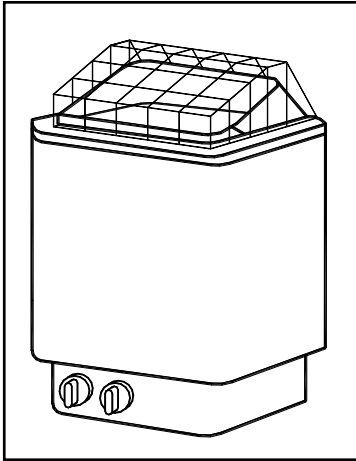


INSTALLATION AND OPERATING INSTRUCTIONS



NTSA SERIES SAUNA HEATER

MODELS: NTSB-20, NTSB-30
NTSB-45, NTSB-60
NTSB-80, NTSB-90

(WITH BUILD-IN OR OUTER 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 CE 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 3 for wire and room size requirements.

These heaters are wall mounted, equipped with build-in mechanical or outer digital control.

NTSB-20,NTSB-30: 12" W×8" D×18⁵/₈" H
NTSB-45,NTSB-60 NTSB-80,NTSB-90: 16" W×11" D×22¹/₂" H

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.

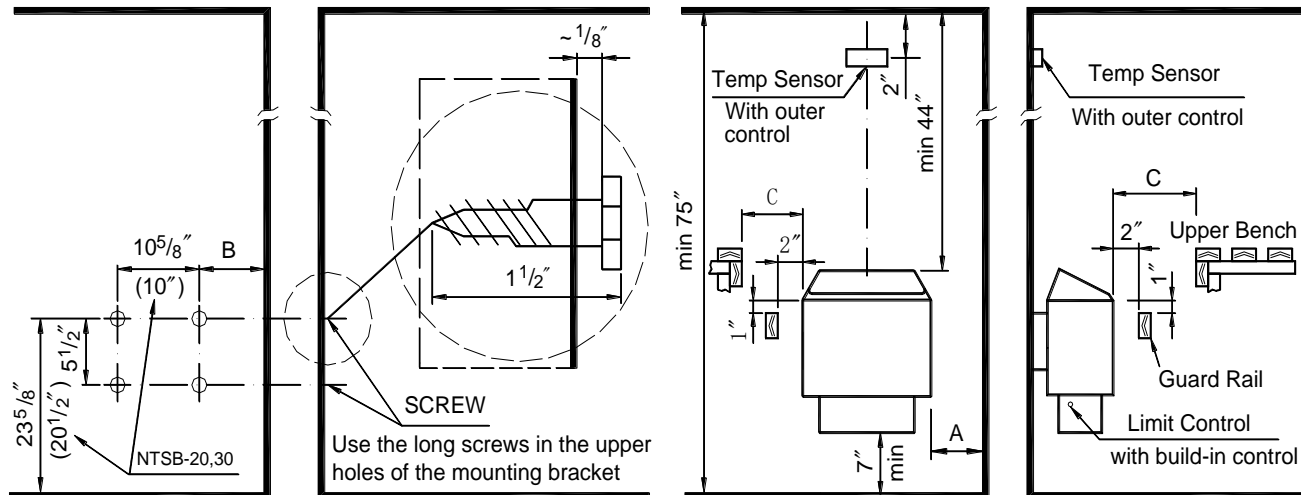
The heater gets extremely hot during operation and should not be touched or burns may result.

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.

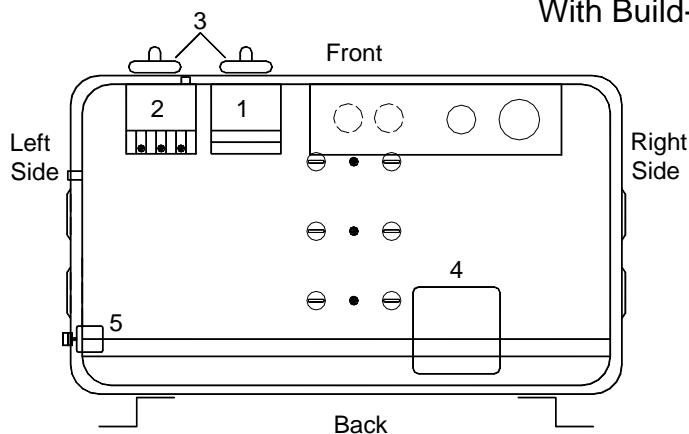


OBSERVING MINIMUM DISTANCES IS REQUIRED TO REDUCE FIRE HAZARD

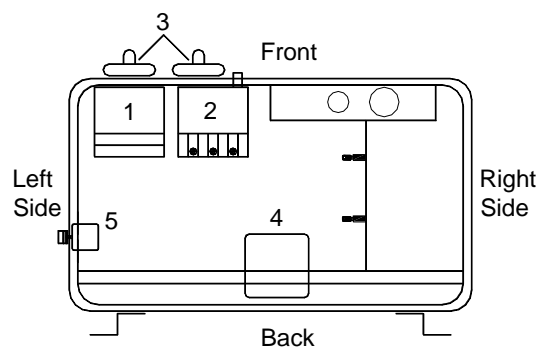
SAUNA HEATER	Minimum safety distance (in.)		
	A	B	C
NTSB-20,NTSB-30	3	4	8
NTSB-45	3 1/2	6 1/4	8
NTSB-60	4	6 3/4	9
NTSB-80	6	8 3/4	10
NTSB-90	6	8 3/4	10

DIAGRAM 2

With Build-in Control



NTSB-45, NTSB-60, NTSB-80, NTSB-90



NTSB-20, NTSB-30

- 1.Thermostat 2.Timer (60 minutes) 3.Knobs for the thermostat and the timer
4.Contactor 5.Limit control (Manual reset thermostat)

DIAGRAM 3

Model	kW	Sauna Room (CuFt) Height ≤ 75"	Power Supply (60Hz 1 Phase)		Power Wire Size (Copper)	Fuse A
			voltage V	Current A		
NTSB-20	2.0	70-140	120	16.7	2#12AGW +GR	25
NTSB-30	3.0	70-140	240	12.5	2#12AGW+N+GR	16
NTSB-45	4.5	105-210	240	18.8	2#10AGW+N+GR	25
NTSB-60	6.0	175-320	240	25	2#10AGW+N+GR	32
NTSB-80	8.0	250-420	240	33.3	2#8AGW+N+GR	45
NTSB-90	9.0	320-460	240	37.5	2#8AGW+N+GR	45

SECTION 2: MOUNTING OF SAUNA HEATER

Refer to diagram 1, hanging the heater on the wall. Drill four 9/64" holes to fasten the heater to the wall. Install two 1/4"x1 1/2" hex head lag screws (supplied with the heater) into the upper two holes. Tighten these screws until their heads are about 1/8" from the wall surface. 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 two upper screws. Locate the two 1/4"x1" hex head lag screws(supplied with the heater) then install them into the two lower mounting holes. Tighten to lock the heater in place. See Diagram 1 for the heater location details and the necessary clearances to combustible materials.

SECTION 3: PLACING OF ROCKS

Never operate the heater without rocks in place! Otherwise it may cause fire, only use the original sauna rocks or the rocks for use in heater. Use of any other type of rock may void the heaters warranty. Rinse the rocks with water before placing through 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. (See Diagram 13)

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

SECTION 4: ELECTRICAL HOOK-UP

Electrical installation must be made by a licensed electrician in accordance with the National Electrical Code and local regulations. All the wiring connection inside the heater has been done in factory and carefully checked. To determine the correct wire size, refer to Diagram 3. Use copper supply wire only, suitable for minimum 221°F (105°C). The heater must be grounded! See Diagram 6 to 9 for proper connections.

For build-in control heater, customers only need to connect the power supply. Remove the compartment cover from the front of the box, route the feed wires through the right holes provided in the bottom of the heater, connect the power wires to the terminal block(Refer to Diagram 6 and 8).

For outer control heater, customer need to connect the power supply to control box(Refer to controller manual). And connect the rubber cable wire, between control box and heater (Refer to Diagram 7, 9 and controller manual).

SECTION 5: TEMP SENSOR BOX (Only With Outer Control)

Mount sensor to finished wall 2" from the ceiling directly above the heater, see Diagram 1, 4 and 7. The temperature sensor box is equipped with 10 feet connection wire and connector. Please drill a hole with 3/4 inch diameter, then lead the connecting wire through and connect it to terminal on main-board in the control box (Refer to controller manual). Then open the box cover, fix the temperature sensor on wall with screws, and put back the cover.

Sensor wire must be routed completely separate (as per low voltage electrical wiring codes) from any wiring carrying over 50 volts.

SECTION 6: CONTROL BOX (Only With Outer Control)

Only sauna heater with outer control NTS-200 is equipped with control box. The control box should be installed close to heater and outside of the sauna room. The installation spot should be well-ventilated and dry, with enough space for wire layout; the environment temperature cannot exceed 140°F; the control box can also be hanged on wall or shelf. Please refer to the controller manual for the control box connecting.

SECTION 7: 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 1 and 12.

WARNING

The control for this a thermostat to adjust the sauna temperature and a timer to control when the heater starts and stops. For health and fire safety, never attempt to alter or bypass the timer or thermostat.

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 8: OPERATION (With Build-in Control)

The heater is provided with a thermostat to adjust the sauna bath temperature and a timer to control when the bath starts and stops. For health and fire safety, never attempt to alter or bypass the timer or thermostat. If the sauna is to be used without an automatic timer provided, an attendant must be present at all times.

SETTING THE TEMPERATURE The temperature can be adjusted by turning the thermostat knob. To raise the temperature, turn the knob clockwise; to lower the temperature, turn the knob counter-clockwise. See diagram 5.

SET OPERATION TIME: The heater has a "60 minutes" timer, so you could set the sauna heater operation time up to 1 hour(60 minutes). Turn the dial clockwise to the operation zone as showing in diagram 5, sauna heater will start to operate.

DIAGRAM 4

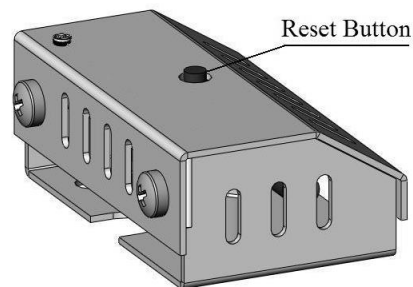
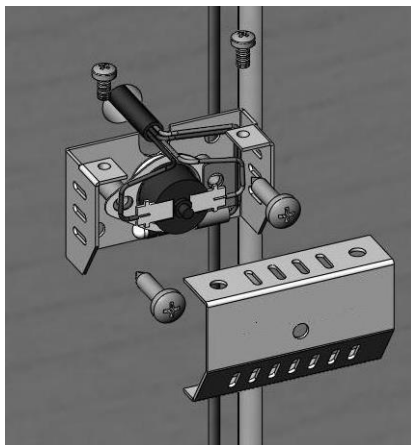
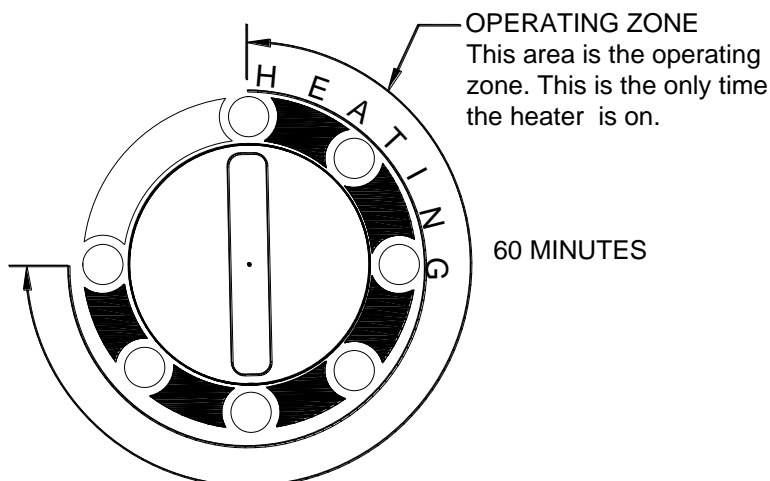


DIAGRAM 5

60 MINUTES OPERATING ZONE



THERMOSTAT
max 90°C

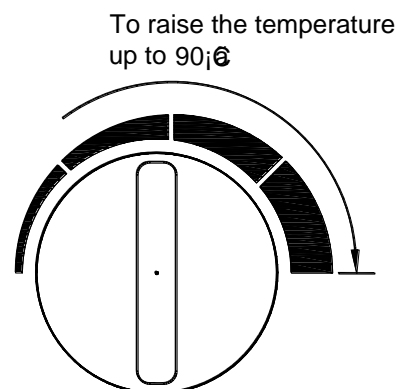


DIAGRAM 6

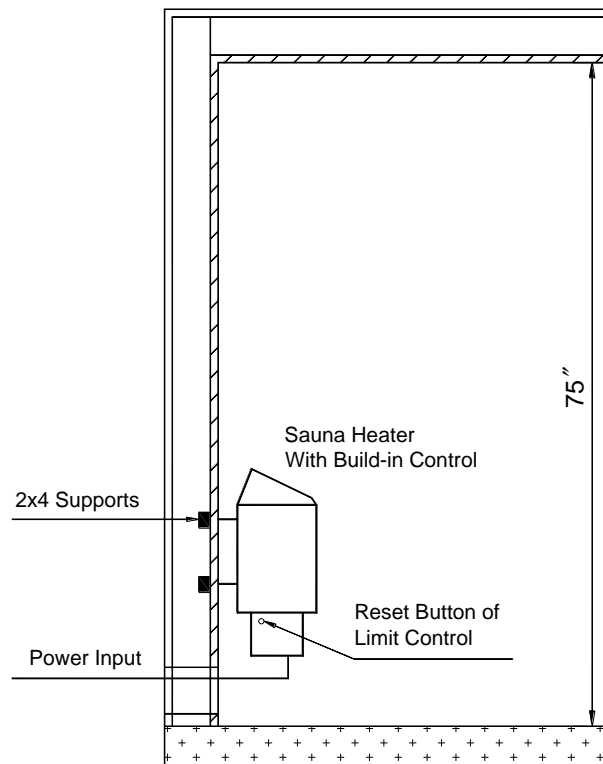


DIAGRAM 7

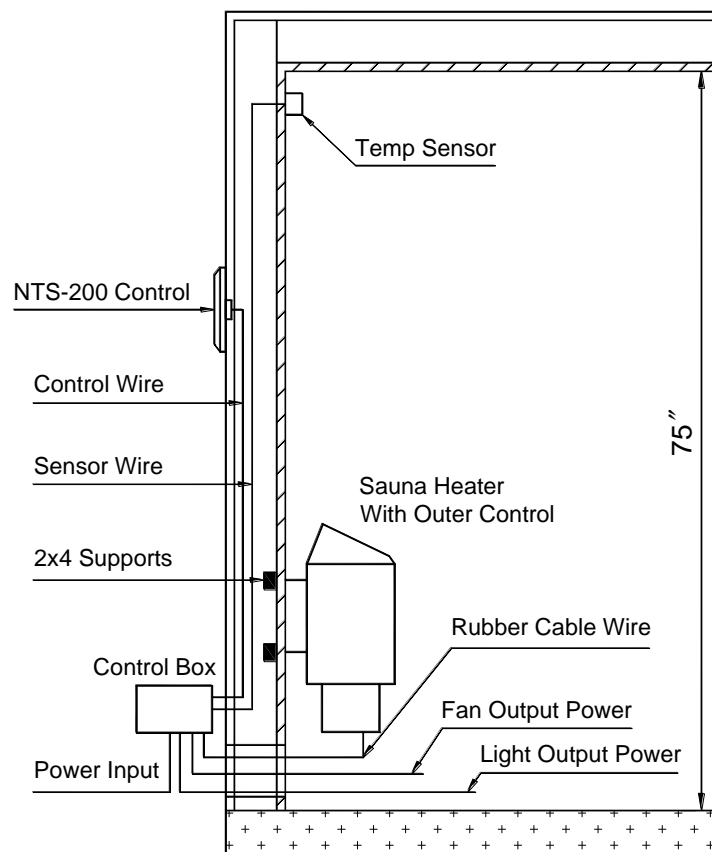


DIAGRAM 8

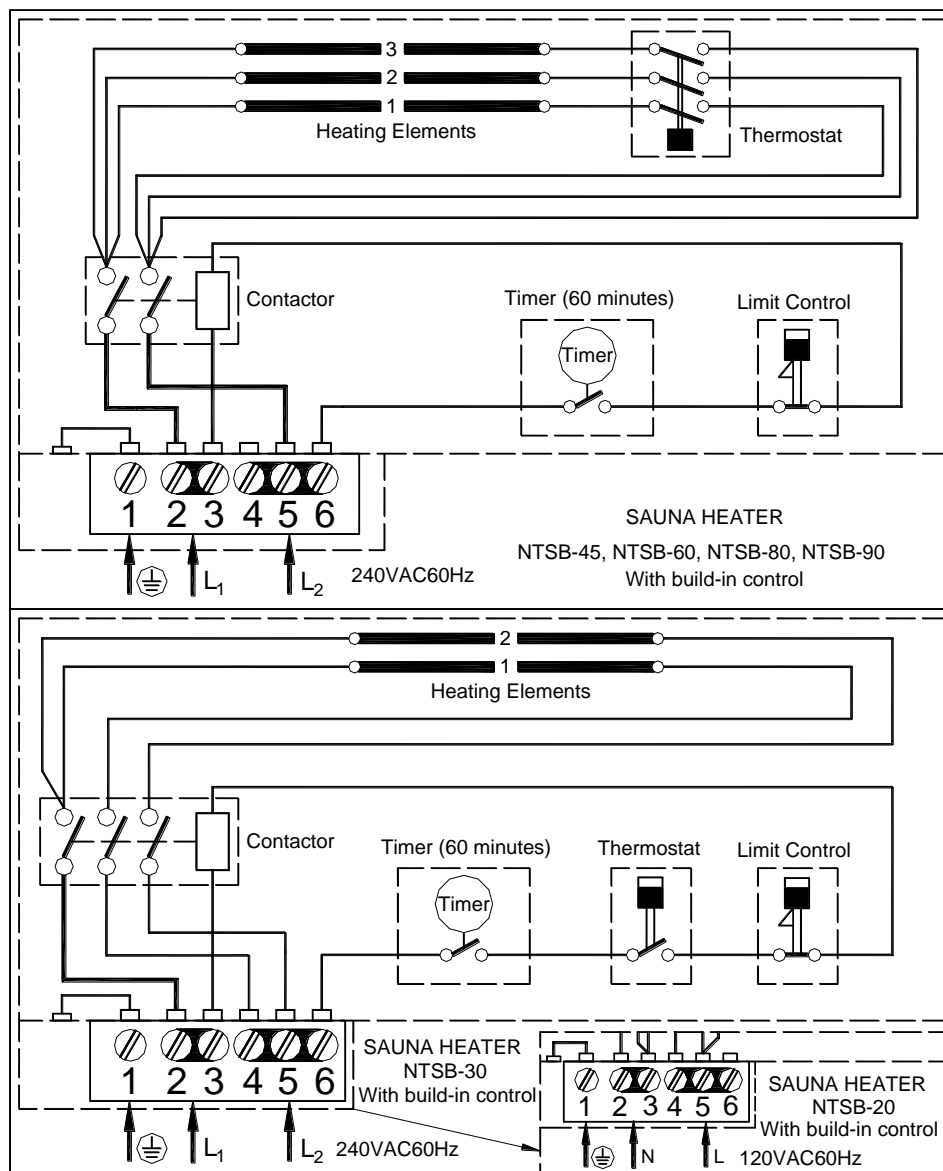


DIAGRAM 9

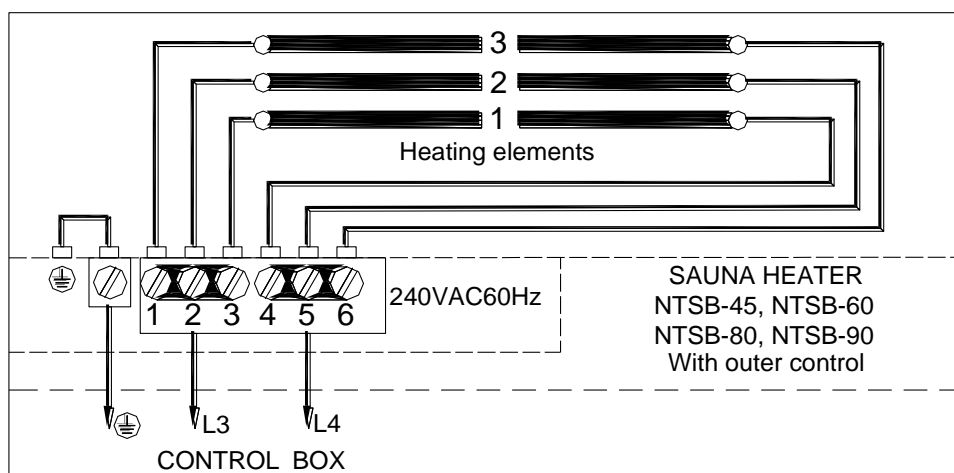


DIAGRAM 10

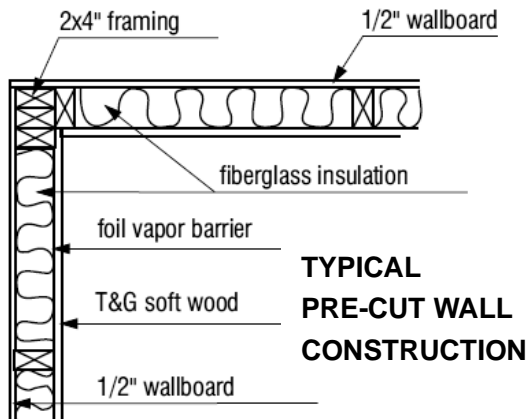


DIAGRAM 11

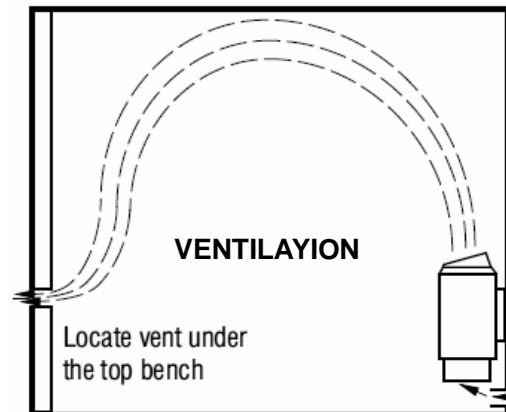
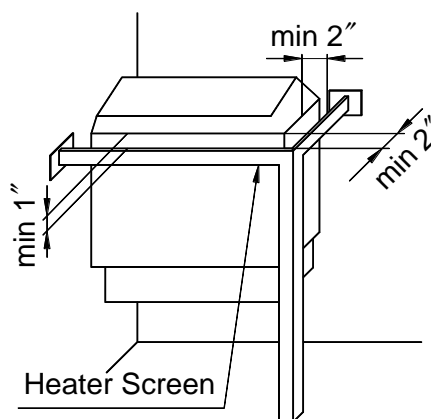


DIAGRAM 12



**HEATER SCREEN
(GUARD RAIL)**

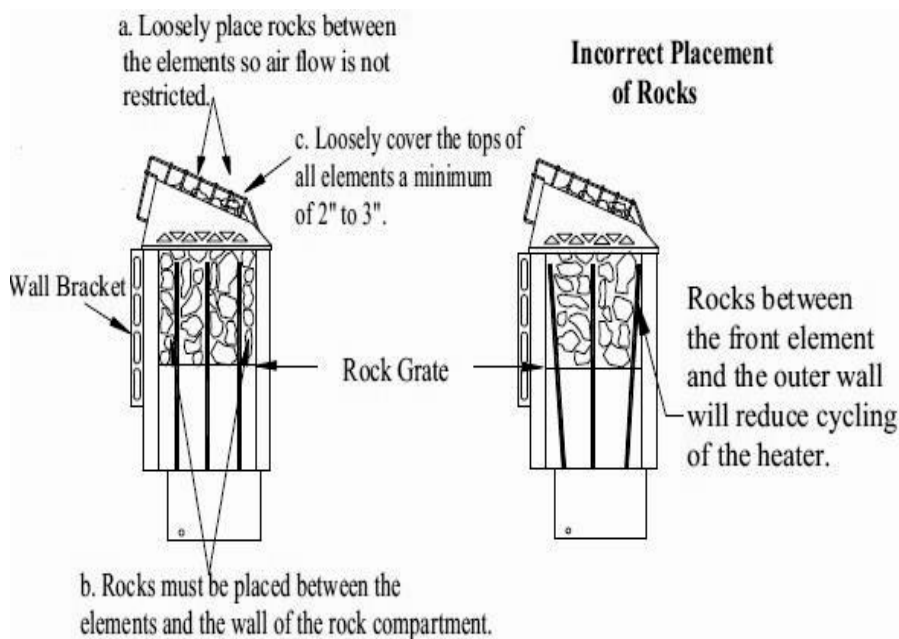


WARNING

REDUCE THE RISK OF ELECTROCUTION AND BURNS

Do Not Operate Unless Guard Is In Place

DIAGRAM 13



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

SECTION 9: LIMIT CONTROL (Manual Reset Thermostat)

The sauna heater with build-in control has a built-in manual reset thermostat. When the temperature of the sauna heater base exceeds 230°F (110°C), the **heating elements** are cut off by the manual reset thermostat control equipment, sauna heater stop heating under this hazard circumstance. If the manual reset thermostat continually shuts off the heater, please check the “**VENTILATION**” section carefully. The manual reset thermostat can only be manually reset after temperature falls back to normal range and turn off power supply, then restart the sauna heater as well, see Diagram 1, 2, 6 and 8.

The sauna heater with outer control has a temperature limiting thermostat in the temperature sensor box, which automatically turns off the heater by the temperature limiting thermostat control equipment if the temperature inside in the sauna room rises to an abnormally high level. The temperature limiting thermostat can only be manually reset after temperature falls back to normal range, and please restart the heater as well. If the thermostat or heater cannot be restarted, please check temperature limiting thermostat, please refer to Diagram 1, 4 and 7.

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 (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



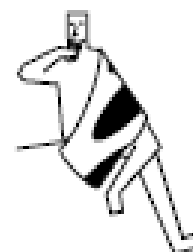
Sauna (10 - 15 min.)



Shower or swim



Rest (10 - 15 min.)



Relax with juice or water

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.
- 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. Use only a fixture that uses for fixture type internal wiring. A 60 Watt bulb should provide sufficient lighting.
- 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.

WARNING

The "CAUTION" and "WARNING" placards must be mounted in accordance with Section 11.



- REDUCE THE RISK OF OVERHEATING**
1. Exit immediately if uncomfortable, dizzy, or sleepy. Staying too long in a heated area is capable of causing overheating.
 2. Supervise children at all times.
 3. Check with a doctor before use if pregnant, in poor health, or under medical care.
 4. Breathing heated air in conjunction with consumption of alcohol, drugs, or medication is capable of causing unconsciousness.



REDUCE THE RISK OF FIRE
Do Not Place Combustible Material On 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 13: 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 went, See Diagram 11. 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 $R \geq 31$, $V \geq 0.3R$

in which:

R = the floor area of the room in square feet and

V = the minimum vent size in square inches

For the SI system of units, the equations are:

For $R < 2.9$: $V \geq 60$,

For $R \geq 2.9$: $V \geq 20.8 R$,

in which:

R is the floor area of the room in square meters and

V is the minimum area of ventilation openings in square centimeters.

SECTION 14: MAINTENANCE

Only licensed electrician is allowed to perform the maintenance. If you need technical support, please contact your dealer.

- Power supply must be cut off before any maintenance.
- Test the heater after maintenance.
- Frequent inspection is required to prevent hazard caused by damaged wire or parts due to moisture.
- Proper ventilation is important, check possibility of over-heating after the sauna heater operating for a while.
- Make sure heater is properly grounded; all cables are properly wired and not oxidized.

Care and cleaning:

Clean the control panel surface with damp soft cloth.

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: LIMITED WARRANTY AND SERVICES

Limited warranty is offered to all customers. Any quality problem will be covered for one year (from the purchasing date) or 18 months (from the factory producing date) under free warranty (base on the earlier one). Damaged accessories, parts, and knobs are not under warranty.

- Heating elements are under half year from installation free warranty.
- Our company has the right to decide whether to repair or to change. Approval must be obtained from our company before shipping back the product. The customer has to pay for the transportation fee and any parts fee beforehand.
- This Limited Warranty shall be void if the Customer fails to comply with all of the terms set forth in this Limited Warranty
- This Limited Warranty does not extend to any Product damaged by reason of alteration, accident, abuse, neglect or misuse or improper or inadequate handling; improper or inadequate wiring utilized or installed in connection with the Product; installation, operation or use of the Product not made in strict accordance with the specifications and written instructions provided by us; use of the Product for any purpose other than those for which it was designed; ordinary wear and tear; disasters or Acts of God; unauthorized attachments, alterations or modifications to the Product; the misuse or failure of any item or equipment connected to the Product; improper maintenance or repair of the Product; or any other reason or event not caused by us.
- Damage caused by accident, misusing of chemistry products, or any other reason which are beyond our company's responsibilities will not be covered. Any product whose label, nameplate has been removed, altered, damaged is not covered either.
- Using in a salty environment or any other extreme, corrosive condition is not covered by the warranty.
- West Sauna Bath and its directors, officers, employees, subsidiaries and affiliates shall not be liable for any damages arising from any loss of equipment or other property, loss of production or profits, overhead costs, claims of third parties, labor or materials, penalties or liquidated damages or punitive damages, whatsoever, whether based upon breach of warranty, breach of contract, negligence, strict liability or any other legal theory, or other losses or expenses incurred by the Customer or any third party.
- After the free warranty period, services are still available if all cost is covered by the customer.
- Please contact our company for further information and more details.