowsiness, and fainting. The effects of the hyperthermia include failure to perceive heat, failure to recognize the need to exit the room, unawareness of impending hazard, fetal damage in pregnant women, physical inability to exit the room and unconsciousness.*

### WARNING

*The use of alcohol, drugs, or medication is capable of greatly increasing the risk of fatal hyperthermia.*

## SECTION 1: GENERAL INFORMATION

These heaters are ETL approved for permanent installations and electrical connections. Built with splash proof construction, the conducting parts are protected against water. All wiring must be performed in accordance with national and local codes. See Diagram 2 for wire and room size requirements. These heaters are wall mounted.

## WARNING

***Do not take a sauna if using alcohol, drugs or medications.***

***Pregnant women or persons with poor health should consult their physician before using any sauna.***

***Caution fire hazard: Do not use the sauna room for drying clothes, bathing suits, etc. Do not hang towels above heater or place any object other than the rocks supplied on the heater. If any darkening of the wall around the heater is noticed discontinue sauna use immediately.***

***Inspect sauna regularly for required maintenance to heater, control and benches. Replace wood surfaces which show any signs of deterioration.***

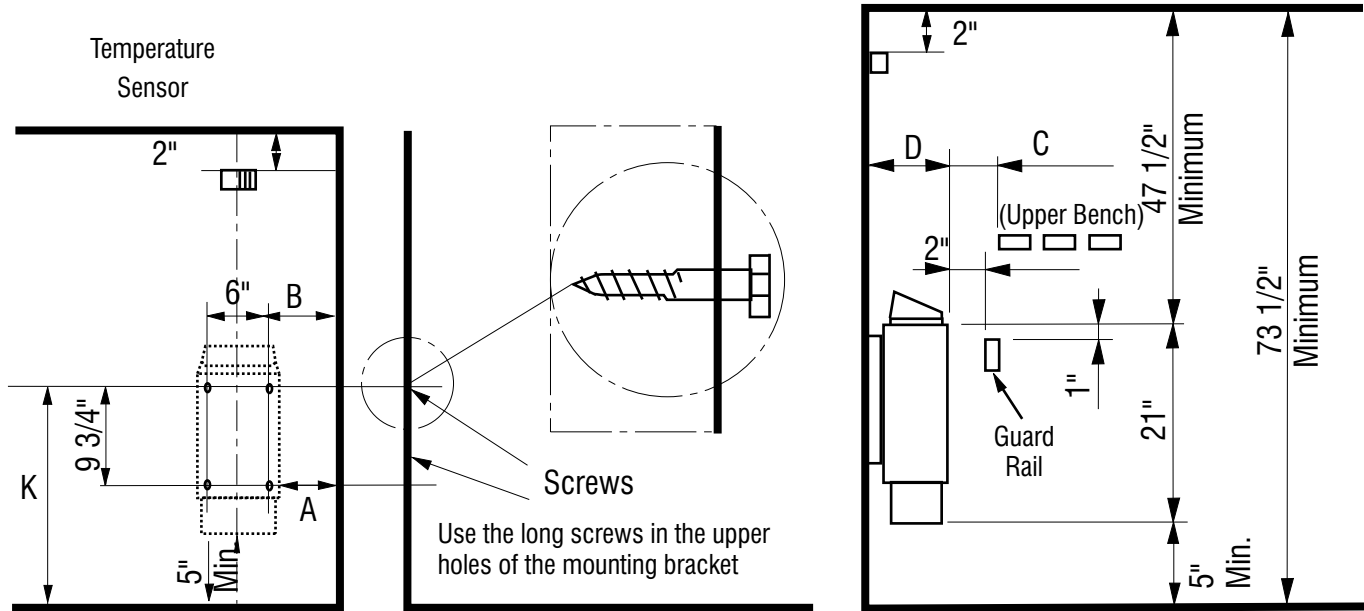
***The heater gets extremely hot during operation and should not be touched or burns may result.***

***Minors should be adequately supervised whenever near a hot or warming sauna.***



## DIAGRAM 1

### MOUNTING BRACKET LOCATION AND MINIMUM DISTANCE TO COMBUSTIBLE MATERIAL



Recheck your distances from the heater to combustible materials to be sure you have the proper minimum distances.

**! OBSERVING MINIMUM DISTANCES IS REQUIRED TO REDUCE FIRE HAZARD**

HEATER	MINIMUM				
	"A" DISTANCE	"B" DISTANCE	"C" DISTANCE	"D" DISTANCE	"K" DISTANCE
Junior 1.7	2"	5"	5"	8"	24 3/4"
Junior 2.2	2"	5"	5"	8"	24 3/4"
Junior 3.0	2"	5"	5"	8"	24 3/4"

## DIAGRAM 2

HEATER MODEL / Product Number	KW	MINIMUM ROOM			MAXIMUM ROOM		PHASE	VAC	AMPS	WIRE SIZE	
		Floor Area	Wall Height	Volume Cu.Ft.	Wall Height	Volume Cu.Ft.				Power Supply to CB PK-1	CB PK-1 to Heater
<b>Junior 1.7</b> 1517-17-02	1.7	7 sq. ft.	73 1/2"	60	84"	80	1	120	14.2	2 #12AWG+GR	2 #12AWG+GR
<b>Junior 2.2</b> 1517-22-02	2.2	8 sq. ft.	73 1/2"	70	96"	100	1	120	18.3	2 #12AWG+GR	2 #12AWG+GR
							1	240	9.2	2 #12AWG+GR	2 #12AWG+GR
<b>Junior 3.0</b> 1517-30-02	3	12 sq. ft.	73 1/2"	100	96"	150	1	120	25	2 #10AWG+GR	2 #10AWG+GR
							1	240	12.5	2 #12AWG+GR	2 #12AWG+GR

## SECTION 2: MOUNTING OF SAUNA HEATER AND PK CB-1 BOX

**HANGING THE HEATER** Remove the mounting bracket from the heater (two screws behind the rockgrill). Using the pattern from the mounting bracket, drill four 9/64" holes to fasten the heater to the wall. Install four 1/4" x 1 1/2" hex head lag screws (supplied with the heater) into the four holes. Tighten these screws until secure. The screws must be threaded through the wall into a framing member or backing board to support the heater weight. Hang the heater on the mounting bracket. Place the two screws behind rock grill to secure to mounting bracket. See Diagram 1 for the heater location details and the necessary clearances to combustible materials.

Remove the cover of the CB PK-1 Control Box to gain access to the 4 mounting holes in the back of the box. The control box can be mounting inside the sauna room on a wall according to Diagram 3. Or it can be mounted outside the sauna room. Locate the 4 screws 3/16 x 3/4" supplied into the 4 mounting holes. (See Diagram 3)

## SECTION 3: PLACING OF ROCKS (SEE DIAGRAM #10)

The rocks supplied with the heater have been chosen to provide the best heater performance. Use of any other type of rock may void the heaters warranty. Never operate the heater without rocks in place! Rinse the rocks with water before placing in the heater. Carefully place the rocks loosely so that the air can circulate through the heater. Packing the rocks too tightly may cause the heater high limit switch to trip. The rocks must fully cover the heating elements. Attach the guard with the screws provided.

## SECTION 4: ELECTRICAL HOOK-UP

Electrical installation must be made by a licensed electrician in accordance with the National Electrical Code and local regulations.

Remove the screws from the CB PK-1 control box to access the electrical connections. Route the wires through the holes provided on the bottom of the control box and connect the wires to the terminal block. To determine the correct wire size, refer to Diagram 2. Use copper supply wire only, suitable for minimum 90 degrees C. The heater must be grounded! See Diagram 6 for proper connections.

## SECTION 5: TEMPERATURE SENSOR

Feed the 17 ft "low voltage" sensor wire from the sensor location to the control box (CB PK-1) location. Sensor wire must be routed completely separate (as per low voltage electrical wiring codes) from any wiring carrying over 50 volts. It may be necessary to drill holes to string the wire through the studs or ceiling joists.

Using a flat tip screwdriver, unsnap sensor cover from sensor. Mount sensor to a finished wall directly above heater and two (2) inches down from ceiling using two (2) screws (provided) as shown in Diagrams 1, 3 & 5.

Connect wires into CB PK-1 on High Limit position of the circuit board.

## WARNING

***Fire sprinkler systems used inside any sauna room should be properly rated for sauna room temperatures.***

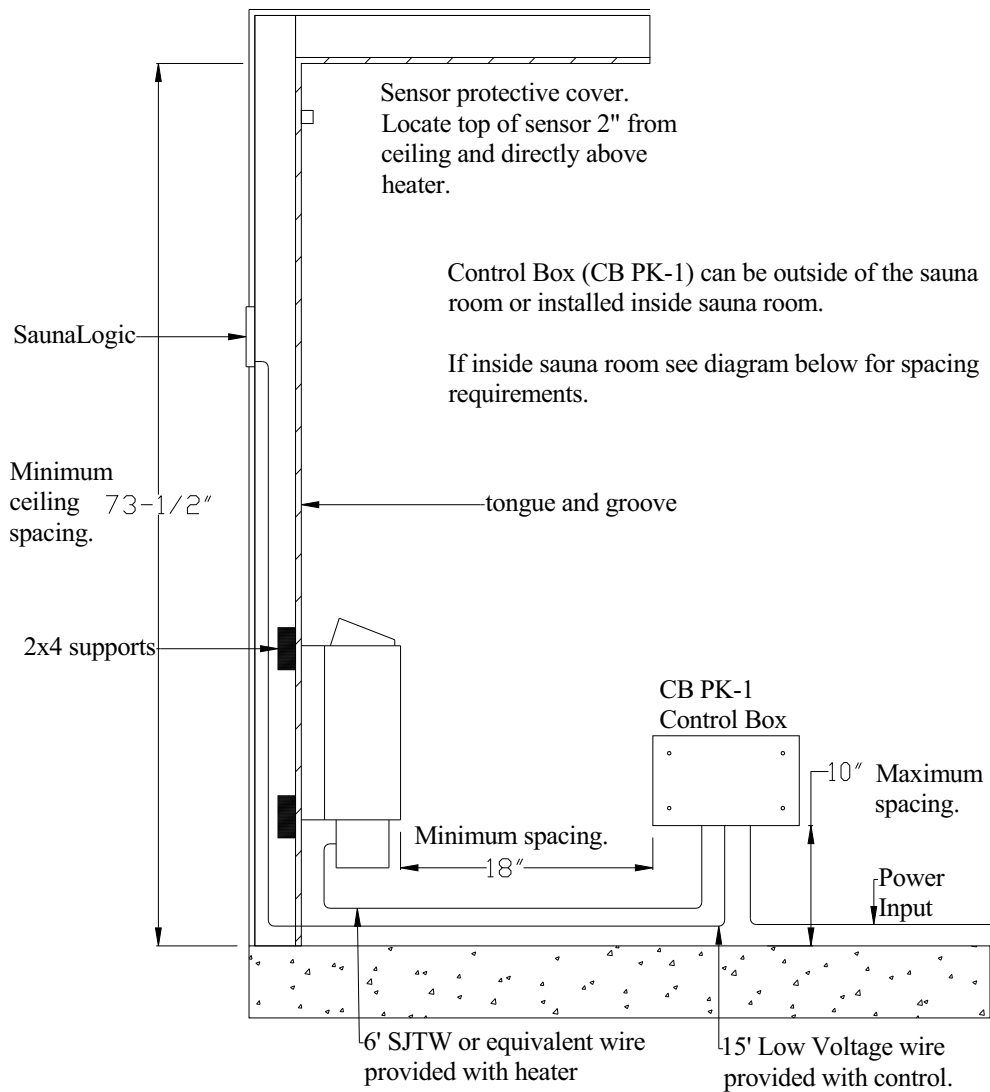
***Do not pour chlorinated pool or spa water on heater. Excessive water use on heater may cause damage and void warranty.***

***Electric Shock Hazard - High voltage exists within this equipment. There are no user serviceable parts in this equipment. All installation and service to this equipment should be performed by qualified licensed personnel in accordance with local and national codes.***

***Do not construct sauna room so as to restrict air flow through the bottom of the heater.***

***Packing the rocks too tightly may cause the heater high limit switch to trip.***

## DIAGRAM 3

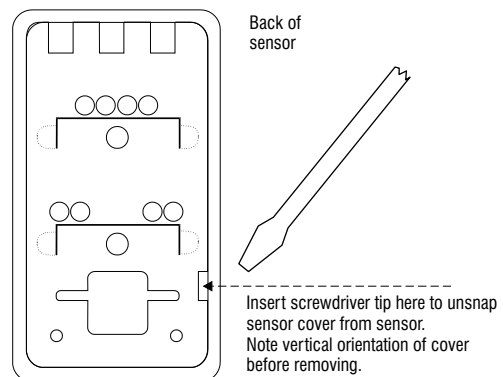


## DIAGRAM 4

### SaunaLogic (PK 1) CONTROL



## DIAGRAM 5



## SECTION 6: HEATER SCREEN (GUARD RAIL)

Install a wooden heater guard to prevent the sauna bather from accidentally touching the sauna heater. Install the heater guard rail with the dimensions shown in Diagram 8.

## SECTION 7: SaunaLogic (PK-1) CONTROL INSTALLATION & OPERATION

**INSTALLATION ROUGH IN** The SaunaLogic (PK-1) control must be mounted outside the sauna room in a dry environment.

To mount the control cut an opening 7-1/2" wide by 5-1/8" tall. Route the control wire from CB PK-1 to the control. *Note: Use the factory supplied cable only! Do not staple through or otherwise damage the cable!* Connect the control cable to the SaunaLogic and secure the control to the wall by 2 mounting screws provided.

Connect the other end of the control cable through the electrical access hole on the bottom of the control box and connect it to JT1.

This section has been left blank intentionally.

## WARNING

***Do not locate benches over heater. Minimum clearance of ceiling above heater 44".***

***Minimum clearance from heater to wooden surfaces (benches, side walls, heater fence etc.) 2 inches. Mounting brackets supplied. Provides proper clearance from wall behind heater.***

***Use only copper wire of the size and type indicated in the Heater Specification Chart and the temperature rating indicated on the heater junction box.***

***All heaters and controls must be grounded per NEC to prevent electrical shock in case of unit failure.***

***Electrical outlets or receptacle must not be installed in a sauna room.***

***A guardrail or fence is required around the heater to prevent burns from accidental contact.***

## SECTION 7: SaunaLogic (PK-1) CONTROL INSTALLATION & OPERATION

### OPERATING INSTRUCTIONS FOR SAUNA HEATER

Default settings for temperature are preset to 176°F, the bath time is set to 60 minutes and 0 minute delay to start to heat. These settings are adjustable (as described below) from 125° to 194°. Length of sauna session can be set from 0 to 60 minutes. The time delay before start can be up to 23 hour and 59 minutes. Any changes to temperature and time are remembered by the heater for your next bath. Should the heaters power be lost then restored, the settings will return to their default values.

#### STARTING SAUNA HEATER IMMEDIATELY

Press the control POWER button once. The room temperature will be displayed on the control. The heater will turn on and begin heating the room to current set points. Once the set temperature is reached inside the room, the control will cycle the heater on and off as needed to maintain the desired temperature. At the end of the selected time (60 minutes maximum), the control will turn the heater off and the control display will turn off.

#### SETTING THE TIME AND TEMPERATURE

To set the sauna operating time, press the control POWER button to turn on the heater. Press the TIME "+" or "-" buttons on the control to increase or decrease time for desired setting. The maximum of time is 60 minutes.

To set the temperature, press the control POWER button to turn on the heater. Press the TEMP "+" or "-" buttons on the control to increase or decrease temperature for desired setting. The maximum temperature is 194°F (90°C); maximum "actual temperature" in the sauna is 194°F at the sensor location. This maximum is a UL/ETL safety standard required in all safety listed sauna heaters.

Note: Typical bathing temperature is 150F to 165F displayed on the control.

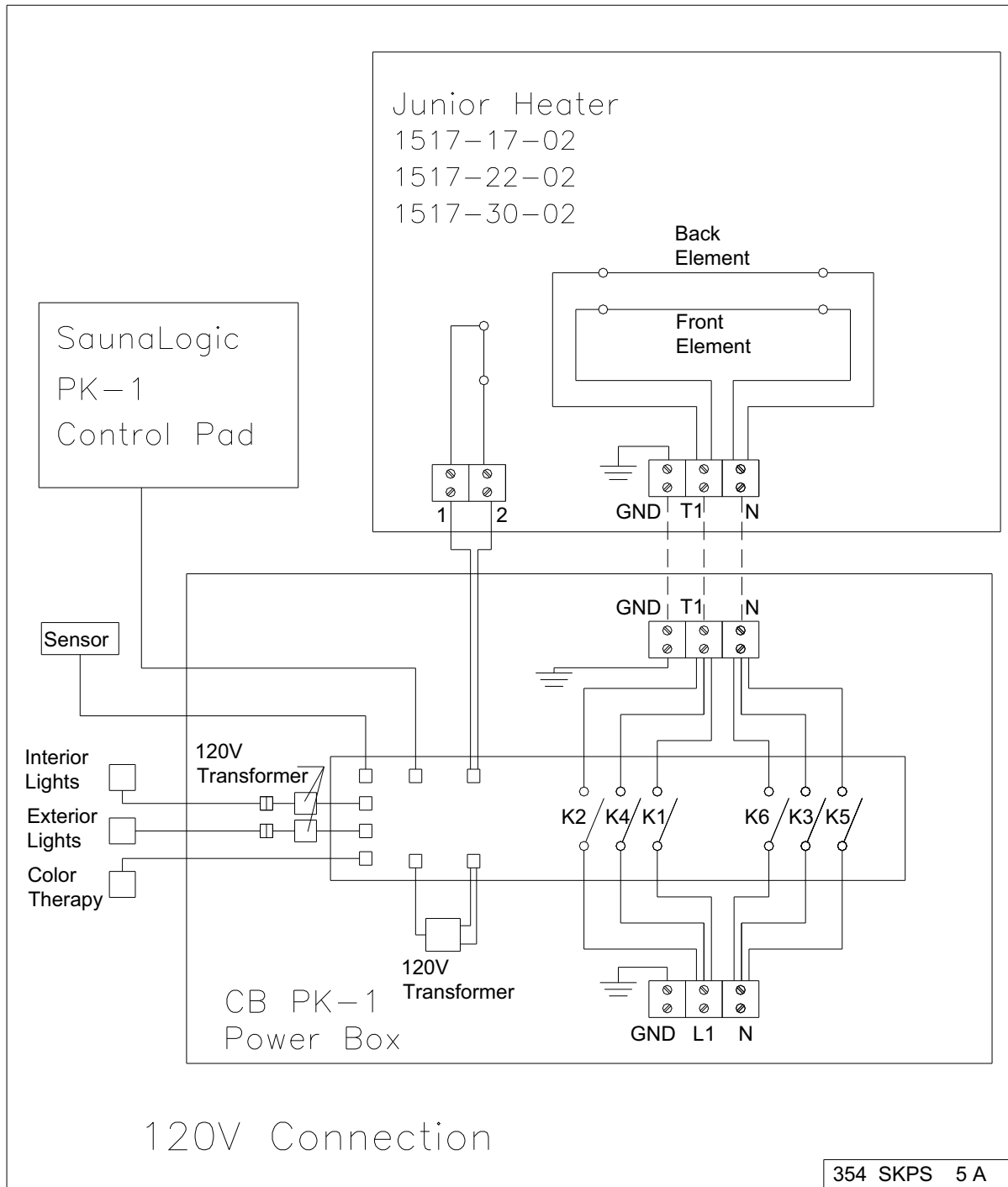
#### PRE-SETTING DELAYED START

Press the control POWER button once. The room temperature will be displayed on the control. Press the "Set" button. Press the TIME "+" or "-" buttons on the control to increase or decrease delay time for desired setting. This desired time displayed is your time delay and you may walk away from the sauna room at this time. The maximum delay time is 23 hours and 59 minutes. If no delay start time is desired, press TIME "+" or "-" button to 00:00 and press the "set" button.

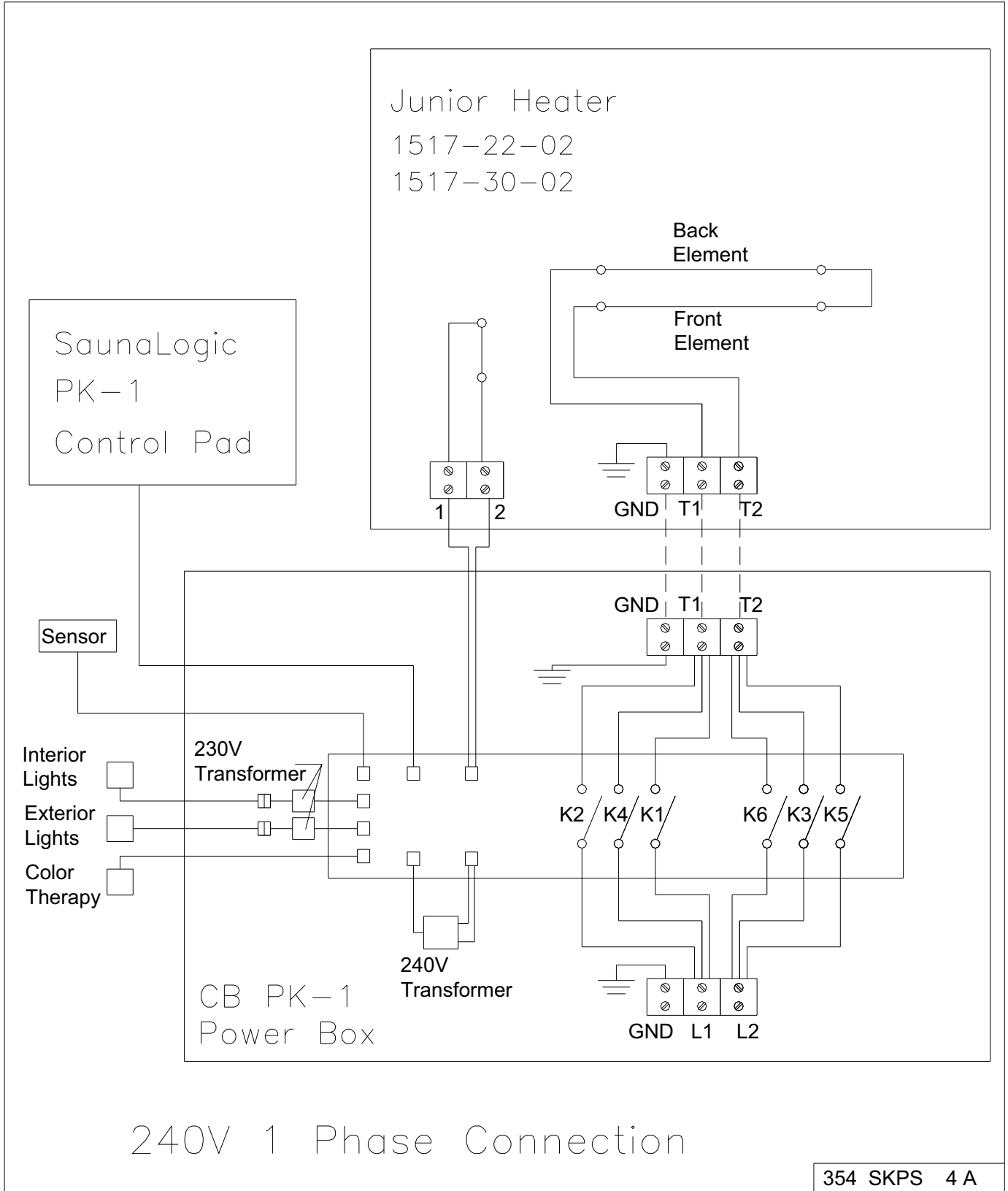
Note: The " : " will flash between the numbers in the time display when system is in the delayed start mode.

## DIAGRAM 6

### WIRING DIAGRAM: CONTROL AND HEATER MODELS Junior 1.7, 2.2 & 3.0 (ETL#'s 1517-17-02, 1517-22-02, 1517-30-02) SaunaLogic (PK-1) and CBPK 1



## WIRING DIAGRAM: CONTROL AND HEATER MODELS Junior 2.2 & 3.0 (ETL#'s 1517-22-02, 1517-30-02) SaunaLogic (PK-1) and CBPK 1





## SECTION 8: LIGHT INSTALLATION

SaunaLogic is capable of operating **ONLY** a lighting package provided or purchased with the system. The lighting package consists of 3 color therapy lights, 2 interior lights, 2 exterior lights, and the cables to connect the light assemblies to the CB PK-1 box.

To install the "Interior Lights" cut 2-3/4" holes in the sauna room ceiling no further than 34" apart. Route the interior light cable provided from the lights in the ceiling to the CB PK-1 box. Connect the cable to the lights and connect the other end to a connector labeled "Interior Lights" inside the CB PK-1 box.

To install Exterior Lights repeat "Interior Light" installation. Connect the provided cable to "Exterior Lights" connector in the CB PK-1 box.

To install color therapy lights repeat "Interior Light" installation. Connect the flat cable on JT5 of circuit board in CB PK-1 box.

## SECTION 9: HIGH LIMIT CONTROL (RESET BUTTON)

The sauna heater has a built-in high limit control, which automatically turns off the heater if the temperature inside in the sauna room rises to an abnormally high level.

The control will display "HL". To restart the heater, let the heater cool, then push the "On/Off" button on the control. If the high limit continually shuts off the heater, contact a service representative at 1-888-780-4427.

## SECTION 10: HOW TO TAKE A SAUNA

- When taking a sauna, allow time to relax completely.
- Remove clothing and jewelry...if required, wear a towel loosely.
- After 10 minutes or when perspiration begins, leave sauna and relax in dressing area...follow with a cool shower.
- Cooling time should equal time spent in sauna. Enter sauna room again and stay 5 or 10 minutes.
- Repeat the cycle 2 or 3 times; end with a brisk shower...rinse in cool water.
- Dress when completely dry and perspiration has stopped.
- Some sauna bathers enjoy the soothing effect of steam by splashing water on the heated sauna rocks. Use only one dipper full (approx. 1/2 cup) at a time and keep clear of the steam as it rises off the rocks.
- Do not smoke, exercise or drink alcoholic beverages in the sauna room.
- Do not pour chlorinated pool or spa water on the heater or corrosion damage may result.



Shower



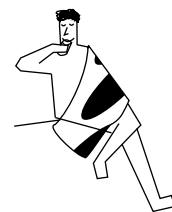
Sauna (10 - 15 min.)



Shower or swim



Rest (10 - 15 min.)

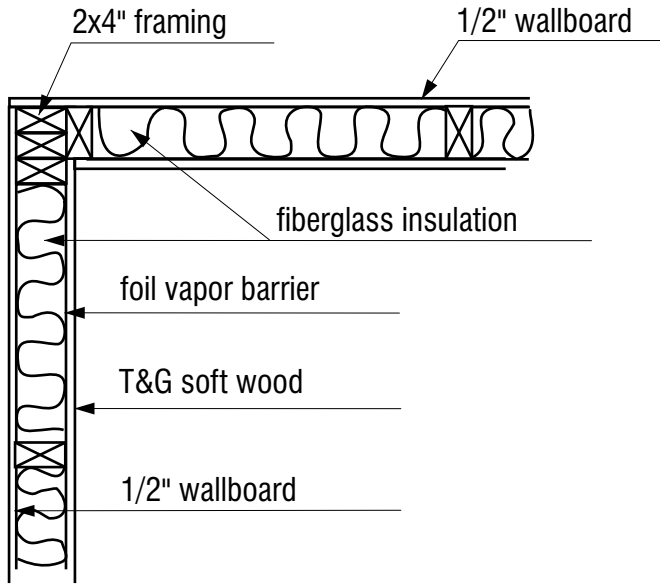


Relax with juice or water

You liked it?  
Do it once again and  
you will feel great.

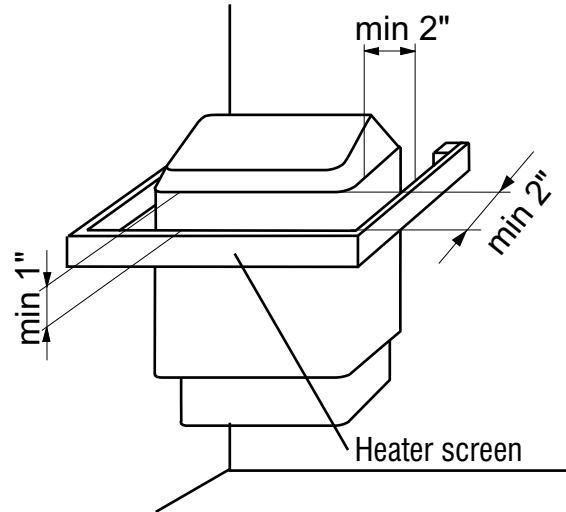
**DIAGRAM 7**

**TYPICAL PRE-CUT WALL CONSTRUCTION**



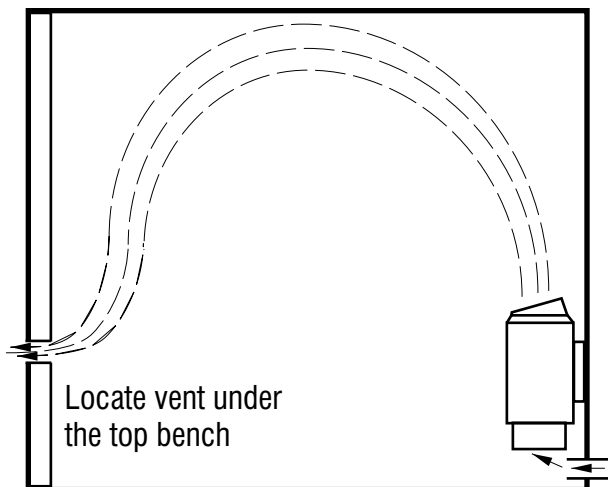
**DIAGRAM 8**

**HEATER SCREEN (GUARD RAIL)**

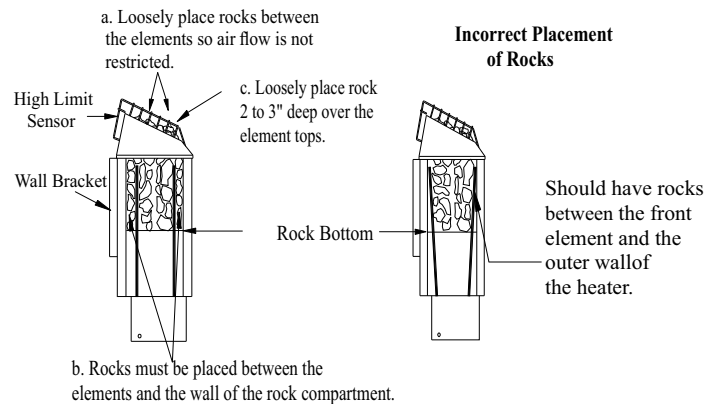


**DIAGRAM 9**

**VENTILATION**



**DIAGRAM 10**



1. Put smaller rocks in first around the outer perimeter of the rock compartment.
2. Completely fill all three sections (front, center and back).
3. In the outer sections, use smaller rocks placed more tightly (see note b).
4. Place rocks loosely in the center section (see note a).
5. Be sure rocks completely cover the elements (see note c).
6. Loosely cover the tops of all elements with rocks a minimum of 2" to 3".

## SECTION 11: WARNING PLACARDS

Two metal placards are included in the Installation Instruction Envelope packaged with every Sauna Heater. The CAUTION placard must be attached to the interior wall of the sauna room directly above the heater where it is visible to the bather. The WARNING placard must be attached to the door of the sauna room.

## SECTION 12: ROOM CONSTRUCTION

For safety and reliability, the following rules must be addressed.

- No permanent locking or latch system is to be used on the sauna door. • Acceptable door fittings are: magnetic catches, friction catches, spring or gravity loaded closures. The door must always open outwards.
- No shower may be installed in a sauna room.
- No electrical receptacle shall be installed inside the sauna room.
- The enclosed WARNING: Reduce the risk of overheating ... warning plate must be mounted on or alongside the door outside the sauna room at about eye level.
- The enclosed CAUTION: Reduce the risk of fire ... caution plate must be mounted on the interior wall above the heater.
- The heater should not be operated without its container properly filled with rocks and the rock guard in place.
- If an intercom speaker is installed, it should be away from the heater and as close to the floor as possible.
- Fire sprinkler systems installed inside any sauna room should be properly rated for sauna room temperatures.
- Always mount the heater according to these installation instructions.

## SECTION 13: VENTILATION

**VENTILATION** In a private sauna, the air should be changed about 6 times an hour. This can be achieved by making a vent opening (fresh air inlet) in the sauna wall directly below the heater. The air outlet must be lower than the upper benches, as far as possible from the heater and about two feet higher than the fresh air inlet vent, See Diagram 9. It is recommended that ventilation openings meet the requirements of UL Specification 875. The minimum opening should be determined using one of the following formulas:

$$\text{For } R < 31, V \geq 9.3, \quad \text{For } R \geq 31, V \geq 0.3R$$

where R = the floor area of the room in square feet and  
V = the minimum vent size in square inches

## WARNING

**The "CAUTION" and "WARNING" placards must be mounted in accordance with Section 10.**



**WARNING**

REDUCE THE RISK OF OVERHEATING

- \* Exit immediately if uncomfortable, dizzy, or sleepy. Staying too long in a sauna is capable of causing overheating.
- \* Supervise children at all times.
- \* Check with a doctor before use if pregnant, in poor health, or under medical care.
- \* Breathing heated air in conjunction with consumption of alcohol, drugs, or medication is capable of causing unconsciousness.



**CAUTION**

REDUCE THE RISK OF FIRE

Do Not Place Combustible Material On The Heater At Any Time.

**For safety purpose sauna door must open out and not lock.**

**Never use a wood stain, seal or preservative on the inside of your sauna room.**

**Light fixtures get very hot during operation. Locate light fixture where it will not be a burn hazard.**

## SECTION 14: MAINTENANCE

The sauna, like a bathroom, should be kept clean and odor free.

Towels or mats should always be used on benches and floor as perspiration otherwise penetrates the soft wood.

Air out the sauna often by keeping the door and vents open when the sauna is not in use. Saunas that are in daily use should be washed down at least once a week to keep them clean and the air fresh. Duckboard should be removed from the sauna, the sauna floor mopped and dried in a conventional manner, and the duckboard thoroughly scrubbed and dried before returning to the sauna room. The sauna heater should be wiped down occasionally with a damp cloth to remove lint and dust. The rocks should be removed once a year for cleaning and small or crumbled rocks replaced.

To clean and remove perspiration stains, use soap or detergent in warm water, best applied with a scrub brush. Badly soiled surfaces may require sanding. Sand paper wrapped around a wooden block works well.

Benches and supporting structure must be inspected annually for potential deterioration due to age, dry rot or abuse. Any boards with signs of deteriorations should be replaced immediately to avoid possible injury.

## SECTION 15: TROUBLESHOOTING

If control displays "SN" it means no sensor is connected. Refer to Section 5 for sensor installation information.

If control displays "HL" it means the high limit is open. Refer to Section 9 for high limit information.

For troubleshooting or service questions call 1-888-780-4427 and ask to speak with service. Prior to calling, please have the Model and Type number available. You may also email us at [techsupport@tyloheloinc.com](mailto:techsupport@tyloheloinc.com)