

POOL HEATER INSTRUCTIONS

Executive Standard: GB4F06.31—2008

Model

0322011ST	Single Phase	0338018ST	Single/Three Phase
0338024ST	Single/Three Phase	033804±ST	Single/Three Phase

Installation Operation Maintenance



WARNING!

The installation and maintenance of this equipment must be completed by professionals, and private modification or wrong maintenance is not covered by the warranty. The installation must comply with the instructions in this manual and the current local plumbing and electrical regulations.

Chapter 1 Introduction

This manual provides the installation process, operation and maintenance guide and parts list of pool heater. The pool heat is the most advanced high-quality heating system, efficient, environmentally friendly, with various sizes. Optional, or depending on the pool. In order to ensure the service life of the machine, the pool heater should be in accordance with this standard. The manual instructs careful installation, otherwise the machine itself and its connected swimming pool equipment will be damaged. The heater must be installed and maintained by professionals. Of course, the local plumbing and electrician regulations must be followed first.

1. Introduction of heater

The heater comprises a water tank with a shell, a heating pipe and a control system. In order to facilitate customer maintenance, this manual is attached with a brief introduction of the components and operation of the equipment.

Stainless steel water tank and its shell are the main mechanical parts of heater. The stainless steel water tank connected with the water flow switch or heating pipe is the only part of the thermostat in contact with water. The shell is a steel plate, which completely encloses the stainless steel water tank and electrical components. The shell is antirust paint type.

The circuit system is the heart of the equipment, which can be regarded as three independent systems to make full use of energy:

- (1) Heating pipe: it is installed on the pipe thread at the end of stainless steel water tank. The contact surface between the heating tube and the stainless steel liner is sealed with a rubber ring. There are 1, 2, 3, 4, 5 or 6 heating tubes.
- (2) Control system: including temperature controller, water switch, AC contactor. These control components are connected with a voltage of 220 V to control the water temperature flowing through the thermostat. Once the temperature exceeds the limit, the temperature controller will automatically cut off the circuit. The built-in water flow switch can prevent the heating pipe from working without water. The water flow switch with a flow rate of 20gpm or above is activated. The temperature controller of the thermostat is adjustable at 85 °C and the maximum temperature limit can be set at 85 °C.

Chapter 2 Installation

1. Installation position

The pool heater is quiet and has no waste gas. It can be installed in the shed or cellar. In general, pool heater should be located close to the filtration system. It should be installed in a place close to the power access terminal and without frequent management. Proposal Clearance: right 24", left 24", top 42", back 12", front 36".

2. Installation of water pipe device

Connect the tube to the inlet and outlet on the right side of the heater as shown in Figure 1. Connect the heater between the filter drain and the pool. The water pipe from the filter should be connected to the inlet of the heater, and the drainage pipe of the swimming pool should be connected to the outlet. Otherwise, the pool cannot be heated properly. If plastic pipe fittings are used, the heat resistance shall not be lower than 120 °C.

No branch pipe is required around the pool heater unless the flow rate through the thermostat exceeds 80gpm. The minimum flow rate is 20gpm. If the flow rate is insufficient, the heater cannot be started.

In larger Olympic or public swimming pools, two or more heaters can be used if necessary. In this case, the heaters should be placed in parallel so that the water flow of each heater is equal.

3. Installation of power supply

- (1) Check whether the voltage on the nameplate of the heater is consistent with your voltage.
- (2) Check whether the wire connection of all components in the machine is loose, which may be caused by transportation and handling.
- (3) Check the components for moisture and rust; Dust may accumulate during transportation, please clean or dry if necessary.

All other internal connections are completed and tested at the factory. For correct wire and conduit size and other local requirements, please refer to local electrical regulations.

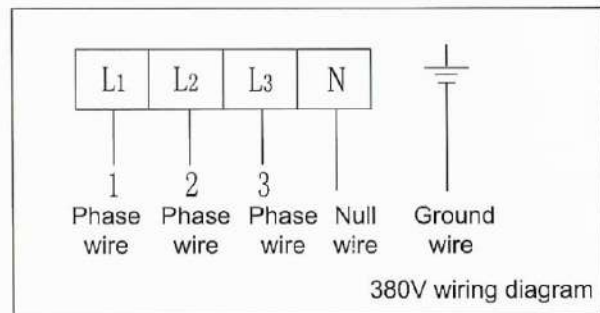
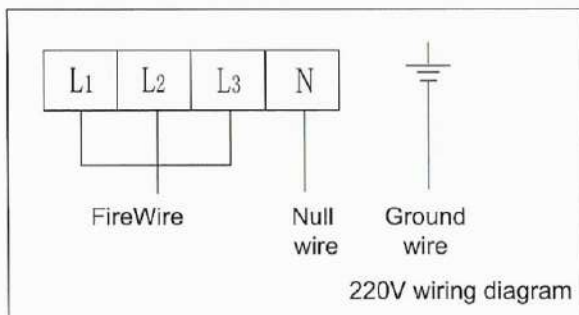
Do not connect the heater to a voltage circuit different from that shown on the nameplate.

Pull out 125% of the rated power of the heater from the terminal block. Connect the power supply to the power input wiring block in the heater.

The ground wire must be insulated copper wire with the same diameter as the power wire. Not less than 12#AWG.

1) Installation of power supply

The heater is connected to the power supply, see the wiring diagram. Each set must be equipped with leakage protection switch.



2) Start the program

1. Ensure that the water pump is turned on and at least 20gpm of water flows through the heater; Otherwise, the heating tube will not work.
2. Turn on the leakage switch and turn on the power.
3. Turn on the heater.

When the pool is closed, cut off the main power supply and drain the water from the heater tank regardless of the time. Do not allow water to freeze in the heater tank as this can cause serious damage.

Chapter 3 Maintenance

1. Inspection and replacement of heating pipe

- A. Turn off the power, turn off the water.
- B. Drain the pool thermostat.
- C. Open the left end maintenance board
- D. Disconnect the wiring of the heating pipe.
- E. Screw off the lock nuts of the four heating pipes and pull out the heating pipes.
- F. Please replace the washer from 5 to 1 according to the above steps.

2. Semi-manual cleaning

The sludge deposited in the cylinder is the biggest factor causing the damage of the heating pipe. Twice a year (summer and winter), the pool heater should be drained, and the scale and sludge should be thoroughly cleaned. If there is sediment or any other substance in the pool.

- A. Turn off the heater
- B. Open the drain valve
- C. Rinse with water until clean
- D. Close the valve and restart

Protect your heater with an appropriate disinfectant;

Proper water quality balance is very important to prolong the service life of your heater. When pH value must be controlled, calcium hardness must be controlled to prevent scaling and corrosion.

Damaging Machine	Acidity							Neutral	Alkalinity							Damaging Machine
	0	1	2	3	4	5	6	7	7.2-7.8	8	9	10	11	12	13	14

The standards of disinfectant, pH value, total alkalinity and calcium hardness vary with the type of swimming pool and water quality. The water quality is unbalanced. Is not covered by the warranty.

Remarks:

This heater is not equipped with pressure reducing valve and is not required by UL standard 1261. Do not install valves in swimming pools or bathtubs and heaters. According to the UL standard revised in 1983, it can be equipped with inspection valve.

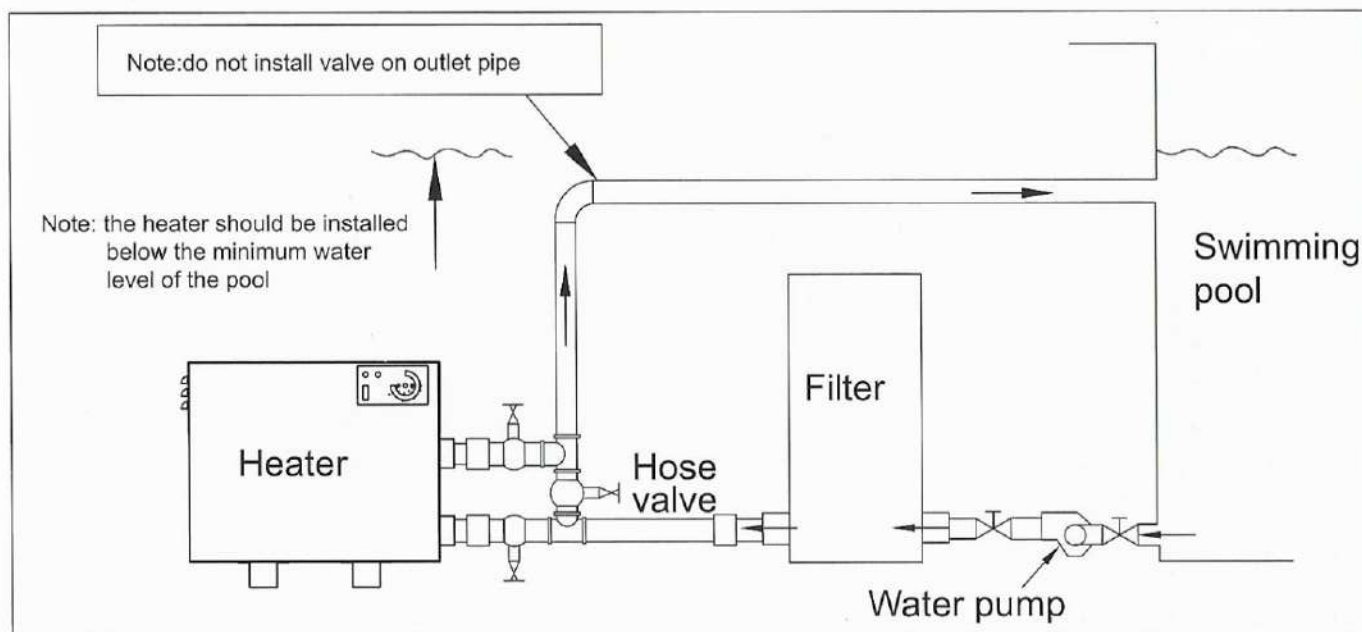
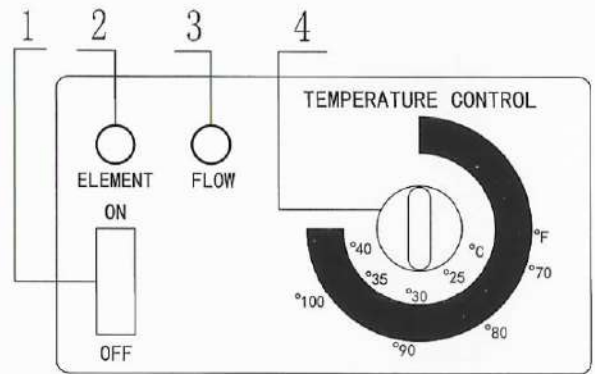


Figure 1: installation diagram of heater

Operation of rotary knob heater

1. When the water and electricity are connected, it must be retested.
2. Close the water valve and turn on the main power. Element will light up on the heater.
3. Turn on the temperature controller, the left and right indicator lights are on, and then the knob temperature controller is between 30 °C and 65 °C. When the flow light is on, it means that the heating is completed.

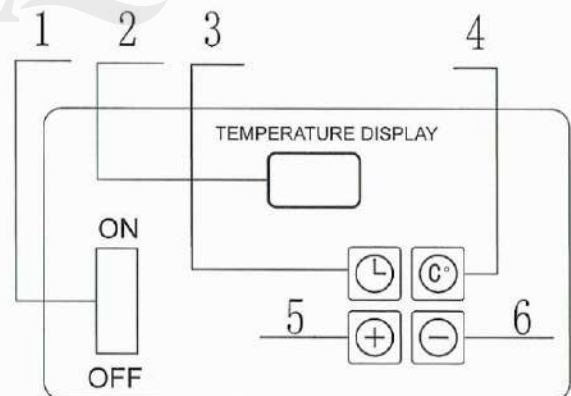


Rotary knob heater panel

- 1:power switch
- 2:power light
- 3:temperature controller light
- 4:temperature controller

Operation of digital heater

1. Water and electricity must also be tested.
2. Press "on" on the power switch to turn on the machine, and the internal temperature of the machine will be displayed on the screen quickly.
3. If you want to adjust the water temperature, press "4" first, Press "5" to raise the temperature, press "6" to lower the temperature, and the temperature range is 30 °C - 65 °C.
4. For time control, press "3", press "5" to add time, and press "6" to subtract time Time range (1-15 hours)



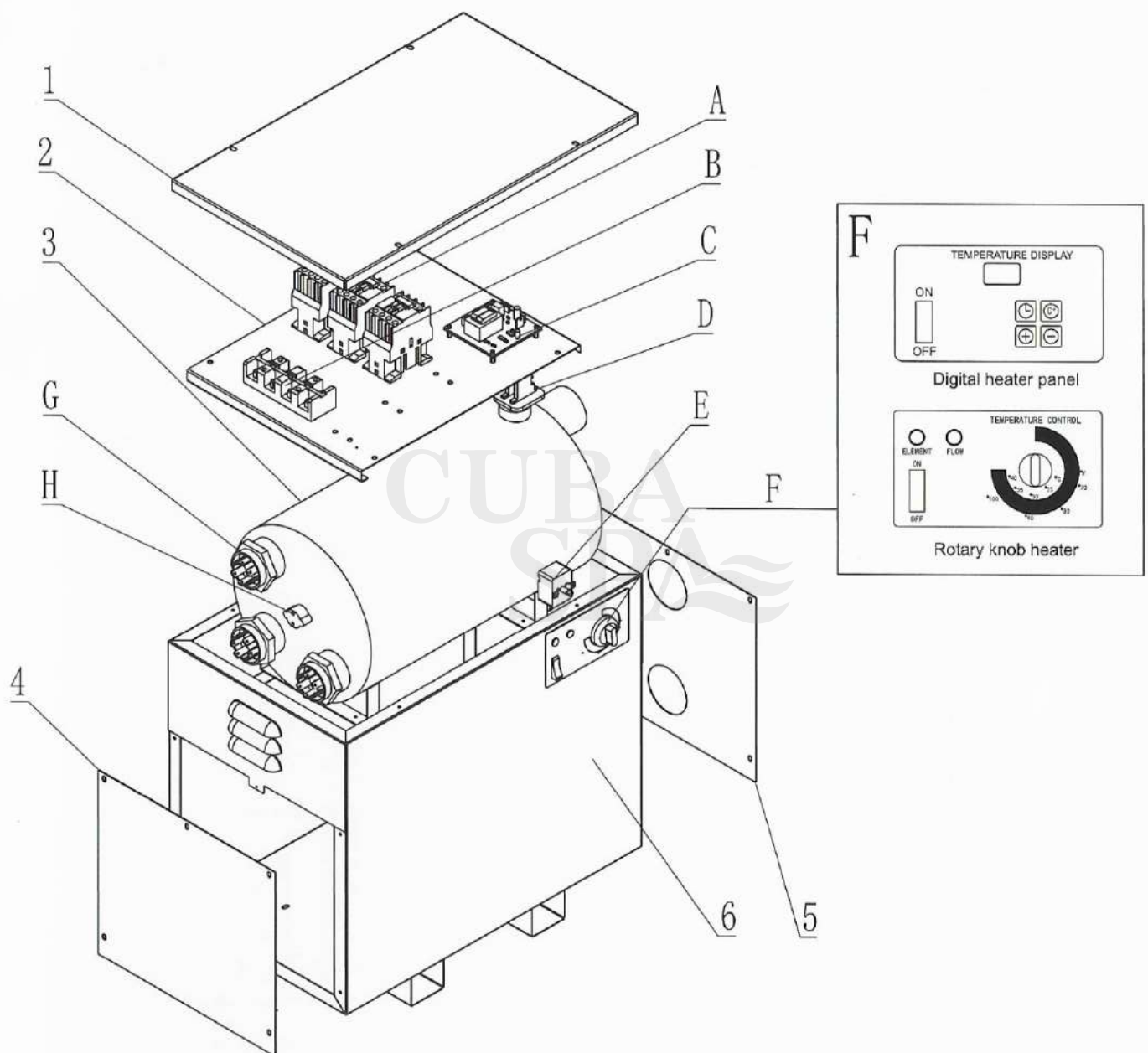
Digital heater panel

- 1:power switch
- 2:display
- 3:time control button
- 4:temperature control button
- 5:plus
- 6:minus

Demand

1. Voltage: AC voltage: 220 V / 380 V AC;
2. Frequency: 50 Hz / 60 Hz;
3. Current: refer to the ammeter on the nameplate;
4. Power switch: high quality three-phase four wire. Active power filter, four pole leakage switch, two-phase leakage switch;
5. Heater: connect the ground wire safely.

Structure chart of heater



Mechanical Part

- 1、 cover
- 2、 wiring board
- 3、 inner bladder
- 4、 rear seal plate
- 5、 front seal plate
- 6、 Shell

Electrical Part

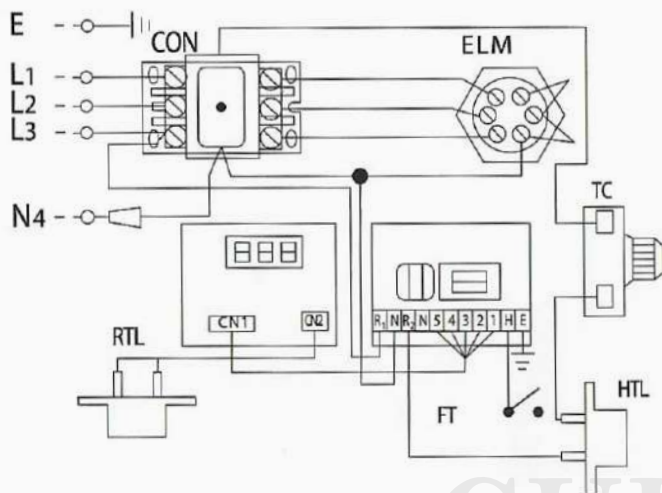
- A、 a.c. contactor
- B、 power supply board
- C、 circuit board
- D、 water flow switch
- E、 temperature controller
- F、 panel

- G、 heating pipe
- H、 temperature sensor

Circuit diagram

Power supply

Single phase 220V/Three phase 380V

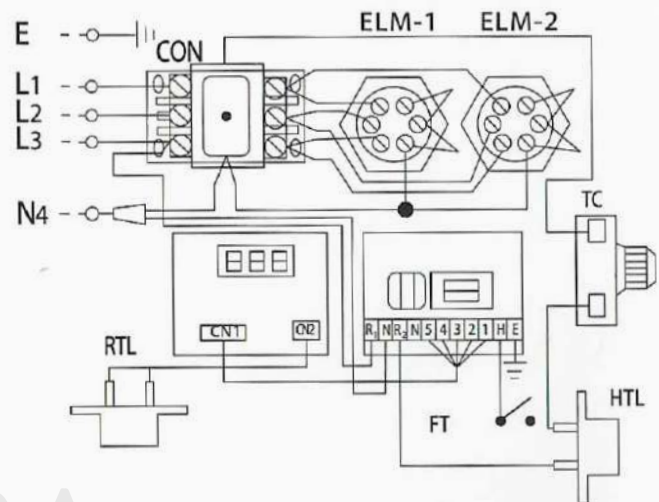


Single tube heater

Figure 2A,circuit diagram

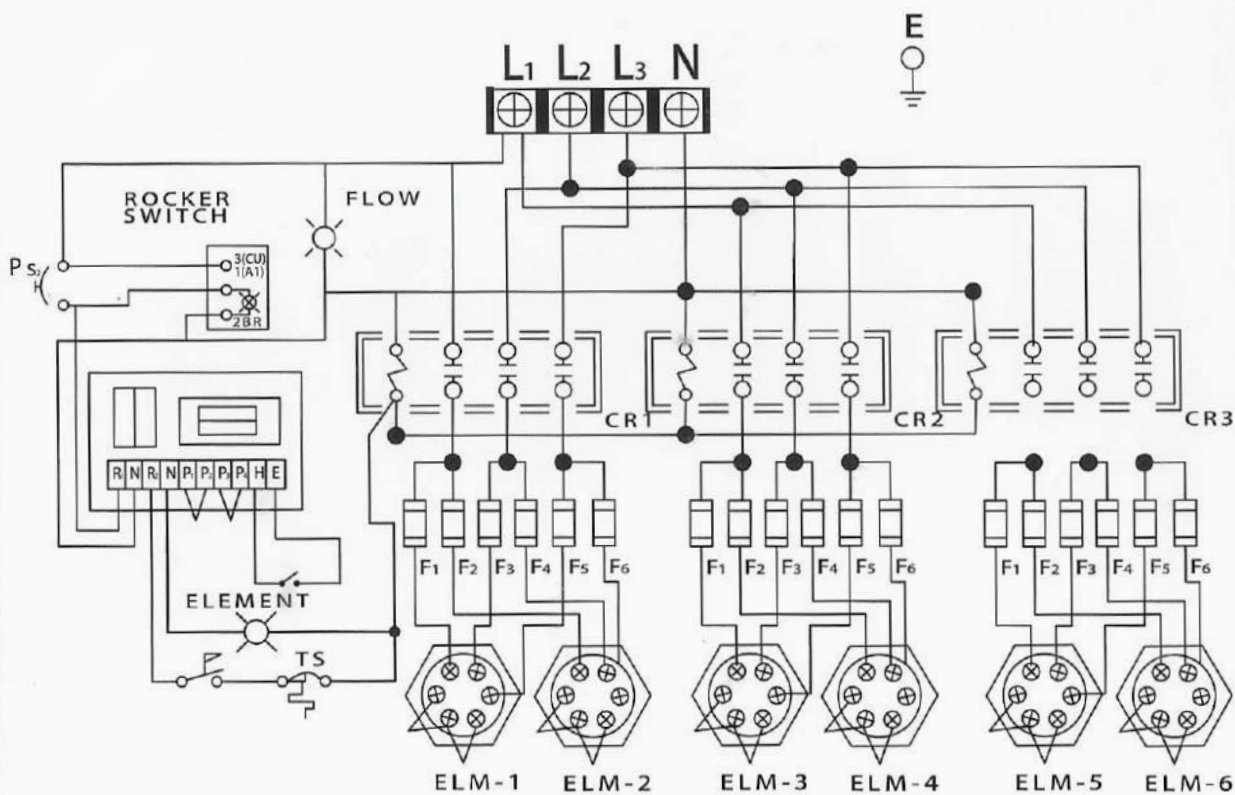
Power supply

Single phase 220V/Three phase 380V



Double tubes heater

Figure 2B,circuit diagram



Medium/Big heater circuit diagram

18Kw-60Kw
Three-phase power
18Kw,24Kw,30Kw,32Kw,36Kw,
40Kw,42Kw,45Kw,54Kw,60Kw
@380/415V