

TOLO - KEY

Steam Generator Manual



**DO NOT use locking pliers to over tight the
DRAIN PIPE connection**

Please read the manual carefully before installation
and keep the manual for further reference

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1. Configuration List

When receive the steam generator, please check if you get complete set according to below chart, contact us immediately if any missing.

Item Name	Quantity
Steam generator	1pc
Controller	1pc
3/4" diameter auto drain valve	1pc
Control cable, length 5 m (steam generator ---> controller)	1pc
Temp. sensor, length 5 m (steam generator ---> sensor end position)	1pc
Steam nozzle	1pc for 3kw~ 12kw; 2pcs for 15kw~ 24kw.
Safety valve	1pc
English user manual	1pc

Table 1

2. Introduction

Thank you for choosing TOLO KEY series steam generator with well-designed structure, steady performance and convenient installation. The steam bath is designed to remove tiredness, relax muscles and stimulate blood circulation.

For proper installation, operation, maintenance, and the customer's safety as well, please read all instructions carefully and keep this manual for further reference.

3. Safety Warning

- This appliance is not intended for use by person 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.
- Supervise children at all times.
- Check steam room before restart the controller.
- Smoking and alcohol are not allowed inside the steam room.
- Leave the steam room immediately when feels uncomfortable.
- A ventilation fan is required for the steam room.
- This steam generator is for heating up the steam room, please don't change its functions or usage by yourself, unless under the help or the guide of someone who can be responsible for the safety.

When you go out, or may not use steam generator in long time, please DISCONNECT the steam generator general power supply and general water supply.

4. Install Cautions

- If the generator is installed at a place where difficult for customer to access, the water supply valve must be easy to access for emergencies.
- GFCI must be installed on the power supply, and the power supply, power wire, fuse and breaker must comply with the nameplate on the unit and table 2 in this manual.
- The solenoid valve can endure maximum 0.8MPa (8kg/cm²) water pressure. To protect the solenoid valve from extremely high water pressure, please turn down the inlet slightly or install water pressure relieving valve .
- Do not install saddle-backed or needle valves on the inlet. Please dredge and clean the pipe before installation.
- No block valve should be installed in the steam pipelines. Strictly no blocked or blended pipe, otherwise will have negative effect on the flow of steam and condensate. The steam pipelines should be installed with a slight angle so that the condensate can flow back to the generator or the steam head.
- Steam generator should be installed indoor to avoid frozen. The generator should be installed and leveled with the arrow pointing upward at an easy-access place, otherwise do not switch on.
- The steam pipeline must be copper pipes or stainless steel pipes, all other material such as plastic, acrylic should not be used since they cannot endure 150°C or higher temperature.
- All inlet and apertures should be sealed to prevent any leakage of steam and to protect the generator and customers.
- Don't directly drain to the steam room, as water from the water tank is very hot and may cause serious scald and damage the steam room.
- All inlet water pipes and steam pipelines should be built according to the National Standard and this should be done before sealing the wall.

5. Parameters

5.1. Models, parameters and dimension

(Only apply to American style voltage and phase)

Model	Power (kW)	Phase	Voltage(V)/ Current(A)	Heating elements (N*kW)	Power wire (N*AWG)	Dimension (L*W*H) (mm)
TOLO-30	3.0	1(2L)	215~240/13.1	2*1.5	2*10	425*160*315
TOLO-40	4.0	1(2L)	215~240/17.4	2*2.0	2*10	
TOLO-45	4.5	1(2L)	215~240/19.6	3*1.5	2*10	
		3(3L)	215~240/11.3		3*10	
TOLO-50	5.0	1(2L)	215~240/21.8	2*1.5+1*2.0	2*10	
TOLO-60	6.0	1(2L)	215~240/26.1	3*2.0	2*8	
		3(3L)	215~240/15.1		3*10	
TOLO-70	7.0	1(2L)	215~240/30.4	2*2.5+1*2.0	2*8	475*185*450
TOLO-75	7.5	1(2L)	215~240/32.6	3*2.5	2*8	
		3(3L)	215~240/18.8		3*10	
TOLO-90	9.0	1(2L)	215~240/39.2	6*1.5	2*6	
		3(3L)	215~240/22.6		3*10	
TOLO-105	10.5	1(2L)	215~240/45.7	3*1.5+3*2.0	2*6	
		3(3L)	215~240/26.4		3*8	
TOLO-120	12.0	1(2L)	215~240/52.2	6*2.0	2*6	510*185*460
		3(3L)	215~240/30.2		3*8	
TOLO-150	15.0	1(2L)	215~240/65.2	6*2.5	2*4	
		3(3L)	215~240/37.7		3*8	
TOLO-165	16.5	1(2L)	215~240/71.7	6*2.0+3*1.5	2*4	
		3(3L)	215~240/41.5		3*6	
TOLO-180	18.0	1(2L)	215~240/78.3	9*2.0	2*4	
		3(3L)	215~240/45.2		3*6	
TOLO-225	22.5	3(3L)	215~240/56.5	9*2.5	3*6	
TOLO-240	24.0	3(3L)	215~240/60.3	6*2.5+3*3	3*6	

Table 2

Remarks:

- The rated power is measured under 230V, therefore the actual power under 1(2L) 215-240V, 50/60Hz, or 3(3L) 215-240V, 50/60Hz may be different from the rated value in Table 2.

● How to choose the right KW steam generator?

Step One: Calculate room m³, (Length*Width*Height) in meter.

(1 feet = 0.3048 meter, 1 inch = 0.0254 meter)

Step Two: Check your steam room materials

- If Acrylic, steam generator KW= steam room m³
- If Ceramic Tile, steam generator KW= 1.30 X steam room m³
- If All Glass tile or Glass Block Walls, steam generator KW= 1.35 X steam room m³
- If Porcelain tile, steam generator KW= 1.6 X steam room m³
- If Natural stone tiles up to 1/2", steam generator KW= 2 X steam room m³
- If Natural stone slabs over 1/2", steam generator KW= 2.25 X steam room m³

5.2. Steam generator structure

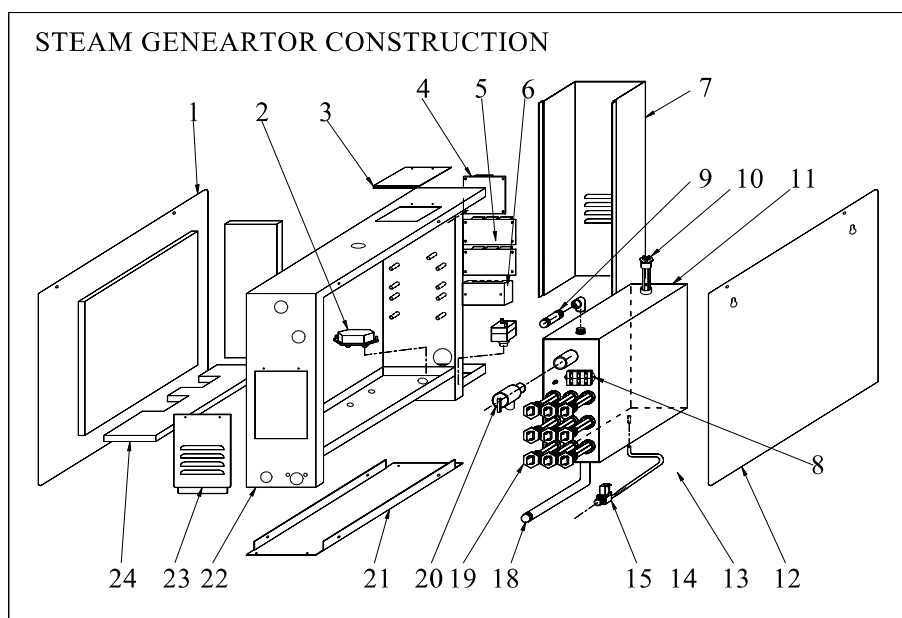


Figure 1

1. Front Cover
2. Wire entry hole
3. Small cover
4. Main-board
5. Sub-board
6. Wire terminal
7. U shape cover
8. Over-heat protection switch
9. Steam outlet
10. Water level sensor
11. Inner tank
12. Back Cover
13. Water inlet hose
15. Solenoid water inlet valve

18. Draining pipe
19. Heating elements
20. Safety valve
21. Base plate
22. Frame
23. Element access cover
24. Insulation

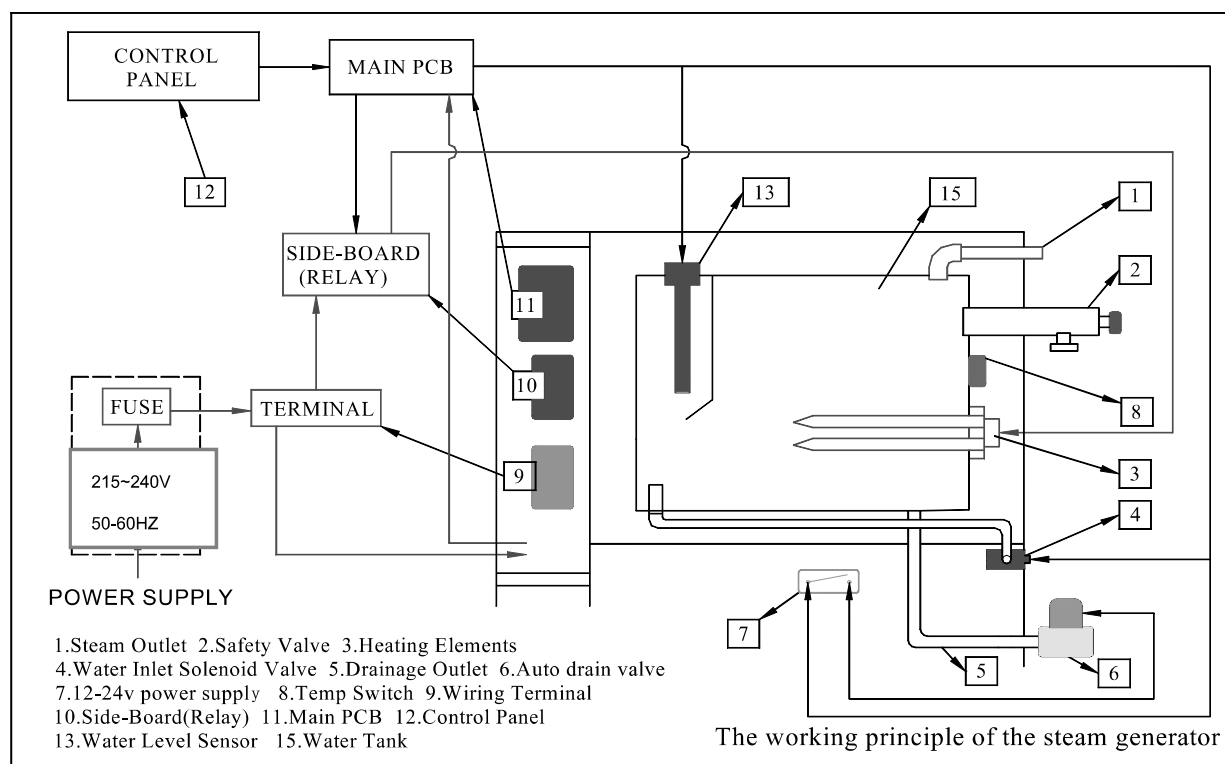


Figure 2

5.3. Controller parameters and dimension

Controller model	Controlling time range (minutes)	Temperature display range	Temperature controlling range	Dimension (mm)
KSA-Elegance	1~60 or long-term (CH)	6~60°C (43°F~140°F)	35~55°C (95~131°F)	90*90*19
KSA-EA	1~60 or long-term (CH)	6~60°C (43°F~140°F)	35~55°C (95~131°F)	103*103*23
GORH	1~60 or long-term (CH)	6~60°C (43°F~140°F)	35~55°C (95~131°F)	Ø 89*19

Table 3

Notice:

- Touch screen controller can be installed inside the steam room. However, we recommend you to install the controller outside the steam room to extend its service life.
- Press button controller must be installed outside steam room.

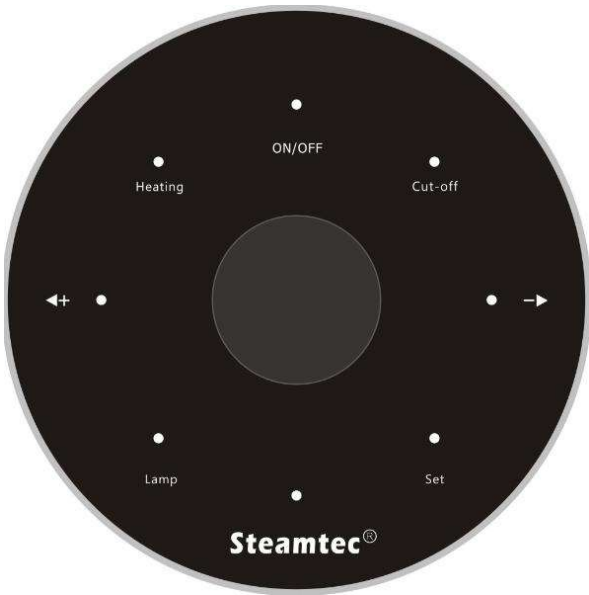
KSA - Elegance	White / black Touch / Press button	
KSA - EA	White / black Touch button	
GORH	White / black Touch button Magnetic	

Table 4

6. Installation

6.1. Installation cautions

- ◆ **DO NOT use locking pliers to over tight the DRAIN PIPE connection.**
- ◆ **Before installation, MUST read all the install cautions in this manual, on page 4.**
- ◆ **Selecting the proper steam generator**

In order to achieve comfort and relaxation, as well as energy efficiency, the selection of the correct steam generator model and size are as critical as design of the steam room itself. The power supply and circuit protector should be carefully checked to match the parameters of the generator. Please referring to the table 2 & its remarks and select the suitable model for your specification.

6.2. Installation of steam generator body

6.2.1. Cautions

- Switch off all power supply before installation, and check whether you have the correct model for your steam room according to table 2 & its remarks .
- A manual resetting 120°C temperature control switch is installed in the steam generator for over-heat protection. If temperature of inner tank exceeds 120°C accidentally, the switch will automatically disconnect power supply to heating elements. In this case, it is necessary to disconnect the power supply to steam generator, and then carefully check heating elements, water level sensor, relay on sub-board and water supply pipeline after steam generator completely cooling-down. The temperature switch could only be manually reset after the fault has been located and solved.
- Do not install the generator outdoors, in wet/moist place, freezing, or corrosive place. Do not install the generator near to inflammables such oil paint, diluents and fuel. Be alert to the steam pipeline and safety valve since the high temperature of steam is dangerous to customers.
- Generator must be level installed.
- The generator should be installed in a dry and well-ventilated place. It can be installed either on the wall or on the ground, but must be well fixed. Install the generator as close to steam room as possible, such as in the closet, under the washing basin or in the basement. (Refer to figure 3).

6.2.2. Installation

- i. Install the generator on the wall: drill two small holes with diameter of 8mm on the wall, insert the expansion screws and then hang the generator on those screws.
- ii. Install the generator on the ground or deck: Install a frame on the site and then screw the generator into the frame.
- iii. For better service and maintenance, please install the generator with the nameplate face to front and leave more than 250mm space around the generator.

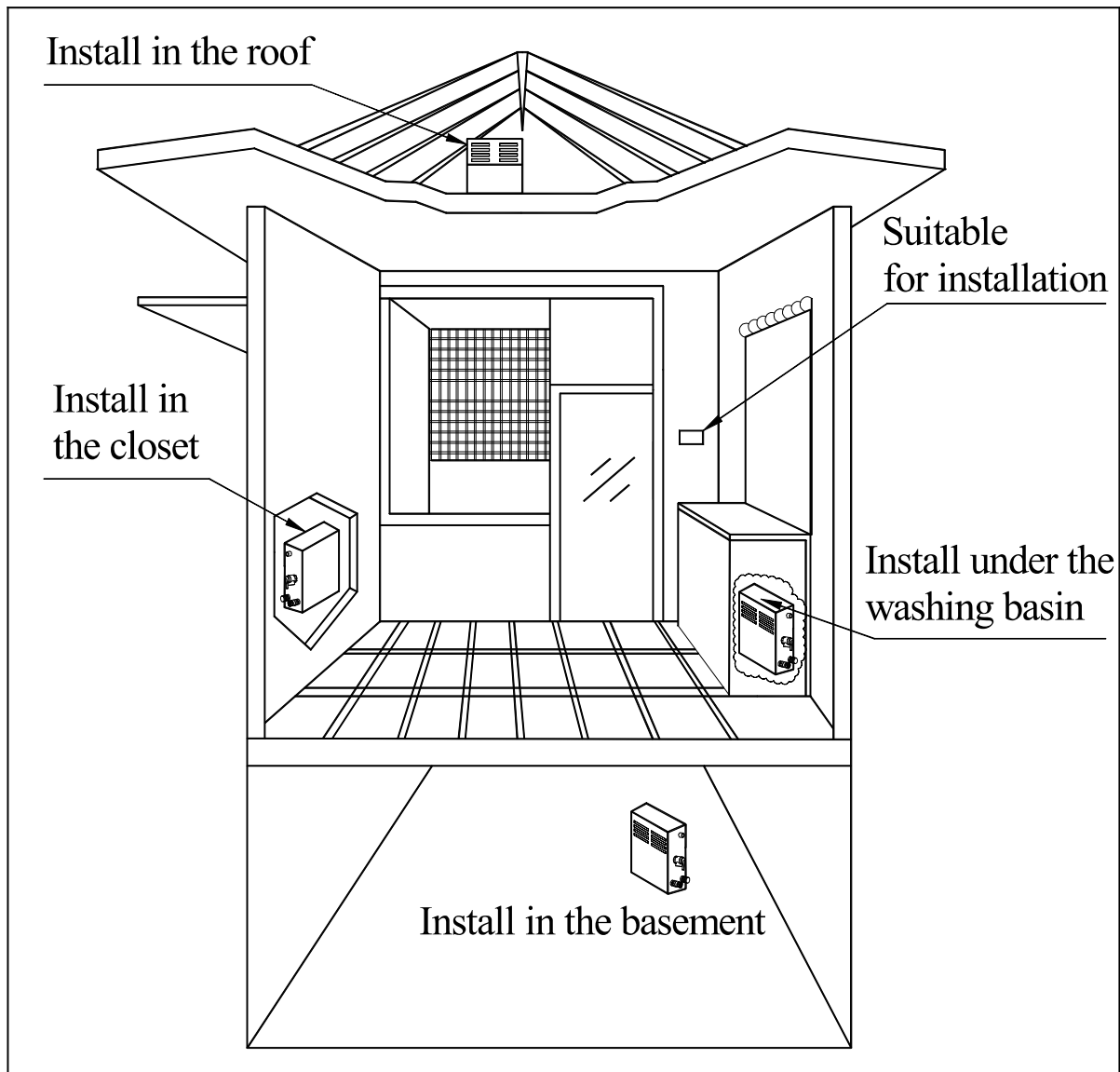


Figure 3 Steam generator installation places

6.3. Installation of controller and temperature sensor

6.3.1. Cautions

The controller wire and temperature sensor wire should NOT be parallel to or intersect with the power wire. The temperature sensor should NOT be installed on the side of the wall which is behind the door, when the door is opened and the controller should NOT be installed in any moist place.

6.3.2. Installation of controller

The controller should be installed with height of 1.2 m inside/outside the steam room but nearby or other place where easy to operate. Firstly drill a hole with diameter of 16mm on the installation site. Pull the control wire through the conduit, then connect the control wire to the black/white connector(4-Pin) . Finally the controller panel can be hanging by the screws/magnetic or insert to the housing box on the wall.

Installation Of Control Wire:

Take off the back cover of the generator, pull the control wire at the back of the controller through a conduit, and then insert it into the hole at the back of the generator case and connect to the plug on circuit board. (Refer to figure 8).

Please ref to below 3 pictures, for the 3 different controller:

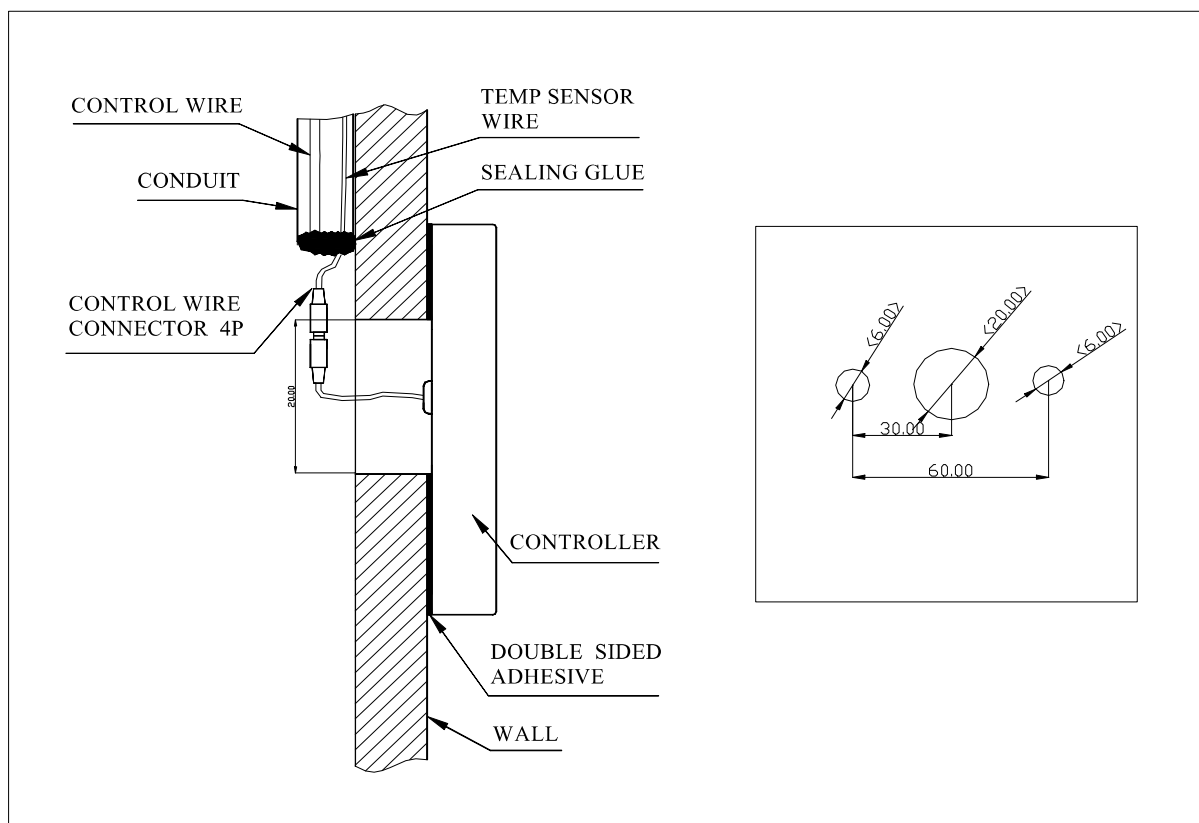


Figure 4 KSA-elegance controller installation

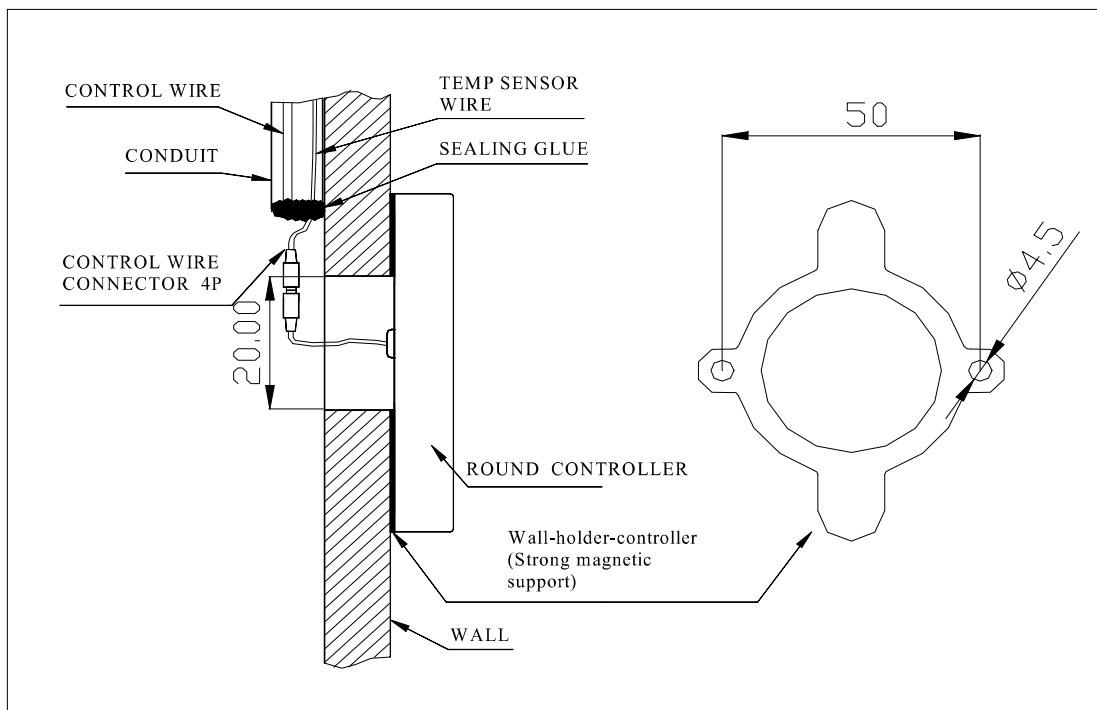


Figure 5 GORH controller installation

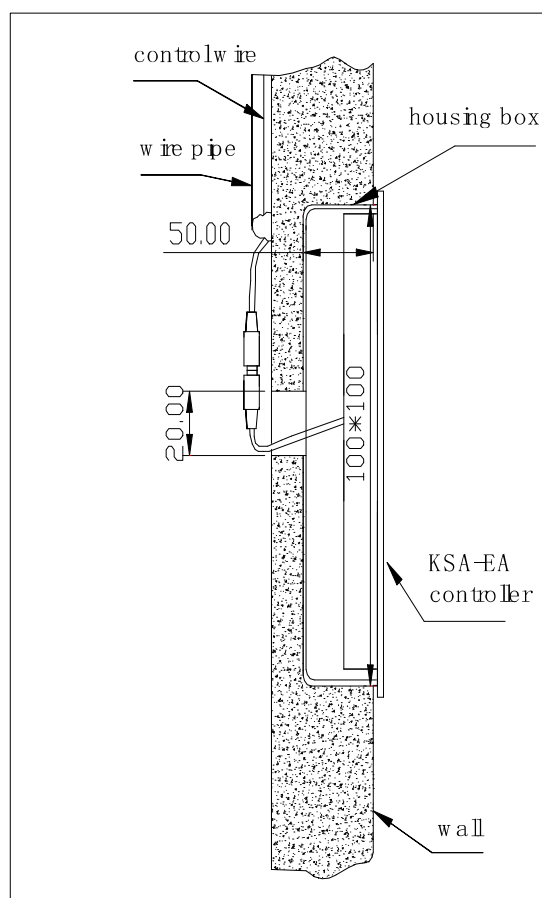


Figure 6 KSA-EA controller installation

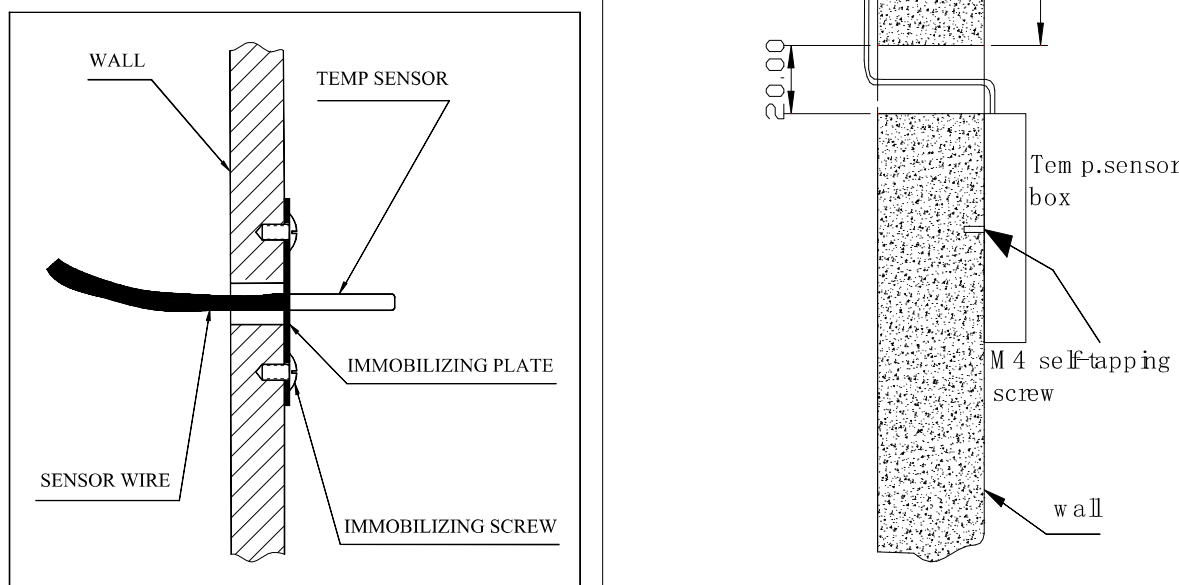


Figure 7 Temperature Sensor installation

6.3.3. Installation of temperature sensor

The temperature sensor is used to measure the temperature inside the steam room, so that the generator can work automatically according to the pre-set temperature and maintain the room temperature constant. The installation height of the sensor should be about 1.2 –1.5 m from ground. Please drill a hole (diameter 16mm), and then nail down the sensor in the steam room , pull the sensor wire through the conduit.

Take off the back cover of the generator, pull the temperature sensor wire through a conduit and then insert it into the hole at the back of the generator case and connect to the plug on circuit board (Refer to figure 8).

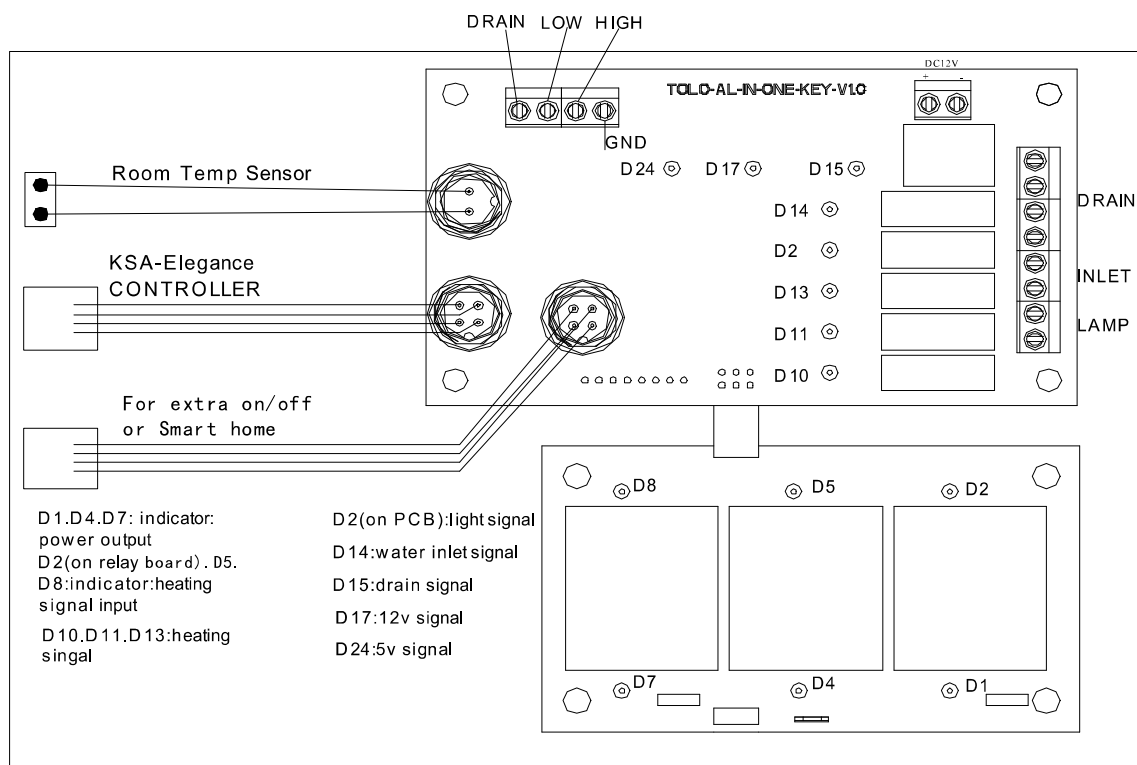


Figure 8 Circuit board

6.4. Installation of pipeline



3kw ~ 12kw

- ① Service hole 1/2"
- ② Steam outlet
3kw~6kw: 1/2"
7kw~12kw:3/4"
- ③ Safety valve 1/2"
- ④ Water inlet 1/2"
- ⑤ Drain outlet 3/4"
- ⑥ Power supply for drain valve

Figure 9 3KW- 12KW KEY Pipe Connection



15kw ~ 24kw

- ① Service hole 1/2"
- ② Steam outlet 3/4"
- ③ Safety valve 1/2"
- ④ Water inlet 1/2"
- ⑤ Drain outlet 3/4"
- ⑥ Power supply for drain valve

Figure 10 15KW- 24KW KEY Pipe Connection

i. Water Inlet

First connect the water magnetizer (if applicable) to the water inlet solenoid valve. Then please use a 1/2" flexible stainless steel hose to connect the other side of the water magnetizer and the water supply pipeline. Do not connect to metal water supply pipeline directly which may damage the water inlet valve.

Attention: Only use cold water supply.

ii. Drain Outlet

Please use 3/4" copper pipe or stainless steel pipe to connect the drain outlet and the drain pipeline of the house. The drain pipeline should be installed with small angle so as to help residual water in the steam generator flow to the drain pipe.

Attention: Don't use locking pliers to over tight the drain pipe connection. Just make sure it without leakage under Teflon tape sealing. The water come out from the steam generator will over 100°C. Don't use the plastic pipe/acrylic pipe/FRP pipe or other similar material pipe.

iii. Steam outlet

Please use copper or stainless steel pipe to connect the steam head and the steam outlet pipe of the generator. The pipe should be less than 3 meters long and minimize the number of elbows, otherwise heat isolating methods should be implemented.

- For 3KW-6KW steam generator, steam outlet is 1/2", please use **AT LEAST** 1/2" steam pipe, must be stainless steel pipe or copper pipe.

- For 7KW-12KW steam generator, steam outlet is 3/4", please use **AT LEAST 3/4"** steam pipe, must be stainless steel pipe or copper pipe.
- For 15KW-24KW steam generator, steam outlets are **TWO 3/4"** , please use **AT LEAST TWO** independent 3/4" steam pipes, don't cross the two steam pipes, must be stainless steel pipe or copper pipe.

Attention: Please **MUST** choose right diameter pipe size, as if the pipe size is smaller than our instruction, it may cause the steam generator internal pressure to increase suddenly which may damage the steam generator and have safety risks.

iv. Safety Valve

It's to release the pressure of steam generator, use 1/2" copper pipe or stainless steel pipe to connect the safety valve and the drain pipeline of the house. Please don't block it.

v. Steam Head

The steam head should be about 300mm from the ground and at least 150mm from customer seats. Please apply silicone glue on the steam pipe nipple and the back of the steam head, and then screw the steam head on to the steam pipe nipple. Please refer to figure 11, the Aromatherapy reservoir should face upwards.

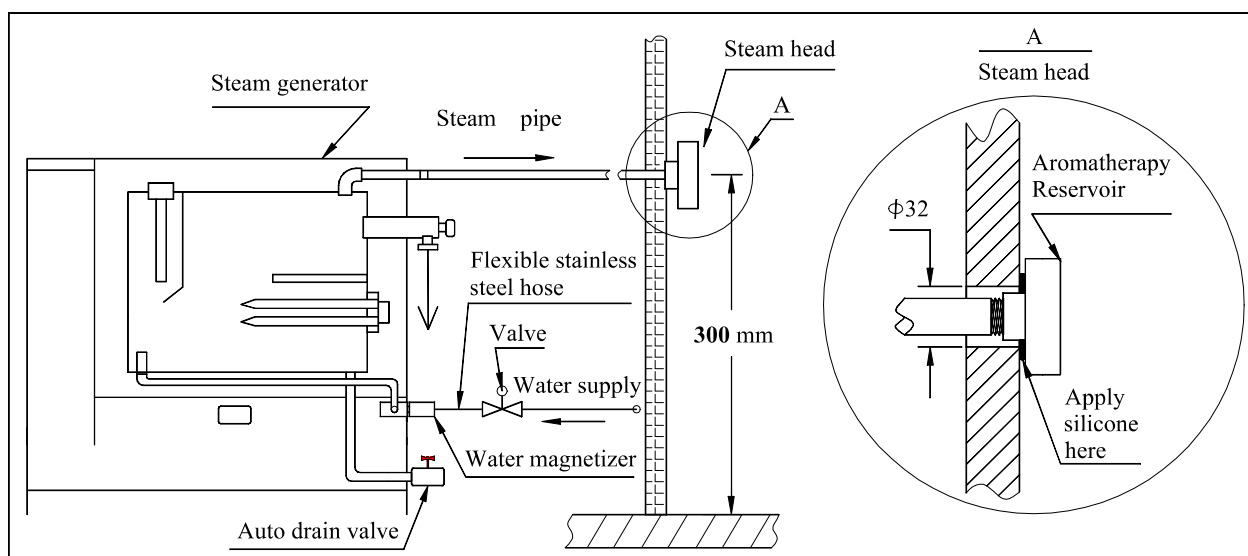


Figure 11

vi. Service hole

Can be used as maintenance hole or another steam outlet 1/2". How to do maintenance, please refer to Chapter Warranty And Services.

6.5. Installation of electrical

Cautions

- All circuits should be installed by licensed electricians and conform to local and national codes.
- Power supply must be cut off before installation, maintenance and repair. Press the on/off button on the controller cannot cut power from the supply.
- No additional power supply or wire is allowed to connect to the generator. Do not connect the ground wire to the neutral wire.
- Only the original parts and elements from our factory are allowed to be used in installation, operation, maintenance and repair.
- After the installation of the pipeline and electrical circuits, carefully checking must be performed before switch on the generator.
- The generator has been carefully installed, checked and tested in factory, thus customer only need to install the power wire, control wire and temperature sensor etc.
- The power supply should be 215-240V, 50/60Hz, please refer to the nameplate of the generator.
- The selection of fuse and breaker must strictly follow the data in table 2.
- Choose the suitable power wire according to table 2 and local codes.
- Take off the back cover of the generator, insert the power wire into the hole at the back of the generator case and connect to the correct terminal. (Refer to figure12- 14)

6.5.1. Power Supply

215-240V, 1(2L) phases, 50/60Hz power supply:

Connect the live wire to the terminal labeled as “L1” “L2” ; connect the Earth wire to the terminal labeled as “”.

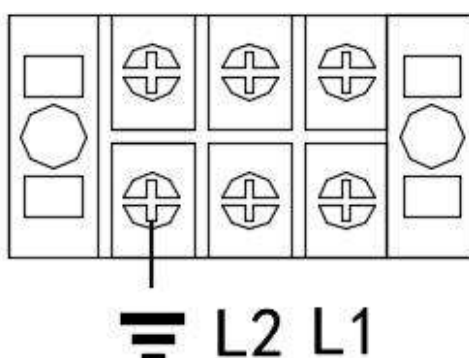


Figure 12 1 (2L) phase, 215-240V

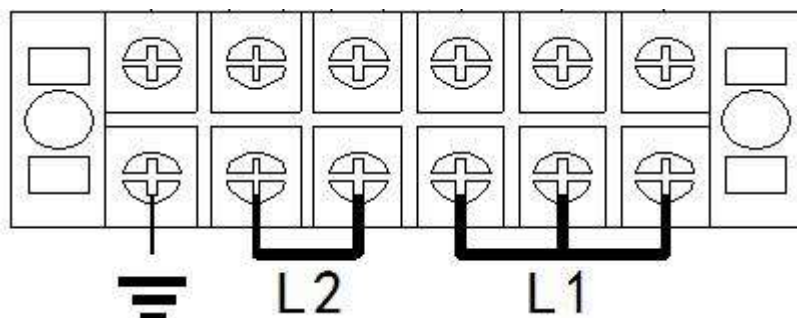


Figure 13 1 (2L) phase, 215-240V

215-240V, 3(3L) phases, 50/60Hz power supply:

Connect the live wire to the terminal labeled as “L1” “L2” “L3”; connect the earth wire to the terminal labeled as “”.

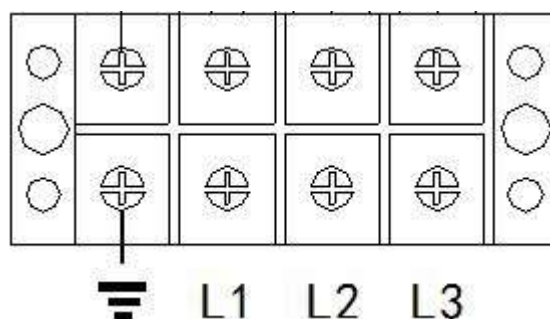
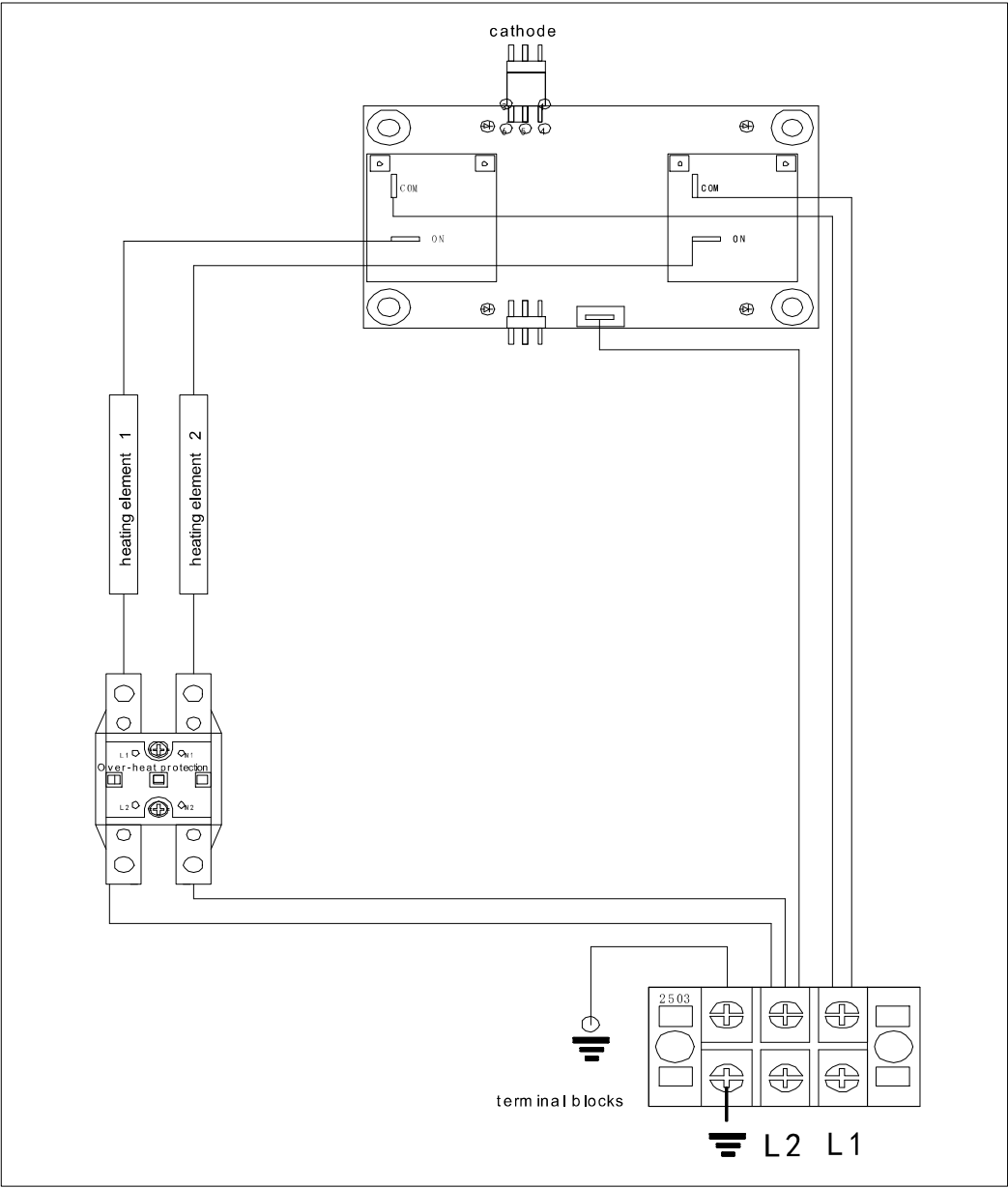


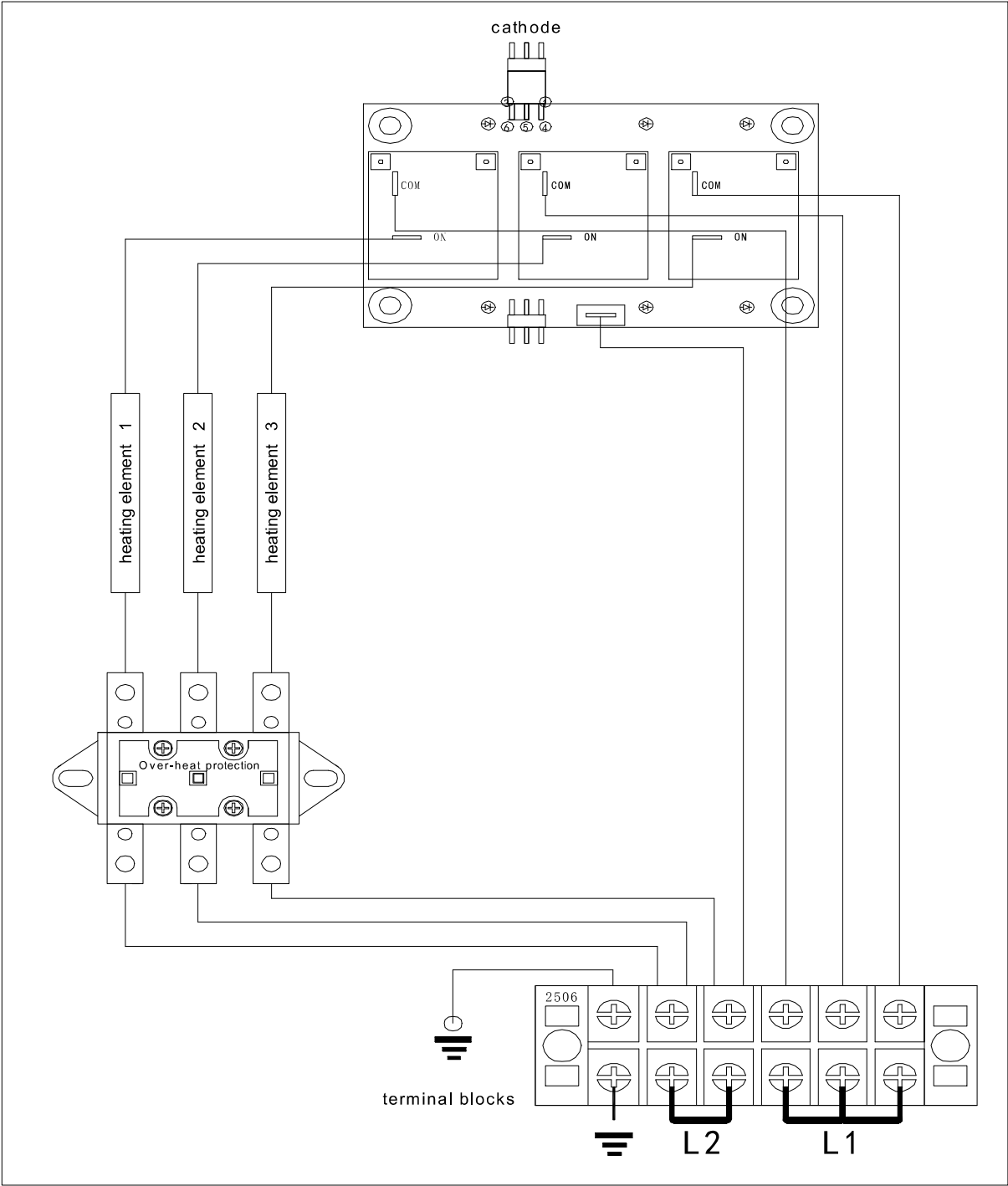
Figure 14 3 (3L) phases, 215-240V

6.5.2. Wiring diagram



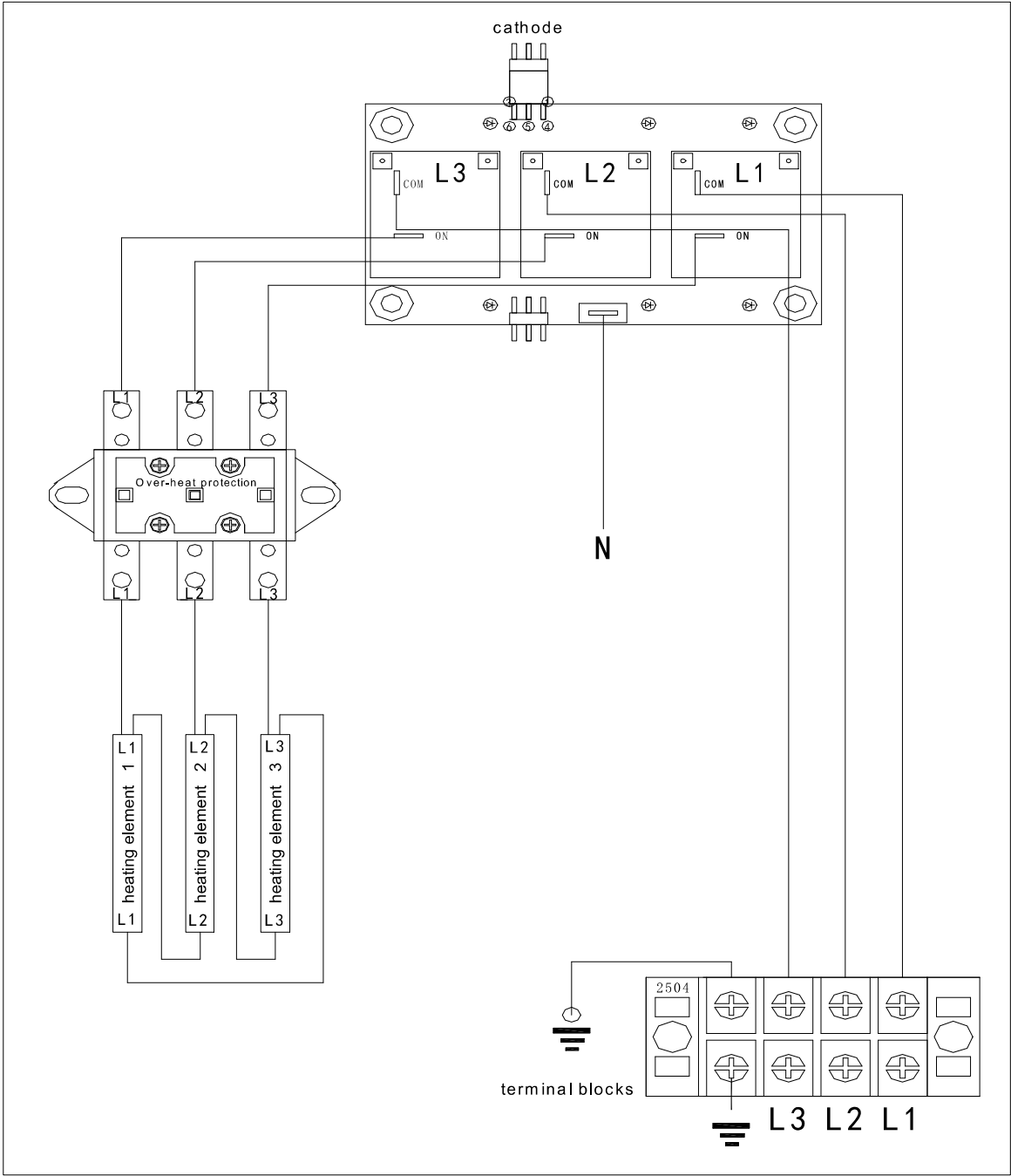
KEY 3KW, 4KW American 215~240V 1(2L)

Figure15



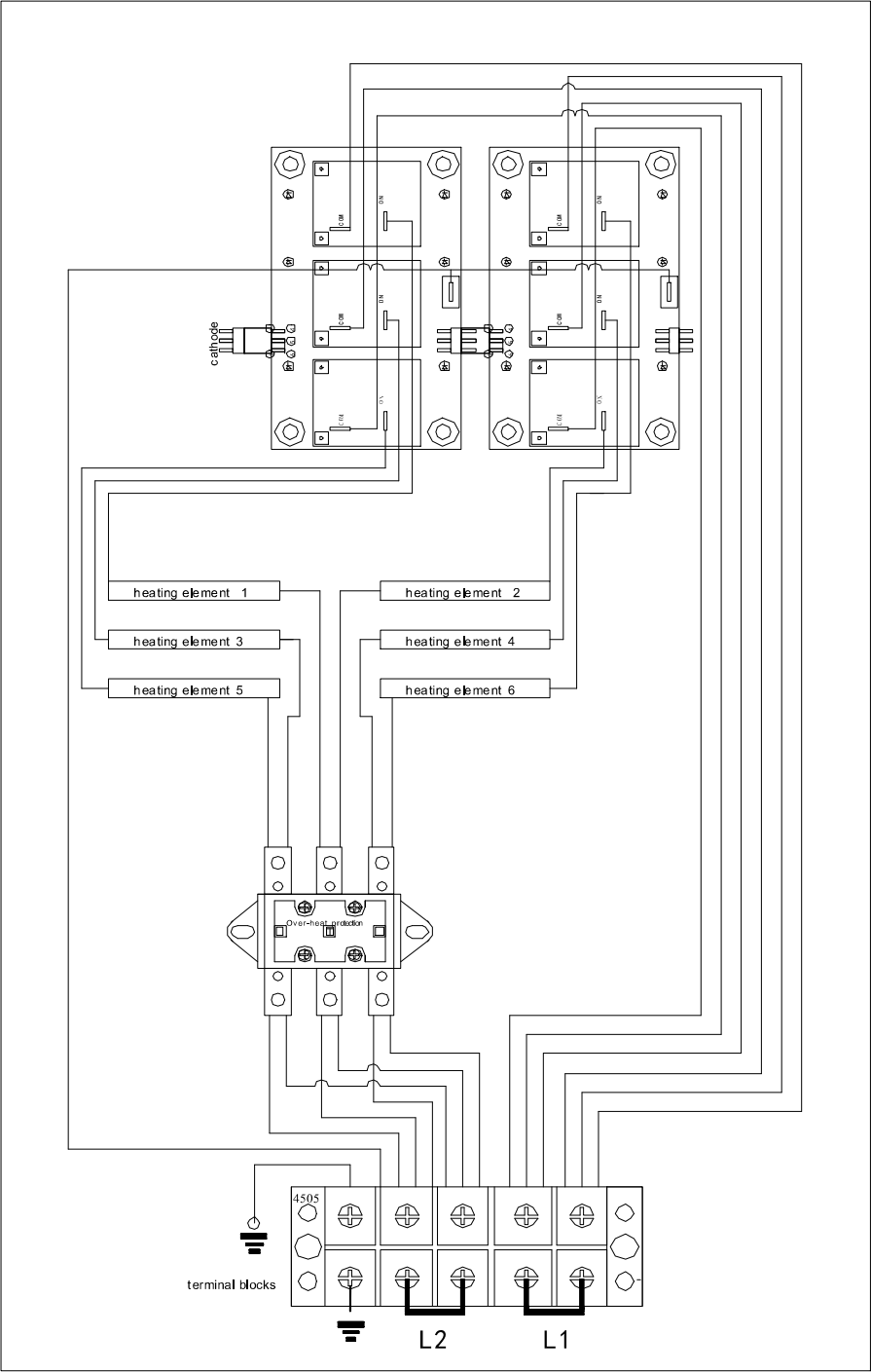
KEY 4.5KW 5KW 6KW 7KW 7.5KW American 215~240V 1(2L)

Figure16



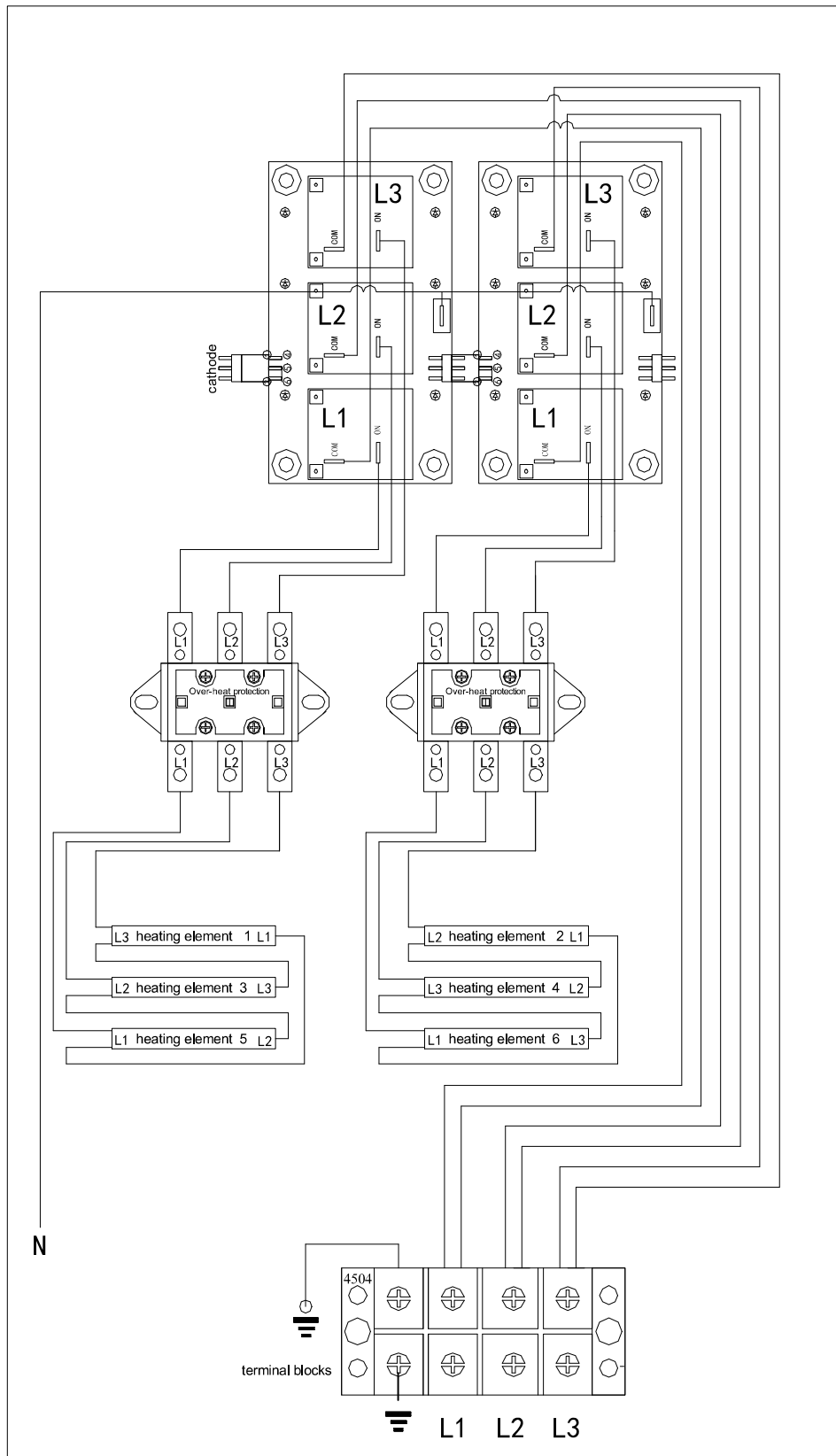
KEY 4.5KW 6KW 7.5KW American 215~240V 3(3L)

Figure17



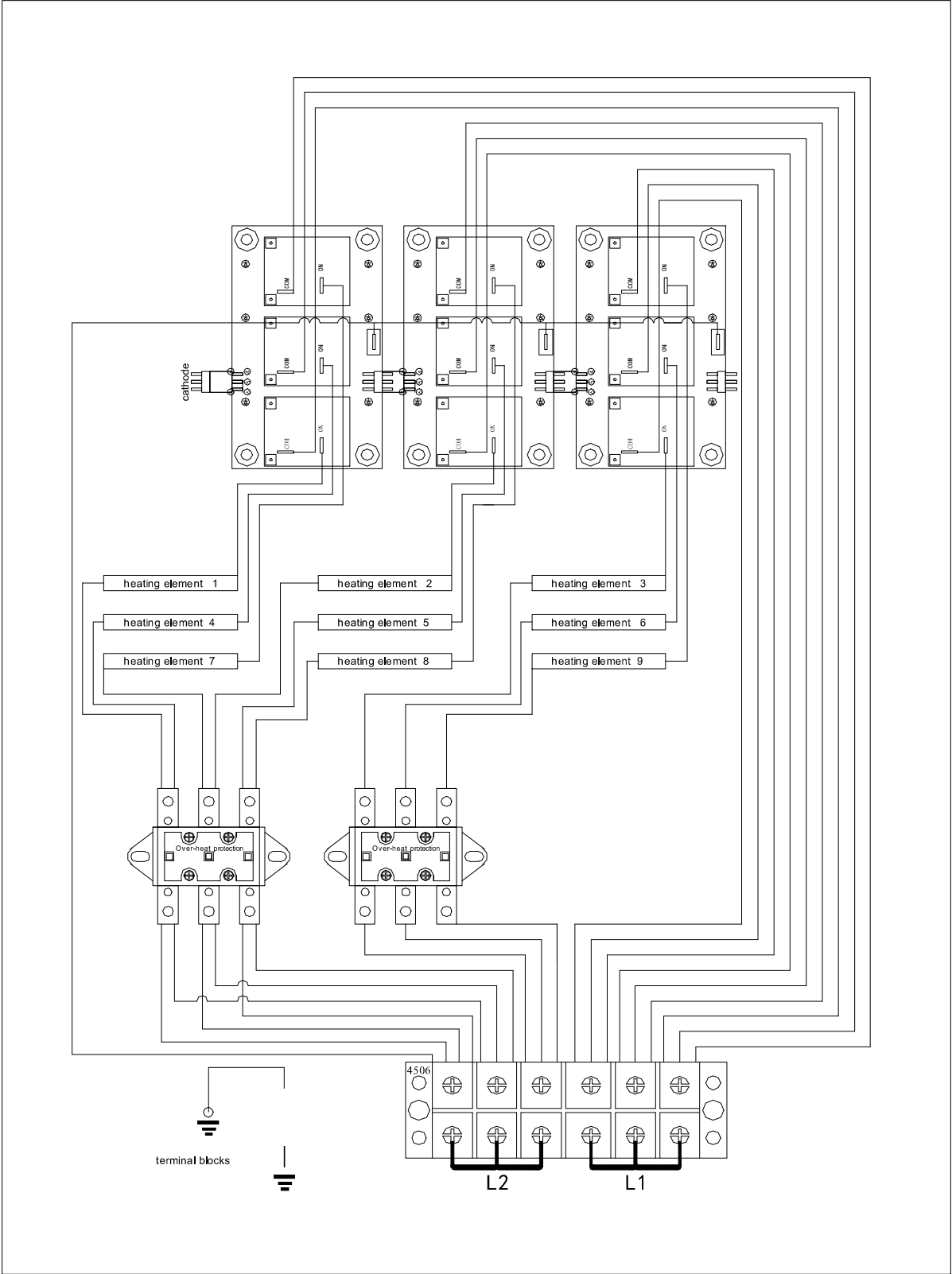
KEY 9KW 10.5KW 12KW 15KW American 215~240V 1(2L)

Figure18



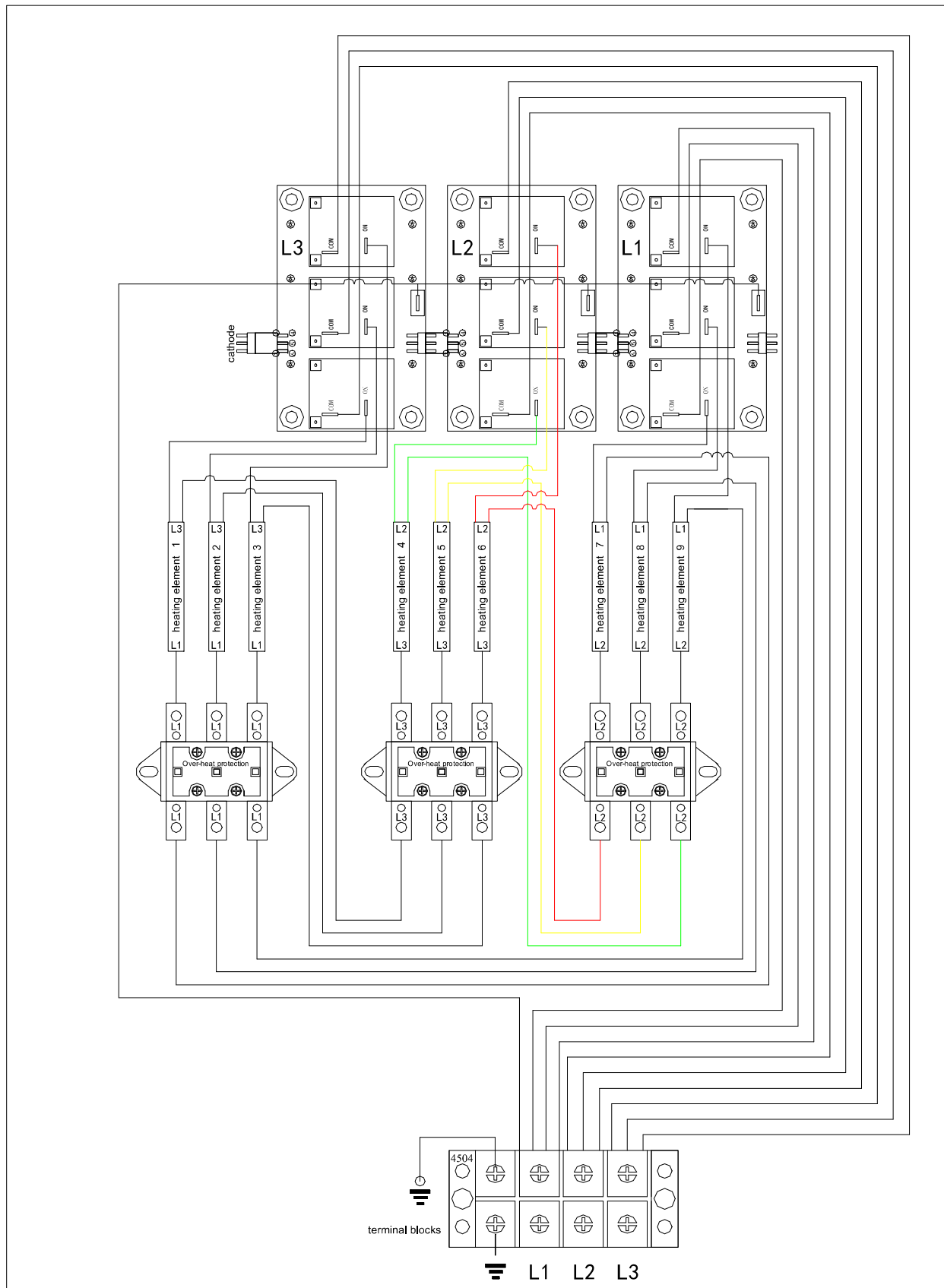
KEY 9KW 10.5KW 12KW 15KW American 215~240V 3(3L)

Figure19



KEY 16.5KW 18KW American 215~240V 1(2L)

Figure 20



KEY 16.5KW 18kw 22.5KW 24KW American 215~240V 3(3L)

Figure 21

7. Functions And Operation

7.1. Display panel

i. Display temperature

The LCD will display the temperature measured by the temperature sensor in the range of 6°C ~ 60°C (43°F ~ 140°F).

ii. Set temperature:

The temperature setting range is 35°C ~ 55°C (95°F ~ 131°F).

The default setting temperature is 43°C (109°F).

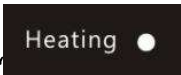
iii. Set time:

The maximum setting time is 60 minutes. The default working time is 45 minutes. If the system is in long-term working mode, the LCD will display CH.

7.2. Hint message

Code	Diagnose
-L	Temperature is lower than 6°C(43°F): LCD displays “-L”, detected by the temperature sensor.
-H	Temperature is higher than 60°C(140°F): LCD displays “-H”, detected by the temperature sensor, all heating elements stop working.
- E	Water supply fault: LCD displays “- E”. This message appears when the water level is lower than the minimum water level 10 minutes after the system is started and the water inlet valve is opened, or the water level is lower than the desired level 3 minute after the water supplementing order is given. It indicates faults of the water supply system, all heating elements stop working.
dd	Normal, means the machine is draining.
EE	Connection error: LCD displays “EE” showing any connection error between the controller and the main PCB.

Table 5

- **Heating up:** indicated by the white LED on the left of the panel with label “”.

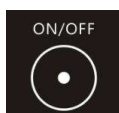
Sectional Heating function:

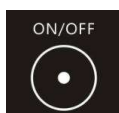
- If has two groups of heating elements (1~6 elements): if the actual temperature is below the setting value, then both two groups of heating elements are working; if the actual temperature is 2°C higher than the setting value, then only one group of heating elements is working.
- If has three groups of heating elements (9 elements): if the actual temperature is below the setting value more than 2°C then all three groups of heating elements are working; if the actual temperature is less than 2°C lower than the setting value so two groups of heating elements are working; if the actual temperature is 2°C higher than the setting value, so only one group of elements is working.

- **Insulation:** indicated by the white LED on the right of the panel with label “”. If the current temperature is more than 2°C above the setting temperature, all heating elements stop working and the system is under insulation function.

7.3. Function buttons and operation

i. ON/OFF



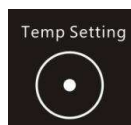
Press  to switch on and off of the whole system.

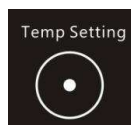
Press this button can switch on the generator and open the water inlet solenoid valve to fill in water. When the water level reaches the required minimum water level, system begins to heat up (if current temperature is lower than setting temperature). Once the water level reaches its maximum level, inlet valve closes and the system enter the automatic working process.

The system has memory function, it will remember the last time temperature and time setting, however if the system has been powered off / outages, it will lose all its memory and will adapt the default temperature (43°C) and default working time(45 minutes); Automatically off when time runs out or off by press/touch the ON/OFF button not belong to power off.

Press the **ON/OFF** button again will shut down the system manually and the system will drain automatically.

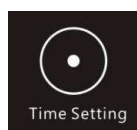
ii. Temperature set

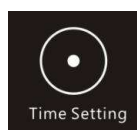


Press  to adjust the temperature.

The LCD and the white LED on the left will blink and display the previous setting temperature or the default temperature. If the system has been turned off and restarted, the LCD displays the default temperature 43°C (109°F), then press the “▲” or “▼” button to adjust.

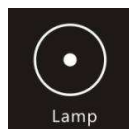
iii. Time set

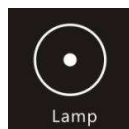


Press  to adjust the working time.

Press “▲” or “▼” button to adjust the working time to the value you want, or press “▲” button until the LCD displays “CH”, after that the system automatically enters long-term working mode.

iv. LIGHT:



This button  is the Switch for the external light.

The button can be used as the switch for the external light as long as the system is connected to power supply. The LED is on when the light is turned on. Only can support 12V light.

v. ▲ Button

Increase the temperature or time.

vi. ▼ Button

Decrease the temperature or time.

7.4. Auto functions

i. Auto filling:

Water inlet valve will open automatically once the system is started and fill in water automatically until the water level reaches maximum level. If water level is still lower than the minimum water level 10 minutes after, it indicates faults of the water supply system, so all heating elements will stop working and LCD will display “-E”.

ii. **Auto heating up by sections:**

Generator will compare the measured room temperature with the setting temperature and then decides the number of working heating elements.

iii. **Auto water supplementing:**

If the water level is lower than the desired level when operating, auto water supplementing function will be on and open the inlet valve. Once the water level reaches the desired level, auto water supplementing function turns off. If water level is lower than the desired level 3 minute after the water supplementing order is given, it indicates faults of the water supply system, so all heating elements stop working and LCD displays “-E”.

iv. **Auto drainage:**

When setting time is over or **ON/OFF** button is pressed, system will drain automatically and displays ‘dd’ on the LCD. The drainage valve will be turned on to drain. After a while the system will open the inlet valve to fill in water in order to wash and cool down the inner tank and heating elements. The whole process is about 2.5 minutes, and the system will be shut off automatically after drainage.

8. Maintenance

- As leakage of the steam will damage the equipment. To prevent any hazard, steam generators, steam head, parts and pipe line connections should be checked regularly.
- Clean the solenoid valve, magnetizer and all the other sets in the pipe line regularly according to the local water quality and usage of the steam generator.
- When operate, check the equipment to see whether it's over heated, check the stability and corrosion of all the wire plugs.

i. **Replace the heating elements:**

Switch off the steam generator and remove the element access cover when the generator completely cools down. Label (or take a picture of) the wires connect to the heating elements which need to be replaced and plug out the wires. Screw the heating elements out. Clear the scale in the water tank and screw in the heating elements after putting the rubber rings on them (airproof gasket should be pressed firmly without reversion). Plug on the wires, make sure the heating elements are properly connected before put on the element access cover.

ii. **Replace the main board:**

Switch off the steam generator and remove the U shape cover when the generator completely cools down. Label (or take a picture of) the three wires which connect the upper part of the main board to the water level sensor and the source, drain valve and water inlet

solenoid valve in the bottom part of the main board. Unplug these wires and remove the main board (be careful with yellow-green ground wire under the screws of the circuit board). Install the main board back carefully.

iii. Replace the sub-board:

Switch off the steam generator and remove the U shape cover when the generator completely cools down. Unplug all the wires on the sub-board. Label all the wires on the relay and remove the sub-board. Install the sub-board back carefully.

iv. Replace the solenoid valve, drain valve:

Switch off the steam generator and disconnect from the power and water supply. Remove the water inlet, steam outlet and draining pipelines after the generator completely cools down. Then please lean the steam generator to remove the base panel. After that, please take off the soft pipes, wires and screws so that the faulty valve could be removed. Finally please install the replacing valve carefully.

v. Replace the water level sensor:

Switch off the steam generator and remove the small cover on the equipment when the generator cools down. Special care should be taken to the plugs of the water level sensor corresponding to the blue wire, the red wire and the white wire respectively. Take off all the wires, screw out the water level sensor, and screw in the new water level sensor until the bottom of the plastic nut reaches the same height as the old one. Finally reconnect the wires (all wire must be plugged back to the right place).

- **Cut off the power supply before any maintenance.**
- **Test the equipment after maintenance.**

9. Troubleshooting

Repair can only be performed by qualified professionals, for more services or technical helps please contact the dealer.

TOLO model steam generator has self-diagnose function, and some common faults will be displayed on the LCD if occur.

Code	Meaning	Diagnose and Solution
-L	Temperature measured by temperature sensor is below 6°C	Check whether the room temperature is below 6 °C, the code should disappear after the room temperature reaches 6 °C. Otherwise check the connection of the sensor.
-H	Temperature measured by temperature sensor is higher than 60°C	Check whether the room temperature is above 60 °C, the code should disappear after the room temperature drops below 60 °C. Otherwise check the connection of the sensor.
-E	Fault on the water supply, heating elements stop working	Check the connection and status of solenoid valve, water supply, magnetizer and water level sensor. After clean or replacement, restart the system and you should feel the flow of incoming water.
EE	Connection error between controller and main board.	Check the connection wire and connectors between the controller and the main board.
dd	Automatically draining when setting time is up or ON/OFF button is pressed. Automatically shut down after draining for a few minutes	Normal

Table 6

Diagnosing procedure:

- i. Take off the U shape cover at the back of the generator and plug out the connection wire for controller, then press the "TEST" button. If the generator can fill in water -> heat up -> produce steam, and stop working when press the "TEST" button again, it means that the main circuit board is working properly and the faults should be on controller part (including

temperature sensor), then please replace the faulty parts. Otherwise the faults are on the main board, sub-board, water level sensor, inlet solenoid valve or inlet pipelines, please carefully test each part and replace the faulty ones.

- ii. If the generator can fill in and drain out water properly but does not heat up, please check the connection wire between main circuit board and the sub-board, the relays on sub-board, and heating elements.
 - iii. If the system keeps on heating up even if the current temperature is more than 2°C above the setting value with the indicator on, carefully test the relays on the sub-board and change the faulty ones, or change the whole sub-board.
- Please refer to the circuit and connection diagrams for diagnosing and repair.
 - Do cut off the power supply before repair.
 - If problems still cannot be solved by the procedures listed above, please contact the dealer.

10. Warranty And Services

Product: TOLO-KEY	once a month maintenance	without maintenance
Controller	2 years	2 years
Heating element	2 year	1 year
Stainless steel team generator body	5 years	1 year
Painted iron housing steam generator body (install inside the room)	2 years	1 year
Water level sensor	2 years	1 year
Temperature sensor	2 years	1 year
Drain valve	1 year	1 year

Table 7 KEY Warranty Time

Remark:

- (1) Warranty period will count from the ex-factory date of the steam generator.
- (2) Limited free warranty only including provide free spare parts and our remote services, not including any other direct or indirect costs / losses.
- (3) Limited warranty is offered to all customers. Any quality problem will be covered according to above file. Please provide the maintenance record (Regular descaling records) when you ask for warranty.
- (4) The controller warranty for 2 year is under install it outside the steam room. Inside the steam room, controller warranty is 1 year.
- (5) Our company has the right to decide whether to repair or to change. Approval must be obtained from our company before shipping back the product. The customer has to pay for the transportation fee and any parts fee beforehand.

- (6) Any clause mentioned in the manual is not covered by the warranty.
- (7) This warranty does not cover any defect, malfunction or failure caused by, or resulting from unauthorized installation, maintenance and repair, improper power supply, and any action which violates the manual.
- (8) Damage caused by accident, misusing of chemistry products, or any other reason which are beyond our company's responsibilities will not be covered. Any product whose label, nameplate has been removed, altered, damaged is not covered either.
- (9) Using in a salty environment or any other extreme, corrosive condition is not covered by the warranty.
- (10) After the free warranty period, services are still available if all cost is covered by the customer.
- (11) Our company is not responsible for any direct or indirect damage caused by the generator.
- (12) Please contact our company for further information and more details.
- (13) Tips for maintenance:

How to descale Tolo KEY Steam Generator?

There is a service hole on top of steam generator, you can put solution through service hole, and let it stay in water tank for 4-8 hours, then flush.

How frequently should descaling be done?

*For home use: at least once per month

*For commercial use: at least once per week

What solution can be used?

TOLO acid;

Vinegar or lemon juice, mix with water and make concentration around 10%;

Or can use edible cleanser.

MAINTENANCE RECORD (Regular descaling records)

[illegible]