

"DIGITAL" SERIES SAUNA HEATERS MODELS 4.5S, 6.0S, 8.0S with DC60 control, (Model # 1712-45-1705, 1712-60-1705, 1712-80-1705) (-3 designates 3 Phase).

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 wall mounted, 16 W x 11 D x 23 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.

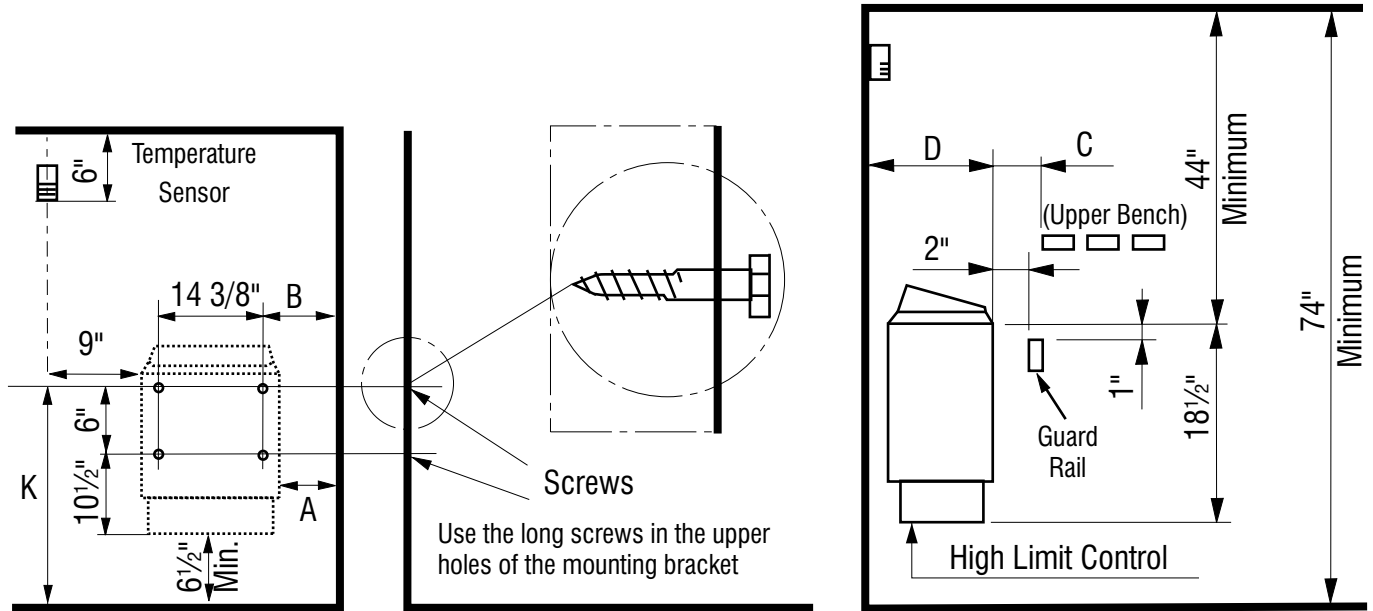
Minors should be adequately supervised whenever near a hot or warming sauna.



INSTALLATION AND OPERATING INSTRUCTIONS

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
DIGITAL 4.5S	3.0"	3 5/8"	4.0"	10 3/4"	23"
DIGITAL 6.0S	4.0"	4 5/8"	5.0"	10 3/4"	23"
DIGITAL 8.0S	5.0"	5 5/8"	6.0"	11 1/2"	23"

DIAGRAM 2

HEATER MODEL / Product Number	KW	MINIMUM ROOM			MAXIMUM ROOM		PHASE	VAC	AMPS	WIRE SIZE
		Floor Area	Ceiling Height	Volume Cu.Ft.	Ceiling Height	Volume Cu.Ft.				Power Supply to Heater
DIGITAL 4.5S (-3 = 3 Phase) 1712-45-1705	4.5	12 sq. ft.	74"	100	96"	210	1	208	21.6	2 #10AWG+GR
							1	240	18.8	2 #10AWG+GR
							3	208	12.5	3 #12AWG+GR
							3	240	10.8	3 #12AWG+GR
DIGITAL 6.0S (-3 = 3 Phase) 1712-60-1705	6	21 sq. ft.	74"	175	96"	310	1	208	28.8	2 #8AWG+GR
							1	240	25	2 #10AWG+GR
							3	208	16.7	3 #12AWG+GR
							3	240	14.4	3 #12AWG+GR
DIGITAL 8.0S (-3 = 3 Phase) 1712-80-1705	8	31 sq. ft.	74"	250	96"	425	1	208	38.5	2 #8AWG+GR
							1	240	33.3	2 #8AWG+GR
							3	208	22.2	3 #10AWG+GR
							3	240	19.2	3 #10AWG+GR

SECTION 2: MOUNTING OF SAUNA HEATER

HANGING THE HEATER Using the template provided, drill four 9/64" holes to fasten the heater to the wall. Install two 1/4" x 1 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" x 1" 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 (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 left and right sides of the electrical box. Remove the painted trim piece from the front of the box. Route the feed 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 for proper connections.

SECTION 5: TEMPERATURE SENSOR

Feed the "low voltage" sensor wire from the heater to the sensor 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 wires into heater and connect to TB-1. Using a flat tip screwdriver, unsnap sensor cover from sensor. Mount sensor to finished wall 9" from the side of the heater and six (6) inches down from ceiling using two (2) screws (provided) as shown in diagrams 1, 3 & 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.

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

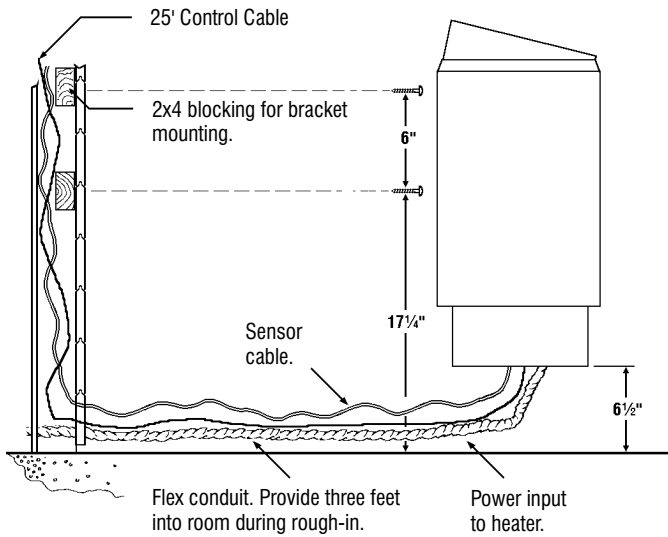
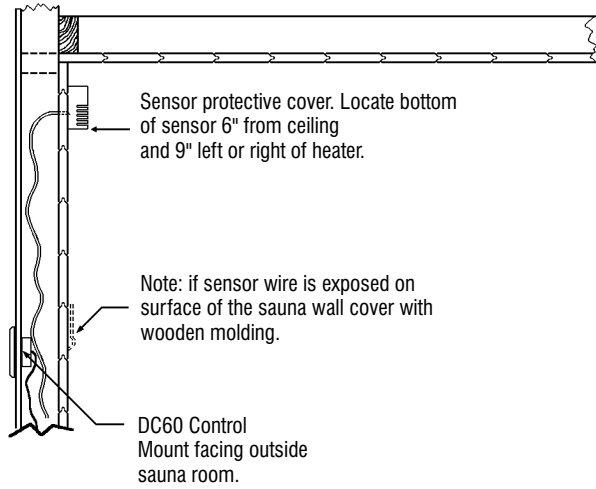


DIAGRAM 5

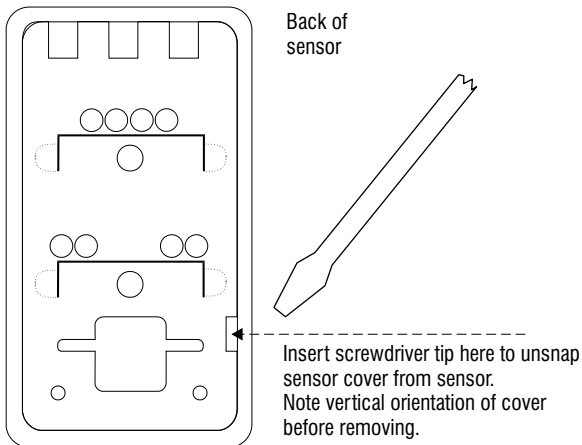


DIAGRAM 4

DC60 CONTROL

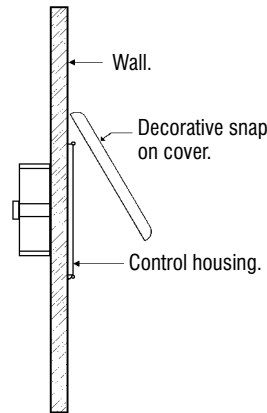
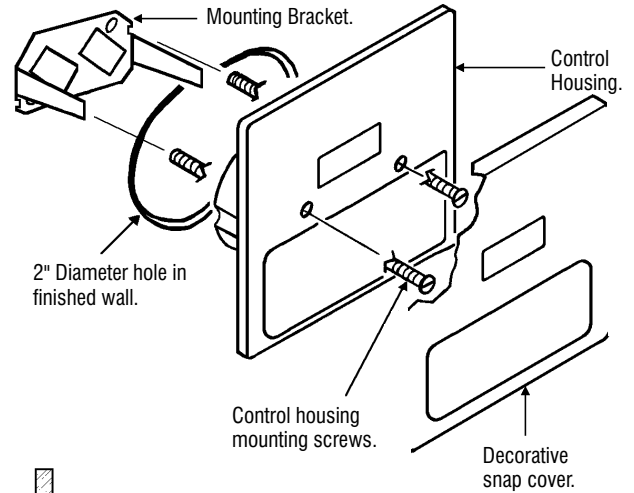
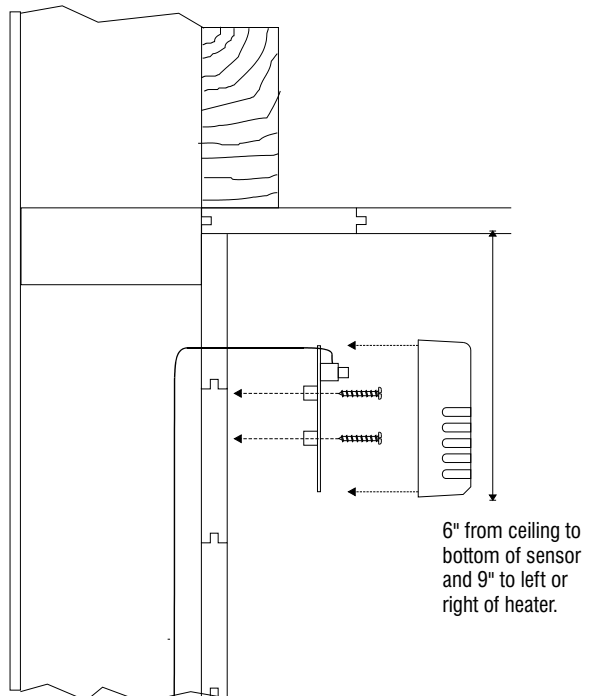


DIAGRAM 5, continued



SECTION 7: DC60 CONTROL INSTALLATION & OPERATION

The DC60 control uses low voltage to switch your sauna heater on and off, to adjust the room temperature, and to adjust the length of your sauna bath. Either one or two controls may be connected to the heater. When power is connected to the heater, the room temperature setting is automatically preset to 175°F and the bath time is set to 45 minutes. These settings are adjustable (as described below) from 150° to 194° and from 5 to 60 minutes and any changes are remembered by the heater for your next bath. Should the heaters power be lost then restored, the settings will return to their 175°/45 minute default values.

INSTALLATION ROUGH IN The low voltage control must be mounted outside the sauna room. Drill a 2" hole in the wall at the desired switch location. String 25 foot cable through 1/2" holes in the wall studs or ceiling joists from the switch location to the heater. Note: Use the factory supplied cable only! Do not staple through or otherwise damage the cable!

With the decorative cover removed from the DC60 switch assembly, insert the two control mounting screws through the control housing (may need to punch through skinned holes) and screw 1/4" into the mounting bracket. Locate the control cable and plug it into the jack on the back of the control housing. Insert the mounting bracket into the wall cavity by first pushing with the control housing then with a hard flat surface on the face of the control housing mounting screws which extend out through the control face. Once the mounting bracket has been inserted into the finished wall, center the control and tighten the mounting screws to draw the control housing securely against the finished wall. *Do not over tighten the mounting screws.* Install the decorative cover plate by sliding the top of the cover plate over the tab on the top of the control housing and pushing on the bottom of the cover plate to complete the snap fit. Route the heater end of the control cable through the small electrical access hole at the bottom of the heater and connect it to either J1 or J2 on the heater circuit board. If two controls are to be installed, plug the second cable into the remaining connector. It does not matter which of the two connectors is connected to a control. *Do not attempt to plug in more than one control to a single connector!*

OPERATION With the power circuit to the heater turned on, press the control ON/OFF button once. The room temperature will be displayed on the control. The heater will turn on and begin heating the room. Once the selected bath temperature is reached, the heater will turn off and on again as needed to maintain the desired temperature. At the end of the selected bath time, the heater will turn itself off and the control display will turn off again.

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.

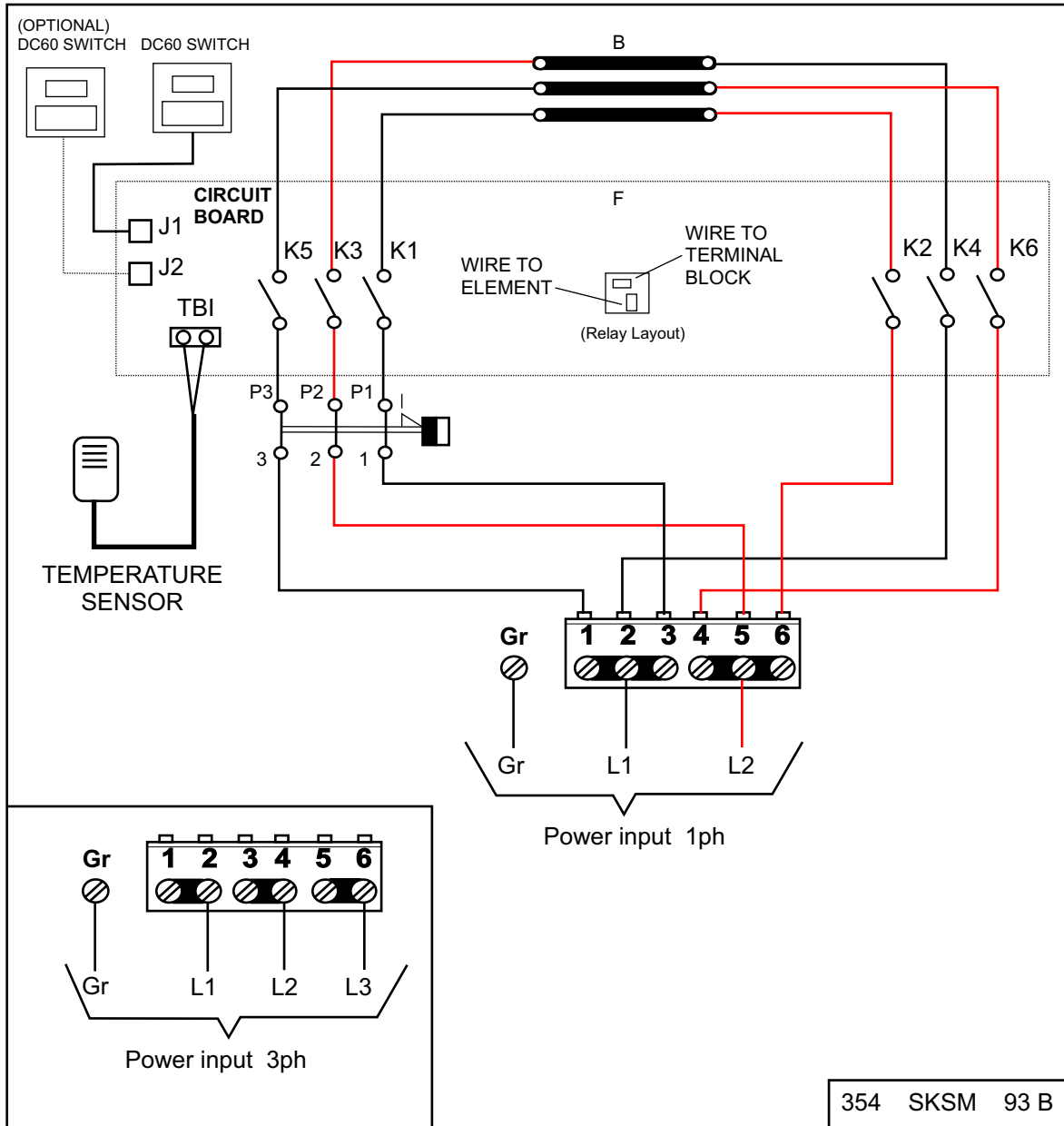
A guardrail or fence is required around the heater to prevent burns from accidental contact.

DIAGRAM 6

WIRING DIAGRAM: HEATER MODELS

DIGITAL 4.5S, 6.0S & 8.0S

(Model # 1712-45-1705, 1712-60-1705, 1712-80-1705)



SECTION 7: OPERATION, Continued

SETTING THE TIME AND TEMPERATURE To change the time setting, press the control ON/OFF button to turn on the heater. Press and hold the TIME button on the control: the control will display the bath time setting. Continue to hold the TIME button pressed and the display will show the time setting changing in 5 minute increments. Continuing to hold the TIME button will cause the time to increase to a maximum of 60 minutes, then decrease to 5 minutes, then increase again. Release the TIME button when the desired time setting is reached.

To change the temperature setting, press the control ON/OFF button to turn on the heater. Press and hold the TEMP button on the control: the control will display the sauna room temperature setting. Continue to hold the TEMP button pressed and the display will show the temperature setting changing in 1 degree increments. Continuing to hold the TEMP button will cause the temperature to increase to a maximum of 194°, then decrease to 150°, then increase again. Release the TEMP button when the desired temperature setting is reached.

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 bottom of the heater, see Diagram 1. If the high limit continually shuts off the heater, refer to Section 13 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.
- 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. ½ 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

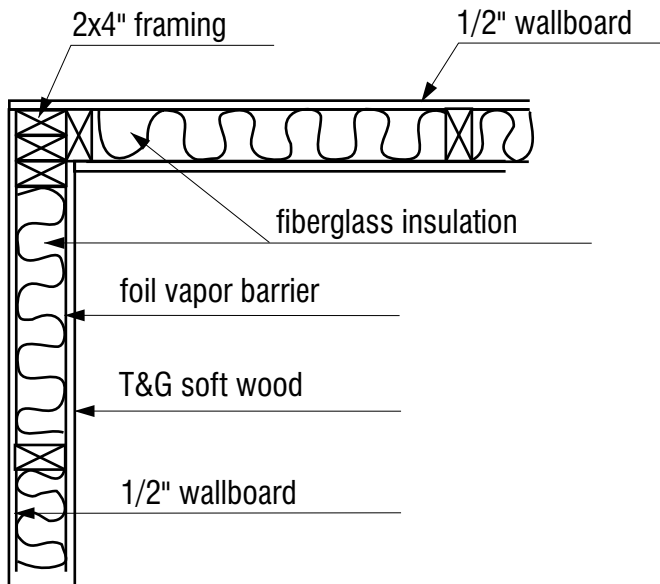


DIAGRAM 8

HEATER SCREEN (GUARD RAIL)

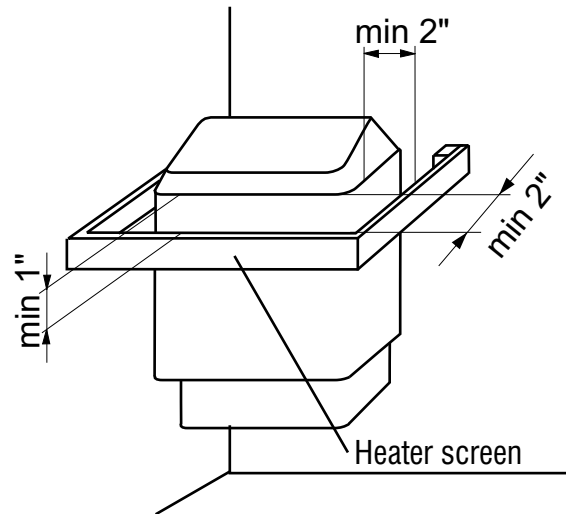


DIAGRAM 9

VENTILATION

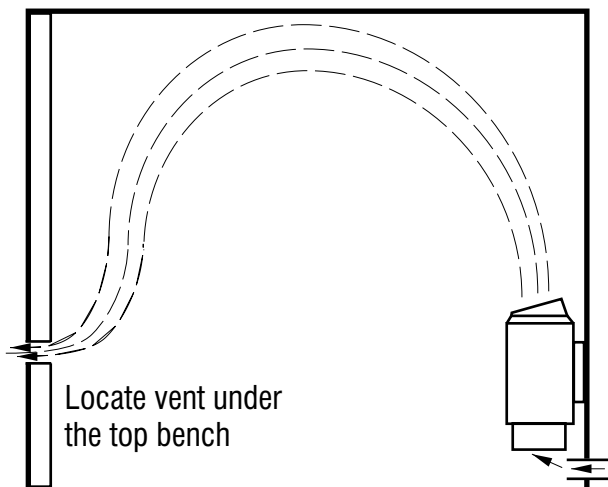
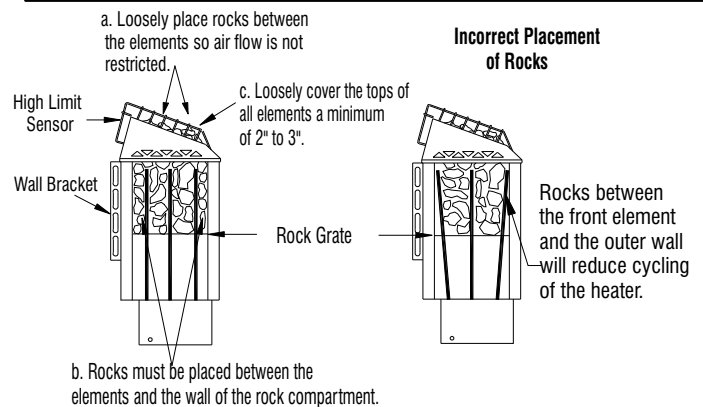


DIAGRAM 10



1. Put smaller rocks in first around the outer perimeter of the 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 10: 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 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. 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 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 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 11: 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:

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

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

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

SECTION 12: 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 13: TROUBLESHOOTING

Control will Not Power Up - Press (reset) the high limit switch on the bottom of heater.

Control Display E001 - Sensor is not connected or broken wire to sensor.

Control Display E002 - Sensor or wire is shorted together.

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" peices. Call the number below to order more rocks if needed.

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