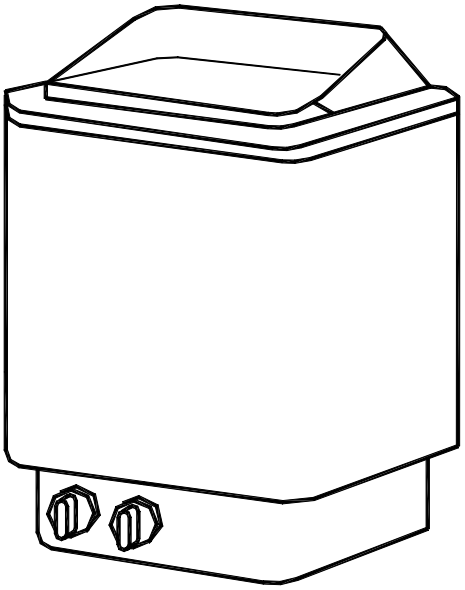
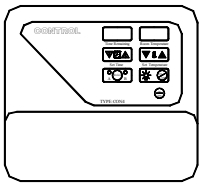
USER HANDBOOK

MODEL

AM20.....45A
AM30MI...AM90MI
AM30MI-C...AM90MI-C

Welcome to select the above AM Heater.
Kead the user handbook before using the heater.





The Heater

-Installation
-Operation

Electric Heater

Welcome to select AMXXA.AMXXMI.AMXXMI-C series SAUNA HEATER, with rational design, reliable performance, steady effort and convenient installation. Sauna-bathing equipment is composed of the heater and sauna room. After Sauna-bathing, people feel the flow of the spirits, excrete virus in body, eliminate fatigue, release the muscle and also good for health.

AMXXA and AMXXM sauna heater series is designed for small sauna room, the model as following: AM30A、AM45A、AM30MI、AM45MI、AM60MI、AM80MI、AM90MI , which is equipped with suitable sauna room and control the temperature. (See table 1).

AMXXM-C sauna heater series is designed for small sauna room, the model as following: AM30MI-C 、AM45MI-C、 AM60MI-C、 AM80MI-C、 AM90MI-C , which is equipped with suitable sauna room and control the temperature. (See table 2).

⚠**Warning:** The heater is forbidden to use the heat of any other purposes.

ATTENTION: This appliance is not intended for use by person (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

ATTENTION: Children should be supervised to ensure that they do not play with the appliance.

Table 1:

Model	Power KW	Heating Elements N*kW	Voltage/Current V / A	Power wire N*mm2	Breaker A	Sauna room height(mm) 1900 / Room size m3	Stones kg	DISTANCE TO SHELF OVER 500mm ABOVE THE FLOOR
AM20A	2.0	2*1.0	120V/16.6	2#10AWG+N+GR	25	2-3	12	15
AM30A	3.0	2*1.5	220-240V/13.6	3*2.5	16	2～4	15	15
			240V/12.5	2#12AWG+N+GR	16			
AM45A	4.5	3*1.5	220-240/20.5	3*6	25	3～6		15
			240V/18.8	2#10AWG+N+GR	25			
			380-415V/6.8	5*1.5	16			
AM30MI	3	3*1.0	220-240V/13.6	3*2.5	16	2～4		15
			240V/12.5	2#12AWG+N+GR	16			
AM45MI	4.5	3*1.5	220-240/20.5	3*6	25	3～6		15
			240V/18.8	2#10AWG+N+GR	25			
			380-415V/6.8	5*1.5	16			
AM60MI	6	3*2.0	220-240/27.3	3*10	32	5～9	18	15
			240V/25	2#10AWG+N+GR	40			
			380-415V/9.1	5*1.5	16			
AM80MI	8	3*2.7	220-240/36.4	3*10	45	8～12		20
			240V/33.3	2#8AWG+N+GR	15			
			380-415V/13.6	5*2.5	16			
AM90MI	9	3*3	220-240/37.5	3*10	45	9～13		20
			240V/40.9	2#8AWG+N+GR	45			
			380-415V/13.6	5.2.5	16			

Table 2:

Model	Power KW	Heating Elements N*kW	Voltage/Current V / A	Power wire N*mm2	Breaker A	Sauna room height(mm) 1900 / Room size m3	Stones kg	DISTANCE TO SHELF OVER 500mm ABOVE THE FLOOR
AM30MI-C	3	3*1.0	220-240V/13.6	3*2.5	16	2～4	15	15
			240V/12.5	2#12AWG+N+GR	16			
			380-415/4.5	5*1.5	16			
AM45MI-C	4.5	3*1.5	220-240/20.5	3*6	25	3～6		15
			240V/18.8	2#10AWG+N+GR	25			
			380-415V/6.8	5*1.5	16			
AM60MI-C	6	3*2.0	220-240/27.3	3*10	32	5～9	18	15
			240V/25	2#10AWG+N+GR	40			
			380-415V/9.1	5*1.5	16			
AM80MI-C	8	3*2.7	220-240/36.4	3*10	45	8～12		20
			240V/33.3	2#8AWG+N+GR	15			
			380-415V/13.6	5*2.5	16			
AM90MI-C	9	3*3	220-240/37.5	3*10	45	9～13		20
			240V/40.9	2#8AWG+N+GR	45			
			380-415V/13.6	5.2.5	16			

HEATER INSTALLATION

Prior to installing heater, please refer to installation handbook and check it as following points:

- Attach the heater to the wall with a screw, according to chart 1 and table 1 or the size in heater.
- Is the output power and the type of the heater suitable for the SAUNA ROOM? see parameter table 1 (technical data).
- Is the supply voltage suitable for the rated voltage of the heater? An Residual Current Device (RCD) must be installed in the power supply circuit for safety purpose.
- The location of the heater fulfils the minimum requirements concerning the distances given in chart 1 and allow for safety and convenience (see table 2).
- Do not install the heater to the floor or wall recess.
- The required MIN height of SAUNA ROOM is 1900mm (chart 1C) .
- Do not use asbestos-cement tile, asbestos–board and this kind of material as wall sheet behind the heater. For this

material will cause the temperature of the wall to rise dangerously high.

- Choose the cable wire according to table 1 and the cable wire can bear high temperature 170℃ (It is recommended to use rubber cable wire).

Do not install more than one heater in a sauna room unless twin-heater installation (NOTE: Leave 400mm between two heaters when installing two.)

The heater gets very hot when working .To avoid the risk accidental contact with the heater, it is recommended that a heater guard be provided. The guard is made into many kinds of patterns in accordance with the location place, yet some size must be made as the chart ID (see table 2 and chart 4).

The electrical supply must do the installation of the heater to ensure safety and reliability .Improper electrical connection can cause fire or electric shock.. Refer to the chart10, 11,12,13,14.

The junction box in SAUNA ROOM must be sealed, splash–proof and have a moisture condensing vent with 7mm diameter , it is maximum height from the floor must not exceed 500mm (see chart 2).

NOTE: The above screw must tighten, leave 3 mm between screw head and the wall.

CHART 1A

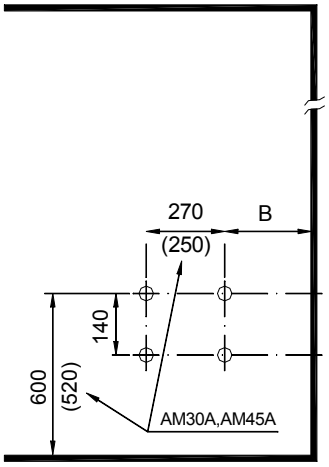


CHART 1B

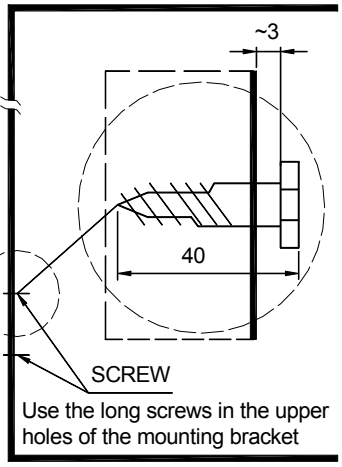


CHART 1C`

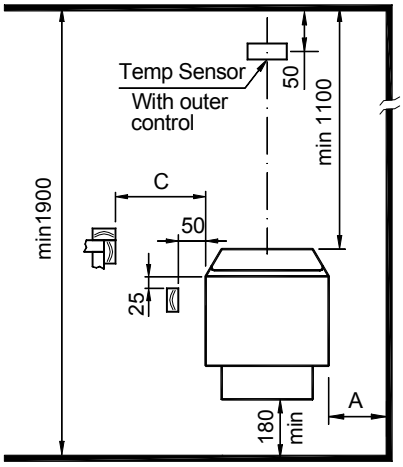


CHART 1D

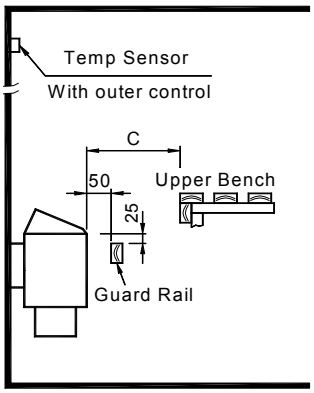


TABLE 2

STOVE	A (MIN)	B (MIN)	C (MIN)
AM30A AM30MI	80	110	200
AM45A AM45MI	80	150	200
AM60MI	100	170	230
AM80MI	130	200	250
AM90MI	130	200	250

CHART 2

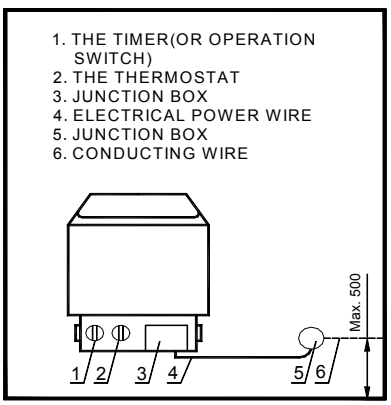


CHART 3

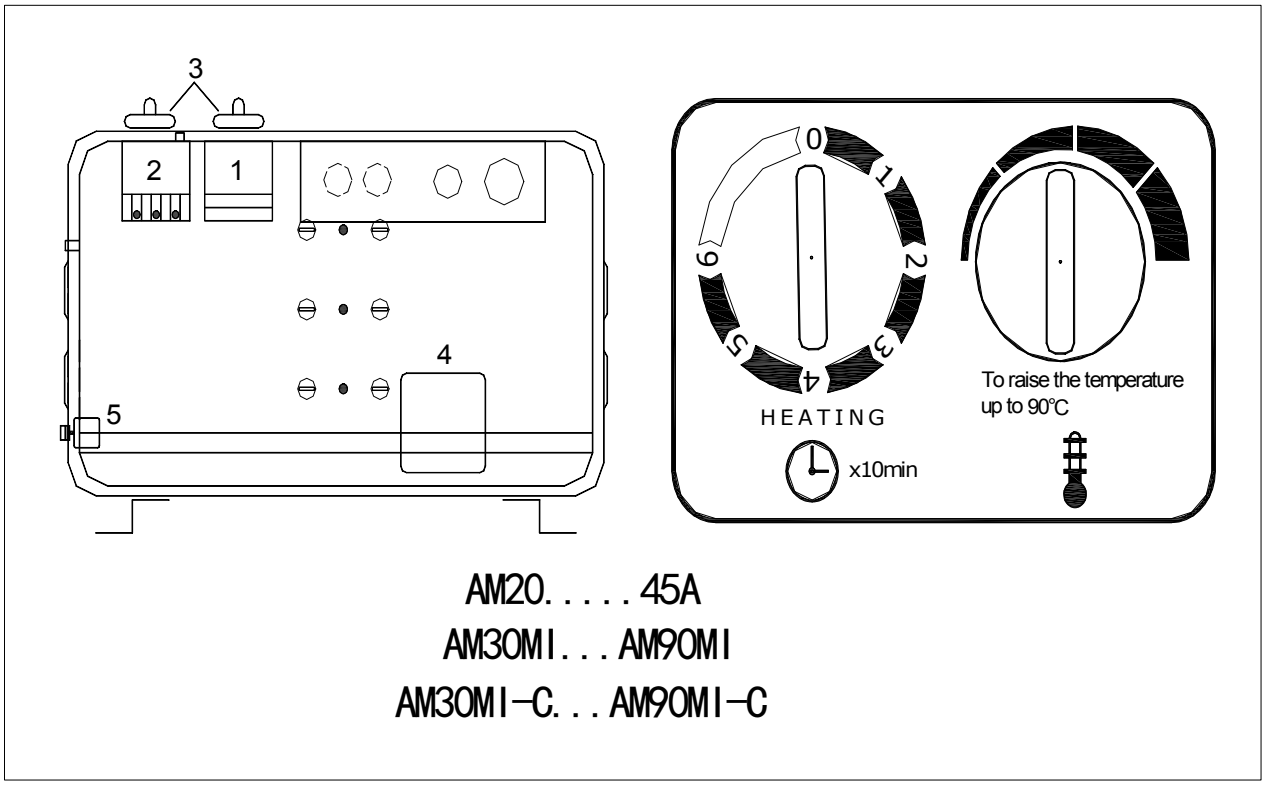
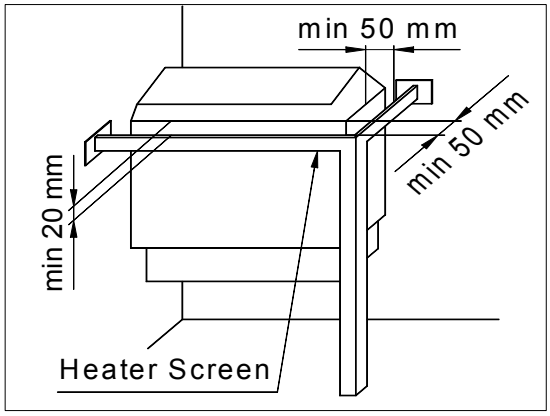


CHART 4



CONTROL TEMP (INSIDE)

The Thermostat control the temperature by turning operating knob. (Chart 2)

The heater should be equipped with proper size of sauna room. During 30-60 minutes, it reaches the selected temperature and remains (refer to table 1).

The timer <AMXXA、AMXXMI、AMXXMI-C sauna series).<Refer to Chart 3>

The timer is the main power switch in heater

The timer automatically cut off the power if it exceeds the setting time.

Timer 1 hour preset heating

The preset heating time range of the timer is 1 ≤ 60 minutes, and the power supply of the sauna can be automatically cut off after the set time.

CONTROL TEMP (OUTSIDE: CON4)

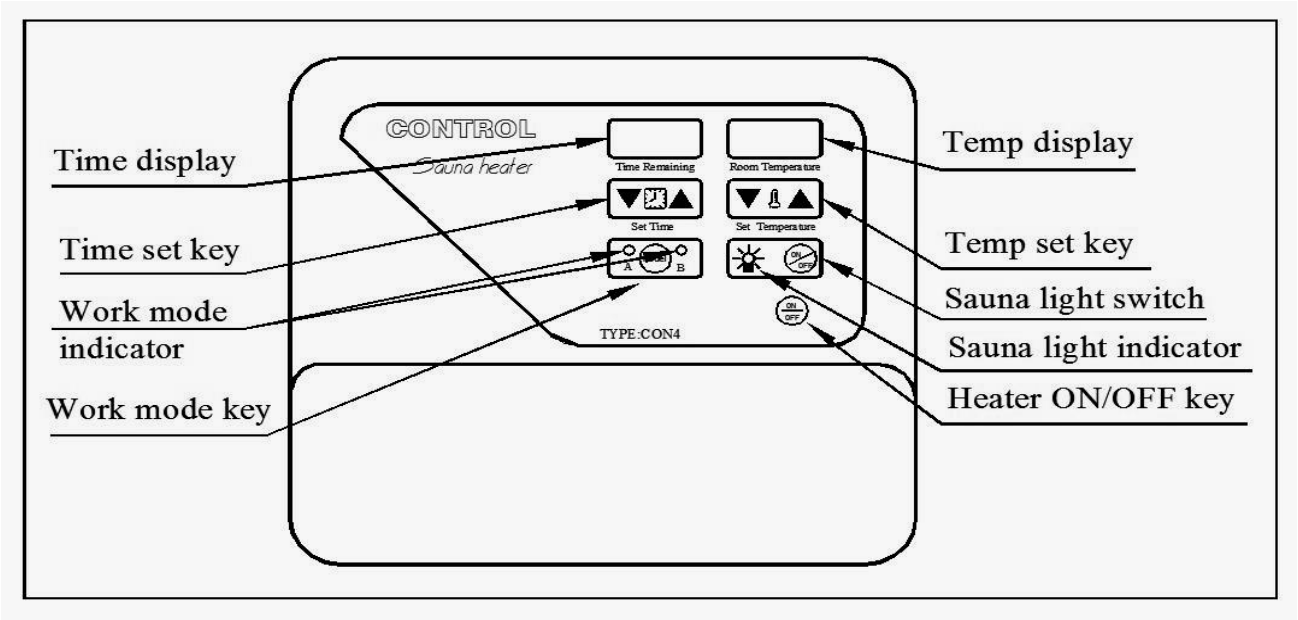
Controller<Refer to chart 5>

1. **Sauna light switch**: turn on and off the sauna light connected to the controller. The sauna light indicator lights up when the sauna light turns on; The sauna light indicator lights off after the sauna light is turned off.

2. **ON/OFF key:** turn on and off the controller and also the sauna heater.

Remark: The controller automatically enters into work mode A every time the controller is turned on, the operation time show the last setting time.

CHART 5 CON4 DIGITAL CONTROLLER



Settings<Refer to chart 5>

1. WORK MODE :

Work MODE A:

When indicator light "A" is on, system is in work mode A. In mode A, it has wait function. The heating time is up to four hours, and presetting (waiting) time is up to eight hours. Time setting in the 0:30-4:00 section is to let the heater work immediately without any delay. Time setting in the 4:30-12:00 section is to let the heater wait for half hour to 8 hours and then heat for 4 hours.

For example:
Time setting to 2:00 means that the heater will heat up continuously for 2 hours without any delay.
Time setting to 6:30 means that the heater will wait 2 and half hours, then start to heat up continuously for the rest 4 hours.

With wait function, you could delay the sauna heater for a certain time.

Work MODE B:
When indicator light "B" is on, system is in mode B. In mode B, it does not have wait function. The heater will heat up immediately up to 12 hours.

For example:
Time setting to 6:30 means that the heater will heat up continuously for 6 and half hours without any delay.

Remark :

1) The time setting range for both Mode A and B is the same: 0:30 ～12:00.
2) In mode A, the presetting time is calculated as (time setting - 4:00), so any time setting less than 4:30 has no presetting time, and heater will start immediately.
3) The time displayed is counting down.

2. Time setting:

Press the time-set key to change the working time setting (press upward key"▲" or downward key "▼"). The setting will be automatically confirmed 3 seconds after no operation. Display start to countdown with the setting time and controller will automatically turn off when counting down is over, and screen shows 0:00. The factory default setting time is 2:00.

3. Temperature setting:

Press the temperature-set key to change the temperature setting (press upward key "▲"or downward key "▼"). Display screen blinking and shows the set temperature. The setting will be automatically confirmed 3 seconds after no operation, then displays the environment temperature. The heater stops heating once environmental temperature reaches setting temperature. The temperature setting range is 40-105℃ (104-221℉), factory default setting temperature is 75℃ (167℉).

Outside controls the CON4 use to see "CON4 digital display controller instruction"，circuit diagram see CHART 13.

Remark: System keeps last settings after the controller is turned off by pressing the ON/OFF key.

All settings will be reset to factory default if power supply is cutoff.

Installation of Temperature sensor <Refer to chart 6> .

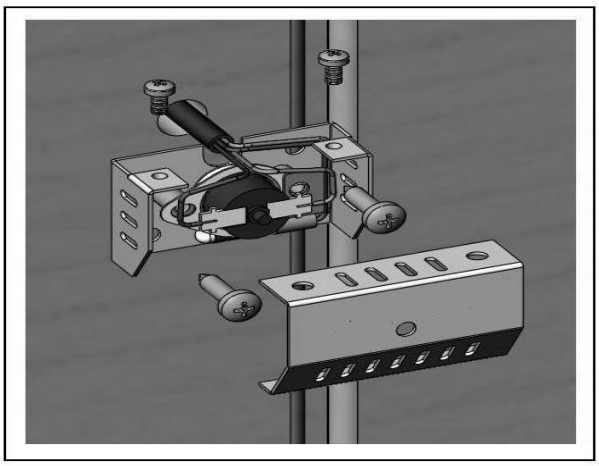
Refer to Figure 6 for the recommended mounting position of the temperature probe box in the sauna. Fact ory Settings that the temperature probe box is equipped with a 3m long connecting wire and connector. Y ou can pre-open a ¢18mm wire hole in the installation position and wear the connecting wire. Connect the hole to the CON4 terminal block. Disconnect the temperature probe cover according to Figure 6. Fix the temperature probe case in the mounting position with the screw, and then install the temperature probe cover to use.

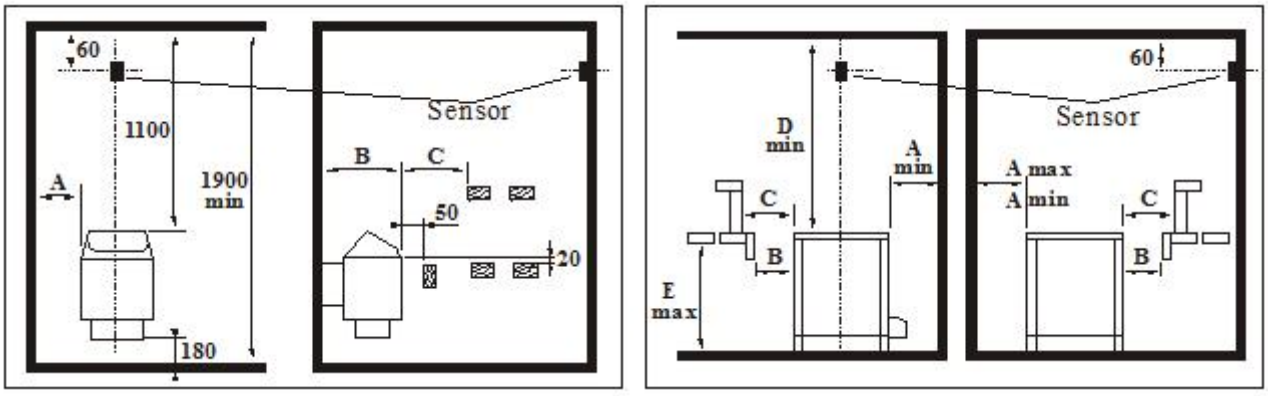
Remark:

Error code "--L" means temperature sensor is not well-connected, broken or the temperature is below -10 ℃ (14℉).

Error code "--H" means temperature sensor is shorted or the temperature is higher than 110℃ (230℉). Sauna heater can't heat either in both error conditions, please check temperature sensor connection or temperature inside sauna room.

CHART 6





ATTENTION：Check sauna room before restart the timer.

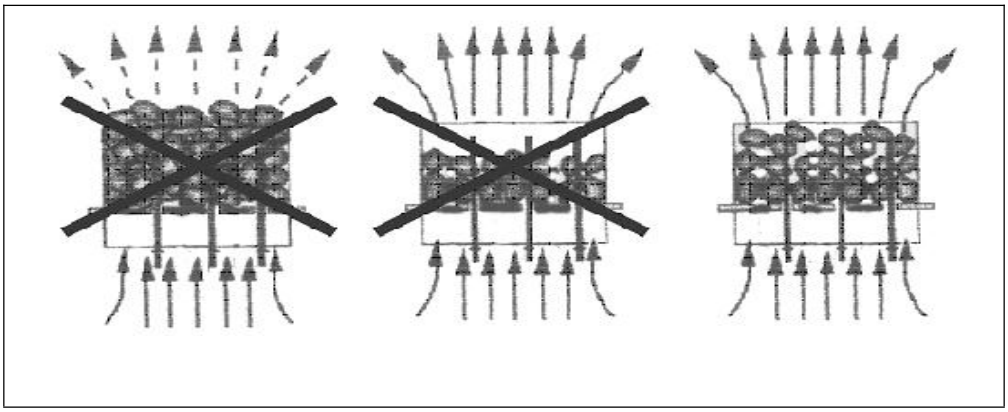
SAUNA STONE <prefer to chart 7>

Do not use the heater without stones, otherwise it may cause a fire , only use the original sauna stone .or the stone for use in heater. Do not use ordinary stone, that may emit harmful substance, easily break and do not possess good heating capacity. Wash the stones to clear the dust before putting them into the heater. Stones of unspecified sizes should not be used. Put the larger stones at the bottom of stove compartment and the smaller ones on the top, do not pile them tightly so that air can flow freely.

NOTE: too tightly placed stones decrease working time of the heater element. The stones should plainly cover the heater element. (Refer to chart 7). The diameter of stone is about 3-8 cm..

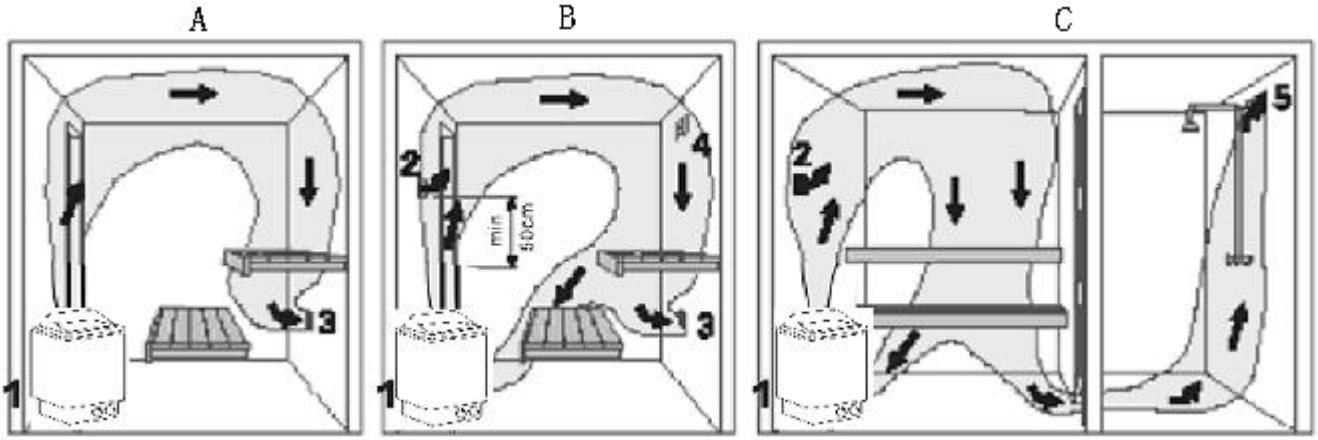
Rearrange the stones in the heater at least once a year or twice if it is in frequent use (maximum 500 hours). To decide the correct volume of stones in the heater, refer to technical data provided (table 1).

CHART 7：（PILING OF THE SAUNA STONES）



Air Ventilation of SAUNA ROOM

CHART 8：（LOCATION OF INLET AND OUTLET VENT）



1. Air supply vent.
2. Optional air supply vent if mechanical exhaust ventilation is used, the opening is located 50cm above the heater.
3. Exhaust air vent.
4. Drying vent, which is closed during heating and bathing. Sauna room also dried by leaving the door open after bathing.

If there is only an exhaust vent in washing room, leave a MIN 5cm opening under the sauna room door. (Mechanical ventilation is recommended).

- To ventilate the Sauna room, the way is to draw air around the heater and move the heat to the farthest part of sauna room.
- Considering air ventilation of sauna room, the inlet vent and the outlet vent should be installed.

The inlet vent may be installed on the wall below the heater (chart 8A). When using the mechanical ventilation, inlet vent is placed at least 50cm above the heater (chart 8B) or on the ceiling above the heater (chart 8C). The heavy cold air that is blown into sauna room is mixed with the light hot air from the heater, bringing fresh air for the bathers. The inlet vent should have a diameter of 5-10 cm .

The outlet vent should be placed diagonally opposite to the inlet. It is advised the outlet vent is placed under the platform in a sauna room as far as possible from the inlet vent. It can be installed near the floor, or lead outside through a pipe from the floor going to a vent to the sauna ceiling, or under the door (to the washroom).

In this case, the sill slot must be at least 5cm and it is recommended there is mechanical ventilation is the Wash Room . The size of the outlet should be twice of the inlet.

Warning: 1、 do not power on when connecting electric current and mending .

2、do not hang clothes to dry in the heater, for this may cause a risk of fire.

3、do not bake food in heater .

4、Keep away from the heater when it is hot, the outer surface of the heater may burn your skin.

It is recommended that spruce wood in Northern Europe is used for material of wall and ceiling.

Insulation.

The door, ceiling and walls of sauna room must be insulated. When one square meter (m^2) of un-insulated surface choose the heater input <refer to table 1>.Take following as example (cubic volume increases to approximately 1.2m^3)

Make sure that moisture-roof is appropriate in sauna room. Purpose of this is to prevent spreading moisture to the other rooms or wall structure. Moisture-proof must be placed between panel and heating insulation. Moisture and thermal proofing should be installed from outside to inside, such as:

1、 Recommend that the MIN thickness of the thermal insulation in the walls is 50mm and in the ceiling 100mm.

2、 Aluminum foil laminate is affixed over the heating insulation as a vapor barrier.

3、 Leave at least 20mm air slot between vapor barrier and inside panel.

4、 Leave a slot between wall panel and ceiling to prevent gathering moisture behind the panel.

Heating of the Heater

Ensure there is nothing near the heater before switching on it. The heater and the stones may emit smells when you use the heater for the first time. Make sure that the sauna room has been efficiently ventilated or open the sauna room door. It will take about an hour to reach suitable temperature in sauna room if the output of heater is proper.(CHART 8) ;

The temperature that bather preferred to is about +60-+90^{0}C. Too powerful heater oil heat sauna room too quickly and the temperature of stones may remain insufficient. Consequently, the water thrown on the stones will run through and do not produce sufficient vapor. On the other hand, if the heater is underpowered the heating tine will be much longer.

Malfunctions

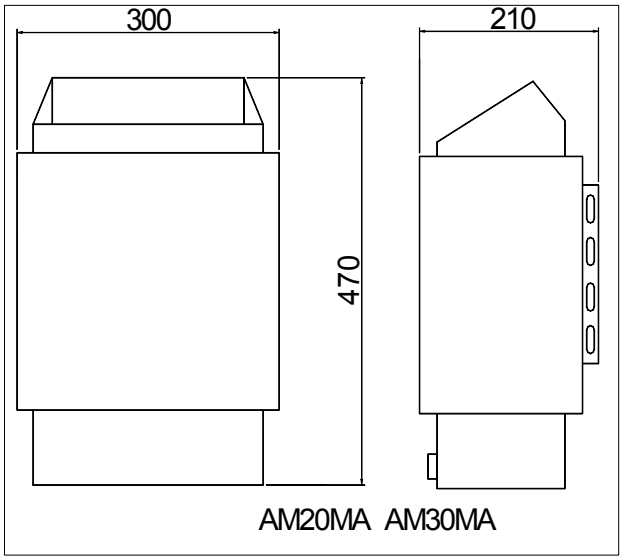
If the heater doesn't work, check the following (Note: witch off the heater before checking >.

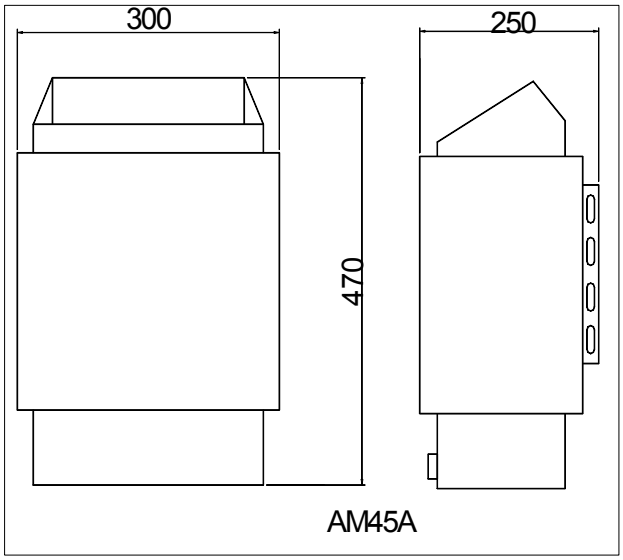
1. front frame 2. stove side frame 3. heating element 4. terminal block

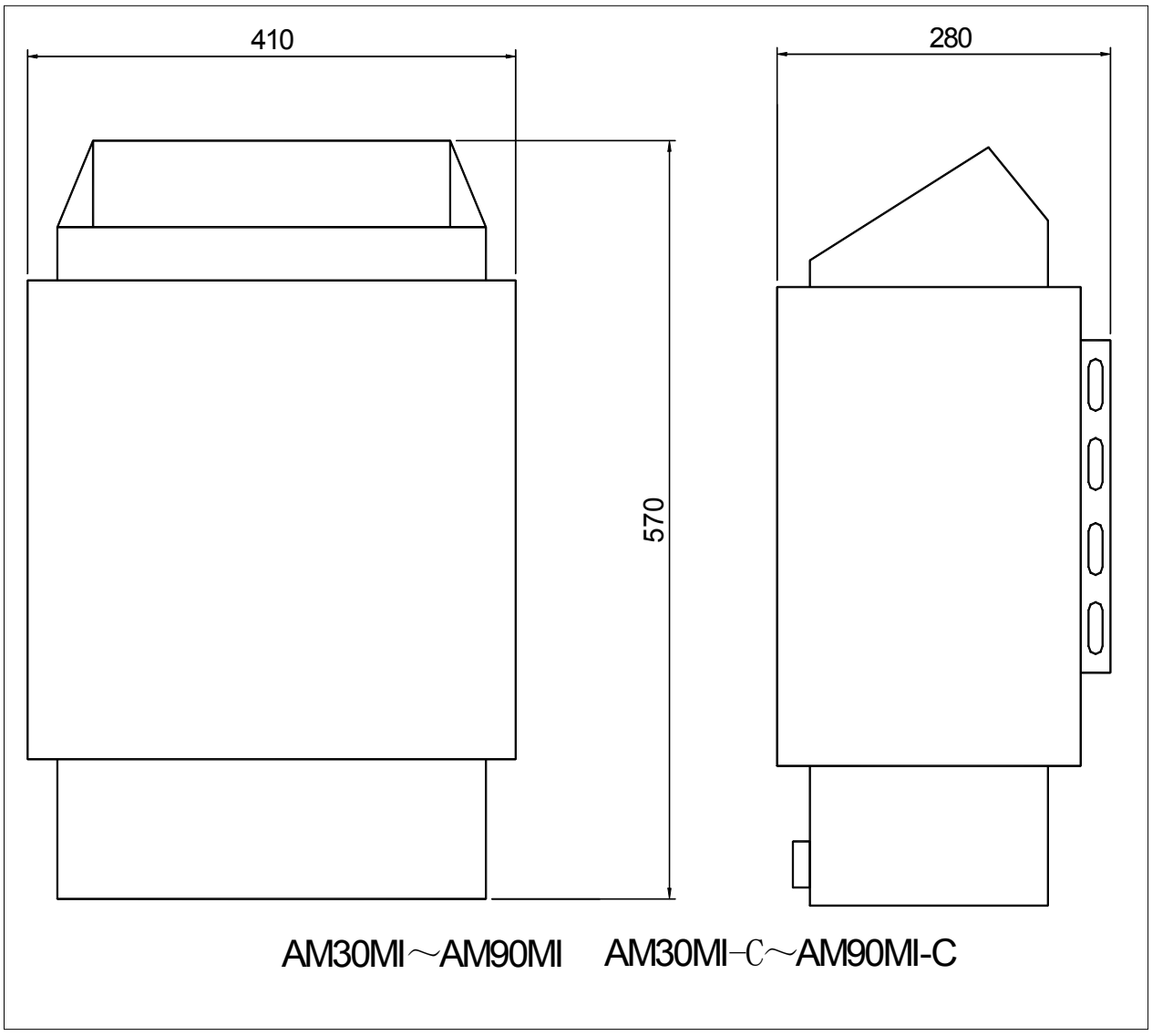
5、heating element holder with o-rings 6. cable holder 7. name plate 8. supply wire set.

⚠Warning: Never put cover on the heater; Do not use heater without stone;
Do not put wood on the heater; Do not use chlorinated water.

CHART 9： DIMENSION OF SAUNA HEATER

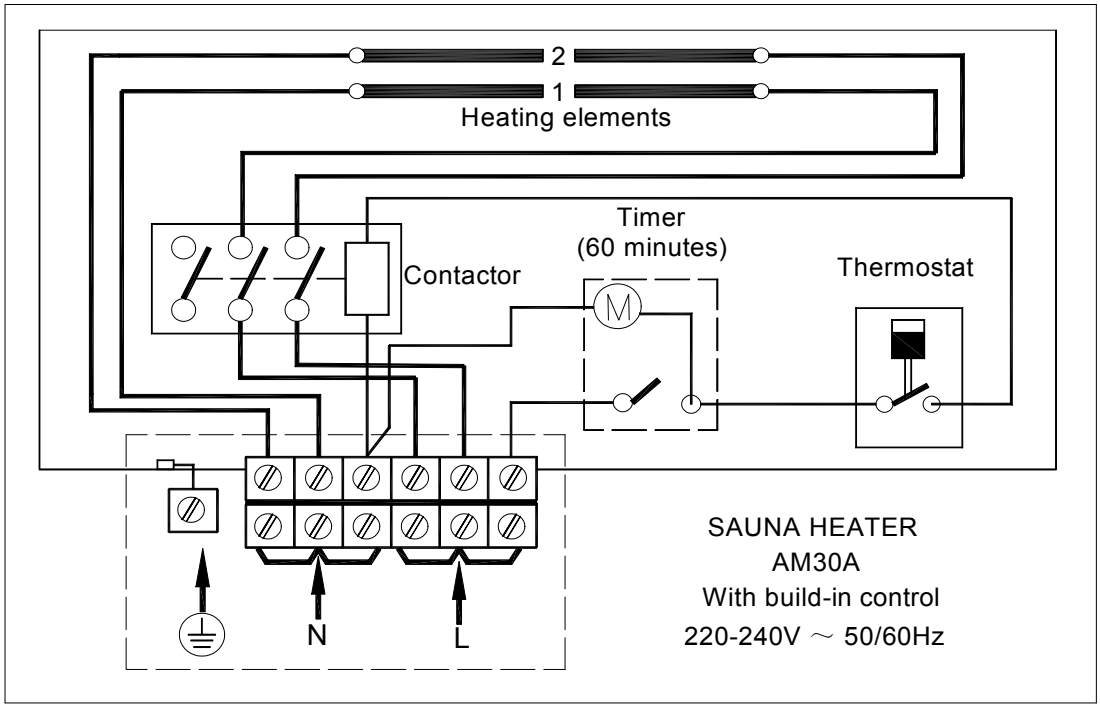






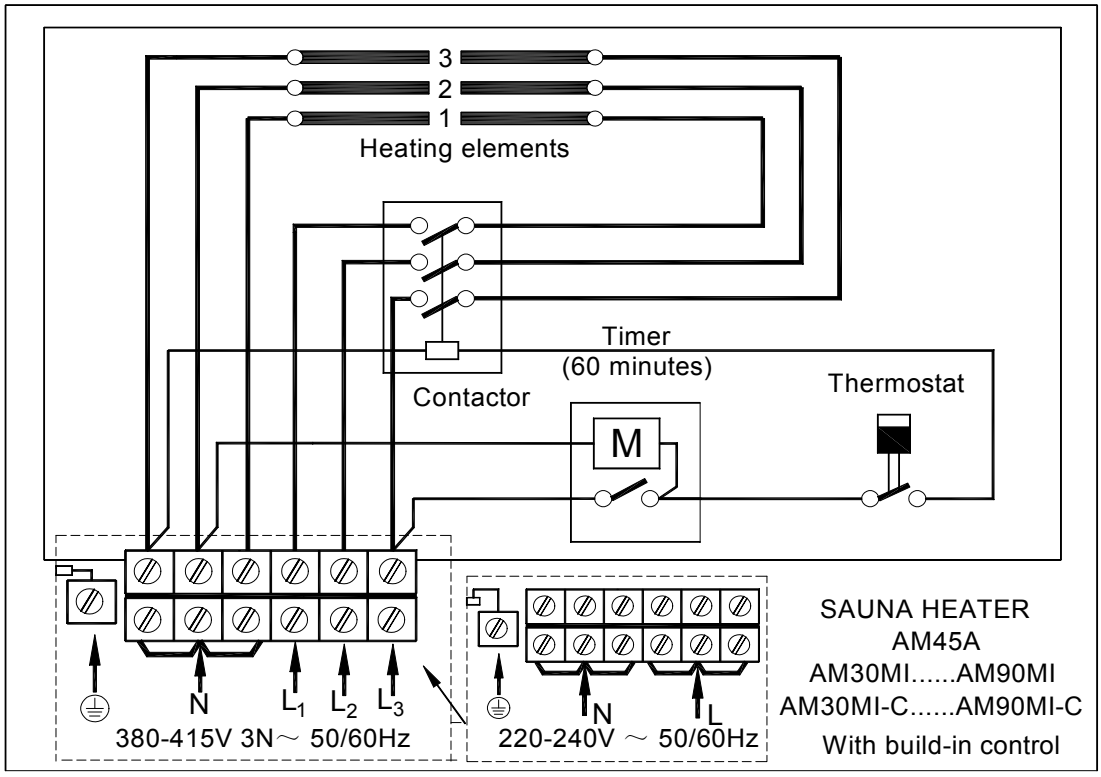
NCHART 10： CIRCUIT DIAGRAM（CONTREL INSIDE）

AM30A 220-240V With build-in control



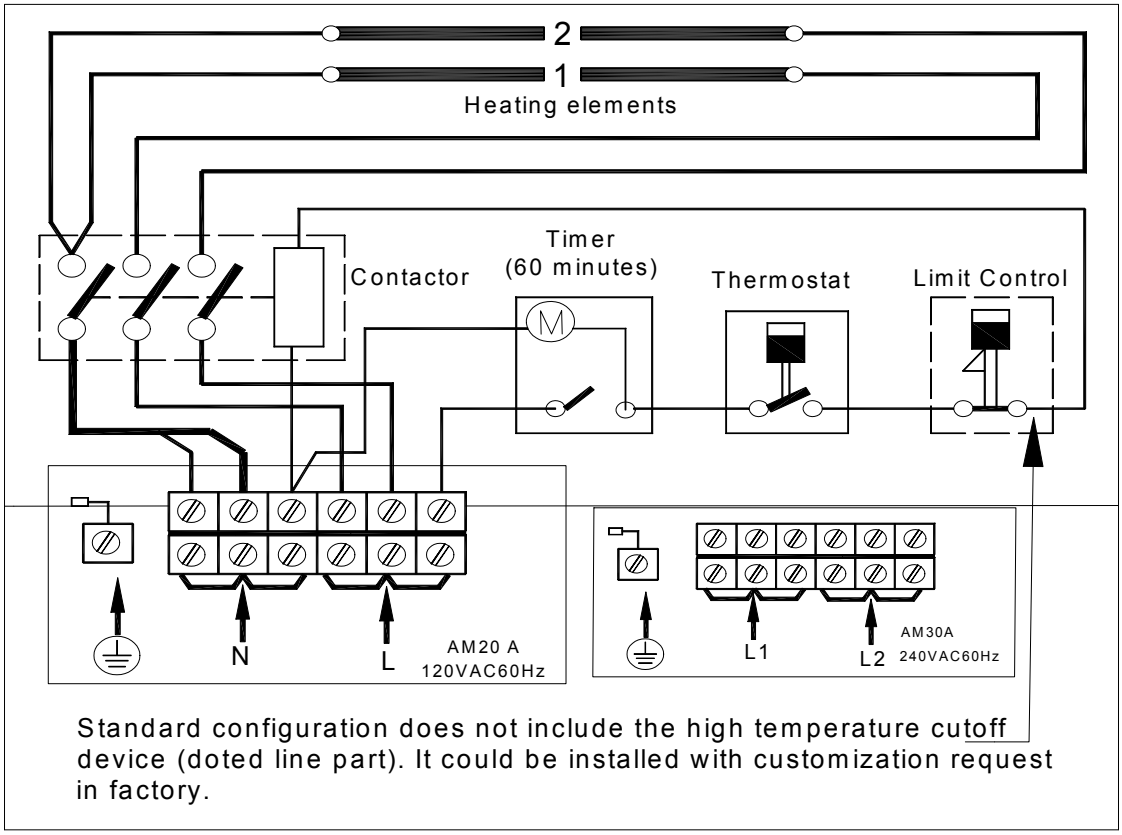
AM30-90MI-C 220-240V 380-415V With build-in control CIRCUIT CHART

AM30-90MI AM45A 220-240V 380-415V With build-in control CIRCUIT CHART



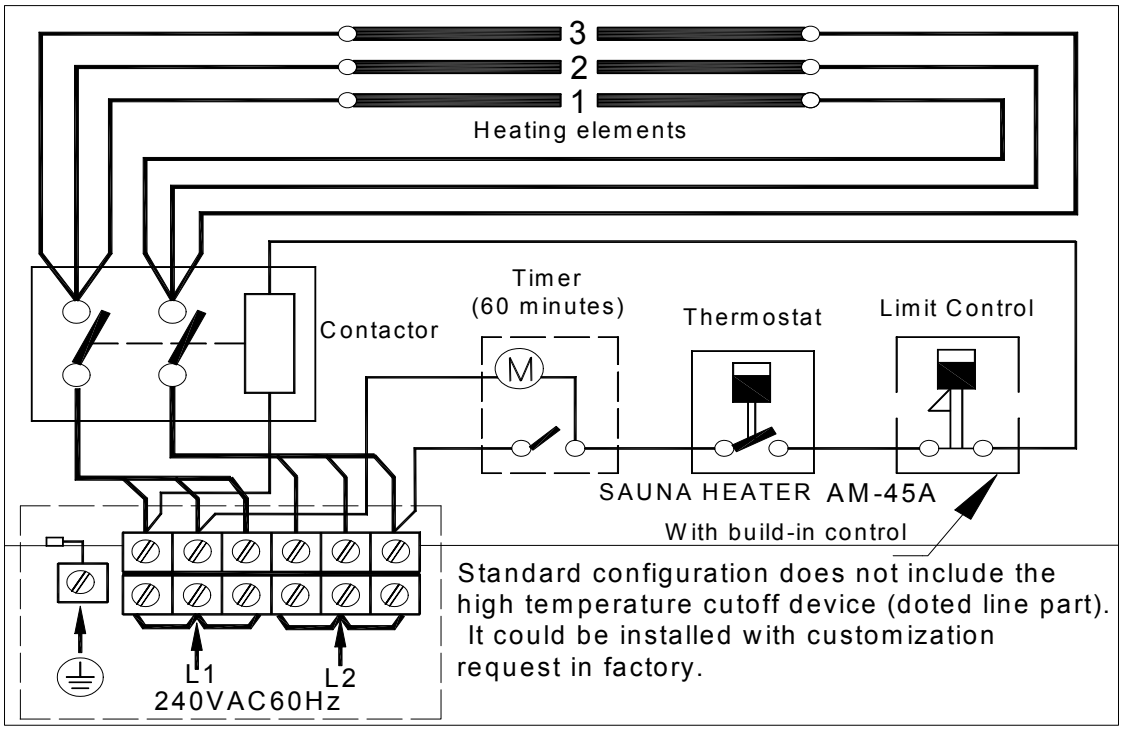
NCHART 11： CIRCUIT DIAGRAM（CONTREL INSIDE）

AM20....30A 120V 240V 60Hz With build-in control CIRCUIT CHART



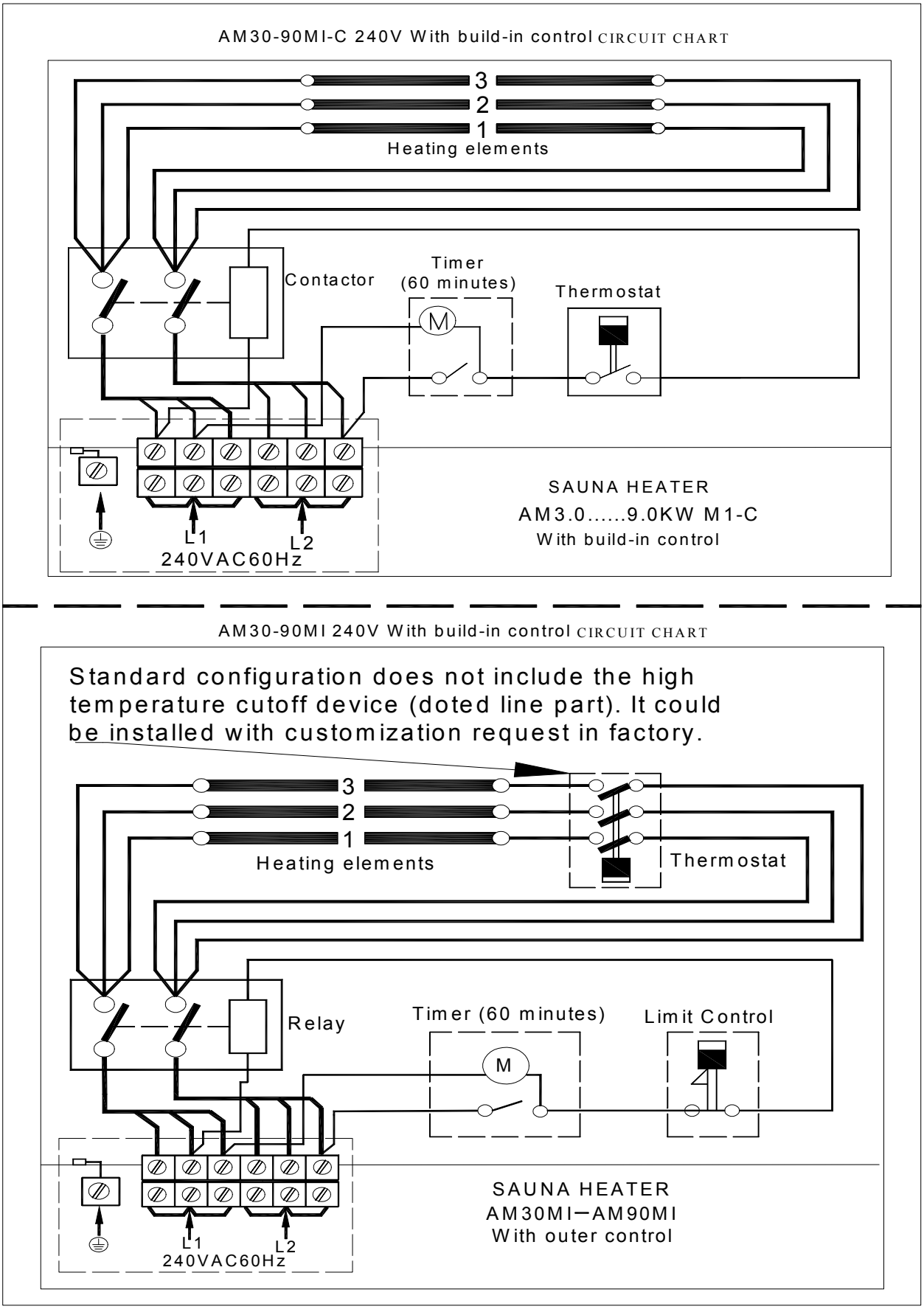
Standard configuration does not include the high temperature cutoff device (doted line part). It could be installed with customization request in factory.

AM45A 240V 60Hz With build-in control CIRCUIT CHART



Standard configuration does not include the high temperature cutoff device (doted line part). It could be installed with customization request in factory.

NCHART 12： CIRCUIT DIAGRAM（CONTREL INSIDE）



NCHART 13： CIRCUIT DIAGRAM（CONTREL INSIDE

