

FINO

STEAM GENERATOR

Thank you for choosing the Fino series Steam Generator for your Steam Room.
It is our privilege to have you as our customer.



2012



OWNER'S MANUAL

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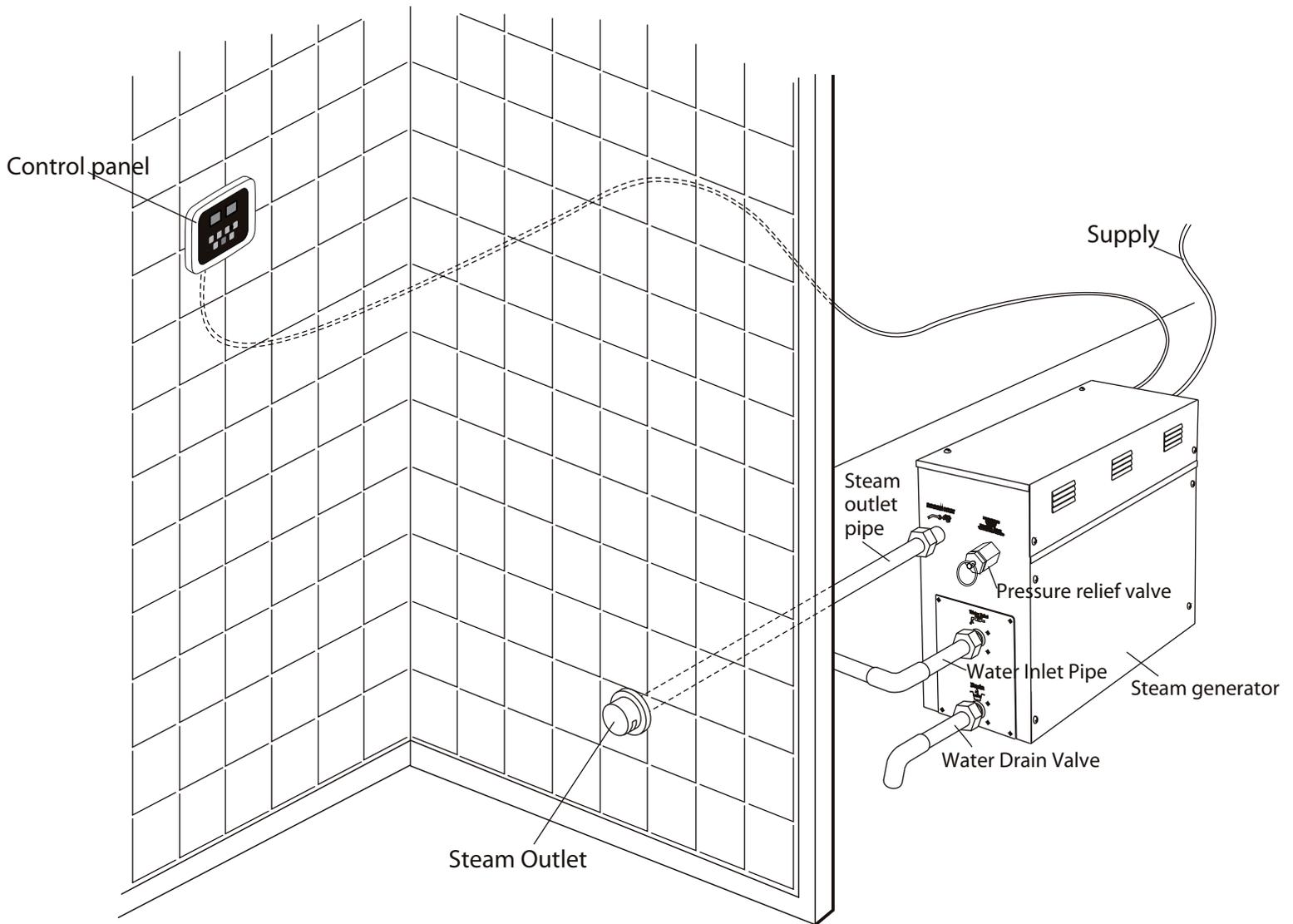
Welcome to the FINO series steam generator, one of the finest steam generators to ever be produced. This steam generator includes the steam generator, digital control panel, aromatherapy steam head and an automatic power flush system. Please follow the instructions carefully and the information in this owners manual will provide you with a lifetime of enjoyment with your steam generator.

It is recommended that an exhaust fan be installed outside the steam room in order to reduce the excess moisture that can occur from opening and closing the steam room door.

Some locations recommended to customers for installation.

1. The distance between the steam generator and the steam room should not be greater than 20 feet. The shorter the distance the greater will be the performance of the steam generator.
2. The steam generator must be installed in a cool dry location with ventilation available.
3. The steam generator must not be installed where water can freeze. The area must always be warmer than 32 F or 0 C.
4. Never install the steam generator near flammable chemicals.
5. The steam generator should be installed vertically, as it appears in this manual, with atleast 12 inches of space around each side to properly ventilate.
6. The steam generator steam outlet, safety valve and drain will become hot after use therefore contact should be avoided directly after use.
7. It is recommended that heat insulation be installed around the piping from the steam generator to the steam head.
8. The controller must be installed inside the steam room.

Figure 1



The installation of copper pipes from the steam generator should be done by a qualified plumber in accordance with national requirements.

1. Use copper pipes only.
2. Do not use black, galvanized or PVC pipes.

Water supply pipe (1/2")

1. Connect cold water to pipes.
2. Install a stop valve on the water supply line. The stop valve should be installed in a place where it is easily accessible in case of an emergency.
3. Clean the water supply pipe completely before connecting the water pipe to the steam engine.
4. It is suggested that a filter be installed on the water supply pipe to prolong the life of the steam generator.
5. The water pressure should not be greater than 20 pounds per square inch. If necessary, decrease the pressure accordingly.

Piping For 3KW and 4.5KW should have pipe size of 1/2"

Piping For 6KW or greater should have pipe size of 3/4"

1. Do not install any valve on the steam outlet pipe. Steam can never be obstructed.
2. The heat insulation material used to insulate the steam pipe should be resistant to temperatures of 120 C or higher.
3. The shorter the steam pipe, the better. Try to position the steam generator as close to the steam shower as possible.

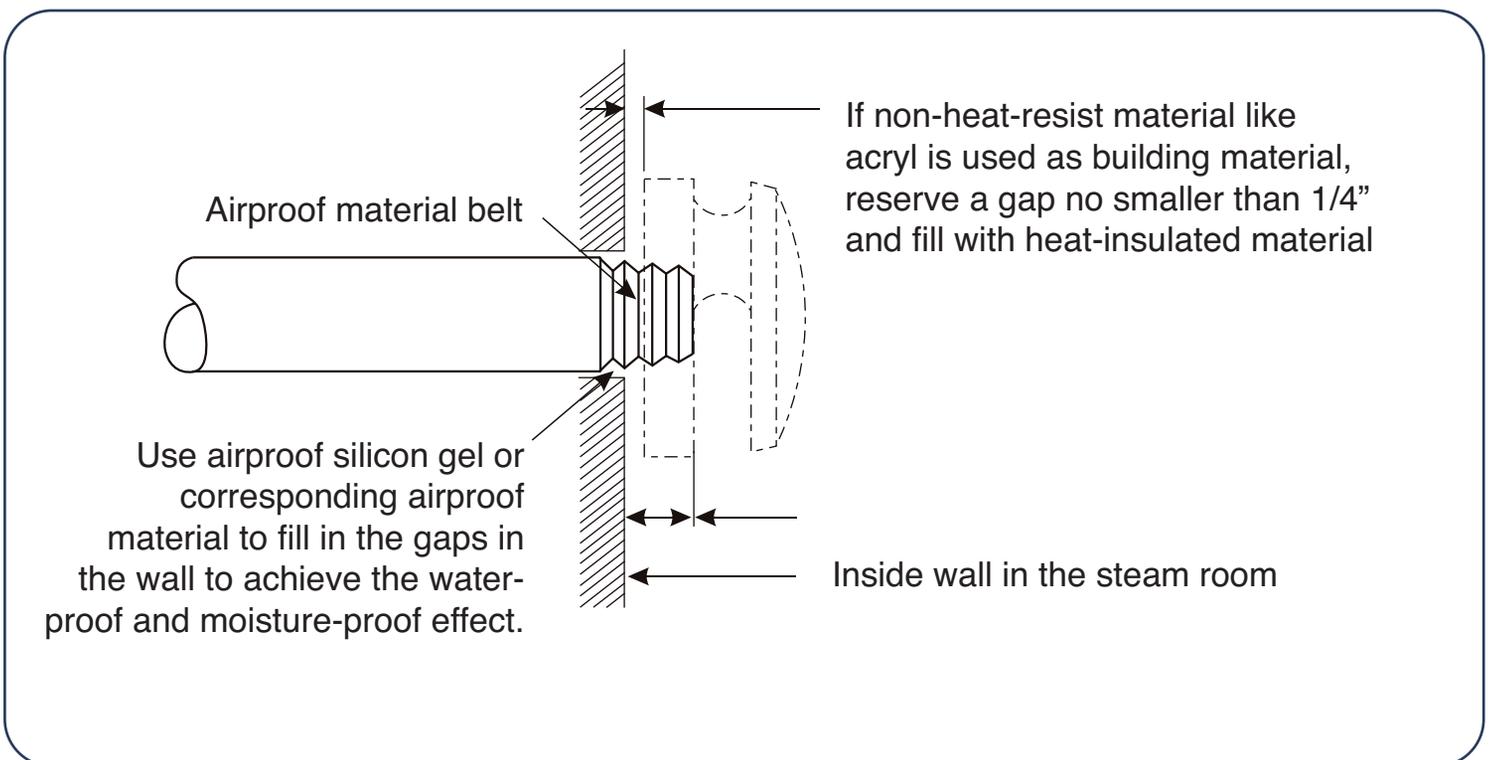
Since the steam outlet is very hot, try to avoid installation of the steam outlet in a position that avoids contact with the user.

Do not install the steam pipe in an upper or lower direction as this may affect the output of steam.

1. Install the steam outlet in the position 6-12 inches above the ground. If the steam bath is in the bathtub or shower, install the steam nozzle 6 inches above the bathtub. If the steam room has materials such as acryl or non-heat-resistant sheet, install additional heat insulator.
2. The steam head should be installed face down.
3. Do not use harsh chemical solutions to clean the steam head.

If non-heat-resistant material like acryl is used as building material, reserve a gap no smaller than 1/4" and fill with heat-insulated material.

Figure 2



The Autoflush pipe should not incline but must drain downward.

Safety Valve

1. The steam generator is equipped with a safety valve in order to prevent excessive pressure in the interior steam engine due to various reasons.
2. The pressure limit range of safety valve is 15 PSI and the pressure will begin to decrease if pressure should come over this value.
3. If it is allowed by local codes, provide the safety valve with exterior drainpipe.

Figure 3

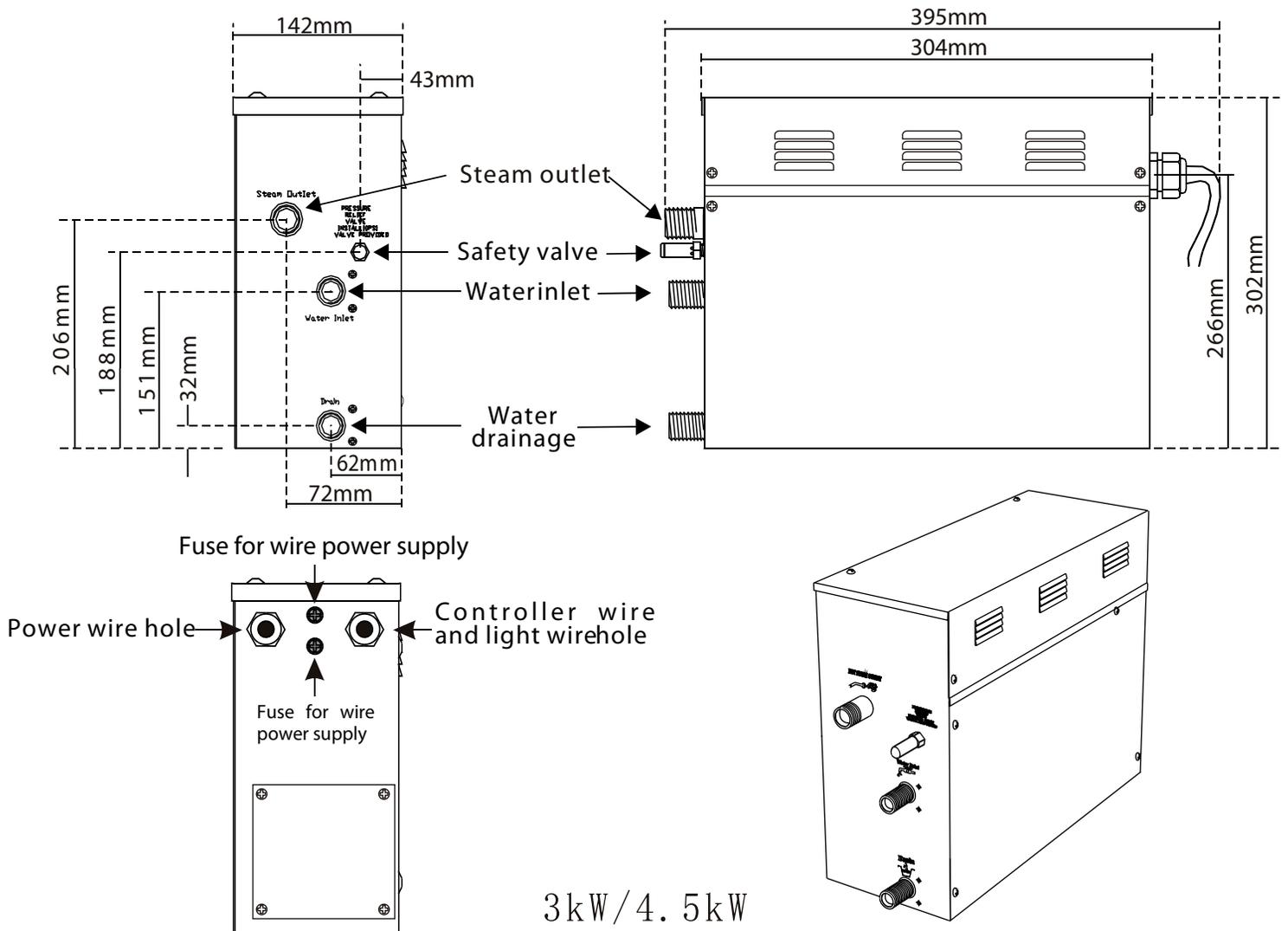


Figure 4

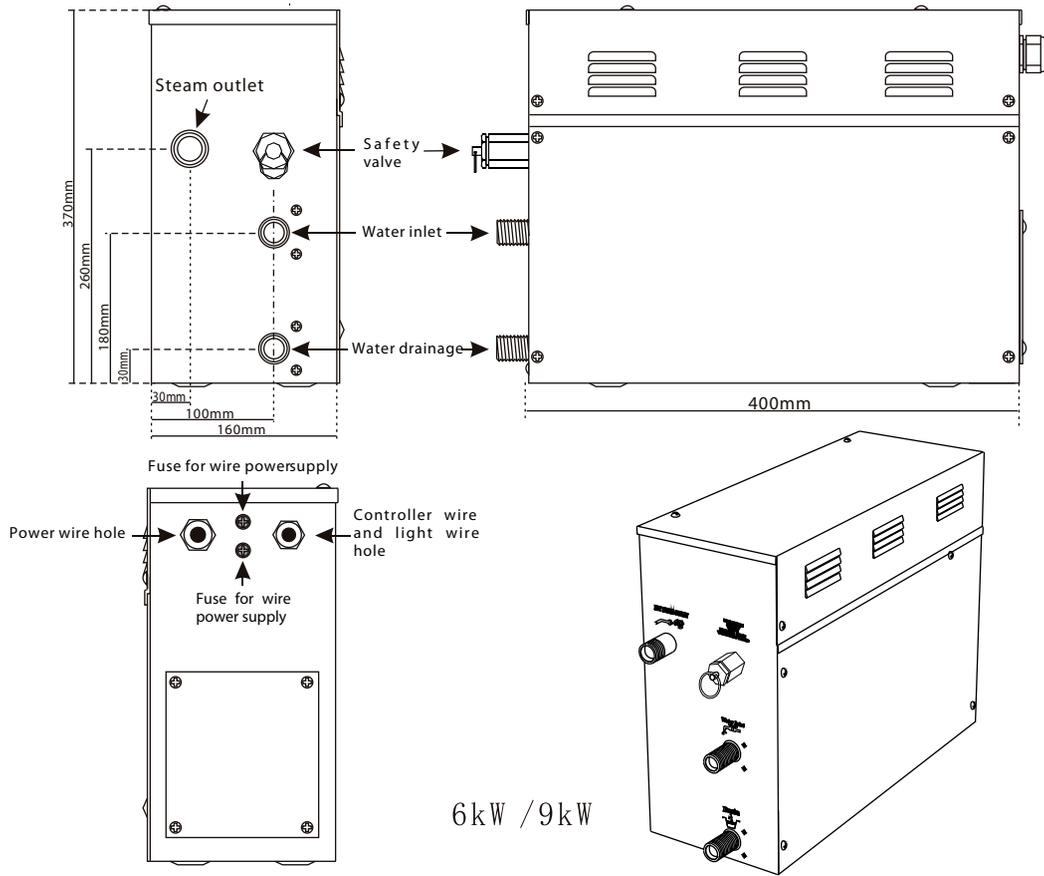
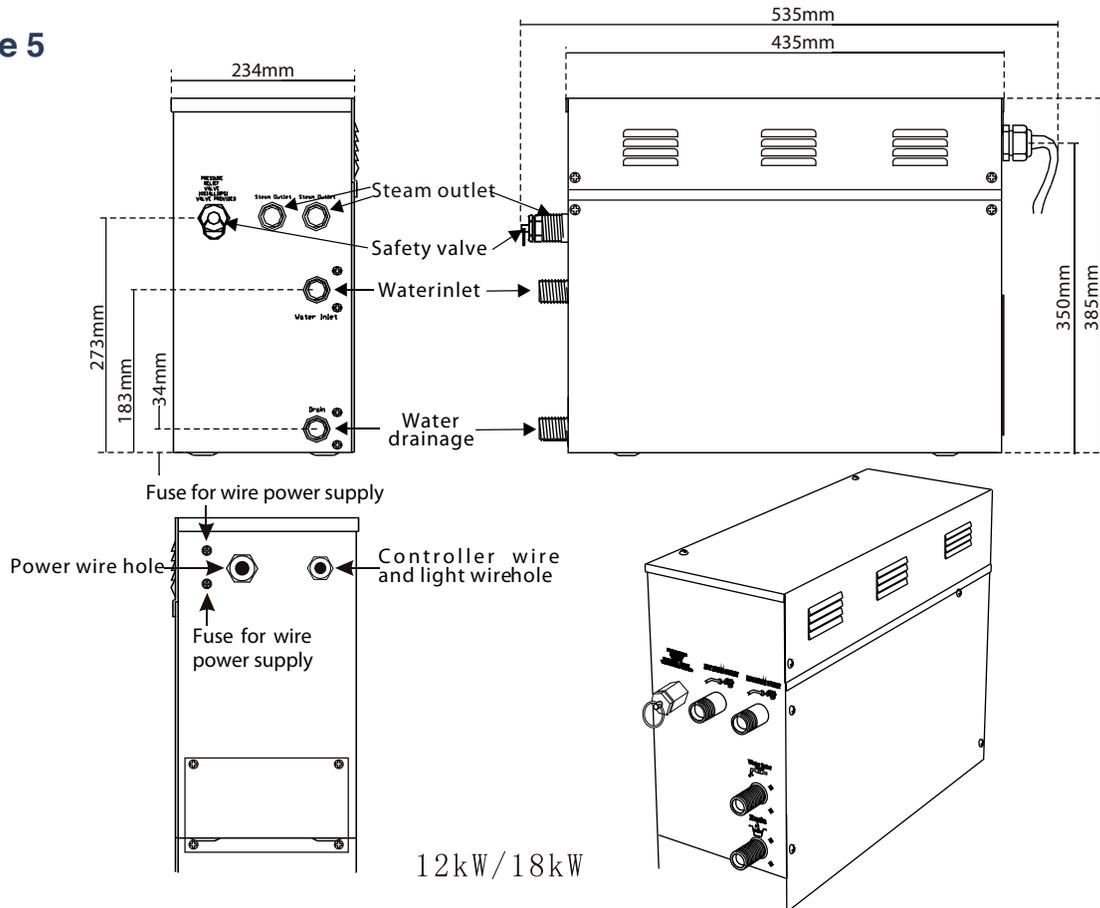


Figure 5



1. Test the voltage of electricity supply and make sure voltage is suitable for the steam generator.
2. Insulated copper wire should be used with an anti-heat temperature of 90 Celsius and a specified voltage of 208 Volts or 240 Volts. Refer to your local electricity consumption code for the specifications. Refer to the ammeter for the ampere.
3. Install ground wire into the ground terminal.
4. Install an independent circuit breaker between the power supply and the steam generator to provide an electricity supply with overflow protection.

Attention: All electrical connections must be in accordance with national and local electrical consumption code and be installed by a professional electrician.

Table 1 FINO STEAM GENERATOR

MODEL	MAX ROOM SIZE	VOLTS	AMPS	WIRE
3KW	55 Cubic Feet	240V 1Phase	12.5	12
4.5KW	100 Cubic Feet	240V 1Phase	19	10
6KW	180 Cubic Feet	240V 1Phase	25	10
9KW	300 Cubic Feet	240V 1Phase	37.5	8
12KW	500 Cubic Feet	240V 1Phase	50	6
18KW	860 Cubic Feet	208V 3Phase	55.58	6

The data provided above are for 220-240V 1 Phase and 208V 3 Phase.

Install an independent circuit breaker in order to provide an electrical supply with overflow protection and electricity leakage protection.

Assembly graph for power wire

Attention: To avoid damage to the equipment, do not connect high electrical current to the component directly.

Warning: This graph is for explanation only. For actual installation, refer to national and local electrical consumption codes by a professional electrician.

Figure 6

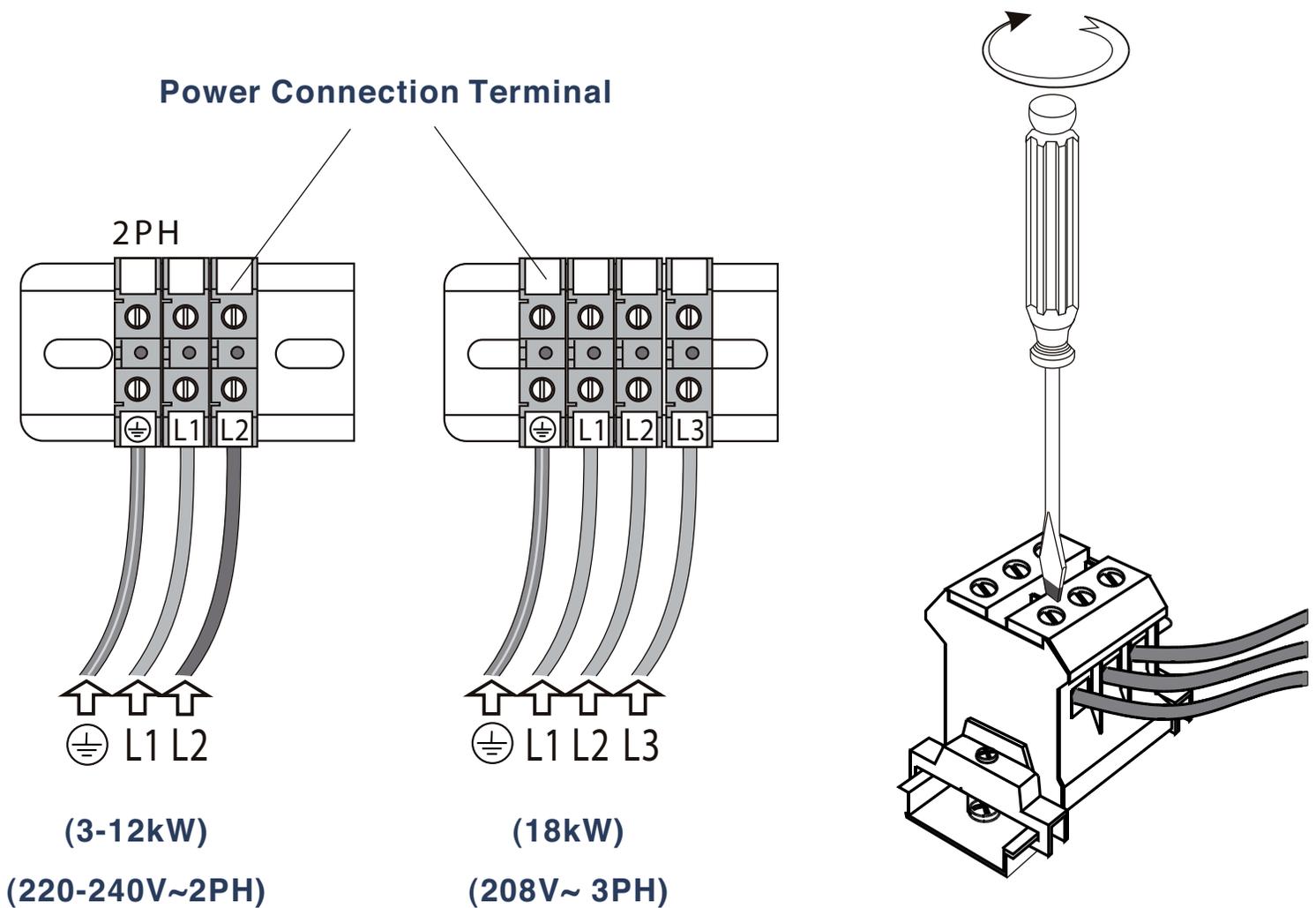
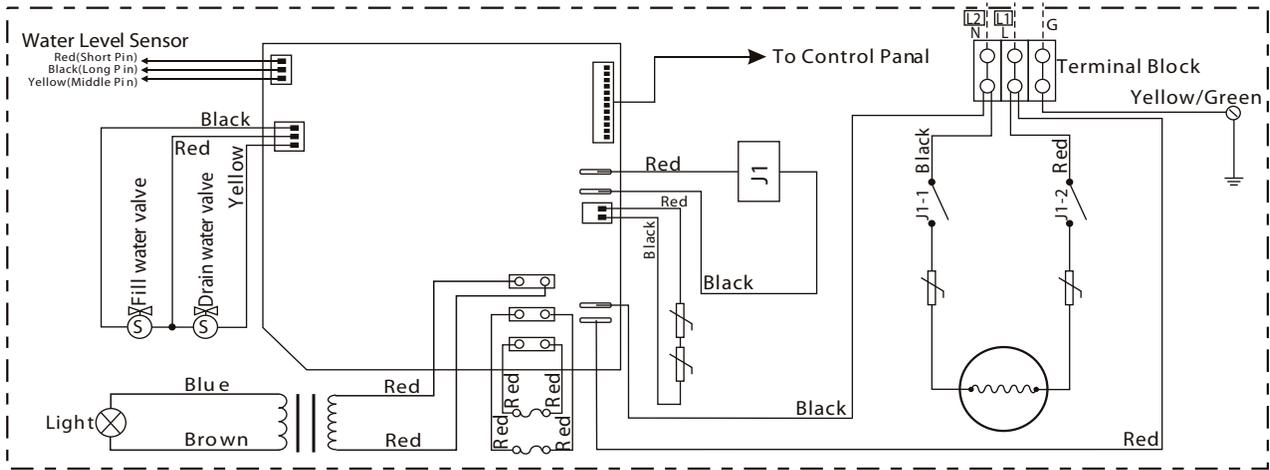
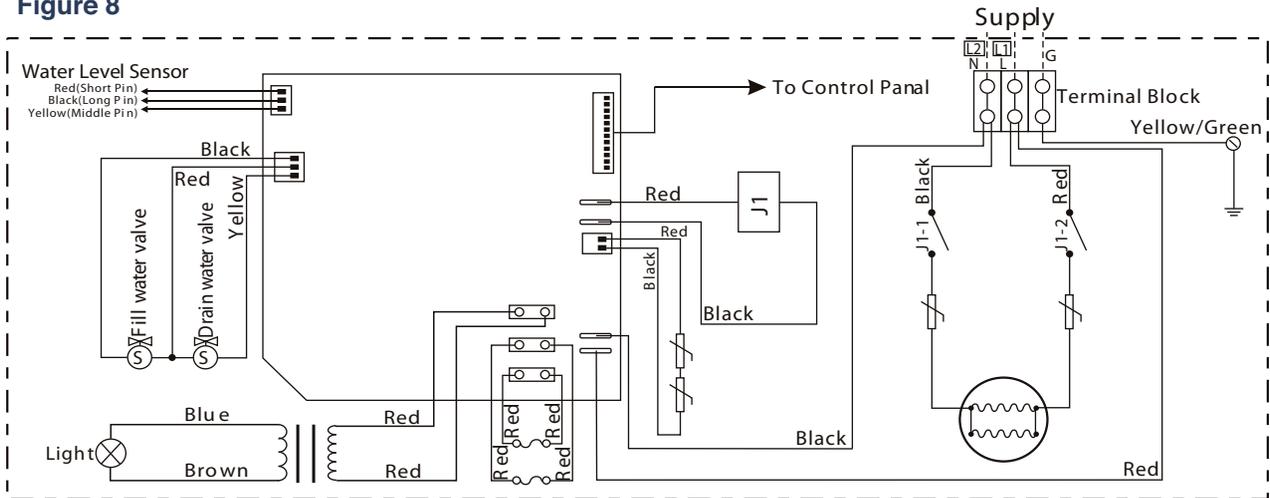


Figure 7



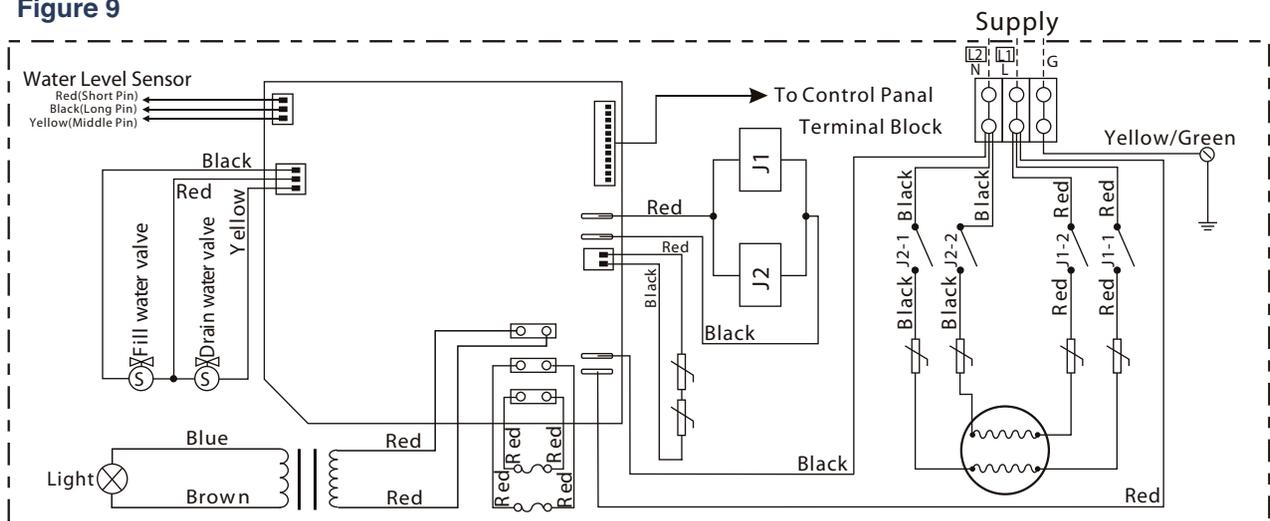
3KW (220-240V~1PH/2PH)

Figure 8



4.5KW (220-240V~1PH/2PH)

Figure 9



6KW/9KW (220-240V~1PH/2PH)

Figure 10

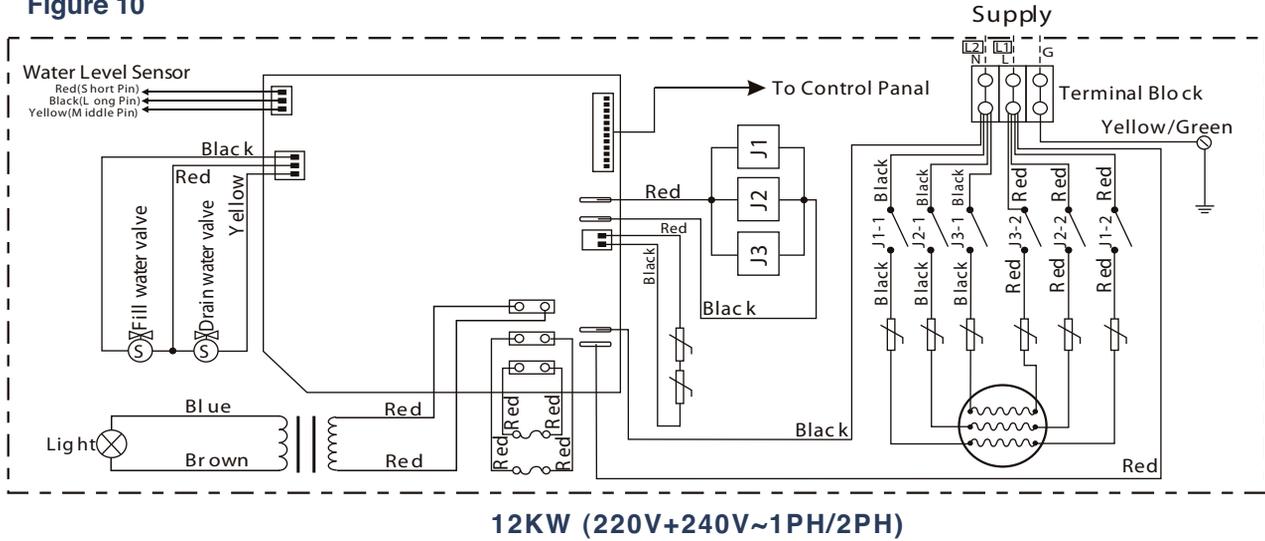
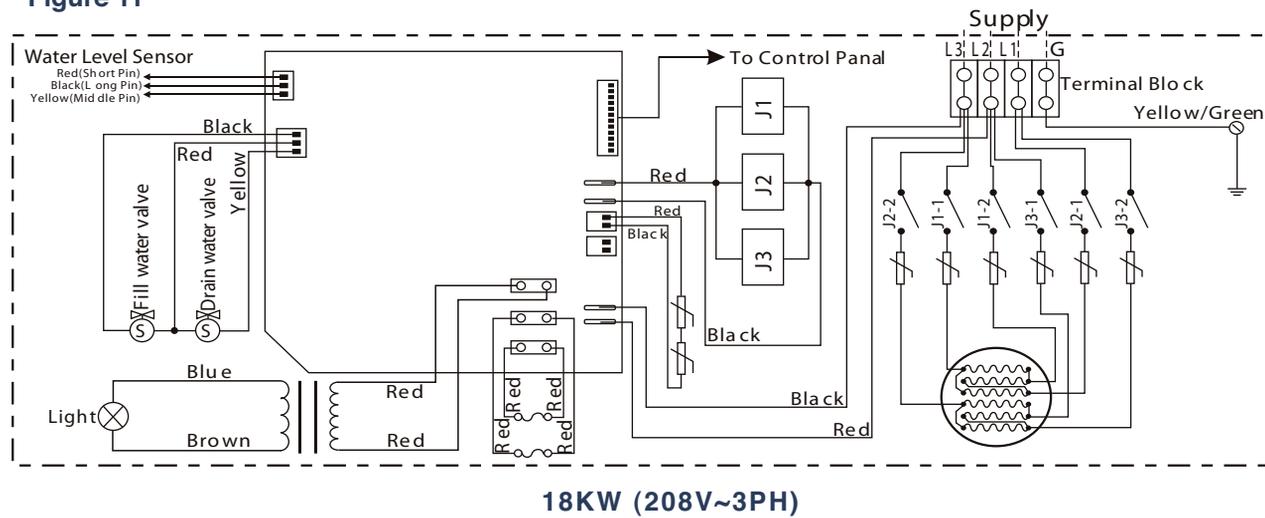


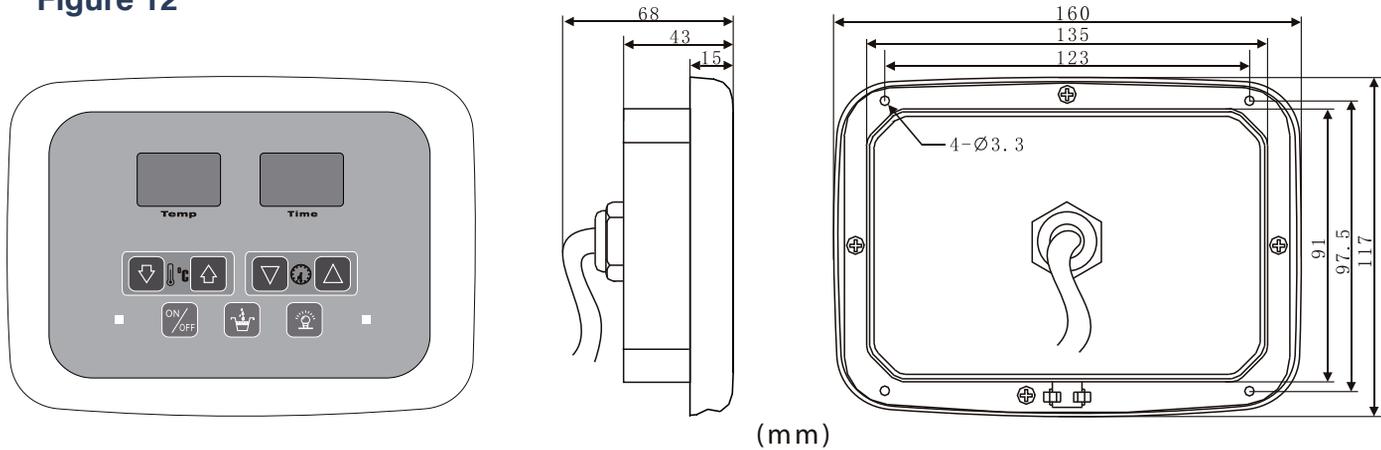
Figure 11



Caution

1. Use a soft cloth with water to clean the control panel.
2. Do not use harsh cleaning products to clean the control panel.
3. Do not install control panel or control panel wire close to the steam outlet or electrical wire of the Fino steam generator.
4. Before installing the control panel, make sure the Fino steam generator is shut off.

Figure 12

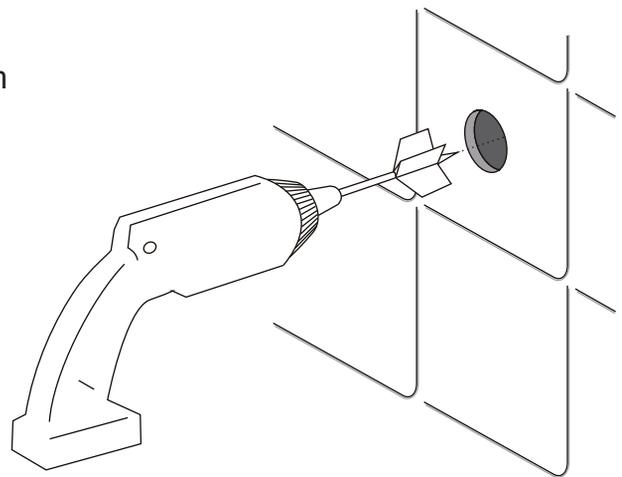


Installation of the control panel

Step One

Determine the installation location of the control panel. The control panel is designed to be installed in the steam room only. Control panel should be installed:

1. 1.2-1.5m from the ground.
2. Far away from the steam outlet.
3. Install on the opposite wall from the steam outlet.
4. The position of installation should facilitate easy operation and convenient wiring. The controller wire is 0.5 m long with a controller lengthened wire of 6 m long.



Step Two

Drill a hole if 35 mm in diameter in chosen position.

Step Three

Pull the control panel wire through the round hole, connect the wire to the lengthened wire and connect to the steam generator. Avoid pulling the control wire too tightly.

Step Four

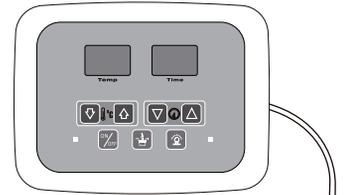
Start the power supply of the steam generator.

Step Five

Remove the paper from behind the control panel. Keep this paper free from moisture which will allow greater sticking power.

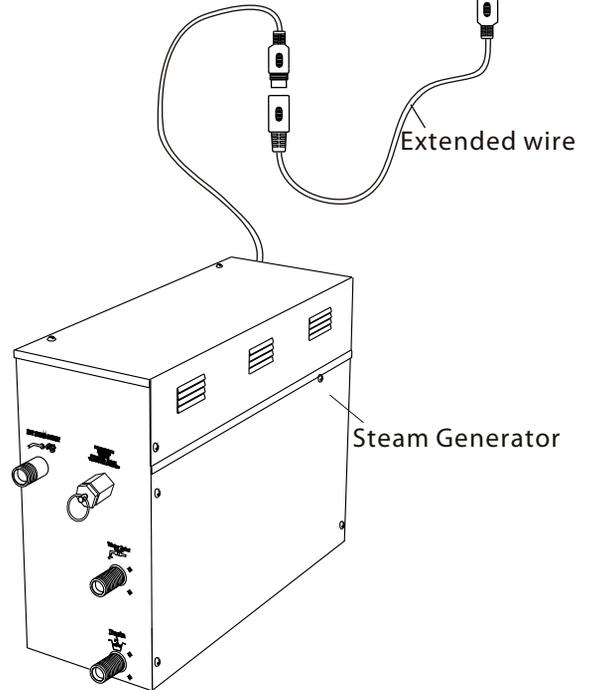
Step Six

Locate the display screen and press the control panel to stick to the wall.



Control Panel

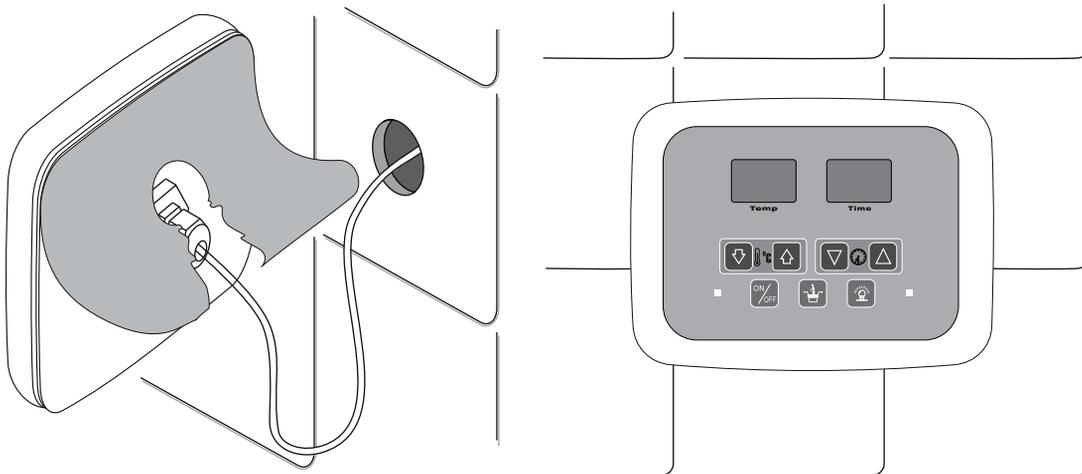
Figure 13



Extended wire

Steam Generator

Figure 14



Temperature Sensor Installation

1. The position of the temperature sensor should be within a range of 1.2 m to 1.5 m above the ground. Install as far as possible from the steam outlet.
2. As shown in Figure 15, drill a small hole of 10 mm in the desired position.
3. Apply a circle of airproof glue along the edge of the back of the sensor foundation (as shown in Figure 15).
4. Use a locknut to lock the sensor foundation. (As shown in Figure 15)
5. The temperature sensor should be installed by extending about 1 cm from the wall.

Figure 15

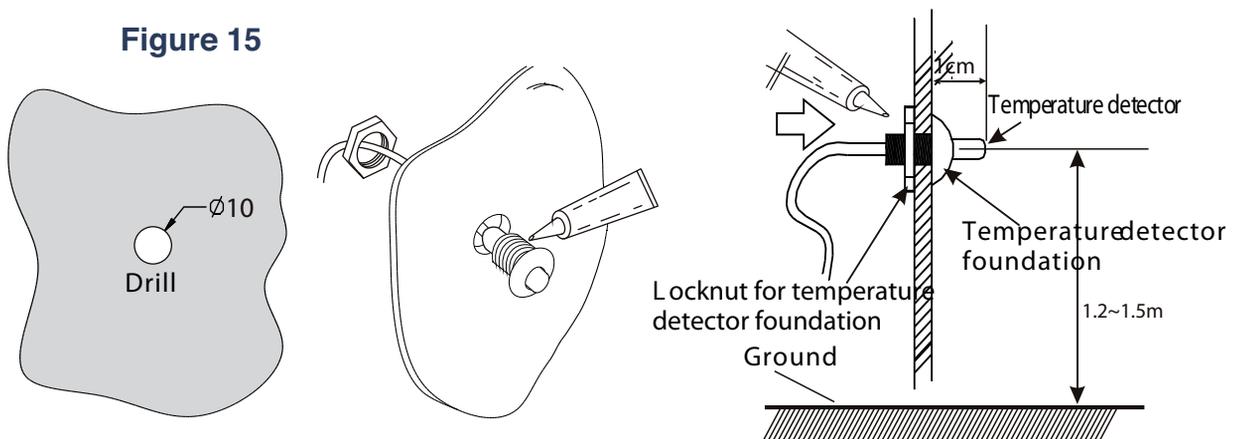


Figure 16



- | | |
|--|---------------------------------------|
| 1. Power ON/OFF | 6. LED SCREEN |
| 2. Steam Indicator LED | 7. Steam Time Adjust Key--LOW |
| 3. Steam Temperature Adjust Key--LOW | 8. Steam Time Adjust Key--HIGH |
| 4. Steam Temperature Adjust Key--HIGH | 9. Power Indicator LED |
| 5. Water Drain Key | 10. Mood Light ON/OFF |

The control panel is a digital temperature control system which can start, stop, pause in the preset time and save the temperature at the saved setting.

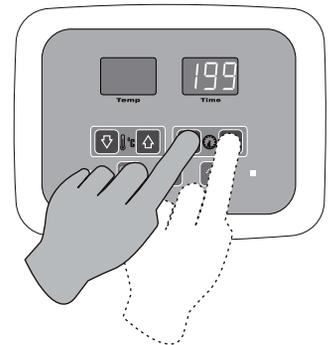
1. Presetting Time before Starting the Steam Generator:

When power supply is on, if system has time set, the steam generator will begin a count down time which will be shown on the time display window in number of minutes.



2. Adjusting Preset Time:

Press keys  or  to adjust time up or down. After adjusting, system accepts new time to start and saves new time for next usage.

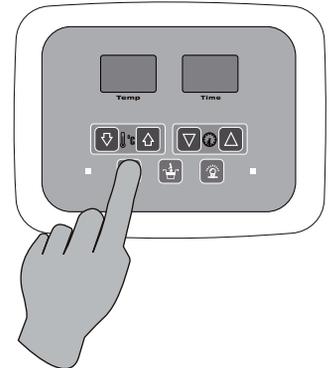


3. Waiting State:

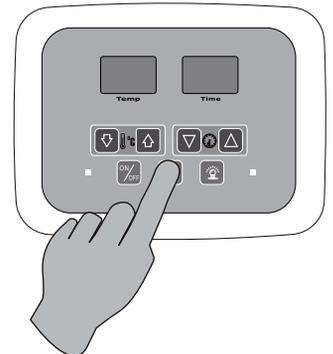
When system is off but connected to power supply, power indicator lamp is illuminated. System is in waiting state.

4. ON/OFF:

ON: When desired preset time is over or press  button to activate the Fino steam generator and all function buttons. The power indicator LED will turn off. Temperature window will display ambient temperature, and time window will show the remaining time. If the steam generator is on, the heating elements will work, steam indicator LED will be on, when the ambient temperature reaches the set temperature. Elements will stop working, when ambient temperature drops lower than 2 degrees Celsius than set temperature the heating elements will turn on again automatically.

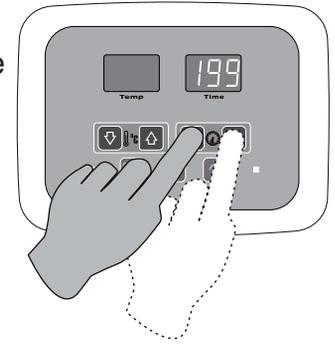


OFF: When system is on, press  key or the desired steam time is over, system will shut off. 10 minutes after the system is shut off, the draining function will be started automatically for 5 minutes, or, by pushing  button, system will begin draining function for 5 minutes. When system is on, if system cannot fill water normally, steam indicator LED will flash. If this situation lasts for 4 minutes, system will be shut off and kept in waiting state automatically.



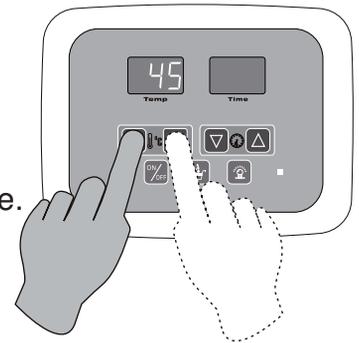
5. Adjusting Time:

When steam generator is on, press keys  or  on control panel to adjust the time. Time display window will show the desired time. The time adjustment range is 1 minute to 8 hours. When setting time less than 1 hour, the time unit is by the minute; when time is more than 1 hour, the unit is by the hour and time display window will indicate an “h” for hour.



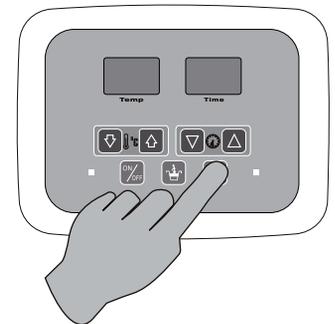
6. Steam Temperature Setting:

Use  and  buttons to set the desired steam room temperature when system is activated. Steam temperature LED screen will show the set steam room temperature which ranges from 25oC~68oC or 78F~150F. When temperature reaches the set temperature, the heating elements will shut off until the temperature is less than 2 degrees Celsius from the set temperature.



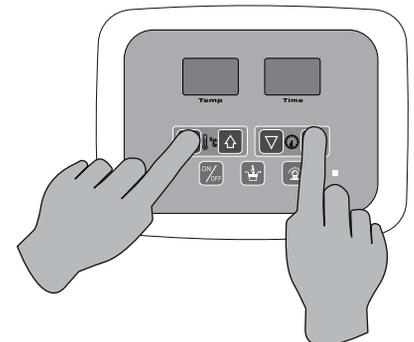
7. Light Function:

When system is on, press key  on control panel to turn light on; to turn off the light press the button again.



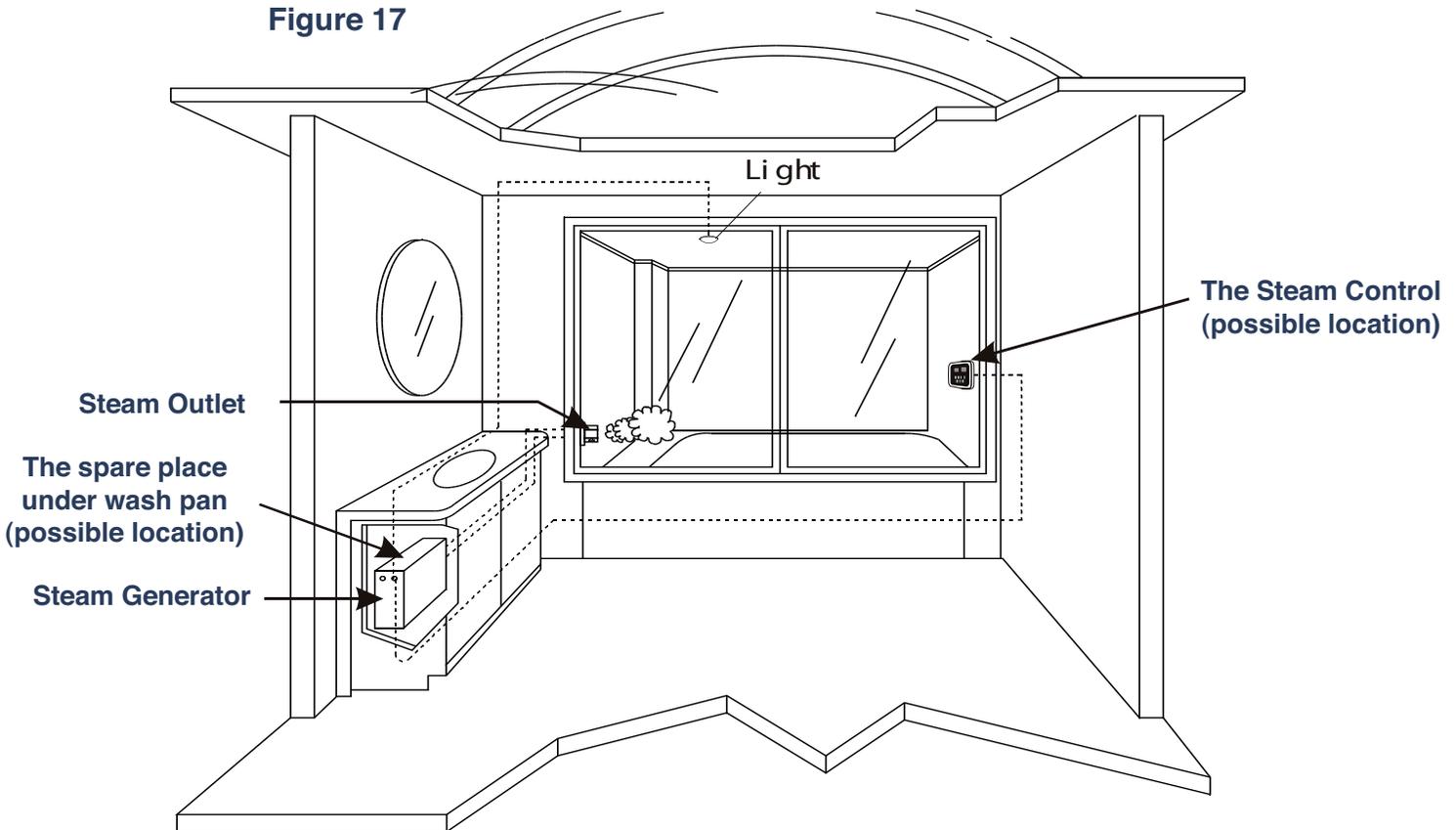
8. Fahrenheit to Celcius:

When system is in waiting state, press  keys  at the same time to switch Fahrenheit to Celcius and temperature display window will display an “F” for Fahrenheit; and a “C” for Celcius. System will save the change for the next usage.



A light is available in 12V/220V/240V outputs. Before connecting the light, please consult with manufacturer to know what voltage the light is, to avoid steam generator damage. If the light output is 12V, the power of the light cannot be more than 35 Watts, or transformer could be damaged. If light input is 220V~240V, light power cannot be more than 100 Watts. Take some moisture proof measures during installation of the ceiling light. Electrical components cannot be exposed to any moisture or severe damage can occur.

Figure 17

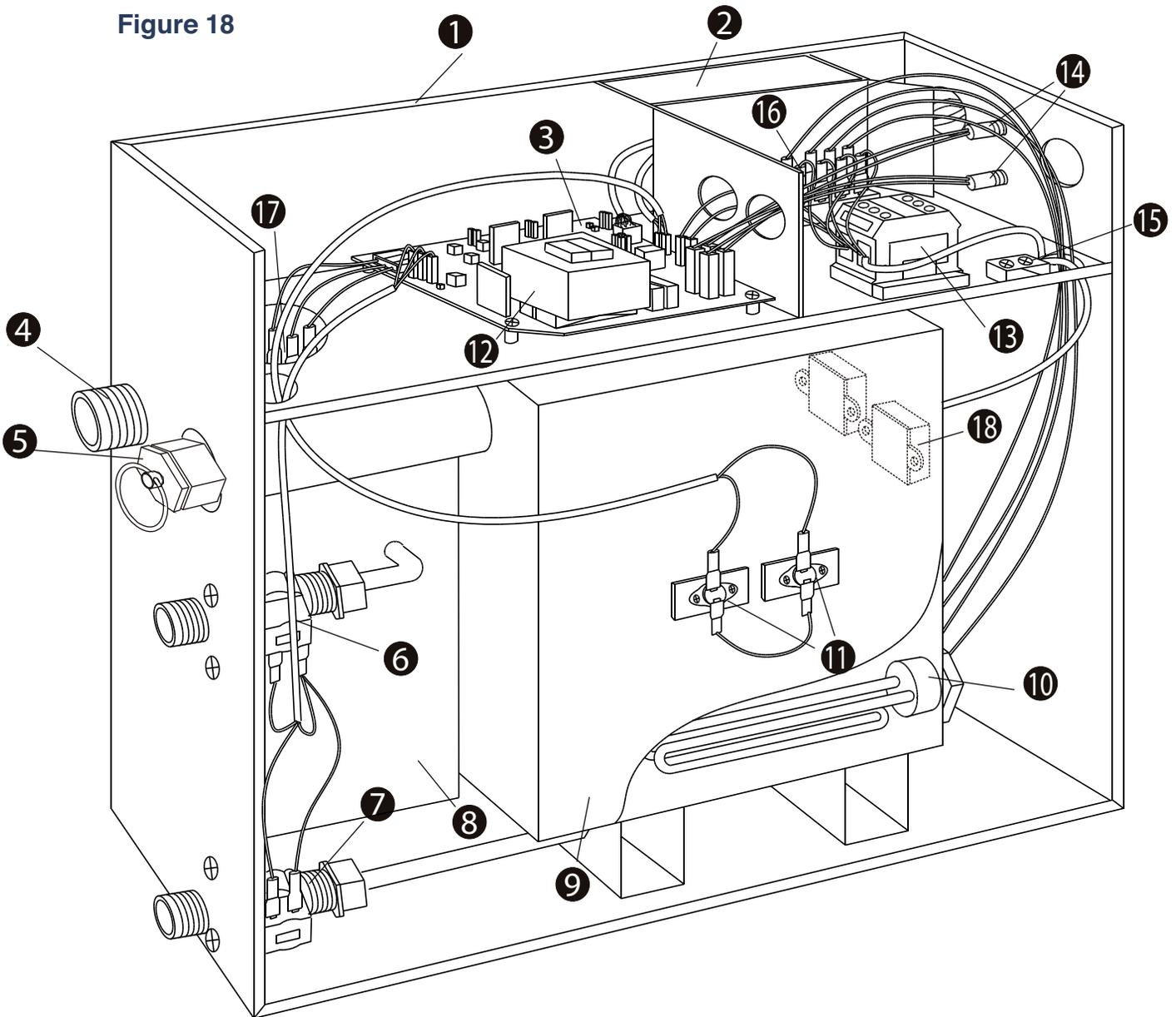


CAUTION: This illustration is for explanation purposes only. Installation must comply with your local electrical requirements and be installed by a professional electrician.

Perform Water Flush each time after use.

1. Wait for the completion of automatic water flush after each use of the steam generator to make sure the water in the tank is discharged completely before cutting off power supply.
2. There should not be any leakage or damage to the steam generator, steam head, components or pipes. They should be checked and repaired annually.
3. Clean the water supply pipe of the steam generator once a year.
4. Check all the connections, faucets and connection terminal to see whether they become loose or are damaged due to overheat.
5. Check for build up accumulated in the water tank. If build up occurs, dispose of it. (use diluted lemon water to soak for 15-30 minutes).
6. Remove the water level sensory needle once every 3 Months to clean accumulated build up in the steam generator.

Figure 18



- | | | |
|------------------------|-------------------------|------------------------|
| ① Enclosure | ⑦ Waterdrain Valve | ⑬ Terminal Block |
| ② Insulation Bracket | ⑧ Subsidiary water tank | ⑭ Fuse |
| ③ Circuit Board | ⑨ Main water tank | ⑮ Earth Wire Connector |
| ④ Steam Outlet | ⑩ Heating Element | ⑯ Relay |
| ⑤ Pressure Reliefvalve | ⑪ 105°C Hi-limit | ⑰ Water Level Sensor |
| ⑥ Waterfill Valve | ⑫ Transformer | ⑱ 105°C Hi-limit |

To facilitate use and maintenance of the steam generator, the following common trouble shooting solutions are listed.

Problem	Cause	Solution
The machine does not start.	<ol style="list-style-type: none"> 1. The fuse is burned. 2. The wire connection terminal becomes loose. 3. Not solid contact in the connection wire between the controller and the steam engine. 	<ol style="list-style-type: none"> 1. Change the fuse (on the shell 0.8A / 250V) 2. Plug the wire connection terminal 3. Make sure the steam generator and the controller come into solid contact.
Electricity leakage switch breaks automatically.	<ol style="list-style-type: none"> 1. The wire connector is damp or damaged. 2. The heating tube breaks. 	<ol style="list-style-type: none"> 1. Check whether the wire connector is damp or damaged, and dry with dryer if dampened. 2. Change heating tube.
When the machine is started, hot water comes out with little or no steam.	<ol style="list-style-type: none"> 1. The water drainage valve is broken. 	<ol style="list-style-type: none"> 1. Change water drainage valve.
The display screen on the control panel does not display.	<ol style="list-style-type: none"> 1. The power wire is not connected well or not in good contact. The connection plug between the control panel and the electrically-controlled box becomes loose. 	<ol style="list-style-type: none"> 1. Check the connection plug between the control panel and the control box and whether the power circuitry has solid contact. 2. Change the circuit board.
Water leakage.	<ol style="list-style-type: none"> 1. The water pipe connector becomes loose or the pipe breaks 2. Water leakage in the water input valve or the water drainage valve. 	<ol style="list-style-type: none"> 1. Tighten the loose connector, and change the broken pipe. 2. Change the water input valve or the water drainage valve.
No steam when starting the machine.	<ol style="list-style-type: none"> 1. No electricity. 2. No water. 3. The set temperature is too low. 	<ol style="list-style-type: none"> 1. Check the power supply 2. Check the water input pipe and water input valve 3. Reset the temperature.
The light cannot be turned on..	<ol style="list-style-type: none"> 1. The fuse is burned. 2. The light is broken 3. The wire is broken 4. The plug does not have solid contact. 	<ol style="list-style-type: none"> 1. Change the fuse (on the shell 1A/250V) 2. Change a light bulb. 3. Change wire. 4. Make the contact solid.
The display box displays normally with no steam input	<ol style="list-style-type: none"> 1. Too much pressure inside the steam generator, so the system breaks for heat protection. 2. Fuse is broken for heat protection. 	<ol style="list-style-type: none"> 1. Check the steam transport pipe and restore automatically after heat protection becomes cool. 2. Check the heat protection fuse to make sure the fuse is working.