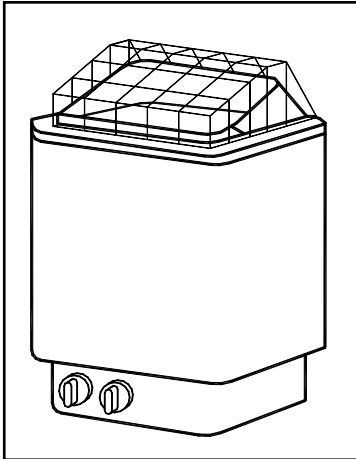


# INSTALLATION AND OPERATING INSTRUCTIONS



## AM SERIES SAUNA HEATER

**MODELS: AM30A, AM45A**  
**AM30MI, AM45MI**  
**AM60MI, AM80MI**  
**AM90MI**

**(WITH BUILD-IN CONTROL AND  
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.

AM30A: 12" W × 8" D × 18<sup>5</sup>/<sub>8</sub>" H  
AM45A: 12" W × 9<sup>3</sup>/<sub>4</sub>" D × 18<sup>5</sup>/<sub>8</sub>" H  
AM30MI—AM90MI: 16" W × 11" D × 22<sup>1</sup>/<sub>2</sub>" 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.*

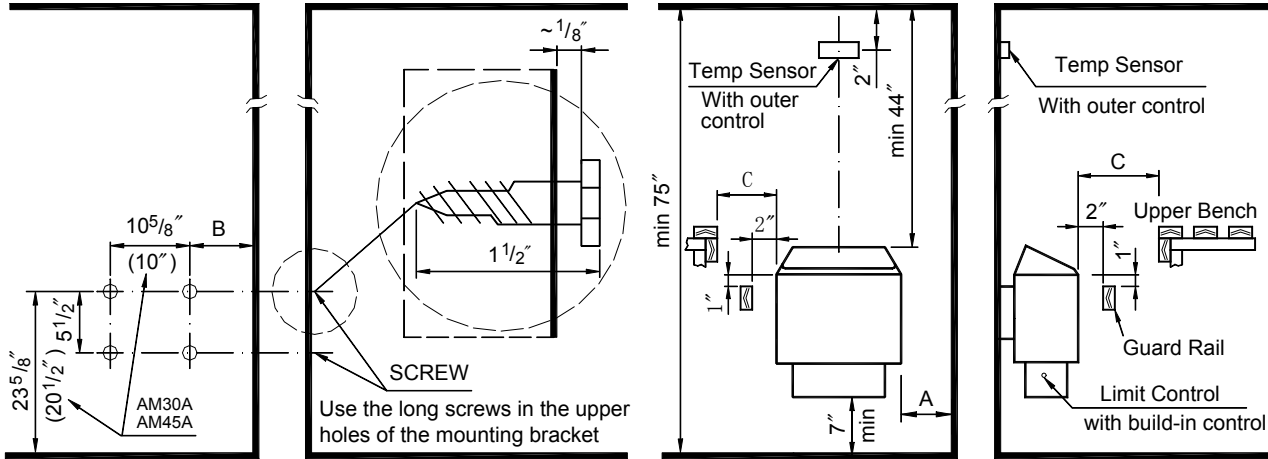
*The heater gets extremely hot during operation and should not be touched or burns may result.*

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



## DIAGRAM 1

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



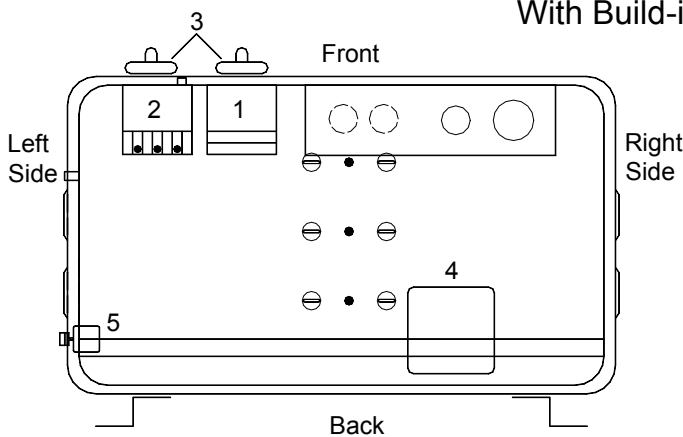
Recheck your distances from the heater to combustible materials to be sure you have the proper minimum distances.

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

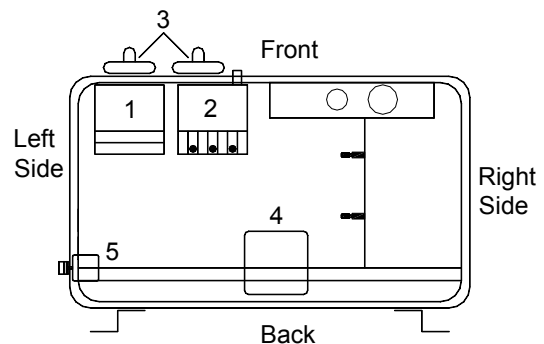
SAUNA HEATER	Minimum safety distance (in.)		
	A	B	C
AM30A, AM45A	3	4	8
AM30MI, AM45MI	3 1/2	6 1/4	8
AM60MI	4	6 3/4	9
AM80MI	6	8 3/4	10
AM90MI	6	8 3/4	10

## DIAGRAM 2

### With Build-in Control



AM30MI, AM45MI, AM60MI, AM80MI, AM90MI



AM30A, AM45A

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		
AM30A	3.0	70-140	240	12.5	2#12AWG+N+GR	16
AM45A	4.5	105-210	240	18.8	2#10AWG+N+GR	25
AM30MI	3.0	70-140	240	12.5	2#12AWG+N+GR	16
AM45MI	4.5	105-210	240	18.8	2#10AWG+N+GR	25
AM60MI	6.0	175-320	240	25	2#10AWG+N+GR	32
AM80MI	8.0	250-420	240	33.3	2#8AWG+N+GR	45
AM90MI	9.0	320-460	240	37.5	2#8AWG+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 over-heated. 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, customers need to connect the power supply to control or control box (Refer to controller manual). And connect the rubber cable wire, between control or 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 or 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 CON3 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 )**

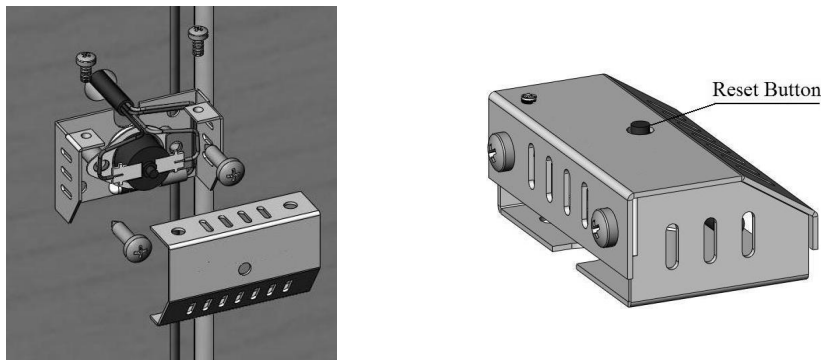
The heater is provided with a thermostat to adjust the sauna bath temperature and a timer to control when the bath starts and stops. For health and fire safety, never attempt to alter or bypass the timer or thermostat. If the sauna is to be used without an automatic timer provided, an attendant must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

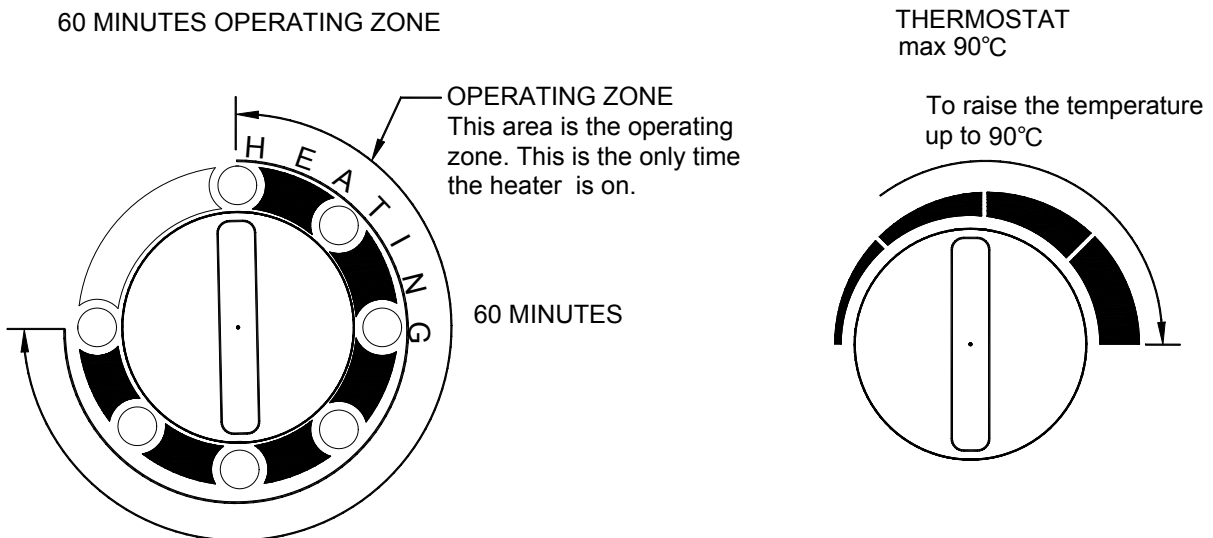
**SET OPERATION TIME:** The heater has a “60 minutes” timer, so you could set the sauna heater operation time up to 1 hour(60 minutes). Turn the dial clockwise to the operation zone as showing in diagram 5, sauna heater will start to operate.

***The operation of a sauna with outer control, please refer to the controller manual.***

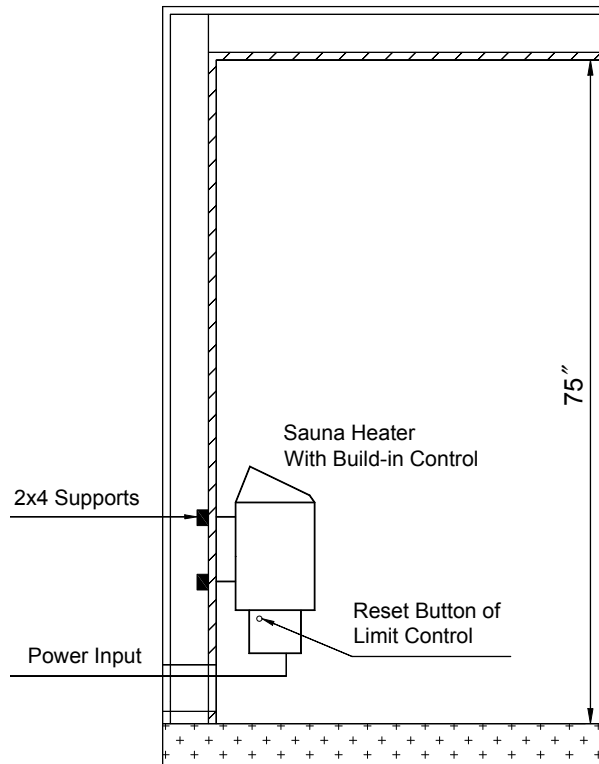
**DIAGRAM 4**



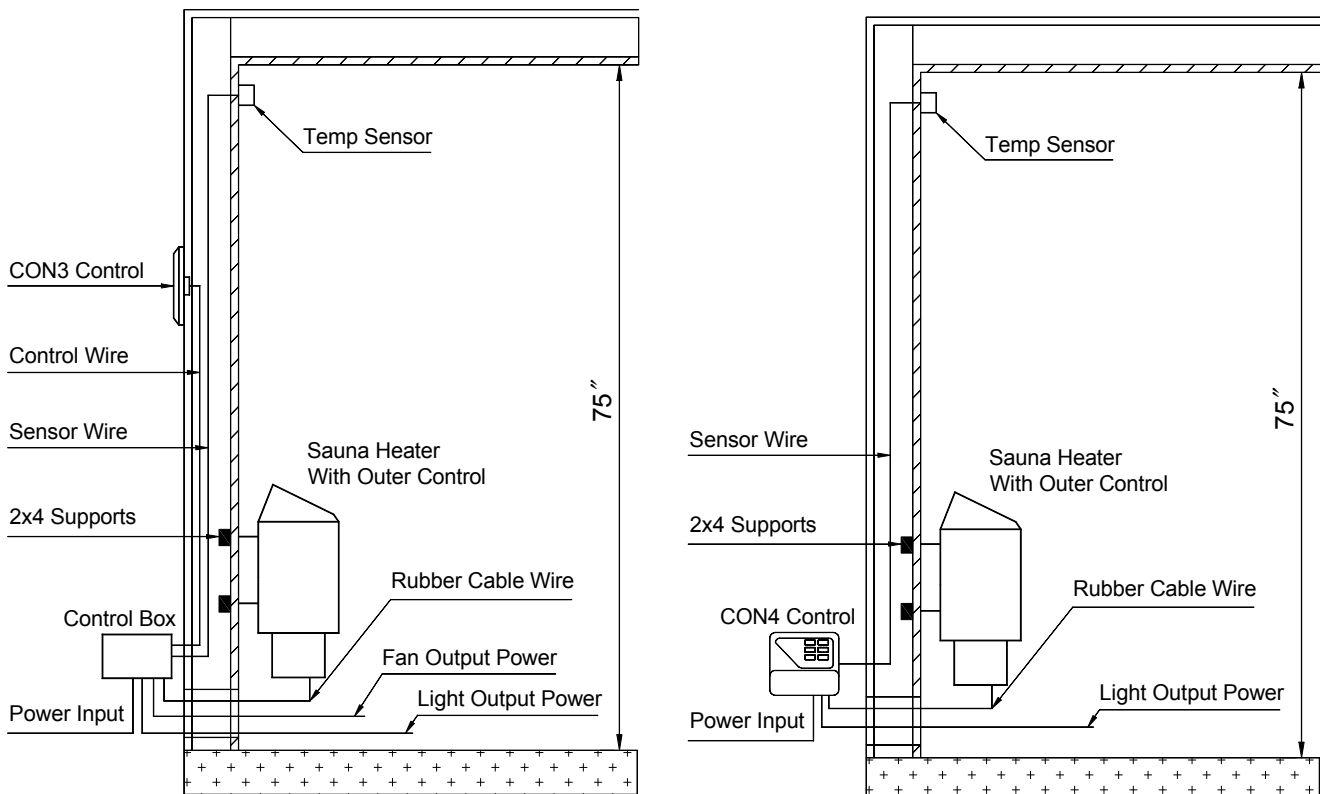
**DIAGRAM 5**



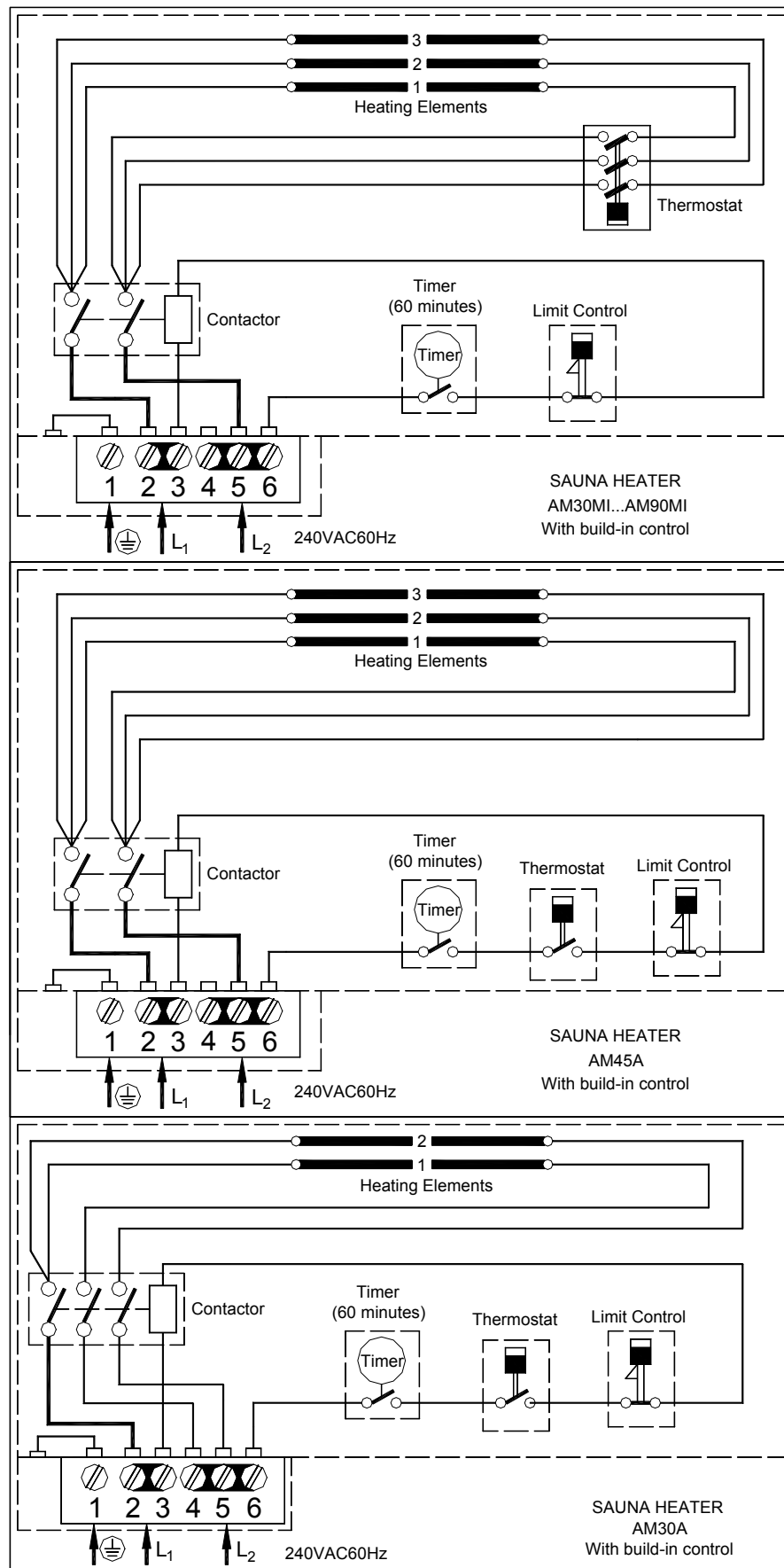
## DIAGRAM 6



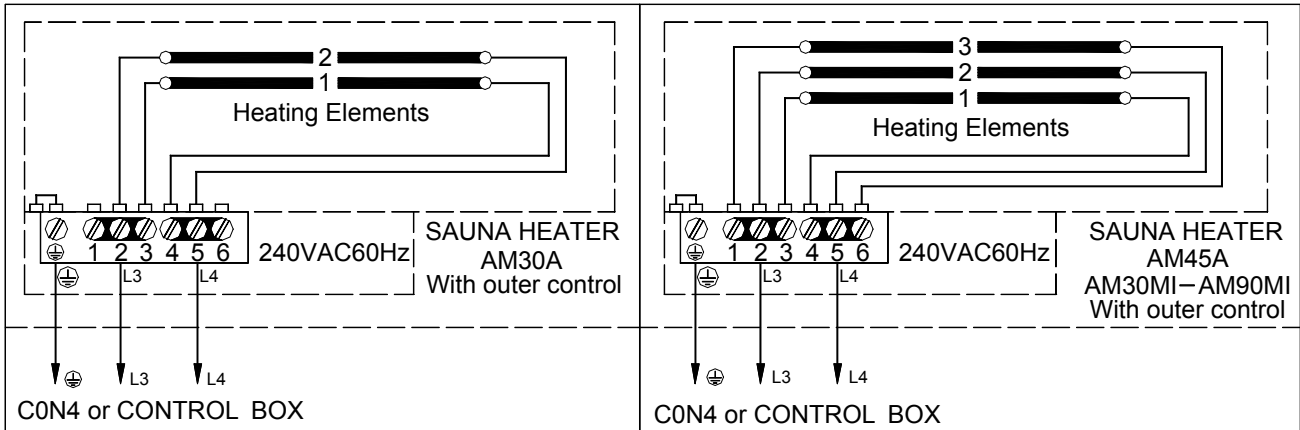
## DIAGRAM 7



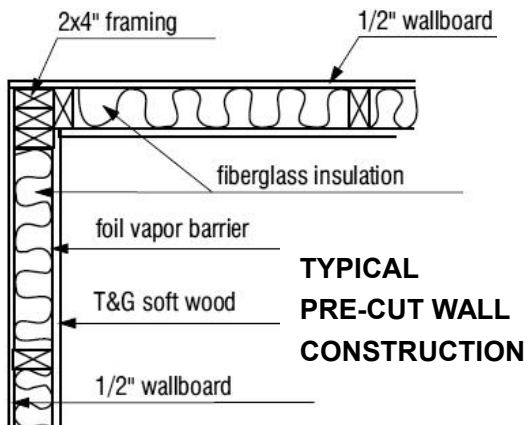
## DIAGRAM 8



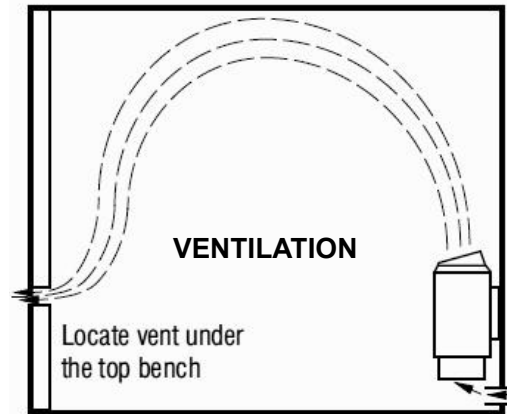
## DIAGRAM 9



## DIAGRAM 10

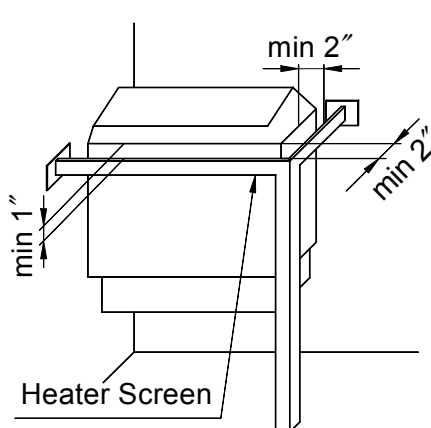


## DIAGRAM 11



Ventilation need to be drilled

## DIAGRAM 12



**HEATER SCREEN  
(GUARD RAIL)**

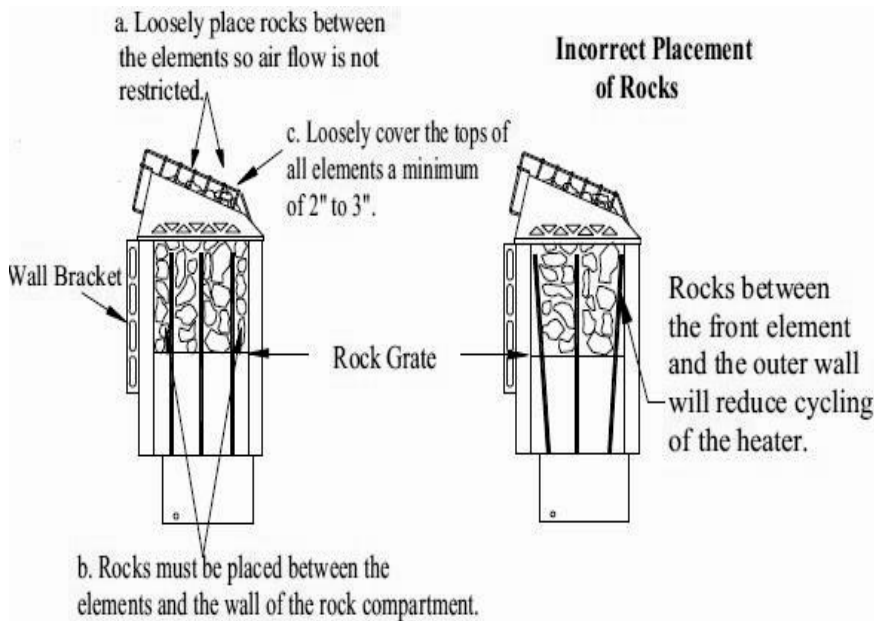
**WARNING**

**REDUCE THE RISK OF ELECTROCUTION AND BURNS**

Do Not Operate Unless Guard Is In Place



## DIAGRAM 13



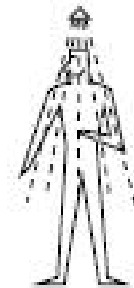
1. Put smaller rocks in first around the outer perimeter of the heating chamber.
2. Completely fill all four sections (front, 2 center sections between elements, and back).
3. In the outer sections, use smaller rocks placed more tightly (see note b).
4. Place rocks loosely in the center 2 sections (see 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 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 4.

## 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



Shower



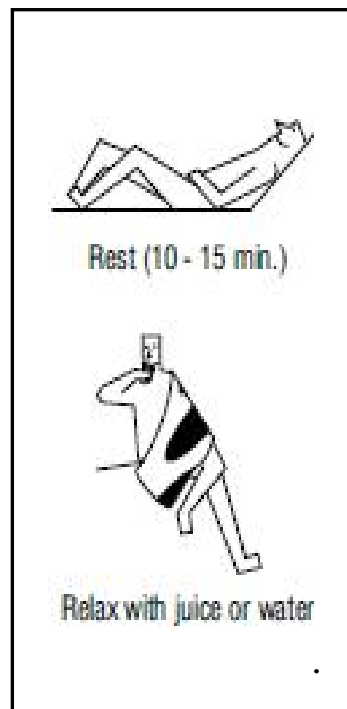
Sauna (10 - 15 min.)



Shower or swim

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.



## 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 A.F. or fixture type internal wiring. A 60 Watt bulb should provide sufficient lighting.
- Fire sprinkler systems installed inside any sauna room should

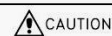
### WARNING

***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.

- Always mount the heater according to these installation instructions.

### **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 60 cm 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:

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

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

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:

$$\text{For } R < 2.9: V \geq 60,$$

$$\text{For } R \geq 2.9: V \geq 20.8 R,$$

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.

***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**

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

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.