

# A-Tech SPA control system

Model: SPC-02

# Instruction

- Please read the instruction carefully before use.
- Please reserve this manual carefully.

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## Drawing 1 The way of change the filter cartridge



**Note** In order to filter up the water in the SPA more effectively, I suggest that you would clean the filter core once a week at least.

## Technical data(Continental 220-240v)

1. Input voltage: AC220V-240V 50A 50-60HZ

2. Input power: 11kw

3. Output Power:

Heater: 3kw

Water pump 1: 2-3HP

Water pump 2: 2-3HP

Water pump 3: 2-3HP

Circulation pump: 400W

Blower: 380W/750W

SPA light AC12V 20W

Ozone generator: 20W

4. Electricity resistant strength: 1.5KV/1mA

5. LEAK current:  $\leq 0.3\text{mA}$

6. Grounding resistance:  $\leq 0.1 \Omega$

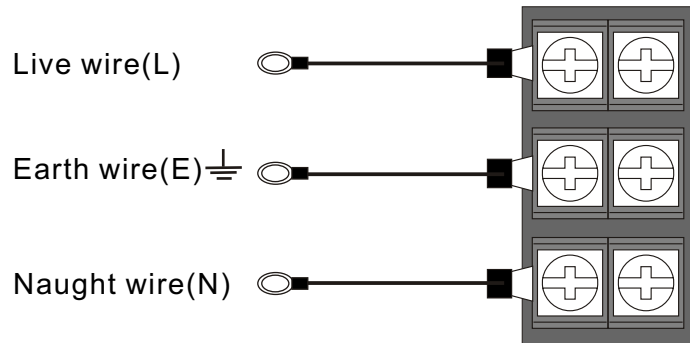
7. Insulated resistance:  $\geq 50\text{M} \Omega$

8. Waterproof grade: IPX4

9. Creepage strope current:  $\geq 30\text{Ma}$

## Wiring schematic drawing(Continental 220-240v)

220-240V single-phase three wire:




### Note:

This product should be installed by electrician who has the certificate, or we clear all the responsibility for connection mistake. Also, a creepage protection switch should be connected before installation, and checked at least once a month.


## Protect situation and prompt description

Statement	Description	Sign/Warning
Insufficiency of water	Heater and all pumps will be shut down.	
The temperature overheating 45°C/ 114°F	Heater stop working.	HEAT
Water temperature too low 5°C/41°F	Please run the system in winter pattern.	ICE
Connect wire broken	All power output will be shut, you must cut the power and checking the wire then connect wire.	LEAK (Leakage)
Heater broken	The heater damaged or not connect well.	LD F (Load Fail)
Circulation broken	Circulation pump damaged or not connect well.	CLDF
The circulation pump doesn't work	The water flowing of the filtration system is no good.	FHL
Working 7 days each time	Test and adjust the PH data in the SPA.	RPH
Working 7 days each time	Sterilize the water in the SPA.	RSA
Working 30 days each time	Clean the filtration.	RCL
Working 30 days each time	Checking GFCI working well or not.	RT9
Working 90 days each time	Change the water in the SPA.	RDR
Working 180 days each time	Clean the cover of the SPA.	RCO
Working 180 days each time	Clean the panel around the SPA.	RTR

## 10. Keyboard Lock

Pressing  button for 3 seconds, the LCD screen will show LOCK, the control is in lock station. Press same again then the LCD screen will show UNLOCK.

## 11. Clean function

Press  button the display will appear English word, three pumps and circulation pump and ozone will running in succession, the working time is CLE setting time (2 minutes to 10 minutes), the water pump button can not working in this period of time.

## Filtration (as drawing 1)

The filtration filtrate the water in the hot tub to clean the water. If the filter is clean and the filtration system working for 2 days but cannot clean the water, that means you should change the filter cartridge, so change the filter cartridge and take out the filter net and clean it (as drawing 1). Do not turn on the control system without filter cartridge and filter net, otherwise the pipes will be blocked....etc.

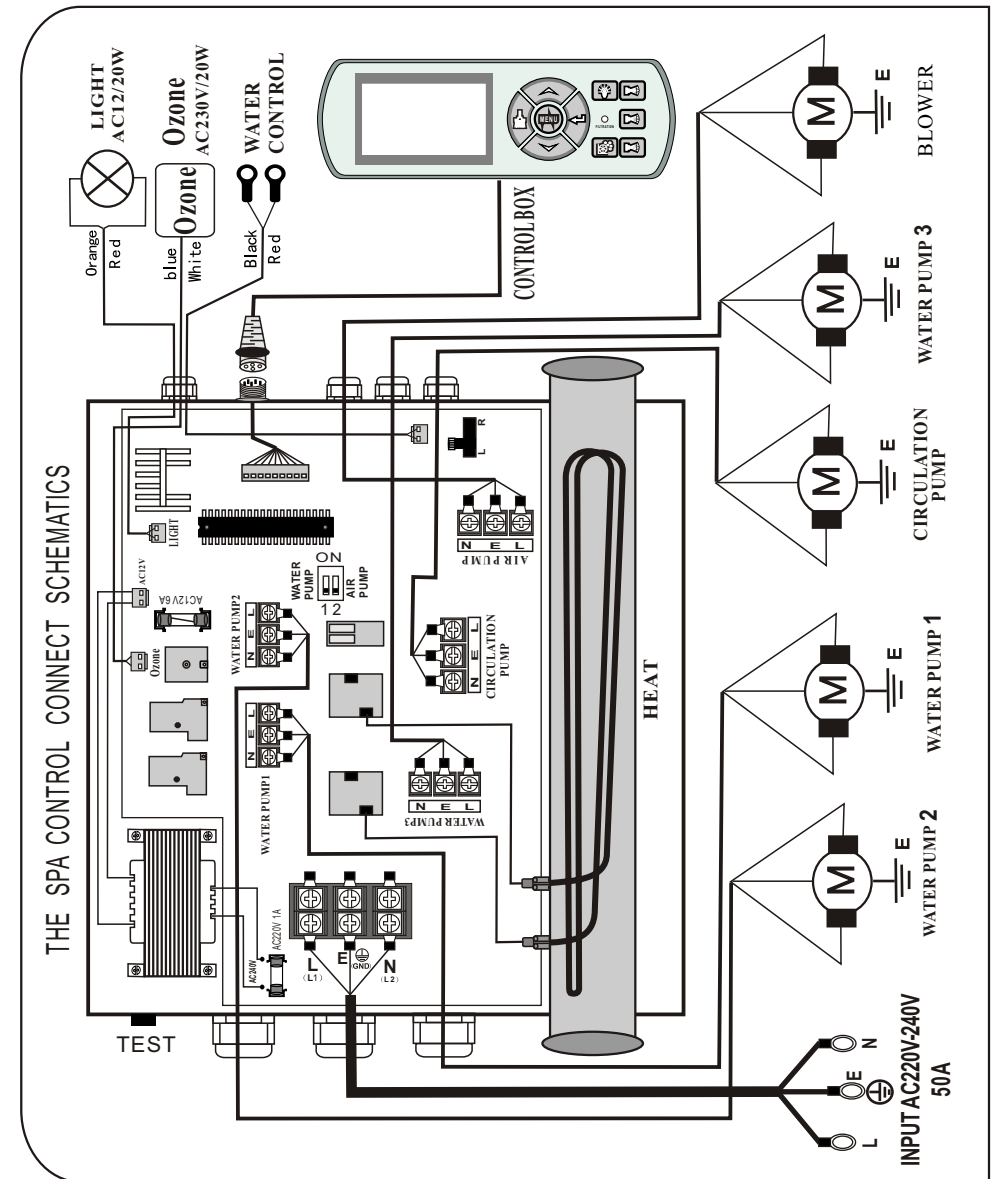
## SPA cover

The SPA cover is adopted by waterproof man-made leather and heat preservation foam, there have 8 pieces buckles at the side of SPA which with lock, the buckle code is "00", please close the cover and lock it in any position if there have water in the SPA. The first reason is more faster for the water to reach the setting temperature, the second reason is prevent children drowning....etc.

## Caution

Please move the cover completely before using the SPA, then test the water temperature by hand, lest a malaise because of the discrepancy between the temperature parameter and the actual temperature which cause by display mistake. Children should use SPA in the custody of adults.

## The drawing of control system connection (Continental 220-240v)




## Technical data(American 230-240v)


1. Input voltage:AC230V-240V 48A 60HZ
2. Input power:11kw
3. Output Power:
  - Heater: 3kw
  - Water pump 1: 2-3HP
  - Water pump 2: 2-3HP
  - Water pump 3: 2-3HP
  - Circulation pump: 400W
  - Blower: 380W/750W
  - SPA light AC12V 20W
  - Ozone generator: 20W
4. Electricity resistant strength:1.5KV/1mA
5. LEAK current: $\leq 0.3\text{mA}$
6. Grounding resistance: $\leq 0.1 \Omega$
7. Insulated resistance: $\geq 50\text{M} \Omega$
8. Waterproof grade:IPX4
9. Creepage strope current: $\geq 30\text{Ma}$

Setting program: Filter working time FP1: you may setting at the range of 15 minutes, 30 minutes,60 minutes,120 minutes.  
Frequency for filter working time(stop working time) FP2: you may setting at the range of 4 hours,6 hours,8 hours, 12 hours,24 hours.


For example: FP1 setting 30 minutes,FP2 setting 4 hours,it means the circulation pump will working 30 minutes after stop working for 4 hours.

**WARNING:** If the display shows (FHL), it means the filtration system is jammed and lead the water to be obstructed, the circulation pump and the heater will nor work any more, so please clean or exchange the filter, starting anew or pressing the  button and let the system restoring working ; specially in winter, if not clean the or exchange the filter in time , it will lead the water to icing and will mangle the spa.

### 6. Water pump function

The control system may control three pumps working at same time or working separately,press  button to turn on or turn off. The circulation pump will working at same time when turn on the water pump, the water pump will turn off automatically after working for 30 minutes, the circulation pump will continue to work then stop after 30 minutes. The water pump will not turn on when lack of water so to protect itself automatically. The water pump will working 2 minutes each hour by winter mode,in order to prevent the water in the tub ices up under the bad weather.

### 7. Blower function

Press  button to turn on or turn off the blower, it is not control by water level. It will turn off after working for 30 minutes automatically.


### 8. Ozone

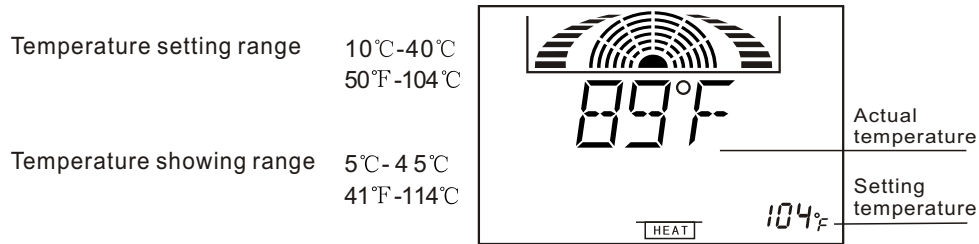
- A. The ozone generator runs during circulation pump working, the ozone generator will turn off during circulation pump stop working.
- B. The ozone generator will turn off during water pump working, When pumps run or just turn off the pumps in 1 hour the ozone generator will not work.

### 9. SPA light

Press  button to control it.

### 3. Setting the heater's working

The control system will test the water temperature automatically after turn on the SPA, the actual temperature will be shown on the LCD screen, the setting temperature will be shown on the under side of right side corner of screen. The heater will not working when the actual temperature is more higher or equal to the setting temperature, the circulation pump and ozone will enter the program of filter frequency mode. You can choice  button to set the setting temperature more higher than actual temperature if you want to finish the above situation. (For example the heater will begin to work when you set the temperature to the range of 31°C to 40°C if the actual temperature is 30°C), you may choice the opposite setting if you need heater finish working.



### 4. Heater working situation

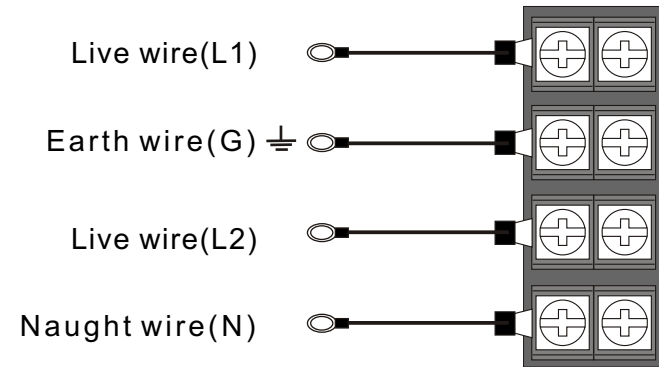
First of all, the water in hot tubs must be enough to the minimum, the control system will checking the water temperature automatically, if water temperature is lower than setting temperature, the circulation pump and ozone generation will start to work at same time, after 30 seconds heater also will start to work, when the water temperature reach to the setting temperature, the heater will stop working, the control system will keep the temperature, if water temperature 2 Celsius degree or 2 Fahrenheit degree lower than setting temperature, circulation pump and ozone generation will start to work again and after 30 seconds heater will working too. Such a cycle can keep the water always warm.

### 5. Circulation pump working mode when keeping the temperature situation(Frequency for filter working)

The circulation pump and ozone will working by setting mode if the control system keeping temperature for a long time, to keep the water clean.

### Wiring schematic drawing(American 230-240v)

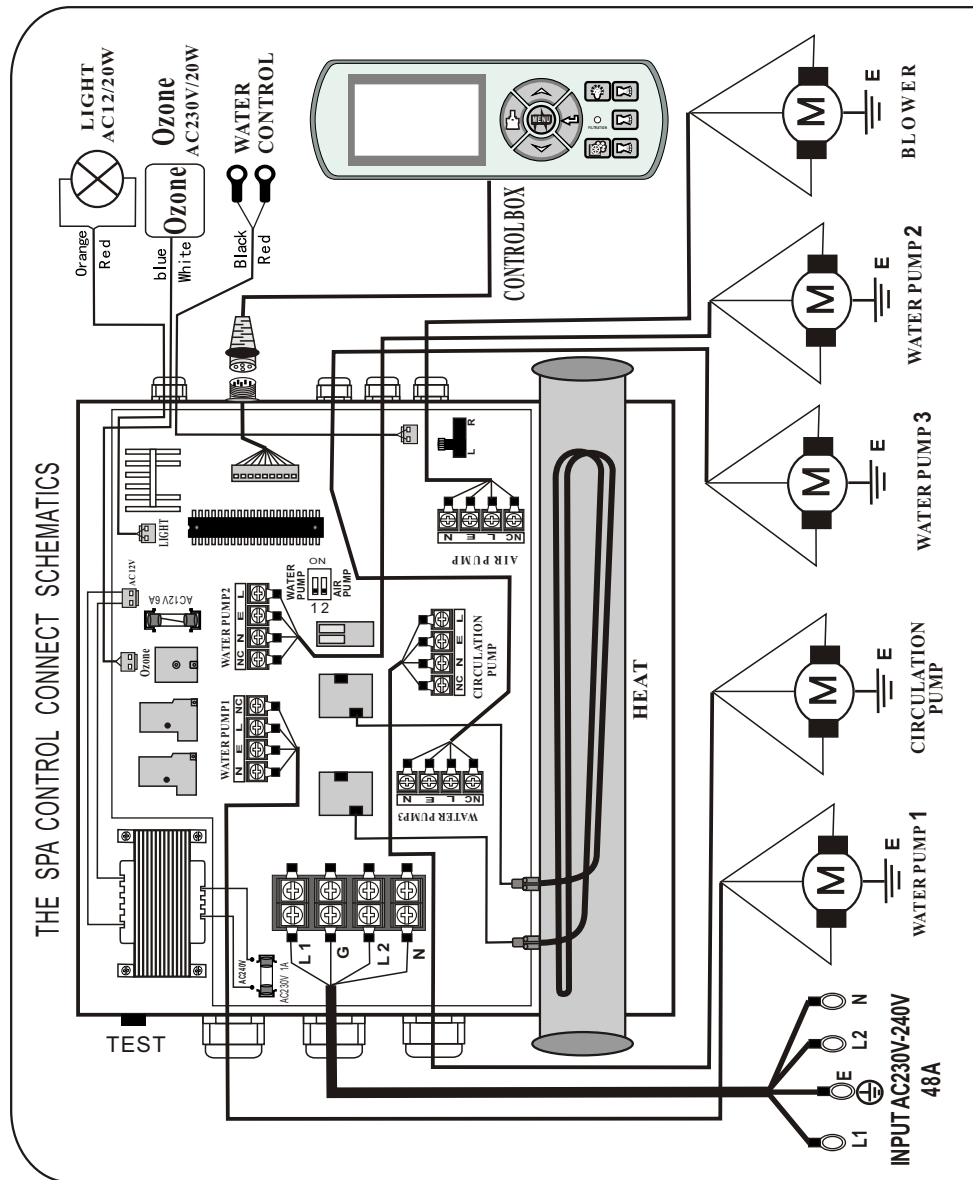
230-240V twain-phase four wire:



#### Note:

This product should be installed by electrician who has the certificate, or we clear all the responsibility for connection mistake. Also, a creepage protection switch should be connected before installation, and checked at least once a month.

## The drawing of control system connection (American 230-240v)



(7). Finished sleeping time setting



Press or to choice sleeping finish time at the range of 1 hour to 24 hours. 7:00 finish sleeping

When the beginning and ending time of dormancy is at the same time, the system is no dormancy. Within the dormancy time, if the water temperature of the spa drops to 5°C, the system will force to working, and at this time, the circulation pump and the heater will work until the water temperature reach to 8°C, in order to avoid the water icing.

(8). Winter mode setting



Press or to choice ON or OF, ON means turn on, OF means turn off, press button to confirm.

(9). Revise the error of temperature



Press or to revise the emperature at the range of ±1°C to 3°C, press SET button to confirm.

For example: when the actual water temperature is 30°C, but the temperature show on the display screen is 33°C, choice "" button setting "-3" then press SET button so can modify it to 30°C.

(10). Turn to the original setting from factory



Press or to choice ON, then press SET button turn to the original data.

### Original setting data from factory

Unit of temperature---Fahrenheit (°F)

Temperature setting---100°F (38°C)

Winter mode---turn off(OF)

Filter working time(FP1)---15 minutes

Frequency for filter working time---(FP2)---4 hours

Clean time(CLE)---5 minutes

Begin for sleeping time (SIL)---21:00

Finished sleeping time(SILD)---7:00

Grade of revising the error of temperature(CALB)---0

(11). Quit the menu








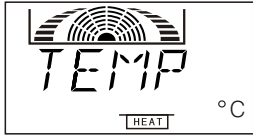



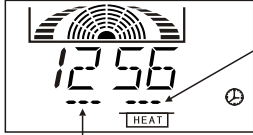



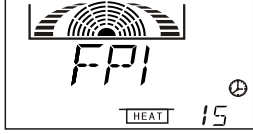














Press button to quit the menu.

Note: If you do not proceed next step in 15 seconds the control system will back to the state which you had set before.



## 2.MENU setting

When press  button the corner of right side on screen will show OF sign, then press  or  the OF sign will be changed to ON sign, then press  button to confirm in MENU setting, If you do not proceed next step in 15 seconds the control system will back to the state which you had set before. You may setting the below functions after setting the MENU, each function need to press  button to confirm your setting.

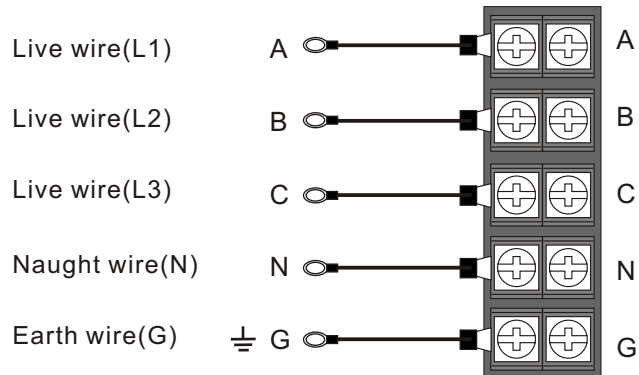
- (1). °F/°C  Press  or  to choice which sign you need then press  button to confirm.
- (2). Time setting  Press  choice minute.  
Press  choice hour.  
Press  button to confirm.
- (3). Programming filter frequency Fp1  Filter working time (minute) Fp1  
Press  /  button to choice 15 minutes, 30 minutes, 160 minutes, 120 minutes, press  button to confirm.
- (4). Programming filter frequency Fp2  Press  or  to choice the clean time at the range of 2 minutes to 10 minutes, press  button to confirm.
- (5). Clean time setting  Press  or  to choice the clean time at the range of 2 minutes to 10 minutes, press  button to confirm.
- (6). Begin for sleeping time setting  Press  or  to choice sleeping time begin at the range of 1 hour to 24 hours. 21:00 begin to sleep.

## Technical data(Continental 380v)

- 1.Input voltage:AC380V 48A 50-60HZ
- 2.Input power:11kw
- 3.Output Power:
  - Heater: AC220V 3kw
  - Water pump 1: AC220V 2-3HP
  - Water pump 2: AC220V 2-3HP
  - Water pump 3: AC220V 2-3HP
  - Circulation pump: AC220V 400W
  - Blower: AC220V 380W/750W
  - SPA light: AC12V 20W
  - Ozone generator: AC220V 20W
- 4.Electricity resistant strength:1.5KV/1mA
- 5.LEAK current:≤0.3mA
- 6.Grounding resistance:≤0.1 Ω
- 7.Insulated resistance:≥50M Ω
- 8.Waterproof grade:IPX4
- 9.Creepage strope current:≥30Ma

## Wiring schematic drawing(Continental 380v)

380V three - phase five wire:

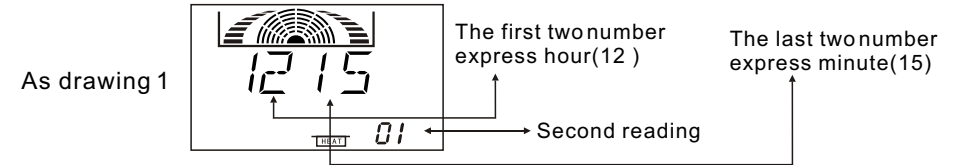


**Note:**  
This product should be installed by electrician who has the certificate, or we clear all the responsibility for connection mistake. Also, a creepage protection switch should be connected before installation, and checked at least once a month.

## Operation instruction

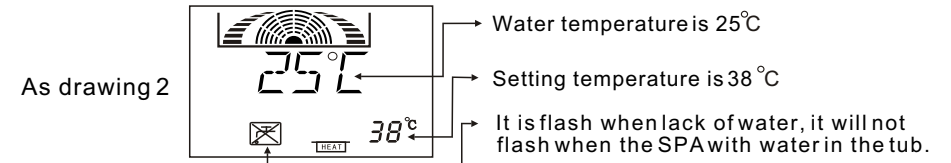
### 1.To provide with electric power

1.When the power connects to the electricity, the control system will startup immediately and showing the time, as drawing 1 : showing 12:15.

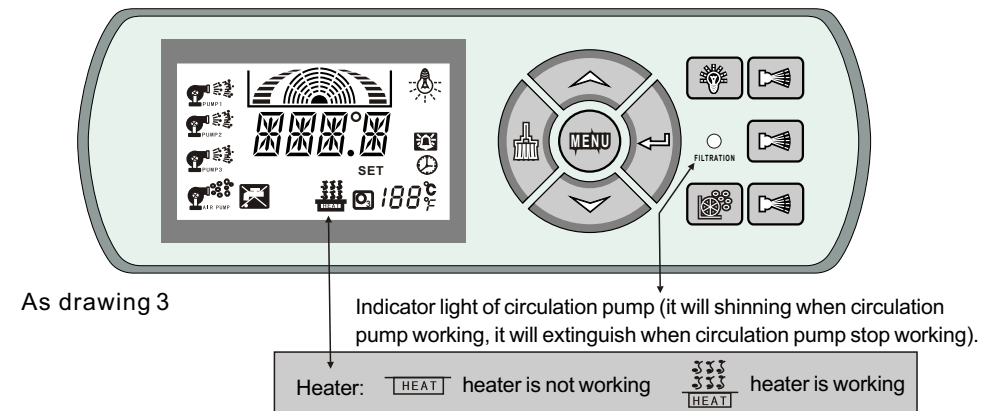


**Note:**You can press the **MENU** to adjust the error if you find the showing time is not same as actual temperature, otherwise will effect the veracity of sleeping time, the time will turn to the original setting from factory if you do not use it for a long time.

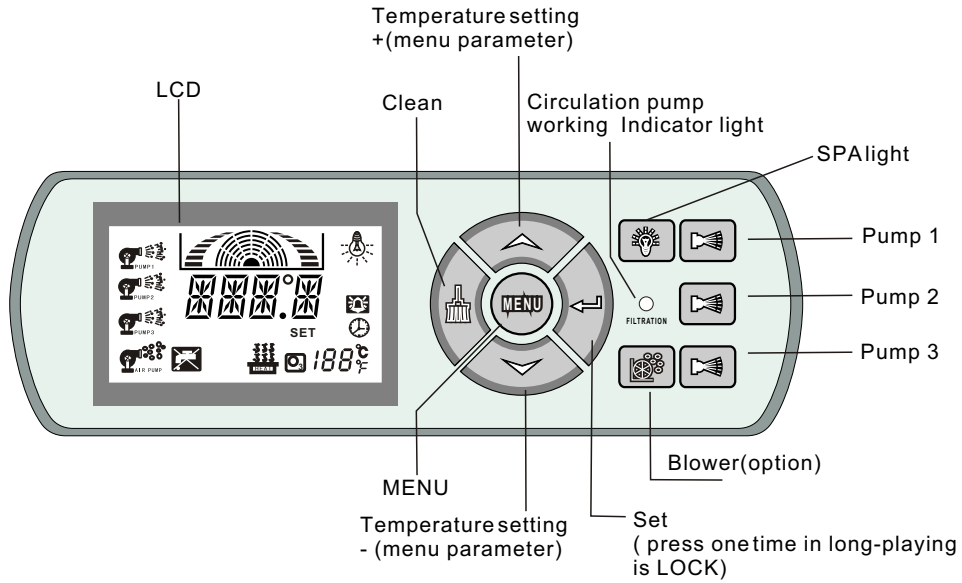
2.The system will checking the water temperature and water level automatically after time display.(as drawing 2)



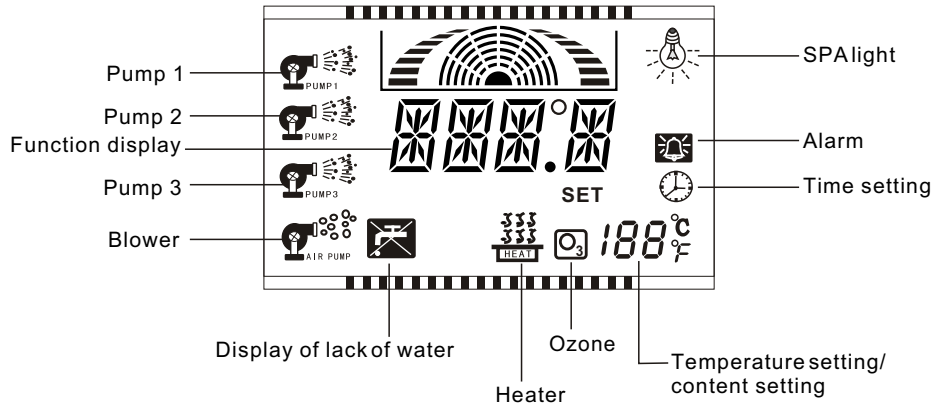
3.The indicator light which is on the control panel will shinning when circulation pump working. The heater will stop working if heat the water until the setting temperature, the circulation pump will stop working after working for 7 seconds then keep the temperature. If the water temperature is 2°C lower than setting temperature, the heater will begin to work (as drawing 3).



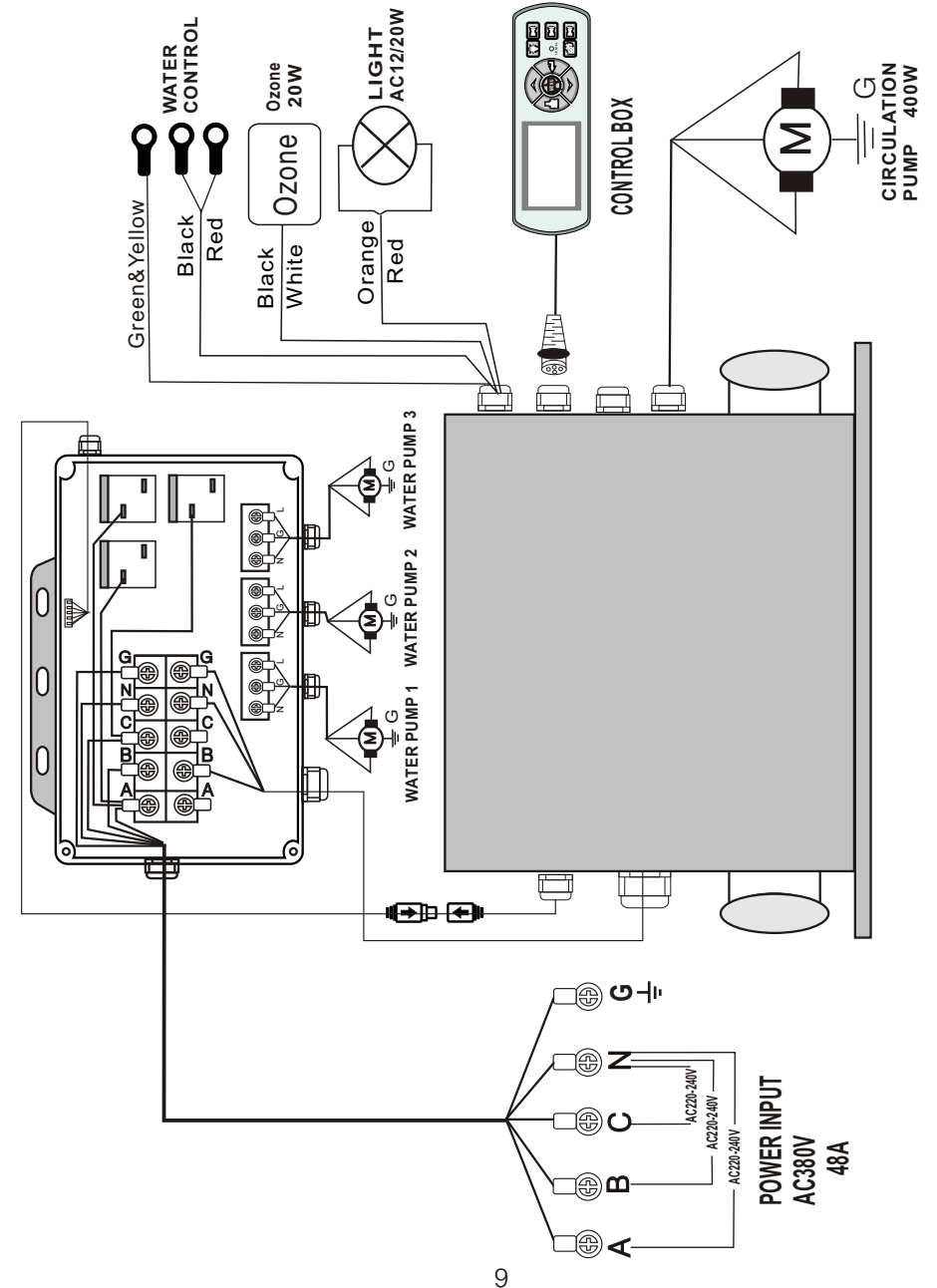
## Panel function instruction



## Display Screen function



## The drawing of control system connection (Continental 380v)



## Preparation before use

1. Choose a flat, hard place which can undergo 800KG per square meter to put the spa. Don't put the spa on unflat surface to avoid spa distortion.
2. Technical staff is needed to install the electricity line. Please reference the manual before assemble it. A leakage protection switch is needed before connecting the spa to power and take into account that the electricity line and leakage protection switch is strong enough and the spa is grounding protection. Make sure that there's a disconnect switch between spa and other connection to meet three overvoltage rating. (Contact range is more than 3mm)
3. Assemble the filter core according to the manual, and install other fittings.
4. There's a red valve inside the control box, please turn it off before pour into water and get the fittings beside the valve. To avoid pests go into the pipe please assemble the cover to the drainage. The joint is used for drainage, remove the cover when drainage, one side of the joint is connected to drainage, the other one is connected to a water pipe which is at least 5 meters long to avoid aquosity around the spa.
5. Get the lock from the fittings, and assemble them according to manual.
6. Pour water into spa till the water level line, then connect the power and operate the spa. Reference the manual to choose which mode you like then you can enjoy the spa.

## Caution

1. The temperature of water poured into spa can't be above 40°C, and it should be neutral liquid, any . strong acid or alkaline liquid is forbidden.
2. Don't knock the shell of spa with hard objects. Use soft cloth to clean the surface of spa, And light acid after tepefaction (such as: lemon juice, vinegar) to clean the furring.

3. Please test the water PH value every 7 days, keep the PH value between 7.35 and 7.45 with some chemicals and also disinfection, please clean the filter core and suction net at the same time. Check the leakage protection switches every month. Normally the water is changed every 3 months, or change it according to the water quality.
4. Remove the cover of spa before use, test the water temperature with hand before going into spa. Children should be accompanied by adults when using a spa. Cover the cover and lock it when not use a spa to prevent children drowning or the spa exposure to the sun. Someone who has heart disease, mobility as well as the elderly, pregnant women should take care when using a spa to avoid drowning case.
5. Please don't turn off the power in winter to prevent water freezing in the spa. If the water will be freezing, it's advised to drain out all the water when out of electricity for a long time.
6. If there's something abnormal when using, please stop using at once and contact the technical staff to check. Please don't open the control box if not technical staff to prevent electrocution.