

INSTALLATION & USE

calo



FL-515

FL-516

FL-518

Contents

1. Preface.....	1
2. Notice.....	1
3.Characteristic.....	1
4. Installation.....	3
5. Use.....	6
6. Electrical safety Principles.....	10
7. Maintenance.....	11
8. Common malfunctions and solutions.....	11

NOTE: The rights for modification are reserved. Should there have been any modification; no other prior notice will be given.



1. Preface

My honorable customers:

Welcome to enjoy the various CALO FL-5×× series steam generators. Your patronage will be our honour.

Adopting superb materials, microcomputer control system and exquisite craftsmanship, our FL-5×× series steam generator is elaborately designed and appealing. It is a high-quality steam bath facility for modern family, hotel, chamber, and club with the characteristics of convenience and comfort. It helps to remove physical and mental fatigue, delay skin decrepitude, and has the function of making you fresh and beautiful.

2. Notice

A. To use your FL-5×× series steam generator more efficiently and safely, you are strongly recommended to read this description in details before use.

B. Any damage and fault arising from self-installation and being unable to operate properly according to the operating procedures stated in the description, are not within the warranty conditions.

C. To your benefits, please fill in the warranty certificate in details and keep it well together with your original fiscal invoice or the accompanying receipt.

D. Warranty concerns for one year and provides for life-long service. Please keep in touch with the dealer.

E. This product is not allowed to use outdoors.

3. Characteristic

FL-5×× series steam generator comprises stove, controller, temperature sensor, and safety valve.

The computerized control system of FL-5×× series steam generator includes the controlling of the indoor temperature of the steam room and the working time of the steam generator. User can set the indoor temperature of the steam room and the working time of the steam generator according to their requirements. FL-5×× series steam generator is an ideal facility for steam bath.

Otherwise, both of the protections against dry burning and safety valve are installed in the steam generator. In case some unexpected factor give cause for the steam generator is in a shortage of water and dry-burning state, the system will switch off the power supply of the heat-pipe to prevent dry-burning; In case the air pressure of the steam generator is beyond normal level resulting from the blockage of the steam outlet, the safety valve will automatically activate the protector to discharge the steam.

FL-5 × × series steam generator has grounding installation and hanging installation. Hanging installation is the conventional product of our factory. You must tell your supplier if you want to get the grounding installation.

FL-5 × × series steam generator is elaborately designed with novelty and reasonable layout and is for easy installation. All components are of high quality after careful selection and strict test.

TECHNICAL SPECIFICATIONS AND DIMENSIONS

Model	Electric power supply		Power kW	Volume of the steam room (m ³)				Dimensions (cm)		
	Pressure (V)	Frequency (Hz)		With vent		Without vent		L	W	H
				Min.	Max.	Min.	Max.			
FL-515/4	220	50	4	2	4	2	5.5	48	17	32
FL-515/6	220	50	6	3	8	4	15			
FL-516/9	220/380	50	9	6	16	13	24	58	22	48
FL-516/10	220/380	50	10	10	19	18	27			
FL-516/12	220/380	50	12	14	22	22	30			
FL-518/6	220/380	50	6	3	8	4	15	58	22	38
FL-518/8	220/380	50	8	3	12	10	20			
FL-518/9	220/380	50	9	6	16	13	24			
FL-518/10	220/380	50	10	10	19	18	27			
FL-518/12	220/380	50	12	14	22	22	30			

Instruction

1. FL-5 × × series steam generator's components should be packaged into one package box. After getting the goods, please check if the packages are maintained to be fine during shipping, as soon as finding the goods were damaged, you should ask for compensation from relative shipping company or your supplier in time.

2. "Installation instruction manual" and "Safe regulation of using electricity" must be obeyed strictly when installing. Otherwise, our company will not in charge of the result.

4. Installation

1. Unpack the packages and clean them. Check all the packages and components, and in case of absence or incompleteness of components, please claim this to the dealer.

2. Installation of the steam generator (see illustration 1, illustration 2).

2.1 This steam generator must be installed outside the steam room. But it should be installed as near the steam room as possible and cannot be far away from 3500 mm.

2.2 This steam generator can either be installed on the floor or hung on the wall.

Hanging installation: As illustration 1, drill two holes $\phi 8$ on the wall and insert $\phi 8 \times 40$ plastic expansion tube. Then screw two ST4.8 \times 50 self-tapping screws

into the plastic expansion tube, fix them tightly on the wall and over the wall about 10 mm. Hang up the steam generator at the two screws on the wall.

Note: the dimensions in the illustration are for reference only. User can reset the dimensions according to the practicality.

2.3 It is suggested a valve be installed on the water inlet pipe for the convenience of future maintenance.

2.4 The steam pipe and drain pipe should be $\phi 15 \times 1$ red copper pipe or aluminum pipe.

illustration 1

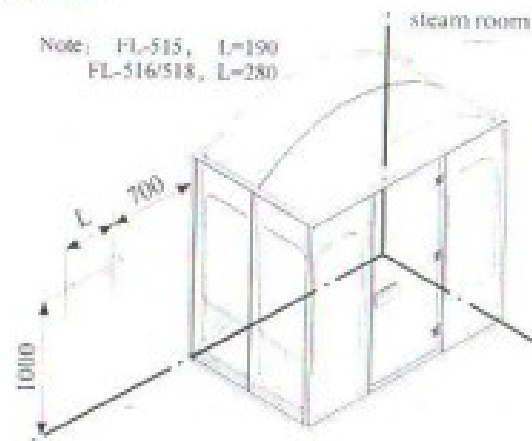
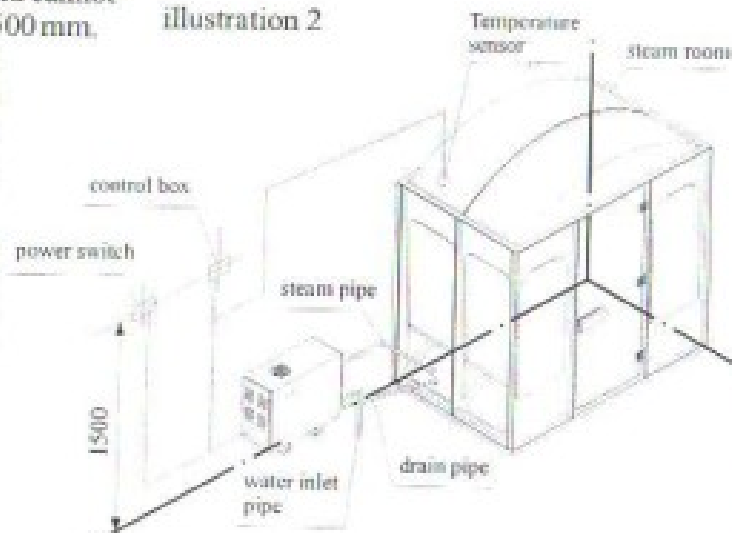


illustration 2



2.5 The steam pipe and drain pipe should be protected in a insulated conduit to prevent heat elimination and scald.

2.6 The steam outlet and the drain outlet should be installed in an appropriate position of the steam room. To avoid scald, the height from the ground is about 100-200 mm.

3. Installation of the steam outlet (see illustration 2, illustration 3).

3.1 According to the sequence as illustration 3, fix the flange, big washer and back shim on the bath seat with two M4 × 20 cross-recessed pan head screws and nuts

3.2 Insert the steam pipe into the flange, then put on the small rubber ring and guide ring and lock them tightly.

3.3 According to the sequence as illustration 3, fix the decorative cover and steam outlet on the flange with three M4 × 8 cross-recessed pan head screws.

4. Installation of the drain outlet (see illustration 2 and 4).

The installation of the drain outlet is same as the installation of the steam outlet.

illustration 3



illustration 4

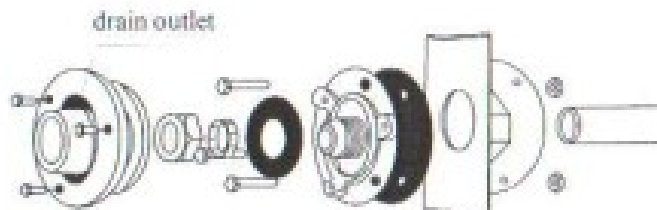
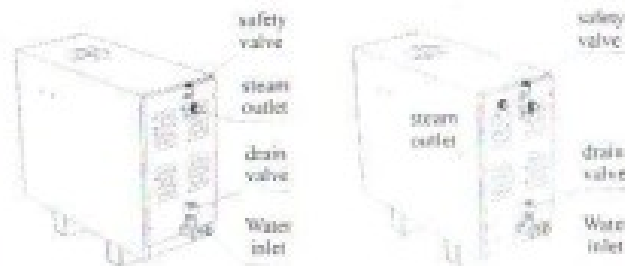
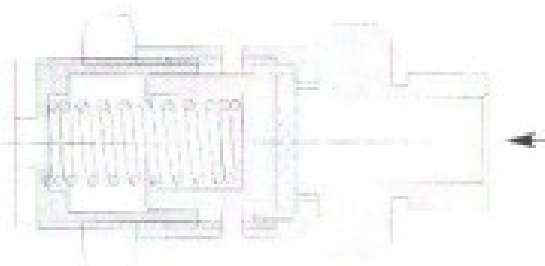


illustration 5



If the generator's power is 8kw or higher than 8kw, there will be two steam outlet.

illustration 6 Safety valve



5. Check the safety valve (see illustration 6)

The reliability of the safety valve should be checked before installing the steam pipe. Push the screwdriver forward moderately according to the arrowhead direction mark. The safety valve is good if the screwdriver can be pushed in and then can rebound; if not, the safety valve must be replaced.

Usually, the actuating pressure of the safety valve has been regulated to the most favorable state by our factory and it has been sealed. It need not be regulated anymore.

6. Installation of the electric apparatus (see illustration 1).

6.1 The power switch and the control box should be installed outside the steam room, but as near the steam room as possible and cannot be far away from 3500 mm.

6.2 Installation of the power switch and the control box. User can choose the location of installation themselves according to the requirements. It is suggested: the

height for installing is away from the floor about 1500 mm.

6.3 Installation of the control box.

Fix the control box on the wall directly with four ST3.9 × 25 cross-recessed pan head tapping screws.

6.4 Choosing of the power switch and the power wire: The electric circuit of connection devices must be in compliance with the international safety standard, as well as the specific norms applied by each country. Especially it must be earthed. The connecting terminal of the power supply is shown as illustration 7 and 8.

6.5 The power wire from steam generator to the power switch must be protected in a metal conduit or a plastic conduit.

6.6 Installation of the temperature sensor

The temperature sensor is shown as illustration 9. The temperature sensor should be installed in an appropriate place of the wall panel inside the steam room and the height must be away from the floor about 1500mm.

illustration 7 FL-515 connecting terminal of the power supply

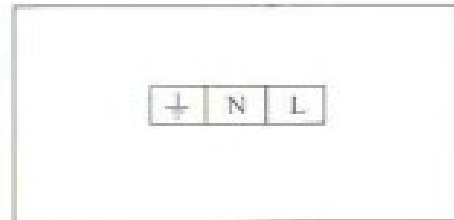


illustration 8 FL-516/518 connecting terminal of the power supply

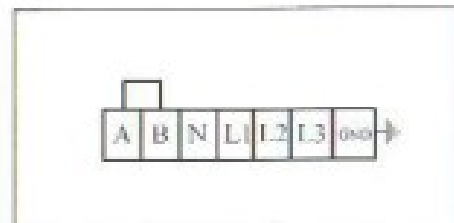
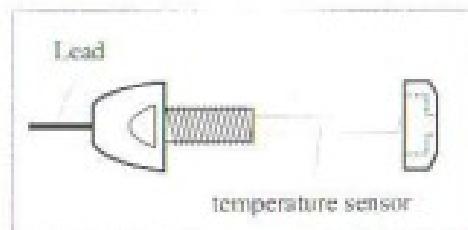


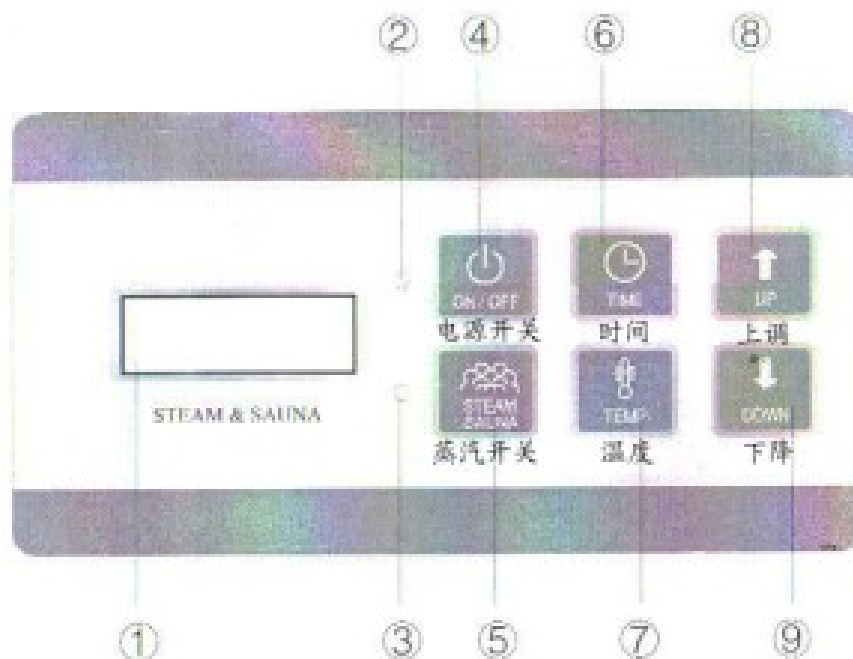
illustration 9



5. Use

The control system of FL-5×× series steam generator is FL-128c control system. It can control the system working time, the indoor temperature of the steam room. The control panel and the electric principle chart of control system are show as illustration 10, illustration 11.

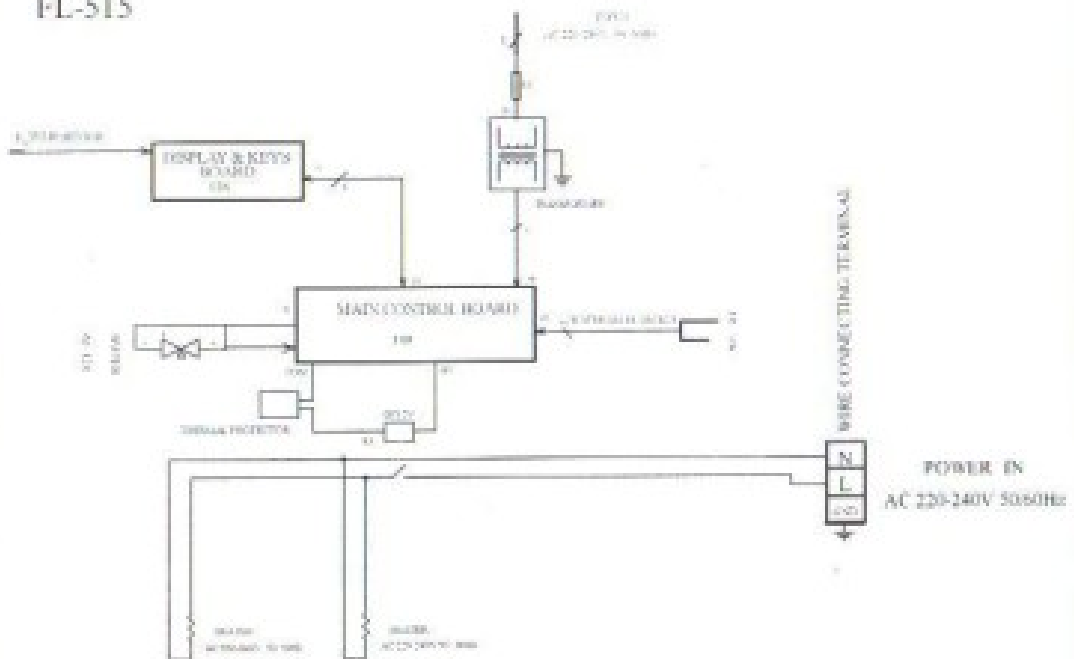
III. 10 FL-128c control panel



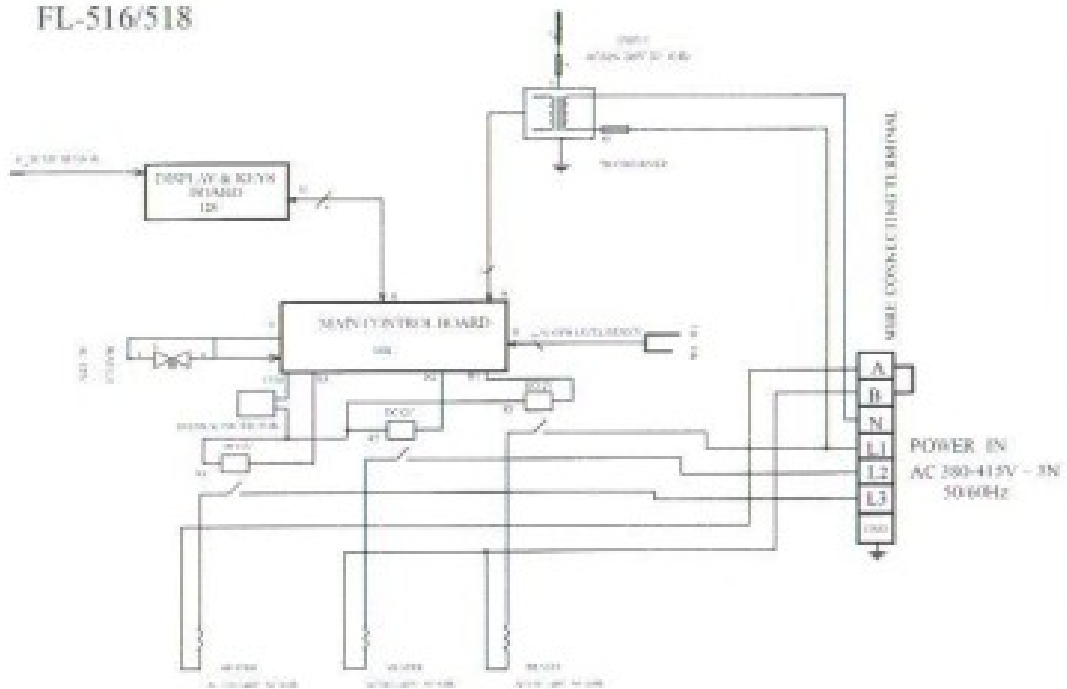
- ①. Display
- ②. Electrical power indicator
- ③. Stove switch on/ off indicator
- ④. Procedure switch on/ off
- ⑤. Stove switch on/ off
- ⑥. Time setting switch on/ off
- ⑦. Temperature setting switch on/ off
- ⑧/⑨ Adjusting button

III. 11 FL-128c ELECTRIC PRINCIPLE CHART OF CONTROL SYSTEM

FL-515



FL-516/518





1. Empty the reservoir of the steam generator

Turn on the drain valve, the reservoir of the steam generator will be emptied, about 1 minute, the draining has been finished. Then turn drain valve.

2. To switch on the power supply

Switch on the power supply, and the electric leakage protection also switch on. The display will show ":", and it will flicker ceaselessly. It means the power supply has been switch on.

3. To start-up the control procedure

Press the procedure switch (ON/OFF), the display will show "03:00", "03:00" means the default operating time of the system is 3 hours. It means the control procedure has been started up. At the same time, the steam generator will fill with water automatically, about 1 minute, the steam generator will be full of water. There after, along with the time passing, the display panel will the remaining working time of the system.

4. To start up the steam generator

Press the Stove switch (STEAM). Stove switch on/ off indicator ③ will be "ON". The steam generator will start working. About 5 minutes there will be steam coming out from the steam outlet. The display panel will show the remaining working time of the system, 00:×× and the current temperature in the steam room every 16 seconds alternately.

User can reset the system working time and the indoor temperature of the steam room according to their preference.

5. To set the system working time

Press the Time setting switch on/off (TIME) to turn on the Time setting switch, then press the Adjusting button (↑/↓) to set the working time you need. Press (↑) one time, the time will increase 10 minutes; Press (↓) one time, the time will reduce 1 minute.

The working time can be set between 0-12 hours.

6. To set the working temperature in the steam room

Press the Temperature setting switch on/off (TEMP) to turn on the Temperature setting switch. The display will show 45℃, it means the default (preestablish) temperature of the system in the steam room is 45℃. Then press the Adjusting button (↑/↓) to set the working temperature in the room you need. Press (↑) or (↓) one time, the Temperature will increase or reduce 1℃.

When the temperature in the steam room is high above the preestablished temperature, the system will switch off the power supply of the steam generator automatically to stop the steam coming out. Contrarily, if the temperature in the steam room is under the preestablished temperature, the system will switch on the power supply of the steam generator automatically, the steam generator will start working again.

The temperature can be set between 45°C-58°C.

Note: the temperature setting must be finished within 16 seconds after the temperature setting switch is turned on. Otherwise, the temperature setting switch must be pressed once again to reset.

7. To stop operating the system.

7.1 The system will stop operating and return to “stand by” state automatically when it reached the setting time.

7.2 Press Stove switch (STEAM/ SAUNA) to stop the operation when the system won't reach the setting time.

WARNING:

1. PERSON AFTER DRINK OR SUFFERING FROM HYPERTENSION OR HEART DISEASE IS STRICTLY FORBIDDEN TO STEAM BATH IN THIS STEAM ROOM.

2. CHILDREN SHOULD NOT USE STEAM BATH WITHOUT ADULT SUPERVISION

3. DO NOT TOUCH THE STEAM OUTLET. THIS WILL CAUSE SEVERE BURNS.

6. Electrical safety Principles

Our company has been tested through the ISO 9002 Quality Guarantee Authentication System, as well as the American, Australian ETL and the Western European GS Authentication. All the CALO products are strictly manufactured and tested according to the IEC international safety and quality standard. During the manufacturing process the quality of the products is effectively controlled and guaranteed, and meets the IEC international safety standard and quality requirement.

All the CALO product components are strictly selected in the factory to guarantee users' safety. FL series is a class "I" apparatus, therefore it must be securely installed and firmly connected to the main power and it must be earthed for further protection.

The electric circuit of connection and switch, connection devices must be in compliance with the IEC international safety standard, as well as the specific norms applied by each country.

1. The cross sectional area of the power lines in the electric connection should be compatible with the power of FL-5xx series steam generator and should be copper cable with rated voltage of 450/750V.

2. The switch and the junction box must be suitable for a voltage of 220/240-volt and should be compatible with the power of FL-5xx series steam generator and must be independently installed without sharing with other electrical appliances.

3. The switch and the junction box must be installed under electrical safety norms and in places beyond easy touch.

4. The switch and the junction box must be earthed.

All installation must be carried out by professionals to assure that the installation meet the safety requirement of international IEC and the relevant national standards.

CALO FL serial products decline any responsibility if:

1. Setting of electric circuit, switch connection and installation of junction box are not in accordance with the IEC international safety standard and the relevant national safety standards.

2. Installation and maintenance instructions in this manual are not strictly followed.

3. Electrical safety Principles is not carefully and strictly followed.

Any question you have, please contact the local dealer.

WARNING: THE SYSTEM MUST BE EARTHED.

7. Maintenance

1. To avoid unnecessary loss, check regularly the electric power lines, switches, and connections to see if they have been damaged by rats, insects or ants.
2. Check if the safety valve is available termly.
3. Keep the shower room clean and tidy; Clear hair and residue to avoid blockage.

8. Common malfunctions and solutions

For the convenience of the using and the maintenance of the shower room, we list out the following common problems and the methods of solving the problems.

Problems	Causes	Solutions
Electric leakage protective switch is off automatically.	Circuit connections damped or damaged.	Check whether the connections are damped or damaged; replace it or dry it.
Screen of the control panel does not display	A. Bad connection or disconnection of electric power supply; Plug loose of control panel and power controlling box; B. Circuitry board broken.	A. Check the plug connection of the control panel and the power controlling box, check the connection of the power supply and reconnect well; B. Replace the circuitry board.
Water leakage	Water pipe joint loosen or pipe break	Tighten the loose or renew the broken pipe

Note: All check and removal of obstacles must be carried out by professionals. Contact the dealer immediately when problems occur.



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