

Piccolo "Trend" Series Sauna Heaters Models 1.7, 2.1, and 3.5 (Type #'s 1217-17-1706, 1217-21-1706, and 1217-35-1706) with Trend Control (Type # 1601-31 and 1601-31-1).

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 by Intertek 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 hung on the wall. The heater is 31" tall by 11" deep by 9 1/2" wide.

WARNING

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

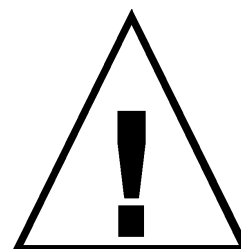
Pregnant women or persons with poor health should consult their physician before using any sauna.

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.

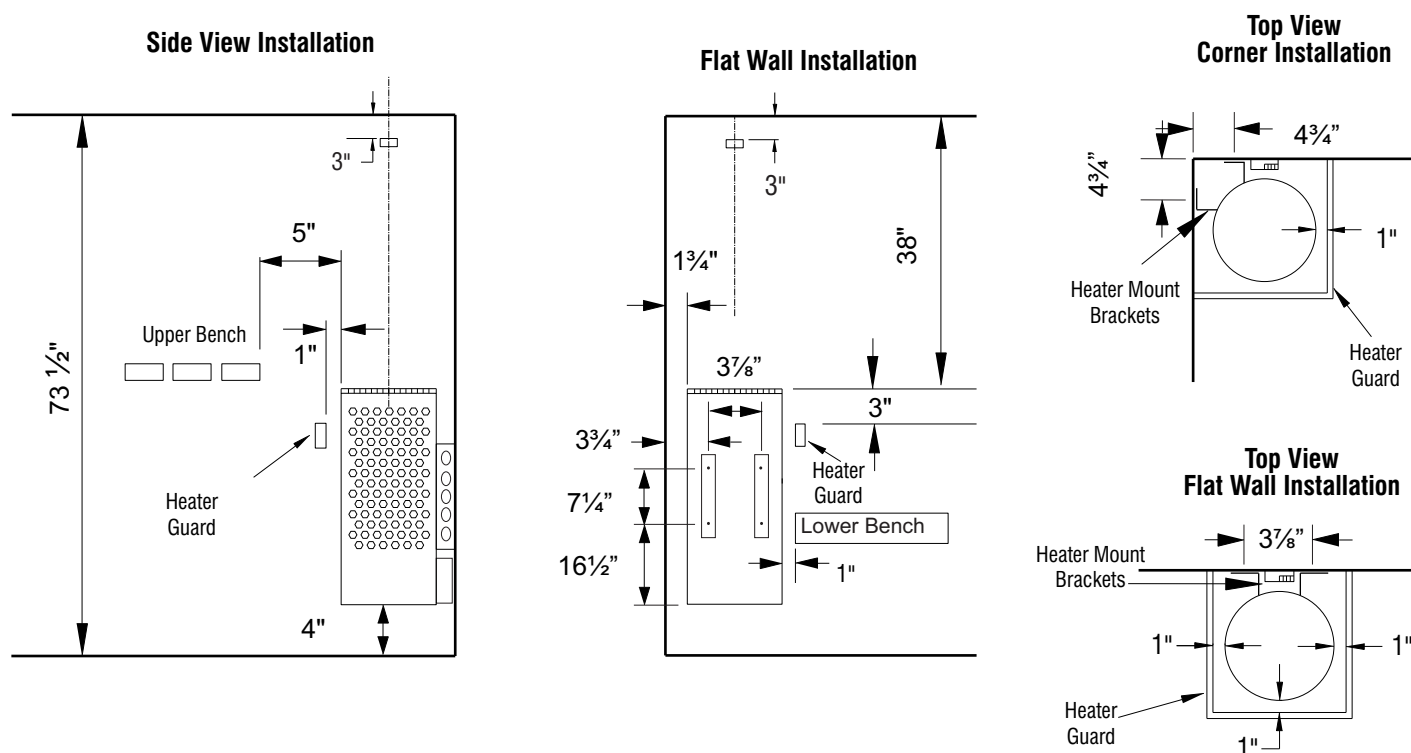


INSTALLATION AND OPERATING INSTRUCTIONS

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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 THE RISK OF FIRE

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 Heater
Piccolo Trend 1.7 1217-17-1706	1.7	7 sq. ft.	73 1/2"	50	84"	85	1	120	14.2	2 #12AWG+N+GR
Piccolo Trend 2.1 1217-21-1706	2.1	8 sq. ft.	73 1/2"	70	96"	120	1	120	17.5	2 #12AWG+N+GR
Piccolo Trend 3.5 1217-35-1706	3.5	12 sq. ft.	73 1/2"	100	96"	175	1	240	14.6	2 #12AWG+N+GR

NOTE 1: Neutral is required for heater and control to operate. Light output from heater is 120 volts at 2 amps maximum.

SECTION 2: MOUNTING OF SAUNA HEATER

HANGING THE HEATER This heater can be installed in a corner or on a flat wall. The heater brackets are factory attached for a flat wall installation. To mount the heater in the corner reverses the brackets.

Using the template provided, drill four 9/64" holes to fasten the heater to the wall. The screws must be threaded through the wall into a framing member or backing board to support the heater weight. Install the two 1/4" x 1 1/2" hex head lag screws (supplied with the heater) into the upper two holes. Install the two 1/4" x 1" hex head lag screws (supplied with the heater) into the lower two holes. Tighten these screws until their heads are about 1/8" from the wall surface. Hang the heater on the four screws. Tighten to lock the heater in place. See Diagram 1 for the heater location details and the necessary clearances to combustible materials. Refer to Diagram 1 for drawings and Diagram 4 for pictures.

SECTION 3: PLACING OF ROCKS (SEE DIAGRAMS #10 and 11)

The rocks supplied 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.

Install the BWT (Bio Water Technique) tank between the two heating elements. The BWT tank rests on the top of the elements and aligns with slot in the back heat shield (See Diagram 11). Place the cover on the tank followed by the fragrance diffuser cup on top.

Start inserting rocks into the heater in even layers so that the heating elements remain as vertical and evenly spaced as possible. Continue to randomly drop rocks into the heater until you are even with the top of the heating coils. Add one more loose layer to cover up the elements and closed portion of the BWT tank. (Do Not Cover Up the round fragrance diffuser on top of the BWT!) The rocks must fully cover the heating elements. Attach the rock guard with the screws provided. See Diagram #10 & 11 for rock placement.

Packing the rocks too tightly may cause the heater high limit switch to trip or the room to heat slow.

SECTION 4: ELECTRICAL HOOK-UP

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

- NOTE: A GFCI (Ground Fault Interrupt Circuit) device is not required by ETL. A GFCI may be installed if required by local codes but will nuisance trip during use of the product.
- CAUTION: Loose wire connections can cause heat damage to wires, terminal blocks and other components and may void the warranty.

Remove the four screws and cover from the back the electrical access of the heater. Slowly slide out the electrical wiring compartment. Route the wires through the holes provided in the bottom of the heater 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 & 8 for proper connections.

SECTION 5: TEMPERATURE SENSOR

Feed the "low voltage" sensor wire from the sensor to the sauna heater 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. Route the wire to bottom of the heater and connect to the Sensor (NTC) Port on the circuit board. Mount sensor to finished wall 3" from the ceiling directly above the heater using two (2) screws (provided) as shown in diagrams 1, 3, 5, & 8.

WARNING

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

Do not place hand or arms over the BWT when hot.

Steam from BWT may cause severe burns.

Do not pour chlorinated pool or spa water on heater or in the BWT.

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.

INSTALLATION AND OPERATING INSTRUCTIONS

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DIAGRAM 3

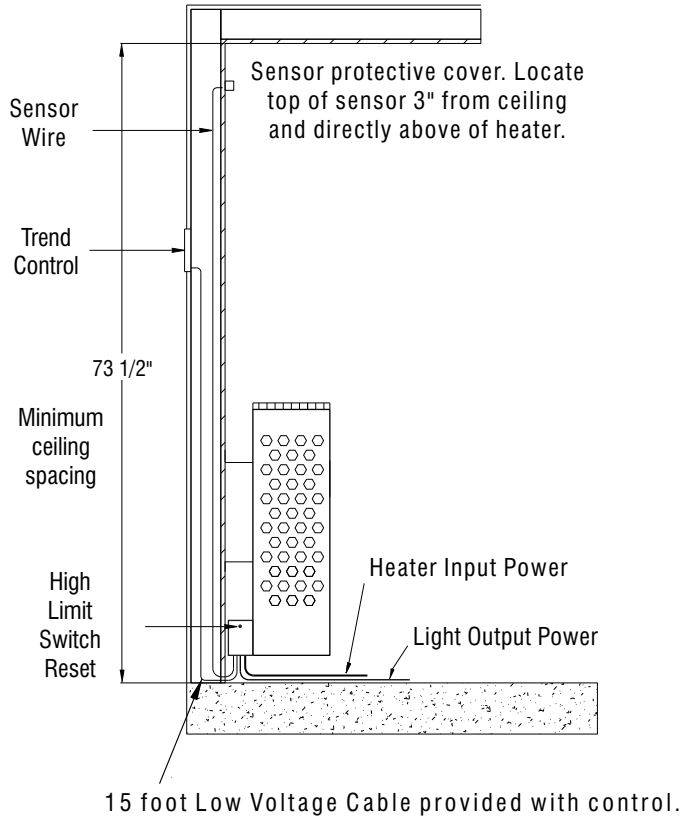


DIAGRAM 4

Mounting Heater to Flat wall or Corner.



DIAGRAM 5

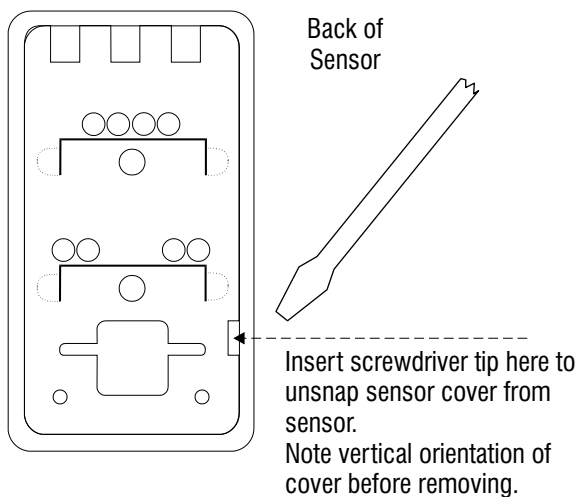


DIAGRAM 5, continued

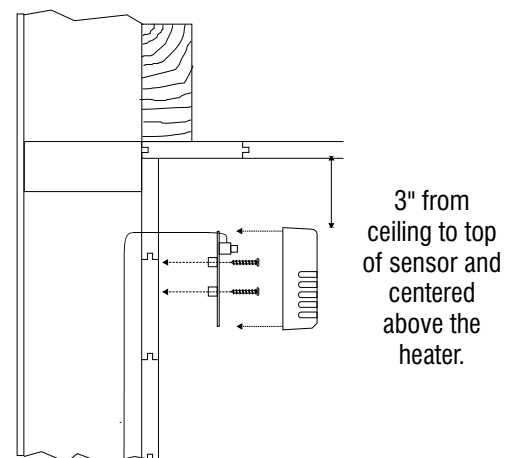


DIAGRAM 6

120 Volt Wiring Diagram Color Code

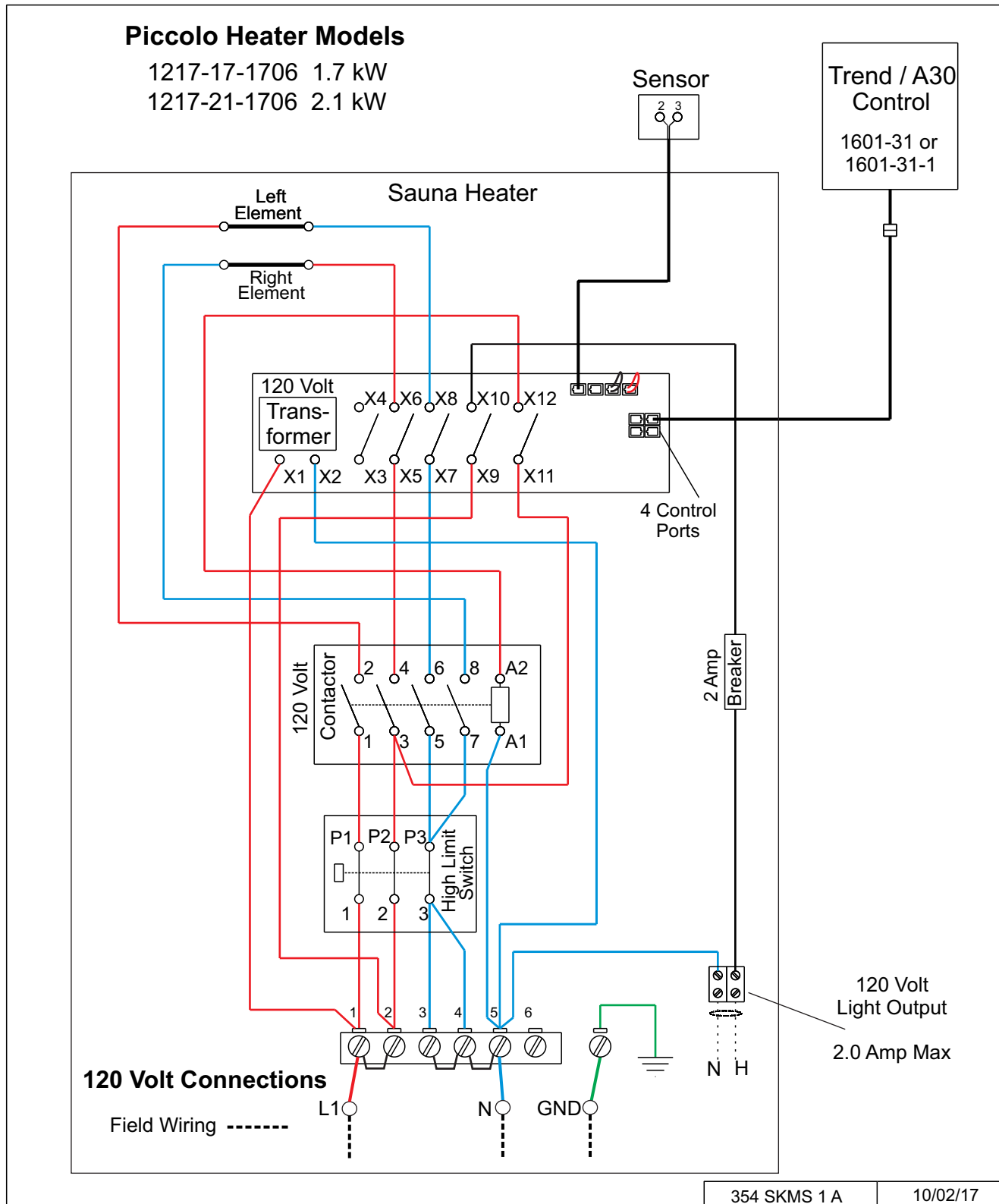
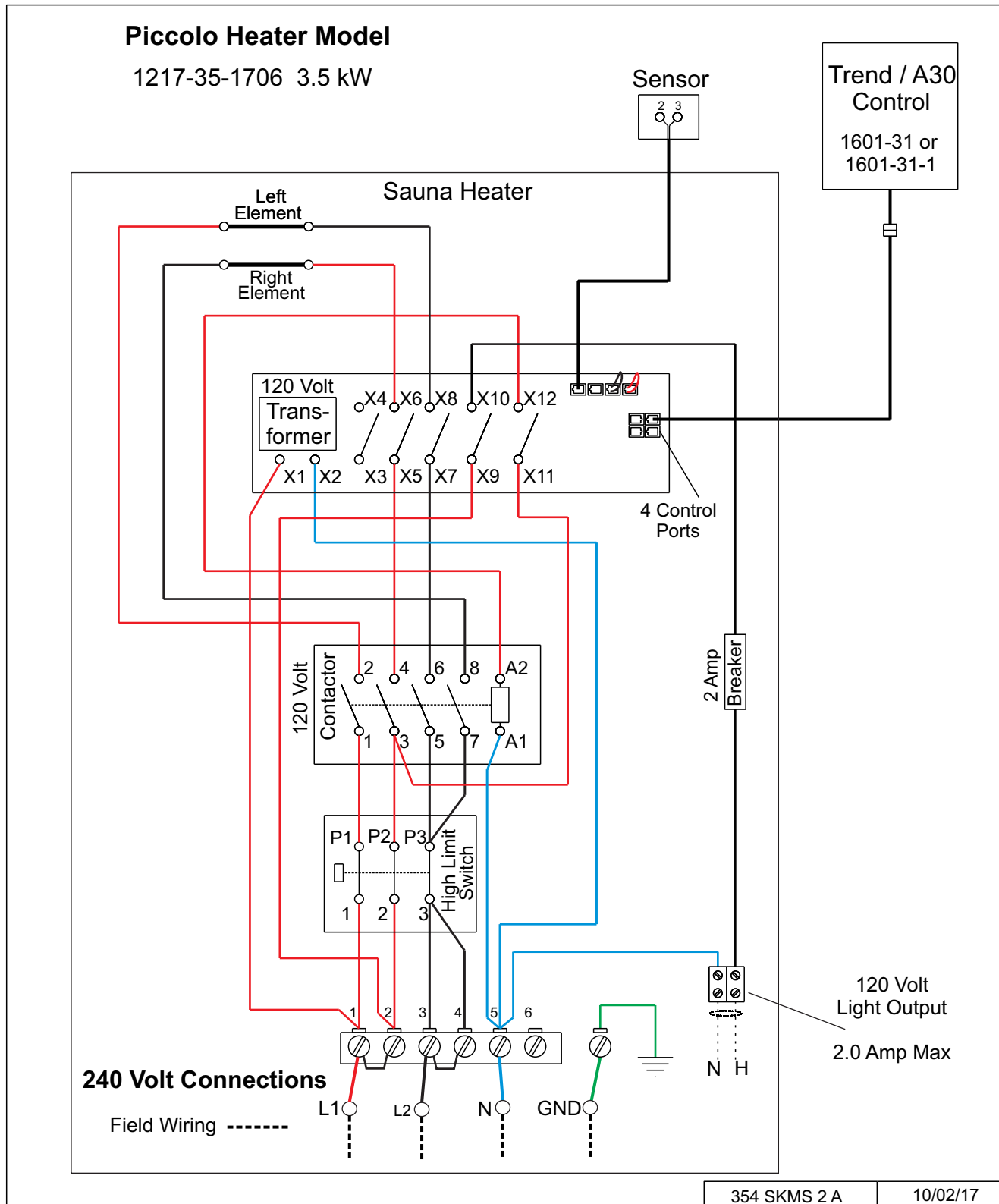


DIAGRAM 6

240 Volt Wiring Diagram Color Code



SECTION 6: HEATER 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 1.

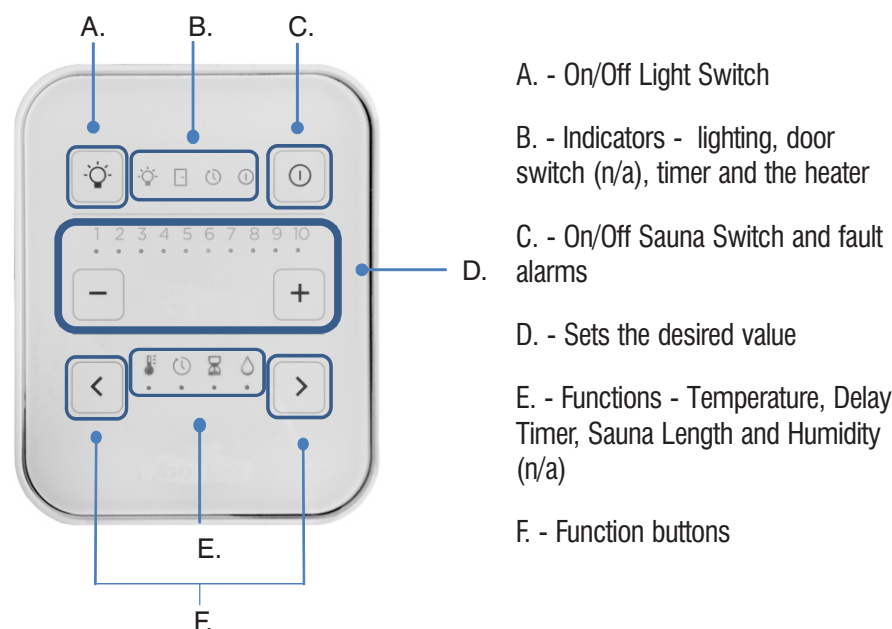
SECTION 7: CONTROL INSTALLATION & OPERATION

INSTALLATION ROUGH IN: Place the control inside or outside the sauna room. If the control is installed inside a sauna room, the top of the unit cannot be higher than 48 inches above floor. Maximum control cable length is 50 feet.

String the provided low voltage control cable through 1" holes in the wall studs or ceiling joists from the control location to the heater. Do not use staples to secure the low voltage cable, it may damage the cable!

Plug the control cable into the control and TEST the control BEFORE mounting!!

After testing is complete, CLEAN the mounting surface to ensure it is free from dust. Remove the adhesive tape from the back of the control, push any excess cable into wall cavity and press the control to the mounting surface.



A. - On/Off Light Switch

B. - Indicators - lighting, door switch (n/a), timer and the heater

C. - On/Off Sauna Switch and fault alarms

D. - Sets the desired value

E. - Functions - Temperature, Delay Timer, Sauna Length and Humidity (n/a)

F. - Function buttons

CONTROL OPERATION:

TURN ON LIGHT: Press the "light bulb" icon once to turn on the light and press again to turn off. (Usage of light control is optional)

SAUNA LENGTH: (Control 1601-31) Select the sauna length function by pressing the buttons < > (F). Set the desired usage time (0–60 minutes) using the – and + buttons. (Setting 10 equals 60 minutes)

(Control 1601-31-1) Usage time is 0-24 hours operation
(Setting 1 = 2 hours, setting 10 = 23 hours)

Version	LED									
	1	2	3	4	5	6	7	8	9	10
1 hour	6 min	12 min	18 min	24 min	30 min	36 min	42 min	48 min	54 min	60 min
24 hour	2 hr	4 hr	6 hr	8 hr	10 hr	12 hr	14 hr	16 hr	18 hr	24 hr

WARNING

Do not locate benches over heater. Refer to Diagram 1 for minimum clearance of ceiling above heater is required.

Minimum clearance from heater to wooden surfaces (benches, side walls, heater fence etc.) is required. Refer to Diagram 1 for specific information.

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: OPERATION, Continued

SET TEMPERATURE: Press function button (F). Then you can choose the desired temperature 1–10 using buttons < and >. (Setting 10 equals highest set point.)

START HEAT IMMEDIATELY:

Start the heater on by pressing the On/Off button. The latest temperature and usage time settings will remain preset. The On/Off indicator will glow green while heating. To add more time after system is running, press the On/Off button twice to restart program.

When system is heating, the set temperature indicator LED will remain solid and the current temperature indicator LED will flash. When the current temperature reaches the set value the indicator light will stop flashing.

You may switch the system off before the usage time ends by pressing the On/Off button. The On/Off indicator LED will go out. NOTE: The room light indicator will remain on. It will turn off automatically after 10 minutes.

TIME DELAY START TIME: The control may be set to delay start mode to activate the heater after a preset amount of time. Select the clock symbol using the function button (F). Use the < and > buttons to select the amount of hours (1–10 hours) after which the device will switch on. Activate a later start by pressing the Start button (C).

The timer symbol light will come on (in field B) and the selected time-lapse indicator light will start flashing. The flashing indicator measures and indicates the time leading up to the device being switched on. When the heater starts, the control panel will automatically show the set temperature.

SECTION 8: 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.

To restart the heater, let the heater cool, then push the reset button on the lower back left corner of the heater, see Diagram 3 & 8. If the high limit continually shuts off the heater, refer to Section 16 for Troubleshooting.

SECTION 9: HOW TO TAKE A SAUNA

- When taking a sauna, allow time to relax completely.
- Remove clothing and jewelry...if required, wear a towel loosely.
- Some sauna bathers enjoy the soothing effect of steam by splashing water on the heated sauna rocks. Use only one dipper full (approx. ½ cup) at a time and keep clear of the steam as it rises off the rocks.
- This heater has a BWT provided and must be installed in the heater.
- Water in the BWT will add a continuous humidity to the sauna room. Additional water can be poured onto the hot rocks at any time to boost the steam level.
- Fill tank with approximately 2 cups of fresh tap water when heater is turned on (never use water from a pool or spa!)
- Heater can operate with BWT tank empty if user does not want constant steam.
- You may add fragrance oils to the BWT if desired.
- Do not pour chlorinated pool or spa water on the heater or corrosion damage may result.
- 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.
- Do not smoke, exercise or drink alcoholic beverages in the sauna room.



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

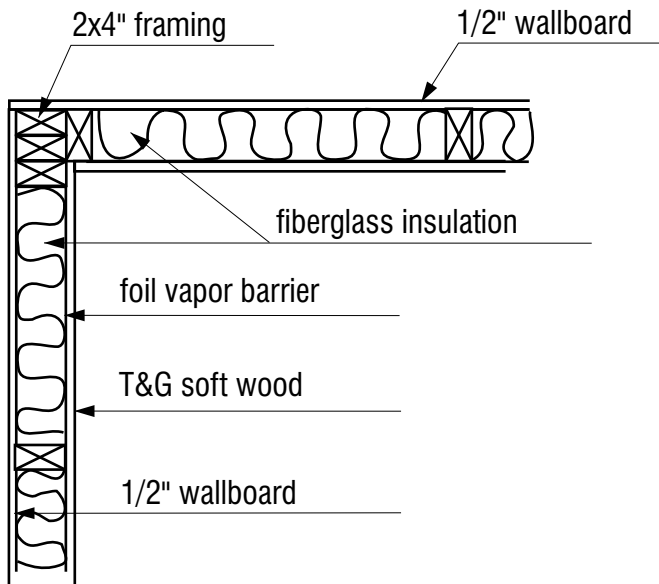
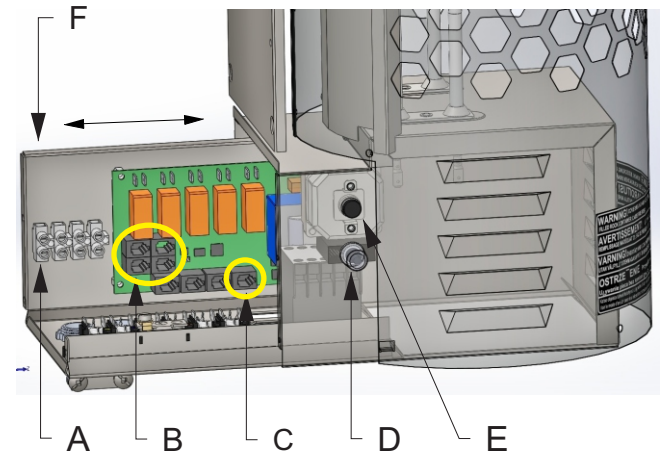


DIAGRAM 8

Electrical Compartment Components



- A. - Light Out Terminal Block
- B. - Trend Control Port Connection (Suggest Upper Left Port)
- C. - Sensor (NTC) Port Connection
- D. - Light Fuse
- E. - High Limit Reset
- F. - Electrical Access Tray (Slides In and Out)

DIAGRAM 9

VENTILATION

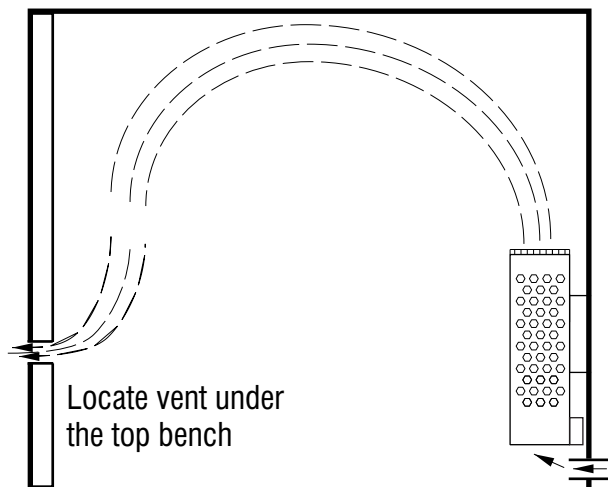
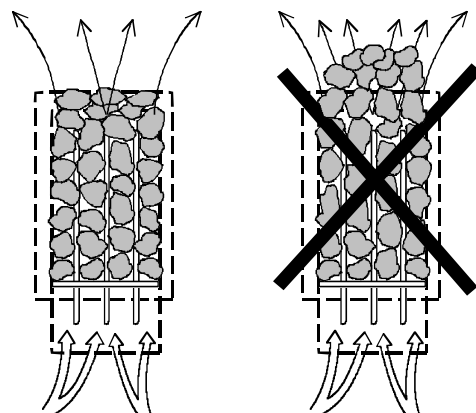


DIAGRAM 10

Rock Placement



1. Install BWT tank with rock spacer under tank.
2. Put smaller rocks in first around the outer perimeter of the heating elements in layers.
3. Ensure the elements are vertical and BWT is in position while filling the heater with rocks.
4. Be sure rocks completely cover the elements.
5. Loosely cover the tops of all elements and the BWT cover with rocks.
6. Do NOT Cover the Fragrance Diffuser with Rocks
7. Install rock grill on heater.

DIAGRAM 11



BWT tank hangs on the top of the heating elements and aligns with inserted tabs into back heat shield.



BWT tank, tank lid, and the fragrance diffuser installed and the rocks placed around the tank.

SECTION 10: WARNING PLACARDS

Three 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 French and English WARNING placards must be attached to the door outside of the sauna room.

SECTION 11: 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.
- If a room light is installed, it should be a surface mounted bracket type. Wall mounted lights should be about 70" above the floor. Ceiling mounted lights should be of an approved type with a junction box that is remote to the fixture itself.
- Fire sprinkler systems installed inside any sauna room should be properly rated for sauna room temperatures.
- Always install the heater according to these installation instructions.

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 12: VENTILATION

VENTILATION In a 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:

For $R < 31$, $V \geq 9.3$, 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

SECTION 13: BWT (Bio Water Technique) Technology

The world sauna trend is moving to the higher humidity and lower temperatures. Many find it easier to breathe, the skin feels warm, and the humidity helps induce a sweat. This system will increase the humidity in the room allowing the air temperature to be lower, and still feel hot.

BWT technology provides the ability to increase humidity levels in the sauna room while the heater is warming up and during the sauna session. The continuous soft boil of water during the sauna session increases the humidity in the room to provide a consistent feel. Additional water can be added to the rocks to provide an additional spike of humidity as needed.

How to use BWT: Allow heater to warm up for approximately 20 minutes and add water into the tank through the side of fragrance diffuser with slots. Add approximately 2 cups of fresh water into the tank. Do Not Use Pool or Spa Water.

Fragrance oils can be placed in the side of the fragrance diffuser without the slots. Avoid adding fragrances directly into the water of the BWT. The oils may cause the water to foam and maybe difficult to remove the scent from the tank.

BWT tank and sleeve should always be installed in heater with rocks. Water in the tank is optional and not required if preference is lower humidity.

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.

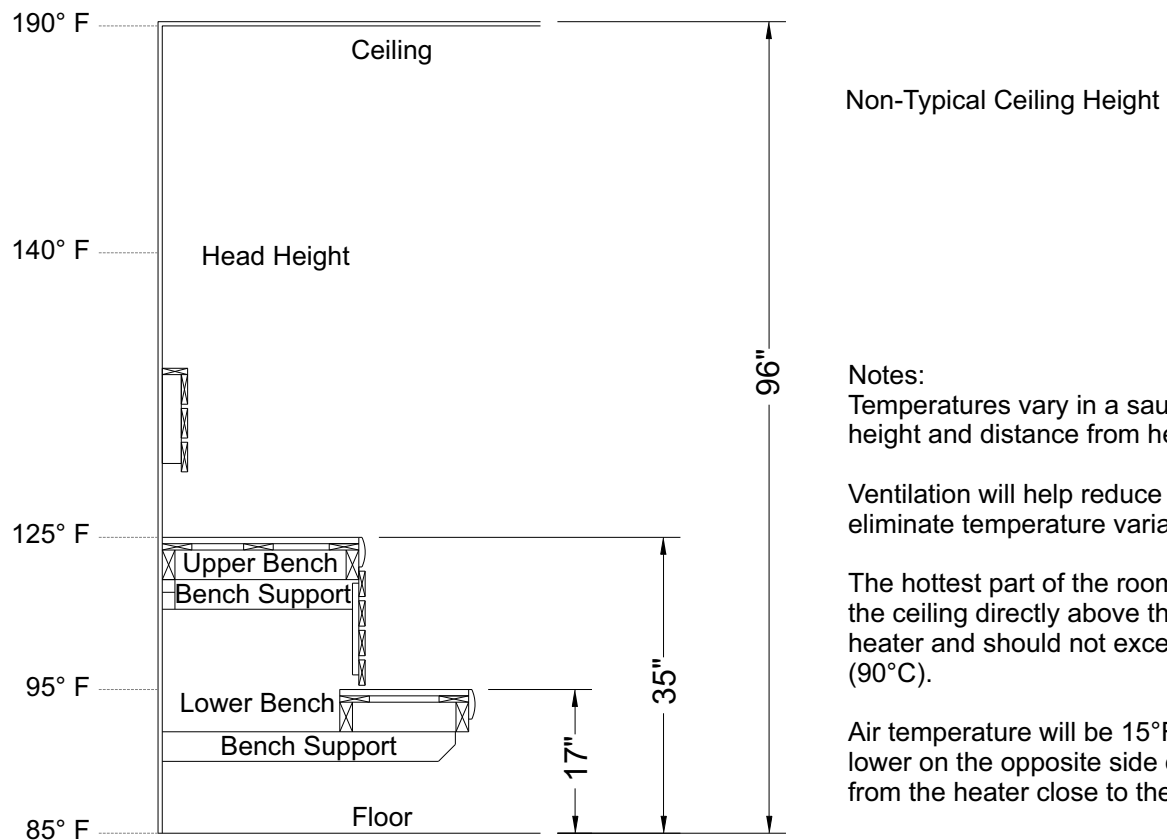
Air out the sauna often by keeping the door and vents open when the sauna is not in use. Saunas that are in daily use should be washed down at least once a week to keep them clean and the air fresh. Duckboard should be removed from the sauna, the sauna floor mopped and dried in a conventional manner, 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.

BWT will accumulate hard-water scale inside the tank as the water is evaporated over time. The water scale will not immediately affect performance. It is recommended to remove the tank from the heater and clean it when you notice a heavy accumulation of minerals or when the rocks are changed. Simply tap on the sides of the tank to loosen the scale and then dump into a waste basket. If stubborn scale accumulation remains, you may use any commercially available de-scaling product to remove built-up hard water scale. Follow up with a fresh water rinse before putting BWT back into the heater.

DIAGRAM 12: ROOM TEMPERATURES



Notes:

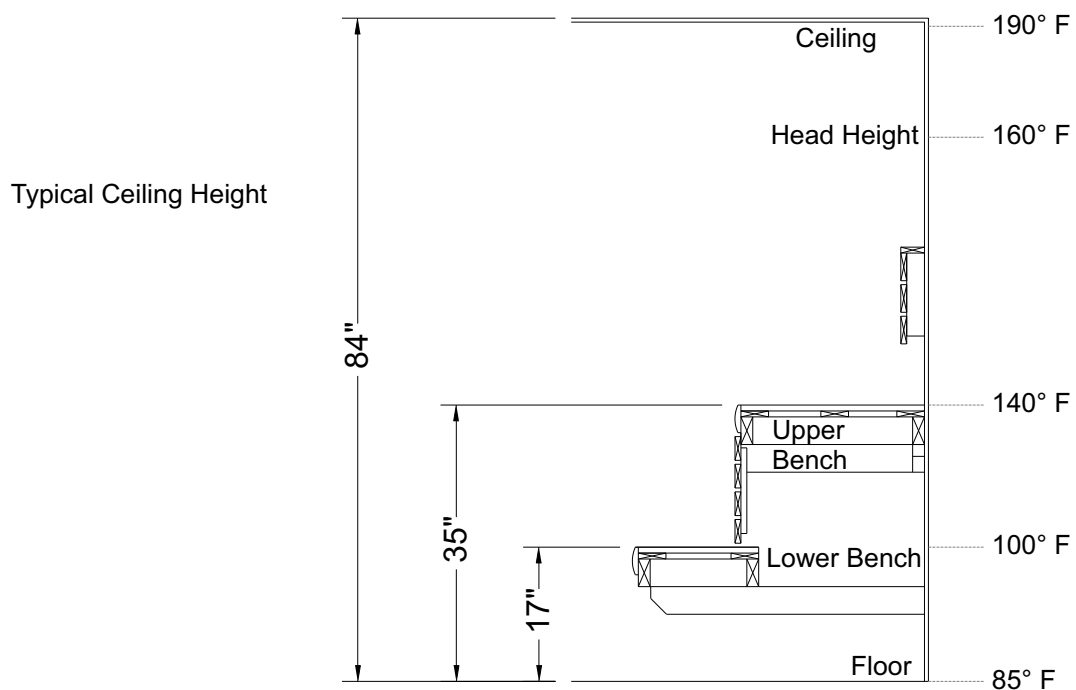
Temperatures vary in a sauna room by height and distance from heater.

Ventilation will help reduce it but will not eliminate temperature variations.

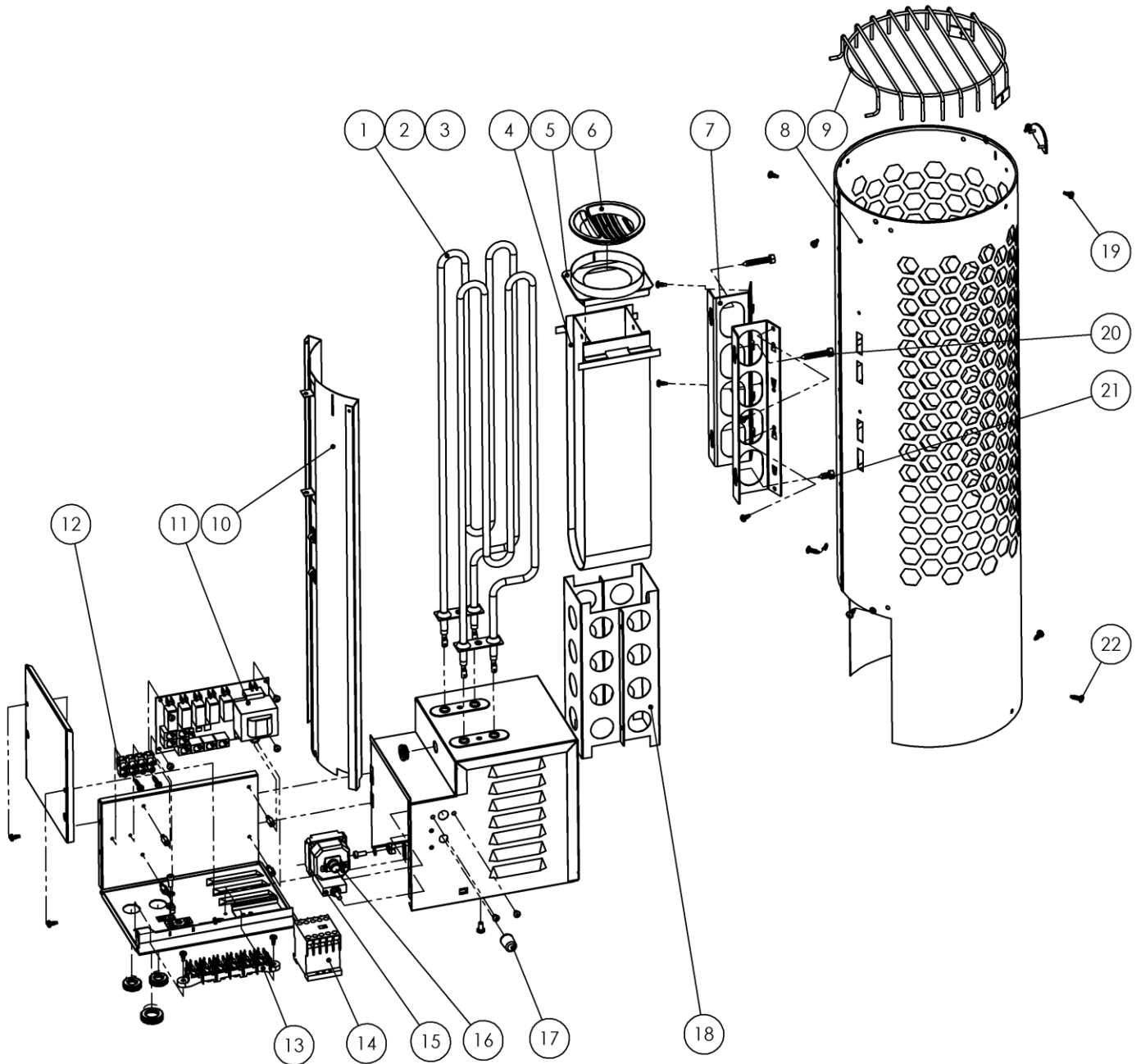
The hottest part of the room is always at the ceiling directly above the sauna heater and should not exceed 194°F (90°C).

Air temperature will be 15°F to 25°F lower on the opposite side of the room from the heater close to the ceiling.

The temperatures in the elevated view are general numbers. Each sauna room is different due to construction variations and ventilation.



SECTION 15: REPLACEMENT PARTS



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SECTION 15: REPLACEMENT PARTS

ID #	THI Part Number	Description	Qty
1	3001-761	Element,850W, 120V, SEPC-232	2
2	3001-762	Element, 1050W, 120V, SEPC-233	2
3	3001-763	Element, 1750W,240V,SEPC-234	2
4	8100-479	BWT Tank	1
5	4009-001	BWT Tank Cover	1
6	8221-06	BWT Herb cup	1
7	8100-485	Heater wall mount bracket	2
8	8012-524	Shroud, outer, black	1
9	8019-514	Rock Grill	1
10	8012-525	Shroud,Galv,Heat Sheild / High Limit,Internal	1
11	3229-002	PCA, Low, 120v	1
12	2100-207	Terminal strip, 4 position	1
13	2100-551	Terminal,Block,6-Position	1
14	3131-516	Contactor, LC1K09004G7, 120v	1
15	3100-593	Schurter Fuse, 2amp	1
16	3100-509	High Limit Switch, 150°C	1
17	2137-30	Cap,Clear Silicone,(for reset Light Fuse)	1
18	8007-001	Internal Tubular Sleeve for BWT	1
19	N/A	Pan Head, blunt tip, M2, Black Screw	
20	N/A	1/4-20 x 1-1/2" lag bolt	2
21	N/A	1/4-20 x 3/4" lag bolt	2
22	N/A	Screw,PH,Black,Blunt,Washer Type, M2	
	7200-008	Wood htr guard	1
	8201-046	Bracket,Wood Heater Guard, Black	3
	9301-158	Sensor, Olet 29 with cable	1
	2990-103	Rocks, medium, 50lb/23kg	1

SECTION 16: TROUBLESHOOTING

Control will Run but No Heat - Press the (reset) high limit switch on the back right side of heater.

Slow Heat Time or High Limit Tripping - Check rock placement, they will break down over time and reduce the air flow in the heater. Refer to Diagram 10 for proper rock installation. Discard all rocks under the size of 2" pieces. Call the number below to order more rocks if needed.

In the event of a fault occurring in the heater system (control panel, temperature sensor, etc.), the LED On/Off indicator will flash red on the control panel.

The fault error code will be displayed with a constant LED light or a flashing LED light under numbers 1-10. See the list below for fault codes.

Constant LED Fault Code (ones marked with “n/a” are not in use):

- 1 Temperature sensor not connected or it is faulty
- 2 n/a
- 3 Heater circuit board overheated
- 4 One or more relay defective
- 5 n/a
- 6 n/a
- 7 Temperature sensor
- 8 n/a
- 9 Clock disconnected
- 10 Power supply to clock disconnected

Flashing LED Fault Code

- 1 n/a
- 2 n/a
- 3 n/a
- 4 Temperature sensor faulty
- 5 Problem with device connection
- 6 n/a
- 7 n/a
- 8 Too many temperature sensors connected
- 9 n/a
- 10 n/a



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