



## **EN** Owner's/Operator's Manual

Sauna heater installation, wiring, operating instructions, trouble shooting, maintenance and guarantee.

**IMPORTANT!** This manual must be left with owner, manager or operator of Sauna after it is used by electrician!

### MODEL

KIP-30-B1/FLB-30  
KIP-45-B1/FLB-45  
KIP-60-B1/FLB-60  
KIP-80-B1/FLB-80

KIP-30-B3/FLB-30-3  
KIP-45-B3/FLB-45-3  
KIP-60-B3/FLB-60-3  
KIP-80-B3/FLB-80-3

### CONTROLS

F-1T  
F-2T  
F-2

### MODEL

KIP-30-W1/FIN-30  
KIP-45-W1/FIN-45  
KIP-60-W1/FIN-60  
KIP-80-W1/FIN-80

### CONTACTORS

FL-402  
FL-303

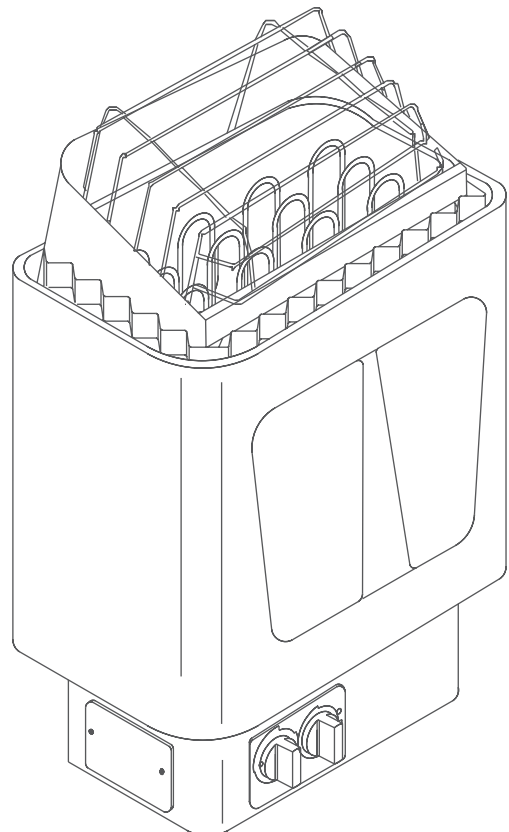
### MODEL

KIP-30-W3/FIN-30-3  
KIP-45-W3/FIN-45-3  
KIP-60-W3/FIN-60-3  
KIP-80-W3/FIN-80-3



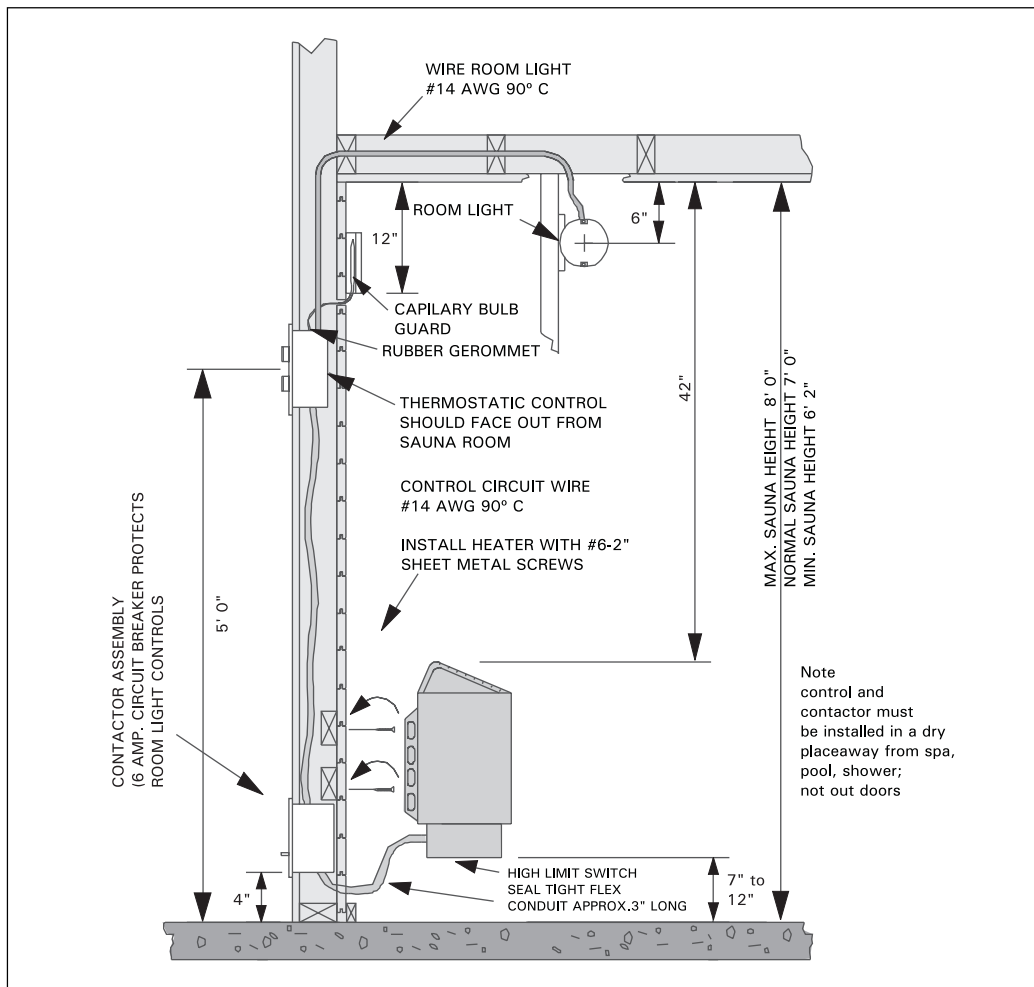
LISTED 6J21  
SAUNA HEATER

**Manufacturer's agent/Importer:**  
Finlandia Sauna Products, Inc.  
14010-B S.W. 72<sup>nd</sup> Ave.,  
Portland, OR 97224-0088  
1-800-354-3342  
503-684-8289  
Fax: 503-684-1120





## The Sauna Room shall be provided with proper ventilation



### INSTALLATION OF WALL MODEL HEATER, CONTROL, CONTACTOR

1. Remove heater from carton and attach heater to wall with screws are supplied. If wall thickness is less than 3/4", use 2"x 4" backing behind heater. Observe proper clearances as per page 3 and table 1.
2. See applicable wiring diagram fig. 5-8 for heater model. Heater must be permanently installed (no pigtailed or plug allowed) and wiring must be done by a licensed electrician, who must follow wiring diagram provided and adhere to local codes. Use proper A.W.G. rated wire size and use copper wire suitable for 90°C within Sauna walls. Use grounding terminals provided in Sauna heater, control system, and contactor to properly ground the equipment as per NEC and local codes.
3. See fig. 5-8 to match control to heater model. Locate control in wall, 5' up from floor, so that panel faces outward from room. Punch out one of knockouts in roughin box and push rubber grommet (provided) into knockout hole. Bring capillary tubing with sensing bulb out through grommet and through stud wall, so that capillary bulb is located 6" from ceiling inside Sauna room and as close to Sauna heater as possible, taking care to avoid sharp bends in tubing (to prevent damage to tubing and liquid within). Extra tubing can be coiled up inside wall. Nail or screw bulb guard to wall to secure sensing bulb.
4. Install contactor 4" up from floor behind Sauna heater, on outside wall of Sauna room. Wire from contactor to heater must be within seal tight flexible conduit. (Contactor may also be located in an equip. room or closet, but must be accessible, for servicing).
5. Inside the heater box there are two signs. Please place the metal "CAUTION" sign on the interior wall of the Sauna room directly above the heater in a visible place. Place the metal "WARNING" sign outside, on the door of the Sauna room. "MAINTENANCE INSTRUCTIONS" are at the end of this manual.

The Sauna Room shall be provided with proper ventilation wall-mounted heaters-minimum clearances, min-max space, arequate ventilation

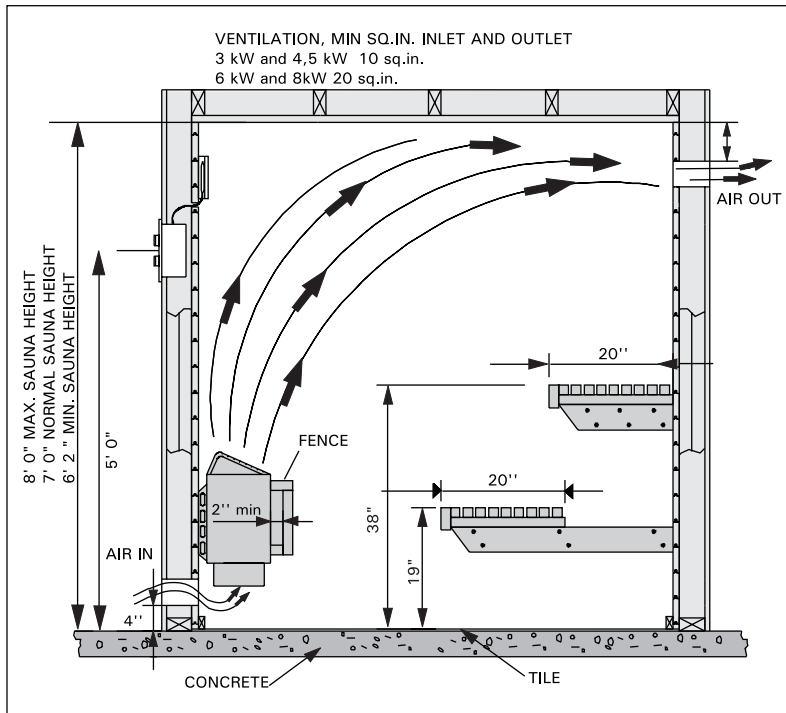


Figure 2.

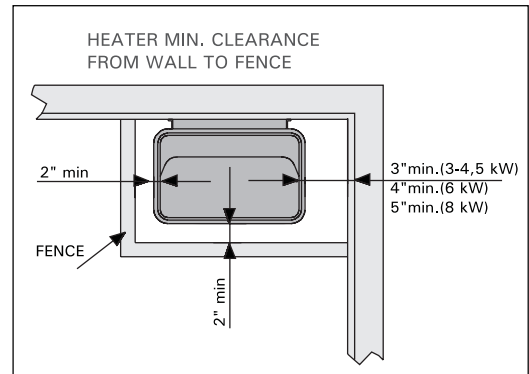


Figure 3.

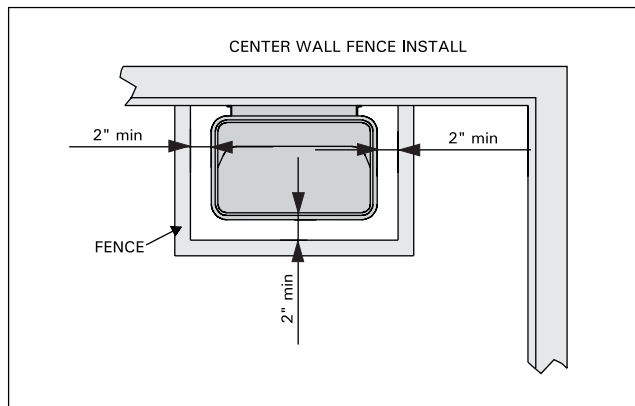


Figure 4a.

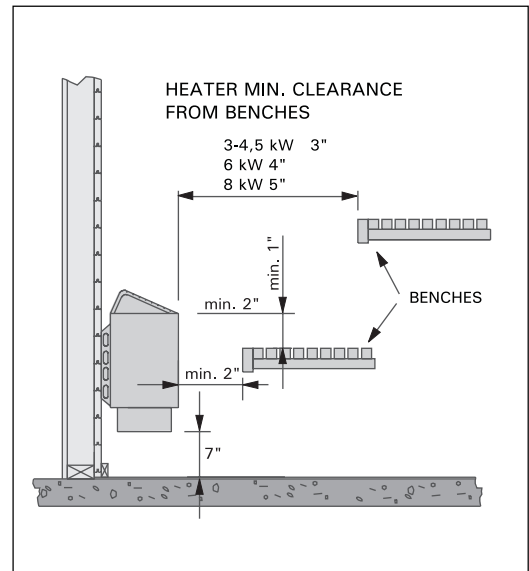


Figure 4.

Model	Input	Min. height	Floor area		Sauna Room		Min. spacing from adjacent surfaces inches
			Min. Sq.Ft	Max. Sq.Ft	Min. Cu.Ft	Max. Cu.Ft	
KIP-30-B/W FLB/FIN-30	3,0	6' 2"	10	20	84	130	3"
KIP-45-B/W FLB/FIN-45	4,5	6' 2"	16	30	100	210	3"
KIP-60-B/W FLB/FIN-60	6,0	6' 2"	28	40	170	300	4"
KIP-80-B/W FLB/FIN-80	8,0	6' 2"	40	65	250	425	5"

Table 1.

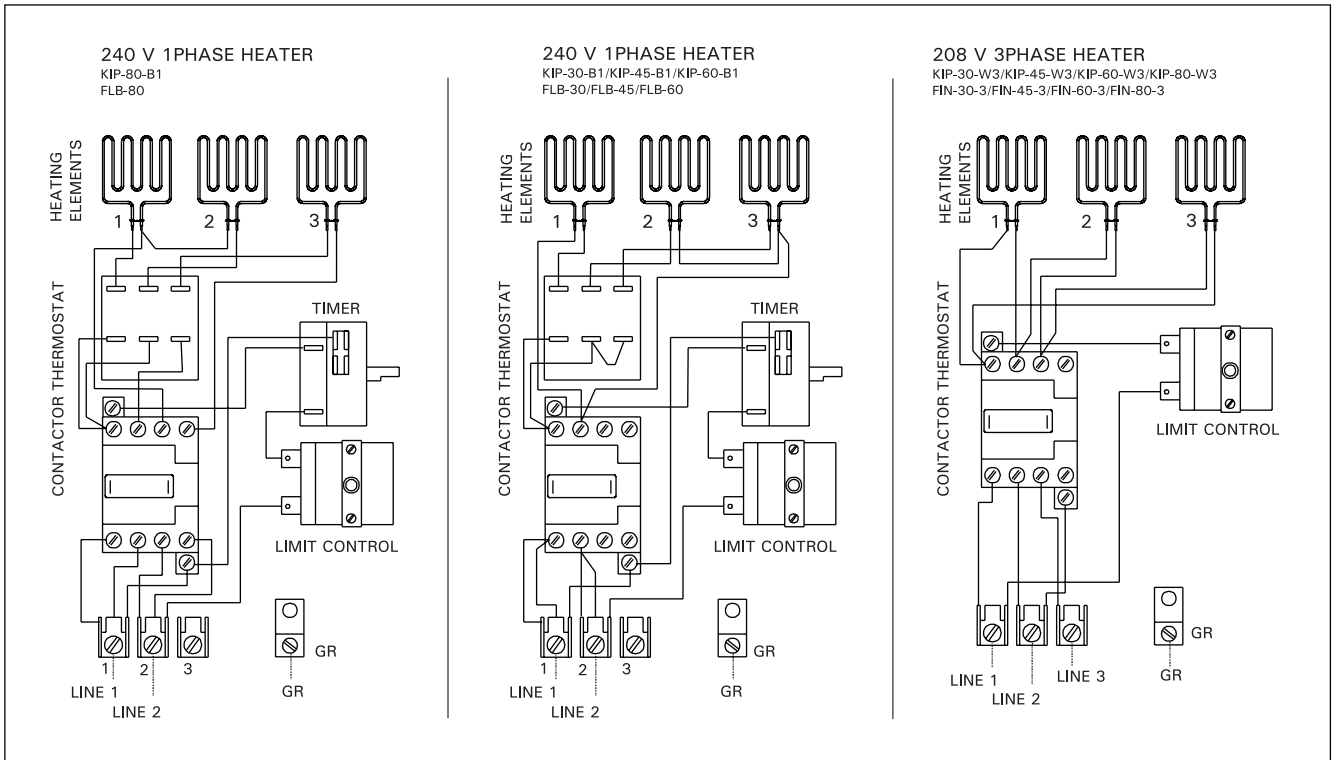


Figure 5.

SAUNA HEATER (240 V) WITH BUILT IN CONTROLS					
Model	Watts	Amps	Voltage	Phase	Wire size
KIP-30-B1 FLB-30	3000	12,5	240	1	12
KIP-45-B1 FLB-45	4500	18,8	240	1	10
KIP-60-B1 FLB-60	6000	25,0	240	1	10
KIP-80-B1 FLB-80	8000	33,3	240	1	8

SAUNA HEATER (208 V) WITH BUILT IN CONTROLS					
Model	Watts	Amps	Voltage	Phase	Wire size
KIP-30-B3 FLB-30-3	3000	8,3	208	3	14
KIP-45-B3 FLB-45-3	4500	12,5	208	3	14
KIP-60-B3 FLB-60-3	6000	16,7	208	3	12
KIP-80-B3 FLB-80-3	8000	22,2	208	3	10

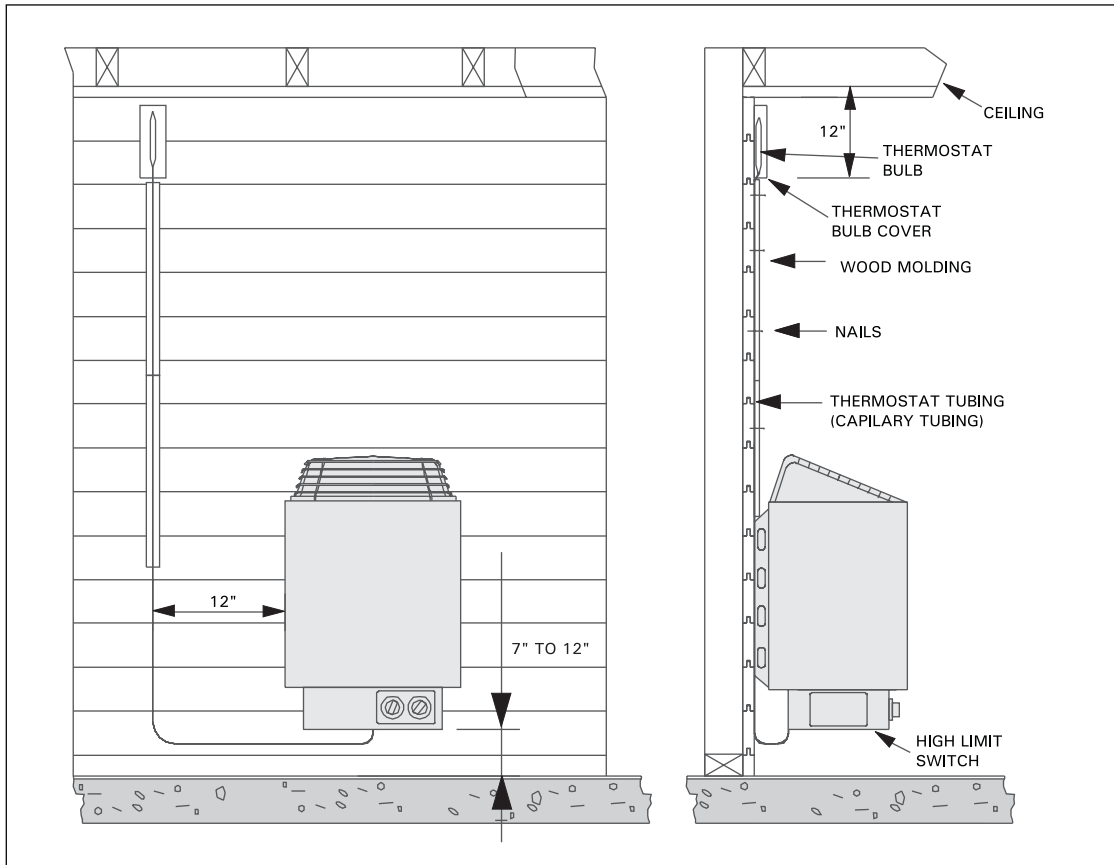


Figure 5a.

## SAUNA HEATER WIRING AND HOOKUP

**Important!** Before hooking up electrical wires to junction box of heater, remove capillary tubing and bulb from junction box and bring up wall to left or right side of heater. Cover tubing with wooden molding provided, coil up excess tubing, and place under heater close to floor.

Refer to chart page 4 for proper wire size and amperage. See page 3 for required clearances. Any wiring within internal Sauna walls must be rated 90° C and copper wire must be used. Run wire through seal tight flex conduit from wall to heater and connect to junction box at back of heater with 90° connector. Connect to terminals 1 and 2 and connect ground wire to lug marked ground. (Cover plate under heater must be removed first.)

**Note!** If connection to heater will be made at a later time, bring flex into Sauna room 4–6" from floor, and leave 3' of flex for hookup (can be cut to right length later).

Before testing heater, fill rock cavity with igneous stones provided with heater and fasten metal rock guard at top of heater. (See general info concerning washing and placing of stones.)

Be sure to cover thermostat bulb with protective metal cover by threading bulb through holes in cover, and fasten bulb cover to wall with screws provided. Also, take care when nailing protective wood strips over capillary tubing, so that nails do not puncture tubing. If punctured, entire thermostat must be replaced.

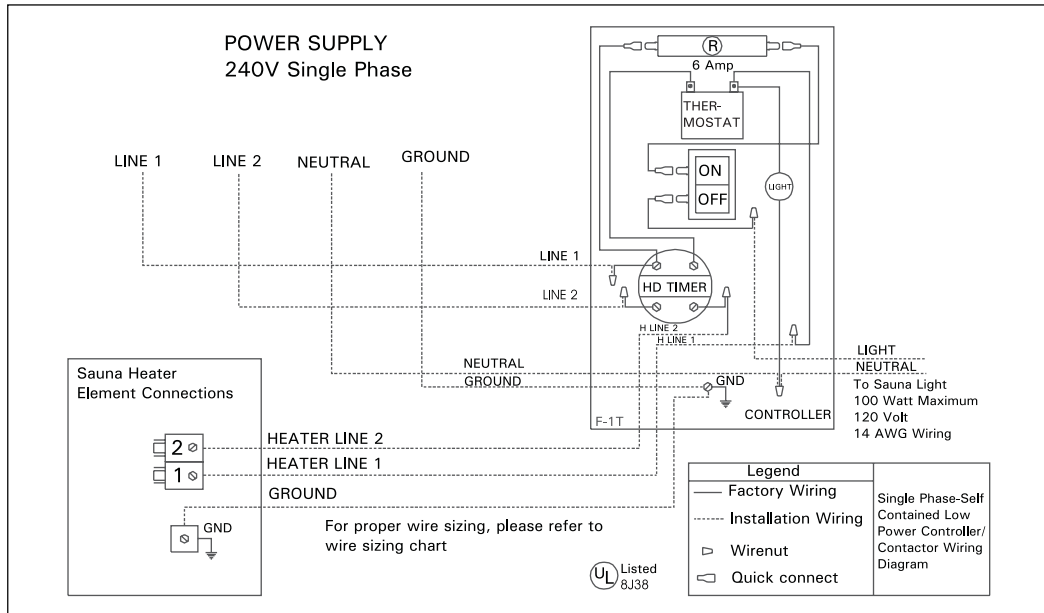


Figure 6. Use this diagram for wiring and hook-up.

Sauna Heater (240 V) with wall control							
Model	Watts	Amps	Voltage	Ph	Wire Size	Control	Contactor
KIP-30-W1 FIN-30	3000	12,5	240	1	12	F-1T	None
KIP-45-W1 FIN-45	4500	18,8	240	1	10	F-1T	None
KIP-60-W1 FIN-60	6000	25,0	240	1	10	F-1T	None

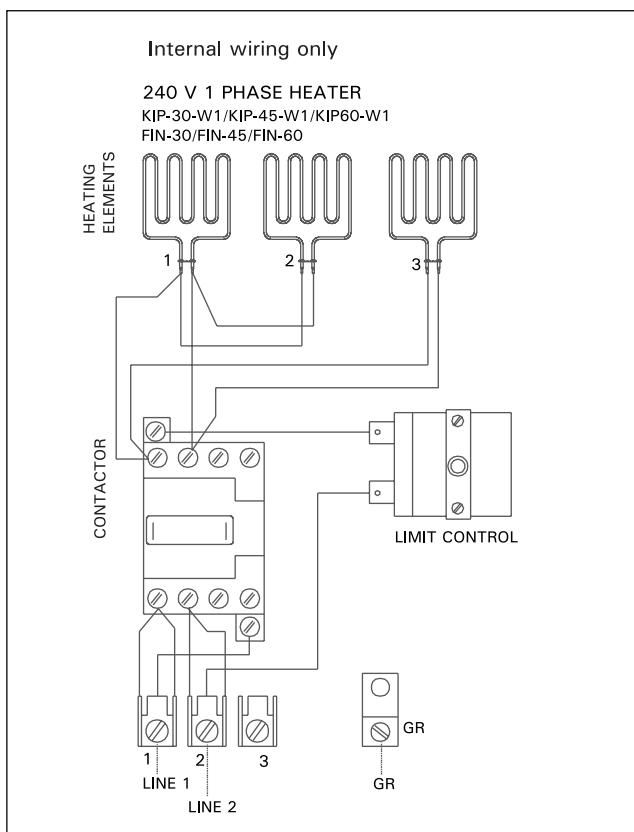


Figure 6a.

### SAUNA HEATER WIRING AND HOOKUP – ALSO REFER TO FIGURE 1

Refer to chart above for proper wire size and amperage. See page 3 for required clearances. Use copper wire from breaker to wall-mounted control, which should face outward from Sauna, 5' from floor to center of box. Note! Neutral wire must also be brought to control to provide power for light switch. (Circuit breaker is built into control to provide protection for light.) From control to heater, provide seal tight flex conduit for wire, and connect to junction box at back of heater with 90° connector. Connect to terminals 1 and 2 and connect ground wire to lug marked ground. (Cover plate under heater must be removed first.)

**Note! If connection to heater will be made at a later time, bring flex into Sauna room 4–6" from floor, and leave 3' of flex for hookup (can be cut to right length later).**

Before testing heater, fill rock cavity with igneous stones provided with heater and fasten metal rock guard at top of heater. (See gen. info concerning washing and placing of stones.)

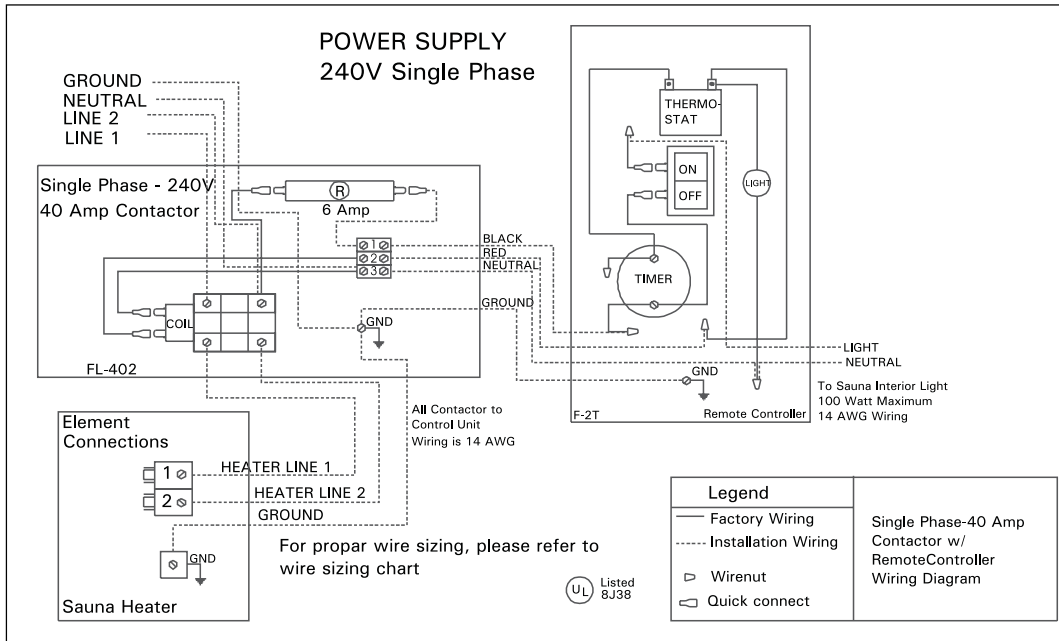


Figure 7. Use this diagram for wiring and hookup

Sauna Heater (240 V) with wall control							
Model	Watts	Amps	Voltage	Ph	Wire Size	Control	Contactor
KIP-80-W1 FIN-80	8000	33,3	240	1	8	F-2T	FL-402

### SAUNA HEATER WIRING AND HOOKUP – ALSO REFER TO FIGURE 1

Refer to chart above for proper wire size and amperage. See page 3 for required clearances. Use copper wire from breaker to wall-mounted contactor. Use 90°C copper wire from contactor to control and from control to room light. Also use 90°C wire from contactor to Sauna heater (within seal tight flex conduit) and connect to junction box at back of heater with 90°C connector. Connect to terminals 1 and 2 and connect ground wire to lug marked ground. (Cover plate under heater must be removed first).

**Important! Follow wiring instructions carefully to prevent shorting of 6 amp circuit breaker in contactor. Do not force wires against circuit breaker: be sure there are no bare wires or shorts. The circuit breaker, has been factory tested, and if it is shorted out, it will be responsibility of the electrical contactor to replace it!**

**Note! If connection to heater will be made at a later time, bring flex into Sauna room 4–6" from floor, and leave 3' of flex for hookup (can be cut to right length later). Before testing heater, fill rock cavity with igneous stones provided with heater and fasten metal rock guard at top of heater. (See gen. info concerning washing and placing of stones.)**

Notice that insulated neutral wire (same A.W.G. gauge as supply wire) is also brought from breaker to contactor!

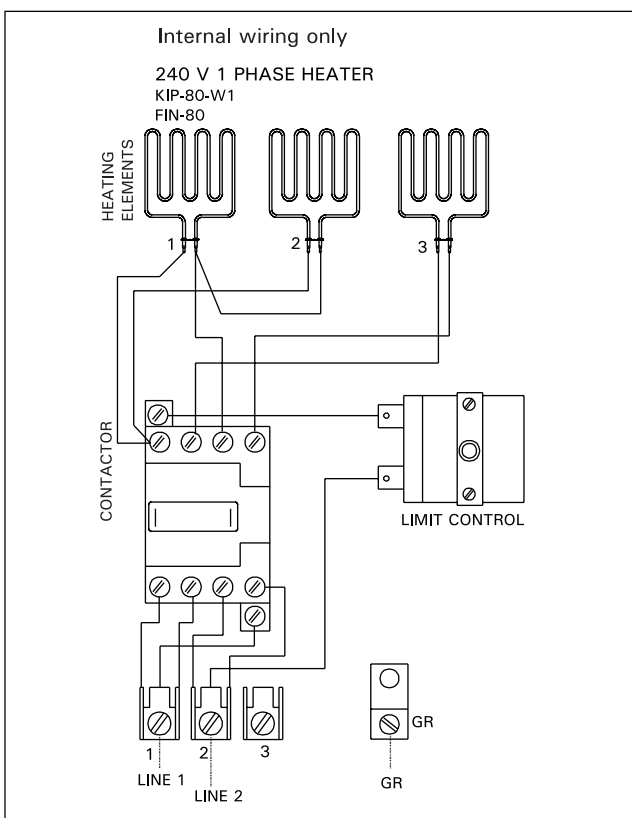


Figure 7a.

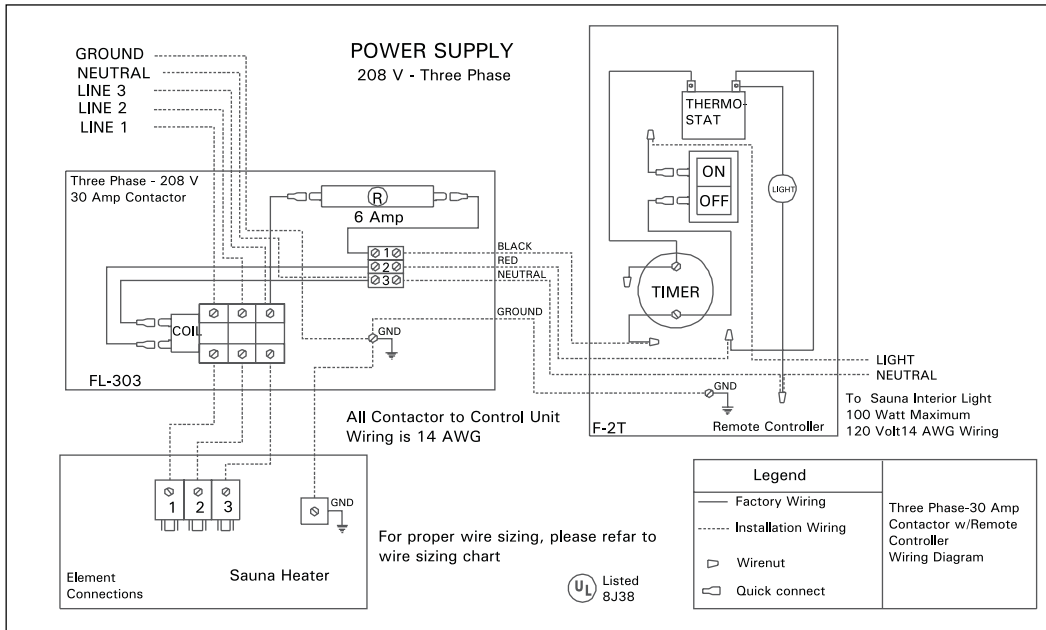


Figure 8. Use this diagram for wiring and hook-up

Sauna Heater (208 V) with wall control							
Model	Watts	Amps	Voltage	Ph	Wire Size	Control	Contactor
KIP-30-W3 FIN-45-W3	3000	8,3	208	3	14	F-2T	FL-303
KIP-45-W3 FIN-45-3	4500	12,5	208	3	14	F-2T	FL-303
KIP-60-W3 FIN-60-3	6000	16,7	208	3	12	F-2T	FL-303
KIP-80-W3 FIN-80-3	8000	22,2	208	3	10	F-2T	FL-303

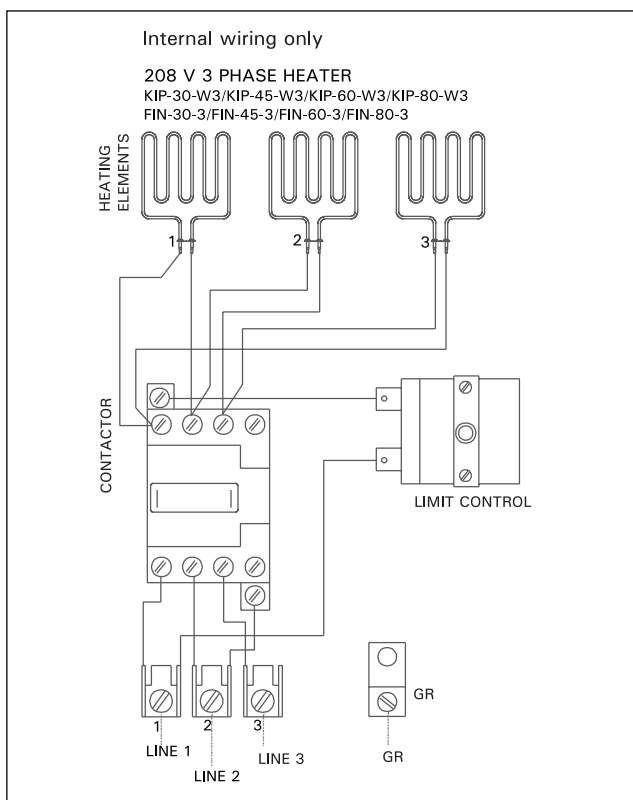


Figure 8a.

### SAUNA HEATER WIRING AND HOOKUP – ALSO REFER TO FIGURE 1

Refer to chart above for proper wire size and amperage. See page 3 for required clearances. Use copper wire from breaker to wall-mounted contactor. Supply cable must have 5 wires including insulated neutral and separate ground. Use 90°C copper wire from contactor to control and from control to room light. Also use 90°C copper wire from contactor to Sauna heater (within seal tight flex conduit), and connect to junction box at back of heater, with 90° connector. Connect to terminals 1, 2, 3 and connect ground wire to lug marked ground. (Cover plate under of heater must be removed first). **Important! Follow wiring instructions carefully to prevent shorting of 6 amp circuit breaker in contactor. Do not force wires against circuit breaker: be sure there are no bare wires or shorts. The circuit breaker, has been factory tested, and if it is shorted out, it will be the responsibility of the electrical contactor to replace it!**

If connection to heater will be made at a later time, bring flex into Sauna room 4–6" from floor, and leave 3' of flex for hookup (can be cut to right length later). Before testing heater, fill rock cavity with igneous stones provided with heater and fasten metal rock guard at top of heater. (See gen. info concerning washing and placing of stones.)

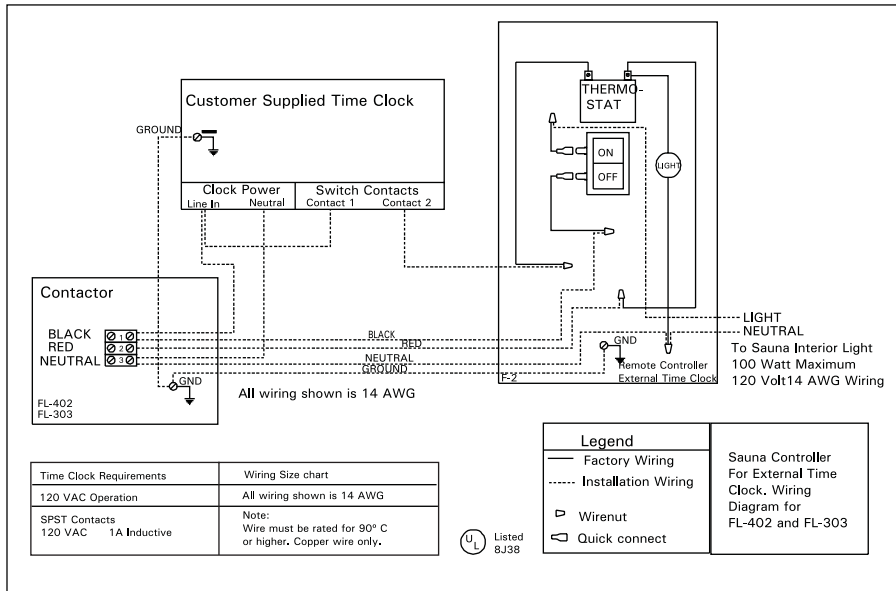


Figure 9.

## F-2 SAUNA CONTROL

This control can be used with any heater and proper contactor. See chart for contactor model.

This control can be used only with use of a time clock.

This control can be used only when an attendant is on duty during hours of operation.

## SAUNA TIMERS

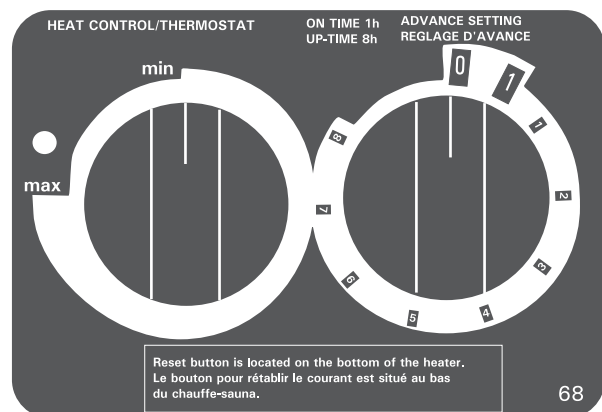
Have a 60 min. timer (0 to large 1 on the dial), and if you wish to use the full 60 min. cycle, turn the timer knob past the first 1 to number 2 or 3 on the dial. Then turn backward to the large 1 until a click is heard. Leave knob at the setting, and Sauna will operate for 1 hour before shutting off automatically.

Allow at least 30 minutes for room to heat up to an average Sauna temperature. Note!! If you set timer past first 1, timer will not come on until the time set has elapsed. The 60 min. timer is quiet. It does not tick.

Have an added feature--an 8 hour time clock (small 1 to 8 on the timer dial). If you wish to preset your Sauna heater to automatically turn on when you are away, you may preset up to 8 hours in advance of Sauna bathing.

For eg., if you set the timer knob at number 3 setting, the Sauna heater will turn on 3 hours later, and will be ready for useage in 3 1/2 hours (allowing for 1/2 hour heat up time). The heater will shut off automatically in another half hour, and if you wish to continue using Sauna, reset the 60 min. timer back up to the large 1.

Have a heat control (thermostat) which must be set between minimum and maximum heating, or the timer will not cause the Sauna to heat. Put heat control setting to maximum, heat Sauna for 1/2 to 1 hour to observe adequate Sauna temperature. If room is too hot, adjust heat control knob back toward minimum setting, until desired temperature is reached.



## SAUNA – GENERAL INFORMATION

### Rock placement – do not operate heater without stones!

Use only the stones which are supplied with the Sauna heater. Wash stones with water hose and place inside of heater box so that rocks are between and around heating elements. However, do not force rocks between elements.

Use smaller stones first, and continue to fill heater with larger stones until they are about 2" below rock guard. You may not need all of the stones.

**Stones should be placed loosely within heater so that there is good heat circulation around and through them. Stones should completely cover the heating elements, however!**

**Pouring water over exposed elements could cause heater damage!**

### TESTING OF SAUNA HEATER

1. After Sauna heater has been properly wired, according to appropriate wiring diagram and local codes, turn Sauna breaker on in the main breaker panel. (Note! Electrician must label "Sauna" breaker.)
2. Turn thermostatic (heat) control to on position (this is located either on your heater or on your remote wall control. If you have a wall control, the indicator light will come on to show that the Sauna is heating). Set timer to 10 or 15 minutes.
3. Within 5 minutes, you should be able to feel heat from heater elements when holding your hand over heater.
4. If Sauna does not heat, refer to troubleshooting information.
5. It is normal for smoke to appear during the first heating, as protective element coating needs to burn off. **Turn sauna on for 1 hour before using the first time, to eliminate smoking.**

### TROUBLESHOOTING

#### A. If sauna does not operate after initial installation and wiring:

1. Check breaker to be sure that it is on. Also, breaker should be correct size.
2. Make sure that a neutral wire has been included (necessary for all heaters except model with built-in control).
3. Check circuit breaker in contactor to be sure that it has not been shorted out.
4. Be sure that thermostat and timer are both in on position.
5. Be sure that timer winds down. If timer has been shorted out, heater will not operate.

#### B. If sauna has been in operation, but heater ceases to operate:

1. Check breaker to make sure it is on.
2. Check timer to see if it winds down.
3. Check high limit reset button in heater (reset is under the heater (wall models) or on the back of the junction box (floor models)) to see if it has been released.
4. Call your electrician or service person for further help.

**NOTE! A ground fault interrupter (GFI) should not be installed in and does not belong in a Sauna. If used, the breaker will trip, and damage could result.**

#### C. If sauna heater operates, but sauna room does not come up to sauna temperature (160–185°F normal Sauna temperature):

1. You must allow at least 30 minutes for Sauna heat-up time.
2. Is Sauna thermometer located 6" from ceiling, and is it above or close to Sauna heater? (This is proper location for Sauna temperature reading.) Thermometer readings vary with room heights and location. Eg. 180°F above Sauna heater = 165 on opposite wall = 140 on upper bench level = 120 on lower bench level = 100 at floor level.
3. Check for proper wire size, amp size, and proper wiring (according to diagrams and information) also necessary copper wiring.
4. Check for placement of stones to make sure they are loosely spaced around elements, to insure good air flow. Stones packed too tightly will restrict air flow and reduce heating capacity.
5. Check for heat loss (around or under door, around ceiling light or fan – we do not recommend ceiling light and a fan does not belong in the Sauna.
6. Is room properly insulated?
7. Is ceiling higher than 7'?
8. After checking all the above, remove rocks and check heater elements for holes or burned areas. (Only if heater has been in use for some time.)

### CAUTION! ELECTRICIAN OR SERVICE PERSON!

1. **Before servicing heater, control, or contactor, turn power off at breaker!**
2. Open junction box to make sure wires are tightly secured with no loose connections. Heater wire and all connecting wires should be copper.
3. Check for burned spots or short in wiring of timer or thermostat.

**Finlandia Sauna's warranty on parts is void if installer/electrician fails to follow necessary wiring information provided or fails to follow code for proper wire size, amperage, etc.**

### HIGH LIMIT CONTROL

Each heater is equipped with a high limit control which is a safety device. If an abnormal heating condition should occur, the heater will automatically shut off, and it will not come on again until it cools.

To reset the high limit, locate the reset button (bottom front on wall models, behind junction box at back bottom of heater on floor models) and push upward until contactor kicks in. If reset button continues to trip, contact a qualified service person. Be sure that a GFI has not been installed.

Receptacles OR PLUGS are not allowed in a Sauna room. If a speaker is installed in a Sauna room, it should not be installed higher than 3' from floor, away from the Sauna heater (consult manufacturer for ratings).

**ROOM LIGHT** should be a vapor proof, wall-mounted type, with rough-in box mounted flush with inside paneling. It should mount 6'6" from floor, not directly over Sauna heater, and not over upper benches; light bulb should not exceed 75 watts.

**HEATER FENCE** is necessary for safety and should be constructed of 1" x 2" or 2" x 2" softwood to match Sauna interior. See figures 2–4 for clearances from Sauna heater. Fence should attach to wall and should not be placed higher than top of heater below rock line.

## **ROOM CONSTRUCTION – GENERAL INFORMATION**

### **A. FRAMING**

- 2" x 4" dry Douglas Fir, 16" o.c.

### **B. CEILING HEIGHT**

- no higher than 7'0".

### **C. INSULATION**

- R11 Fiberglas with foil back in walls and ceiling, foil facing into room.

### **D. DRYWALL**

- See local codes. Is not required in most residences. See local codes commercial. If drywall is used, apply 1" x 2" nailers so that wall and ceiling boards can be attached to solid wood.

### **E. PANELING**

- Use kiln-dried, clear, T & G softwood such as California Redwood, Western Red Cedar, Alaska Yellow Cedar, with moisture content not exceeding 11 %.

### **F. BENCHES**

- Use matching wood of vertical grain with 2" x 2" tops – ½" spacing – and 2" x 4" facing, fastening from bottom to prevent burning of bathers.

### **G. HEATER GUARDRAIL**

- Use matching softwood of 1" x 2" or 2" x 2".

### **H. DOOR**

- Must open out and should not have a lock. Size – 2'0" x 6' 8" with fir rails and double sealed, tempered glass.

### **I. FLOORING**

- concrete, ceramic tile, or heavyduty Vinyl with walking area of removeable SuperDek.

### **J. VENTILATION**

- should be provided by lower vent close to heater, 4" from floor, and upper vent on opposite wall (if possible) 6" from ceiling or as low as 24" from floor. Vents should be adjustable and should allow air to change 5 times per hour.

### **K. LIGHT**

- should be wall-mounted, vapor proof type, located 6" from ceiling.

### **L. ACCESSORIES**

- bucket, dipper and thermometer are essential. Thermometer should be placed over the Sauna heater, 6" from ceiling, for correct temperature reading. Other accessories such as hygrometer, sand timer, brushes, etc. are available.

### **M. MAINTENANCE INSTRUCTIONS**

- are included at the end of this manual.

### **N. WARNING SIGNS**

- are furnished with Sauna heater. The metal "CAUTION" sign should be fastened to wall, close to heater, in a visible place. The metal "WARNING" sign should be fastened outside, to the Sauna room door.

### **WARNINGS!**

**Do not smoke, use alcohol, or exercise in the sauna!**

**Do not exceed 30 min. in the sauna at one time, as excessive exposure can be harmful to health. The sauna should not be used as an endurance test!**

**Persons with poor health should consult persons their physicians before using the sauna!**

**Do not place any combustible material over the sauna heater (towels, bathing suits, wooden bucket or dipper)!**

**Use only clean tap water on the stones – do not use pool or spa water, as chlorine gas can be produced and the heating elements can be damaged!**

**Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98,6°F. The symptoms of hyperthermia include an increase in the internal temperature of the body, dizziness, lethargy, drowsiness, and fainting.**

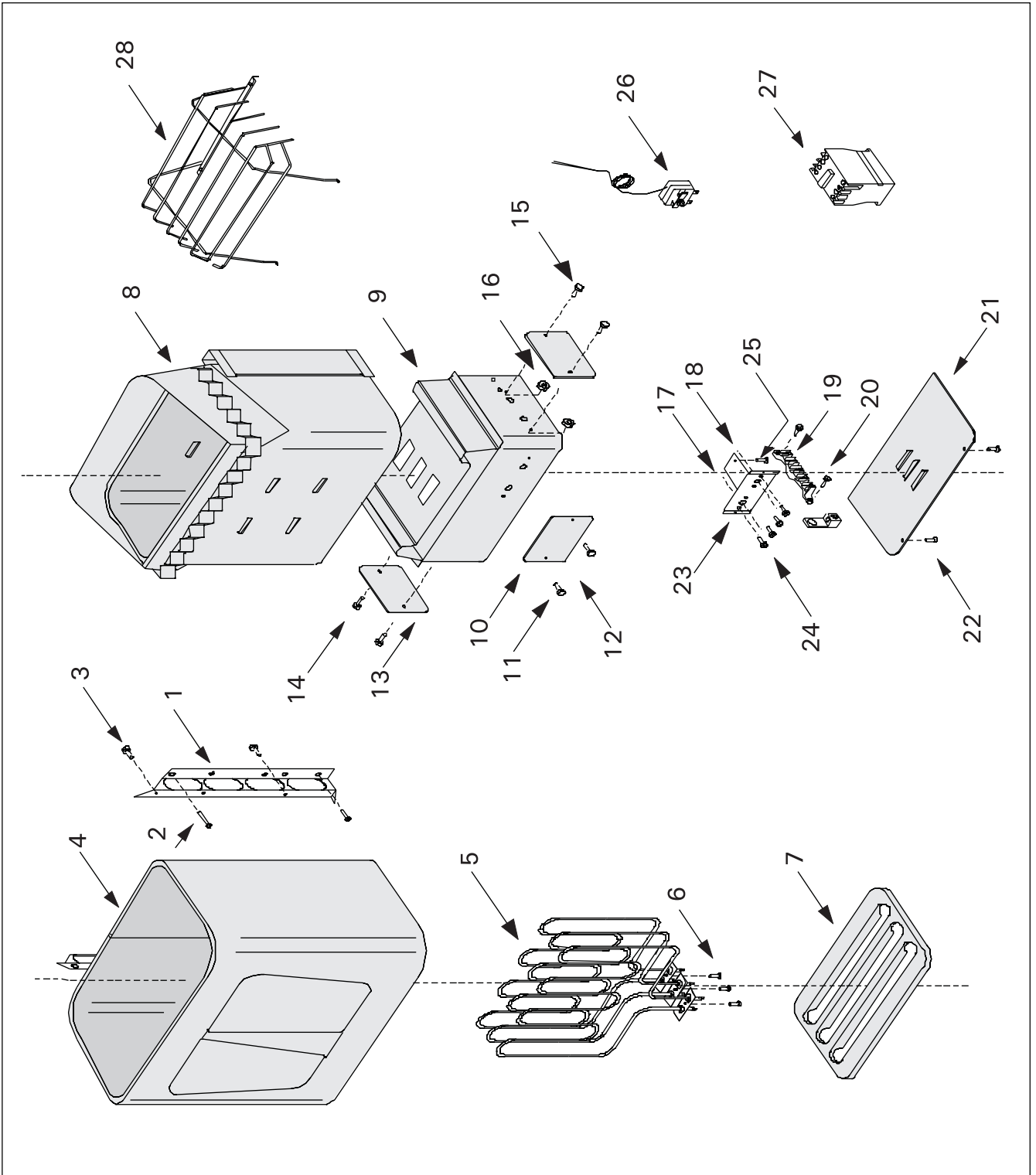
**The effects of hyperthermia include:**

- A) Failure to perceive heat**
- B) Failure to recognize the need to exit the room**
- C) Unawareness of impending hazard**
- D) Fatal damage in pregnant women**
- E) Physical inability to exit the room**
- F) Unconsciousness**

**Warning – the use of alcohol, drugs or medication is capable of greatly increasin the risk of fatal hyperthermia**

# KIP-60-B1/KIP-60-B3/FLB-60/FLB-60-3

Sauna heaters type -W1, W3, -FIN without parts nr 12, 17 and 18





## MAINTENANCE INSTRUCTIONS

1. Use only clean water on Sauna stones. **Do not** use spa or pool water as it will destroy your heater.
2. Clean water should always be used in Sauna buckets and water should be dumped out after every use. Scour buckets and dippers occasionally when film collects from usage. Use plastic bucket liner in bucket to prevent water leakage.
3. Scrub benches with a soft brush, using soap and water or a mild disinfectant, when needed—about once a week in commercial Saunas, or depending upon Sauna usage. For sanitation, each bather should sit or lie on a towel (this will prolong bench life).
4. Remove Super Dek and wash waterproof floor with disinfectant (e.g. Pine Sol) about once a week or as often as needed. Hose off Super Dek to clean.
5. To maintain beautiful appearance of Sauna heater, remove water stains by wiping with a damp cloth occasionally.
6. Finlandia/Harvia Sauna Heaters require no special maintenance when properly installed by a qualified electrical contractor. After 5 years of usage, the rocks may need replacing if they have crumbled or powdered.
7. Finlandia/Harvia Sauna strongly recommends a floor that can be easily cleaned (concrete, ceramic tile, or a poured type of flooring). When this is provided, the Sauna can be easily cleaned and kept in a sanitary condition with little effort. A carpet is NOT recommended for a Sauna! A carpet becomes a perfect breeding ground for bacteria in the moist conditions of a Sauna; and a carpet promotes the spread of foot diseases such as athlete's foot. For the same reasons, wooden duckboard should not be used for flooring.
8. In new construction, a floor drain should also be provided, especially in commercial Saunas for sanitary cleaning and maintenance.
9. Seal wood around glass in door—inside and outside—with *Thompson's Water Seal* to prevent warpage.
10. When Sauna wood becomes stained from perspiration, the wood may be lightly sanded with fine sandpaper to restore beautiful appearance. We do not recommend stains or sealers as toxic vapors may appear when heated. However, 2 coats of *Thompson's Water Seal* may be used on the wood benches in a commercial Sauna, so that the wood may be more easily cleaned and kept sanitary—the wood will not absorb perspiration.
11. The Sauna room will heat faster if the higher vent is kept in a closed position when heating. The lower vent may always be kept in an open position.
12. Required warning signs should be posted according to the instructions.

## Guarantee

This FINLANDIA HARVIA SAUNA heater is guaranteed for one year date of purchase, and includes all heater parts such as heating elements, controls, contactors, etc.

This guarantee covers faults in manufacture and material only, and includes the exchange of new parts supplied by the manufacturer or manufacturer's agent, after the faulty parts have been returned to same. The replacement of parts under warranty does not extend the warranty period beyond the original one year.

The guarantee does not cover defects caused by normal wear and tear, defects caused by improper installation, poor maintenance, or failure to follow the manufacturer's instructions for installation, use and care, or alterations made to the Sauna product.

This guarantee is void if the heater is used improperly. Pool or spa water should not be poured over the Sauna stones, as chemicals are harmful to

the heater. Only one or two dippers full of water should be poured over the hot stones at one time. This guarantee will be void if a shower has been installed in the Sauna room.

The guarantee does not cover delivery costs of the faulty part or costs of the person carrying out the repair in the field. If the Sauna heater is returned to the manufacturer or manufacturer's agent within five years after date of purchase, the agent will provide free labor for repair, but will charge for parts if date of purchase is past one year.

This guarantee will be void if installation and wiring is not carried out by a certified electrician or authorized and qualified service representative, who must sign below.

This guarantee will be void if information below is not filled out and returned within 15 days of purchase, and it applies only to original installation of product and to original purchaser.

FINLANDIA

HARVIA SAUNA HEATER

MODEL NUMBER

DATE OF PURCHASE

ORIGINAL OWNER

ADDRESS

PURCHASED FROM

ELECTRICAL CONTRACTOR

MUST SIGN HERE

DATE OF ELECTRICAL

WIRING & HOOKUP

**Manufacturer's agent/Importer:**

Finlandia Sauna Products, Inc.  
14010-B S.W. 72<sup>nd</sup> Ave.,  
Portland, OR 97224-0088  
1-800-354-3342  
503-684-8289  
Fax: 503-684-1120

