

# WATER-HEATED PARKING HEATER

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**QUICK  
GUIDANCE**  
GENERAL MANUAL FOR  
INSTALLATION  
MAINTENANCE & FAILURE

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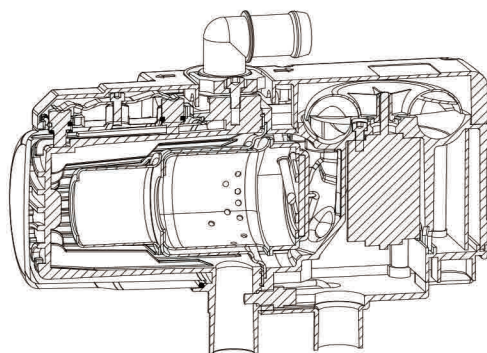
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## PREFACE

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Thank you for choosing our water-heated parking heater, which is a wisdom and correct choice. We sincerely hope that our company's products can bring convenience and warmth to you and your car!

Even though you are not very familiar with this type of water-heated parking heater, it has been popularized and used in Europe for many years. Therefore, please feel free to use it. Moreover, this type of heater has become standard equipment of many other luxury brands such as Land Rover, Mercedes-Benz, BMW and Audi and selection of some imported cars. Most importantly, it can reduce wear of vehicle's cold starting on engine and reduce fuel consumption of hot car after cold starting in winter, which can not only save your time and fuel, but also make warm along with your car without garage and environmental restrictions. It will change your car life in winter!



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## WARNING

Installation, repairing, maintenance of this heater requires professional knowledge and specialized tools. Wrong setting, installation, repairing, and maintenance may cause damage to machine or accident.

Parking heaters are prohibited to start around gas stations, oil depots, and places where flammable gases or dust may be shaped and where flammable liquids or flammable solid materials accumulate (such as places nearby fuel, coal, sawdust, barn, hay and leaves, cardboard, and paper, etc.). In addition, please do not activate the heater even if use timer and remote control in a confined space (such as garage).

—After parking heater is installed, bleed screw must be loosened and gas be discharged before the first heating. It is strictly prohibited to heat without water.

—It must maintain optimal performance whether you use it or not. The authorized dealers need to check and maintain the heating system at least once every two years.

—The heater can only be operated with fuel specified on the nameplate and the indicated rated voltage. If the heater has smoking, abnormal burning sound or fuel odor, please turn off it immediately to stop the heater and drain out fuel. It can only be used again after inspection by professional before heating again.

—The heater is required to operate for at least ten minutes in cold engine and minimum blast at least once a year.

—Please turn off the heater before cleaning. Do not use high-pressure cleaning system or compressed air for cleaning

We believe that professionals of service stations or service outlets who responsible for heater installation have already introduced principles and operation methods of this new heater to you. In this operation manual, we will once again point out general conditions and precautions on how to safely use the heater. In order to understand and learn more about functions of this heating device, please be sure to read the instruction carefully. Please contact your authorized dealer immediately to get a new operating instruction if lost.

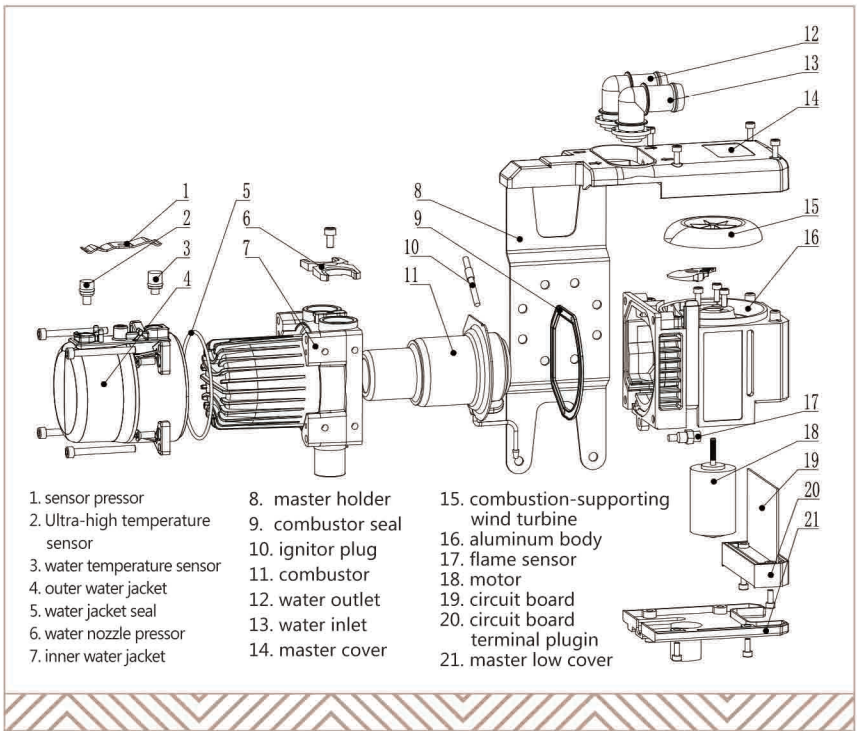
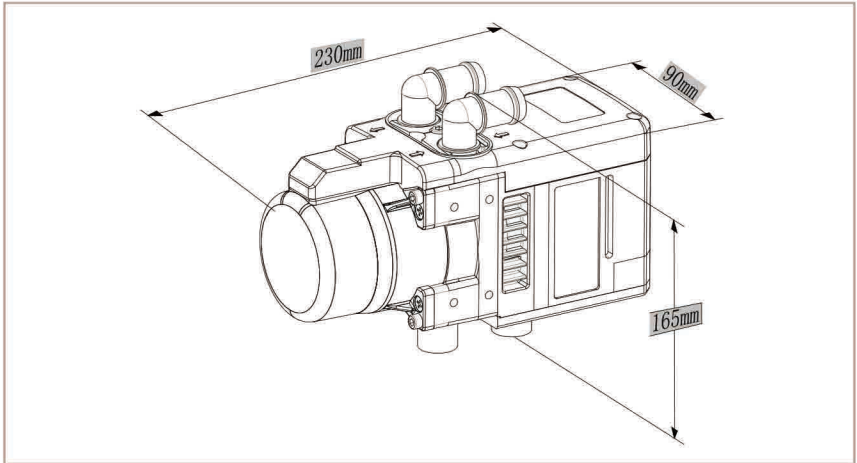
## I . Overview

Powered by vehicle-mounted battery with vehicle fuel, the water-heated parking heater is a device for circulating heating of vehicle engine and water circulation system of vehicle. With function of manual start, timed start, remote start and mobile remote start, it can be flexibly adapted to different heating needs. The heater can be operated stably in the environment above  $-40^{\circ}\text{C}$  on the basis of adding fuel in season.

## II . Main technical parameters and applicable areas

### Main technical parameters of the heater

|                           |   |   |   |
|---------------------------|---|---|---|
| Model                     | 5KW   | 12KW  | 12KW  |
| Rated heat flow           | 5KW   | 12KW  | 12KW  |
| Fuel required             | gasoline/diesel   | diesel  | diesel  |
| Fuel consumption          | 0.55L/H   | 12L/H   | 1.2L/H  |
| Rated voltage             | 12V   | 12V   | 24V   |
| Working voltage           | 9V-16v  | 9V-16v  | 18V-32v   |
| Power consumption         | Power consumption $\leq$ 39W  | Power consumption $\leq$ 78W  | Power consumption $\leq$ 78W  |
| Weight                    | 2.3Kg $\pm$ 0.5   | 5.87Kg $\pm$ 0.5  | 5.87Kg $\pm$ 0.5  |
| Dimensions                | 230*90*165  | 360*125*180   | 360*125*180   |
| Remote control distance   | 800m  | 800m  | 800m  |
| Applicable vehicle models | Water circulation system for small family cars, SUV series cars, pickup trucks, agricultural vehicles and minibus | Water circulation system for agricultural vehicles, minibus, large passenger cars, large freight cars, engineering vehicles and caravans. | Water circulation system for agricultural vehicles, minibus, large passenger cars, large freight cars, engineering vehicles and caravans. |



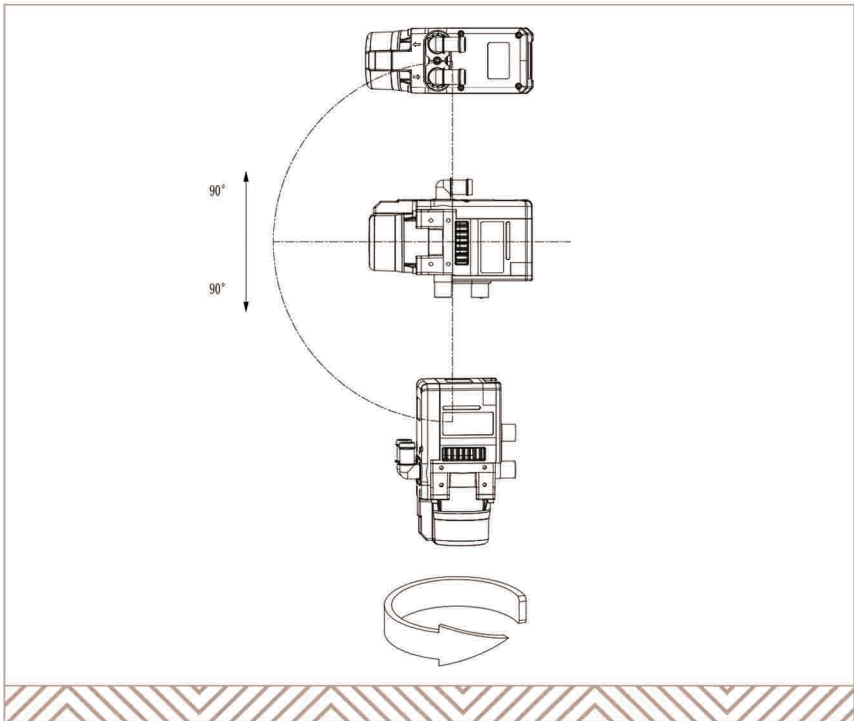
### III. Working principle of parking heater

Without external power, parking heater can achieve effect of hot car in winter when the vehicle is not started. Independent water pump and oil pump of the product are installed in series between engine and water tank of warm-air machine. With power taking from vehicle battery, oil pump extracts a small amount of fuel from the original vehicle's oil tank and sends to combustor for igniting by ignitor plug through computer control. Heat exchange system of the heater heats antifreeze and circulates it to engine, making temperature of engine and vehicle warm-air machine gradually rises. The heater will stop automatically when water temperature reaches 78 °C.

This heater can be used in combination with heating equipment provided in the vehicle itself. There are no conflicts among equipment.

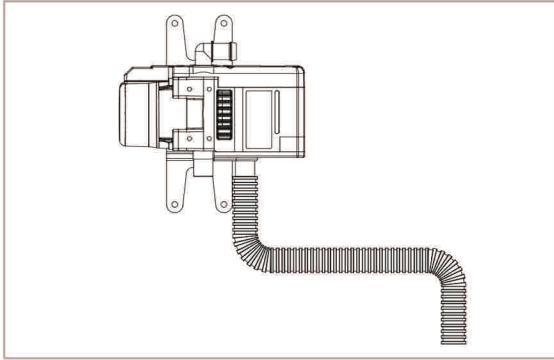
### IV. Installation and precautions

#### 1. Range of allowable installation angles



## 2. Installation of combustion-supporting air-intake duct

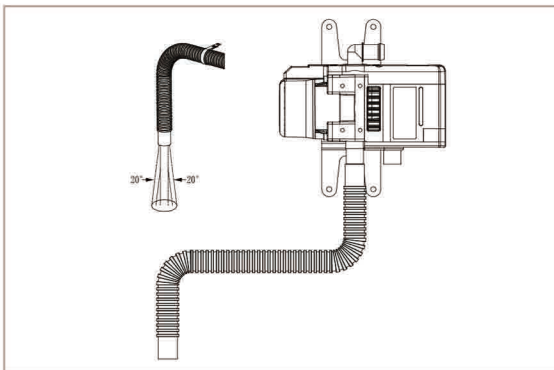
Installation assembly contains a corrugated hose with an inner diameter of 25 mm. the combustion-supporting air duct should not be shorter than 20 cm and no longer than 1.5 m. One end is fixed on the heater with a pipe clamp while the other end on vehicle body with supports.



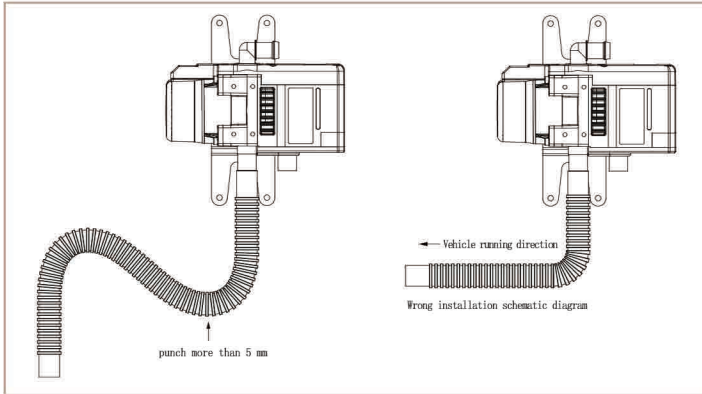
## 3. Installation of waste gas-exhausting device of heater

Direction of gas-exhausting port cannot face to airflow and cannot be blocked by mud, rain, and snow, etc.

Installation assembly contains an exhaust pipe with an inner diameter of 25 mm and a length of 60 cm. Based on installation situations, the exhaust pipe shall be shortened to 20 cm or extended to a maximum of 1 meter. One end is fixed on the heater with a pipe clamp while the other end on vehicle body with supports.



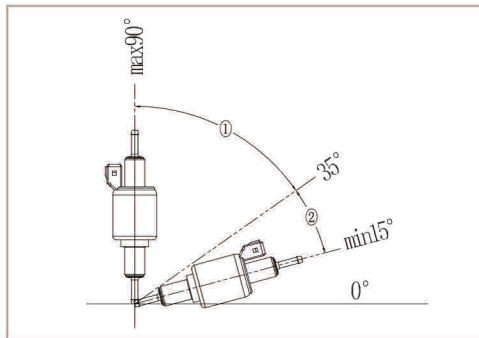
(Schematic diagram of installation of exhaust pipe)



#### 4. Installation and precautions of oil-measuring pump

Installation of oil line is preferably inclined upwards to facilitate discharge of gas in oil line. Pay attention to check vent hole of the oil tank to avoid negative pressure. Oil pipeline should be away from the heat source. Installation of oil line should not be close to the silencer, exhaust pipe, etc. It should be protected by bellows and be bundled in a suitable place with distance no more than 50cm.

Schematic diagram of installation of electromagnetic pump



#### Installation angle of oil-measuring pump

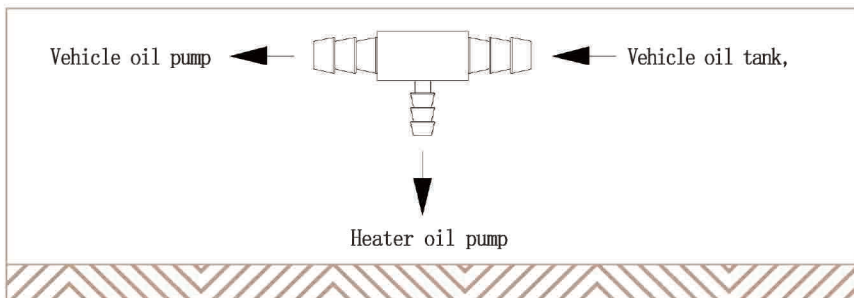
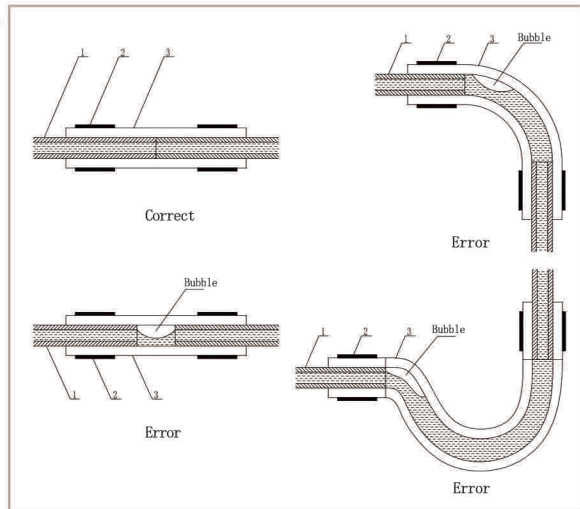
Installation of oil-measuring pump shall always be inclined tilting upward to the oil nozzle with an installation angle greater than 15°, because installation angle between 15° and 35° is preferred.

1. It is not allowed to select installation angle between 0 and 15°
2. Installation angle between 15 and 35° is preferred.
3. It is allowed to select installation angle between 15 and 90°

## Connection of oil pipe

After inserting the heater oil nozzle, oil pump nozzle, oil extractor and the T-type three-way oil nozzle into the rubber, connection of oil pipe shall form a seamless connection with the oil pipe inserted at the other end to avoid that air bubbles and noises produced in oil line affect combustion effect

1. nylon oil pipe
2. Oil pipe clamp
3. Oil pipe connector



## Installation and precautions of T-type three-way oil extractor

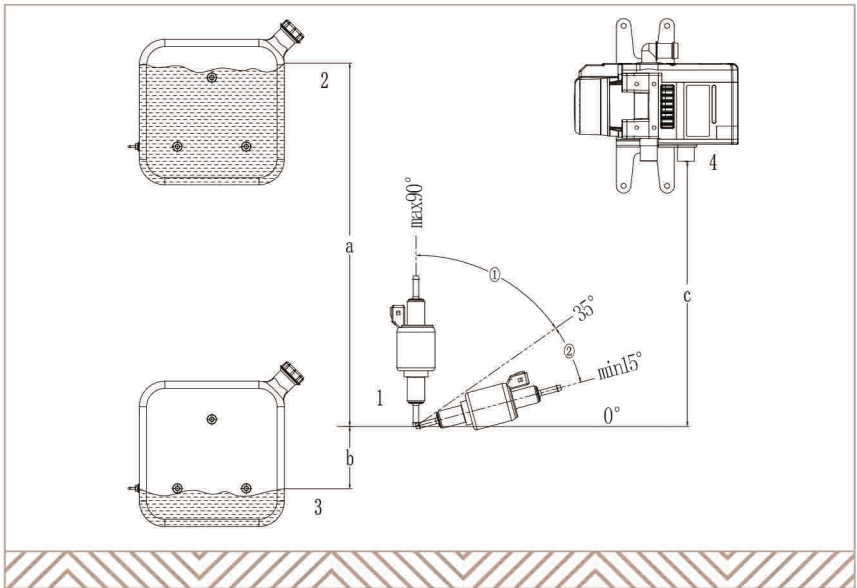
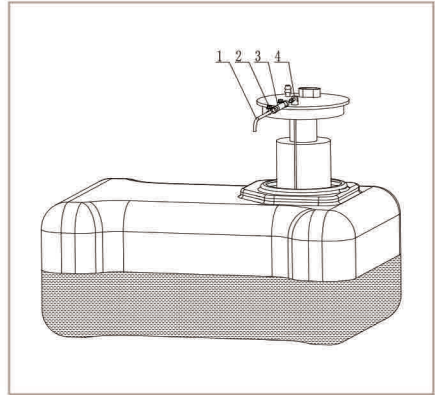
Three-way oil extractor must be connected between original vehicle's oil tank and and oil pump; It is forbidden to be connected between the original vehicle's oil pump and engine to prevent high pressure of the original vehicle's oil pump from injecting fuel into the heater, posing a great danger. Vehicles with the original vehicle's oil pump installing in oil tank shall use oil extractor to take oil from oil tank directly instead of T-type three-way oil extractor.

### 5. Precautions of oil extractor installation

Installation of oil extractor of oil tank can intercept length of the metal oil suction pipe on site according to different height of oil tank and then seal for connection. Installation of 5KW machine shall open a 10mm hole on the upper end of the oil tank (25mm for 12KW machine) to remove burr; Intercept an appropriate length of oil extractor (the bottom of the oil suction pipe is kept at a distance of 10mm from the bottom of the oil tank), install oil extractor with seal and pressor, then adjust oil discharge direction and lock finally.

Connection of oil pipeline shall pay attention to seal all connectors to prevent that leakage makes fuel supply not available. Be careful to check vents of oil tank. The fuel pipe should be kept away from the heat source to avoid damage to the pipeline.

1. nylon oil pipe
2. oil pipe clamp
3. rubber oil pipe connector
4. oil extractor



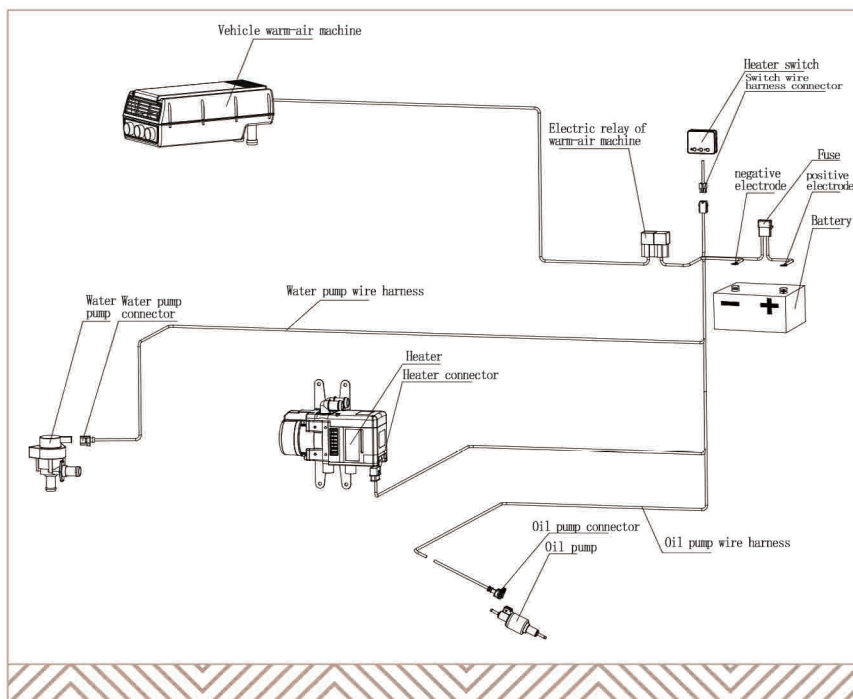
- |                          |                          |
|--------------------------|--------------------------|
| 1: oil pump              | 2: maximum level of fuel |
| 3: minimum level of fuel | 4: oil inlet of heater   |

a: maximum of 3m    b: maximum of 1m    c: maximum of 15m

(Length of oil pipe between oil tank and oil pump shall not exceed 1.5m, while oil pump and heater shall not exceed 6m)

## 6. Installation and precautions of heater wire harness

Positive and negative electrode of wire harness should be directly connected to that of the vehicle battery, ensuring that heater is always powered to support its normal operation.

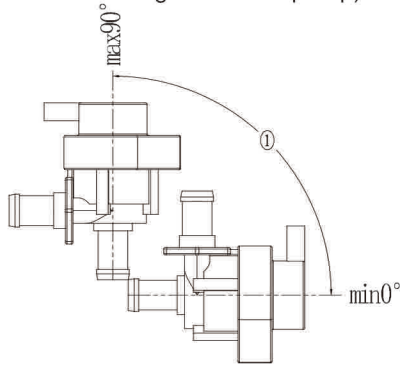


## 7. Installation and precautions of water line

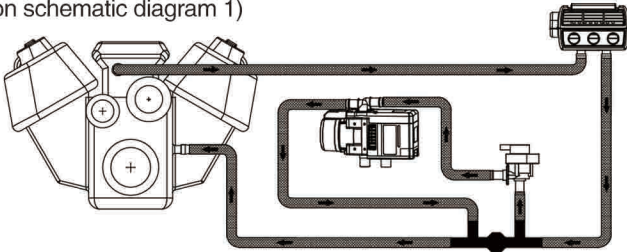
1. Installation of heater water pump should be lower 20 cm than the water level of engine to ensure the same direction as the original vehicle's pump water flow.

2. Vehicles that with throttle valve in warm-air machine of original vehicle needs to skip installation of throttle valve.

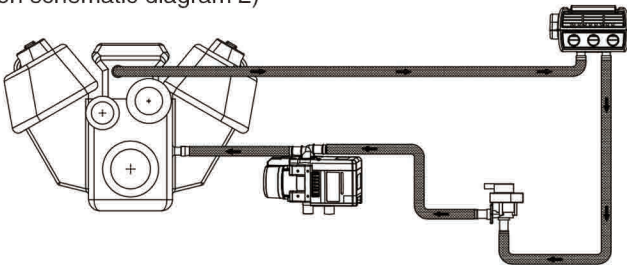
(Range of allowable installation angle of water pump)



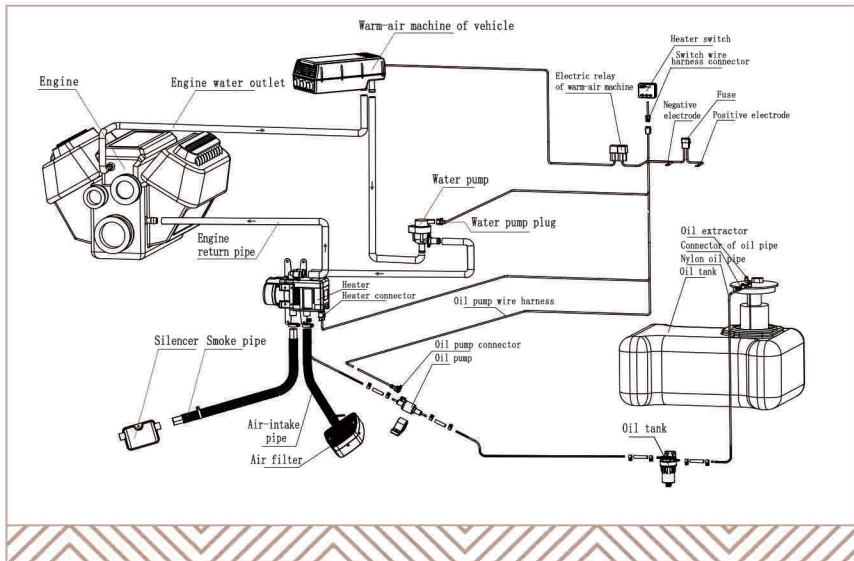
(Installation schematic diagram 1)



(Installation schematic diagram 2)



## Express installation schematic diagram



### ※ Debugging after heater installation

Heater must be vented first after installation to fulfill the pump and the entire pipeline with antifreeze. After heater installation, the engine can be started to let water fulfill in the entire parking heater and pipeline by water pump of the engine. Throttle can be appropriately enlarged to facilitate discharge of gas generated in the pipeline during installation.

Pay attention to liquid level of water tank and add antifreeze in an appropriate amount to avoid that water shortage in water tank may cause unnormal work of heater. It is forbidden to start heater without water.

## V. Operation and function display of heater

Liquid heater is activated by one button with fully automatic control. User can complete the entire heating process of heater only by running switch of the heater.

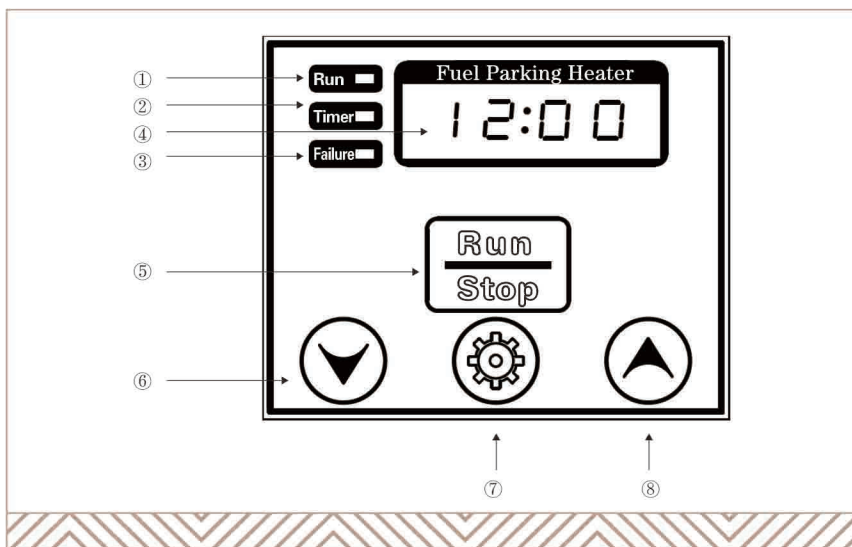
First, check leaks of heater pipes (including water pipes and oil pipes) before starting heating.

System starts to run the self-test function after the heater is turned on. The ignitor plug preheats for 60 seconds before ignition. Sensor detects that flame in the heater is stable, indicating ignition is successful and normal combustion begins. If the first ignition fails, it will enter the second preheating ignition automatically. If the second ignition fails, the controller will enter self-protection, please check if relevant parts are connected correctly.

The heater will heat the antifreeze continuously after normal combustion. The heater will automatically reduce the power for slow heat when water temperature of heater outlet reaches 65 ° C. The heater will stop supplying oil when the water temperature reaches 78 ° C. Fan motor will delay for 3 minutes and then stop work while water pump is still rotating. The heater will automatically start to heat when the water temperature drops to 60 ° C. User can turn off switch if does not need constant temperature function, then the heater will exit constant temperature to end heating. It is forbidden to turn off the whole vehicle' s power switch during heating (if turn off the fan and water pump suddenly, the high-temperature gas in the heater will stay, or even flow to the opposite direction, which will burn controller and other components). Turn off the heating switch and wait for over 3 seconds to wait fan and water pump to stop running, then cut off the power.

## ( 1 ) Operation and display of vehicle-mounted controller

Instruction of fuel parking heater vehicle-mounted controller



- ① Run indication (green light): flashes when running, and lights up when the "Running Time" interface is displayed in standby mode;
- ② Timer indication (red light): lights up when timer mode is activated, and lights up when the "Timer time" interface is displayed in the standby mode.
- ③ Failure indication (yellow light): lights up when in fault;
- ④ Information display (digital)

(I) . Standby mode

Time interface: "12:00";

Timer interface

Timer mode: "06:00";

Manual mode: "--:--";

Running time interface: "00:40"

(II). Running mode: "075 °C"

(III). Sleeping mode: "no display"

(IV). Matching mode: "----"

(V). Failure mode: "E-00";

(VI). Data viewing mode

1. Host version: "v000";

2. Failure code: "E-00";

3. Host status code: "0H00";

4. Water temperature: "t-01"

"075C" scroll display;

5. Shell temperature e: "t-02"

"055C" scroll display;

6. Furnace temperature: "t-03"

"155C" scroll display;

7. Power supply voltage: "P-24";

8. Bootstrap voltage: "b-34";

9. Water pump current: "2-5A";

(VII). Power off: "OFF" flashes "OFF";

⑤. Start stop button: long press for 1second to start or stop, long press for 1second to power off in fault state

⑥. Set decrease button

1. Click under setting mode can adjust corresponding parameters, decrease progressively in cycle with units of "1";

2. Click under setting mode can check remaining running time. Click under this interface can adjust running time, decrease progressively in cycle with units of "10", the minimum is 10 minutes;

3. Long press the "Add" and "decrease" to enter matching mode. Perform this operation again can exit matching mode.

⑦ Set add button:

1. Click under setting mode can adjust corresponding parameters, increase progressively in cycle with units of "1";

2. Click under setting mode can check remaining running time. Click under this interface can adjust running time, increase progressively in cycle with units of "10", the maximum is 1 hour;

3. Long press the "Add" and "decrease" to enter the parameter viewing mode, and click "Setting" to switch the viewing item;

4. Long press the "Add" and "decrease" to enter matching mode. Perform this operation again can exit matching mode.

⑧ . Setting: can set real time and timer

1. In the "Time Display" interface under standby mode, long press for 3 seconds to enter "Setting Time", and click to change the setting bit;

2. In the "Timer Display" interface under standby mode, long press for 3 seconds to enter "Set Timer", and click to change the setting bit.

3. In the "Running Time Display" interface under standby mode, long press for 3 seconds to enter "Set Running Time" (10-60 minutes).

4. Under the setting mode, long press the "Setting" to save setting parameters and exit;

5. Long press the "Setting" and "decrease" to enter parameter viewing mode. Perform this operation again can exit "Parameter Viewing Mode";

Functions :

1. Manual mode: "Start /stop" on the control box can start or stop the master. The master will be automatically turned off after countdown ends. If water temperature reaches the preset temperature, it will automatically stop.

2. Timer mode: The master will be automatically turned on when it reaches the timer;

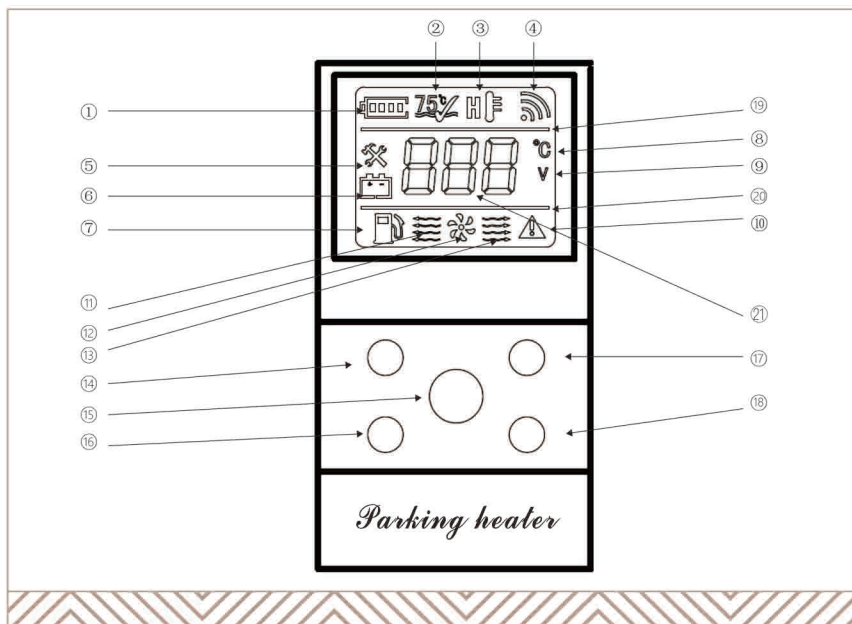
3. Failure: See the failure code table for details.

## ( 2 ) Control and display of remote control

If indicator light does not light up after press heat or stop button, the remote control may exceed effective distance, or there is an obstacle before the remote control, or there is a strong magnetic field around it.

Use distance of remote control is greatly affected by environment. In order to not affect your travel, please leave before confirm that the remote control is successful.

## Instruction of Fuel parking heater remote control



1. Battery indication: display current power of the device
2. Preheating completion indication: preheating completes, reaches preheating temperature of 78 °C
3. High water temperature indication: high water temperature alarm
4. Wireless transmission and reception indication: send power successfully, one flash indicates receive successfully;
5. Failure indication: lights up when master in fault, accompanied by displaying failure code
6. Voltage abnormality indication: alarm of abnormal voltage of master power supply, accompanied by displaying failure code
7. Start failure indication: failure alarm of secondary start of master; accompanied by displaying failure code
8. Temperature unit indication: Celsius, lights up when display "water temperature, shell temperature, furnace temperature"
9. Voltage unit indication: Volts, lights up when display "power supply voltage, bootstrap voltage"
10. Master flameout indication: alarm of master flameout, accompanied by a displaying failure code.
- 11.12.13. Auxiliary graphics
14. Master work indication: lights up when turn on, flashes when receive that master is running

Setting Add: click to view the running time, click again under this interface to set running time, increase progressively with unit of "10", the maximum is "60 minutes"

Long press for 3 seconds to light the backlight, and press for 3 seconds again to turn off the backlight. If the backlight is lighted up without manual interference for 5 seconds, it will be automatically turned off.

15. Start/stop button: long press 2 seconds to start or stop the master

16. Setting button: click to check master status, press the "Setting" and "Setting Add" to enter the parameter view mode, click to switch viewer under parameter view mode

17. Setting Decrease: click to check the running time, click again under this interface to set running time, decrease progressively with unit of "10", the minimum is 10 minutes

18. Remote control switch: long press for 3 seconds to switch

19.20. Dividing line of LCD screen

21. Digital display:

1> Standby mode

1- Water temperature display: "00 °C"

Running time display: "t00";

2> Failure mode:

1- Failure code display: "E00"

3> Parameter view mode:

1-master version display: Version number "the first bit" and "the second and third bits" scroll display, for example: "v1" and "v28"

2-Failure code display: "E08";

3- Water temperature display: "t-1 °C" and "75 °C" scroll display;

4-Shell temperature display: "t-2 °C" and "125 °C" scroll display;

5-Furnace temperature display: "t-3 °C" and "145 °C" scroll display;

6-Power supply voltage display: "p24v";

7-Bootstrap voltage display: "b34v"

8-Water pump current: "pca" and "2-5" scroll display, unit "Ampere";

4> Master power off

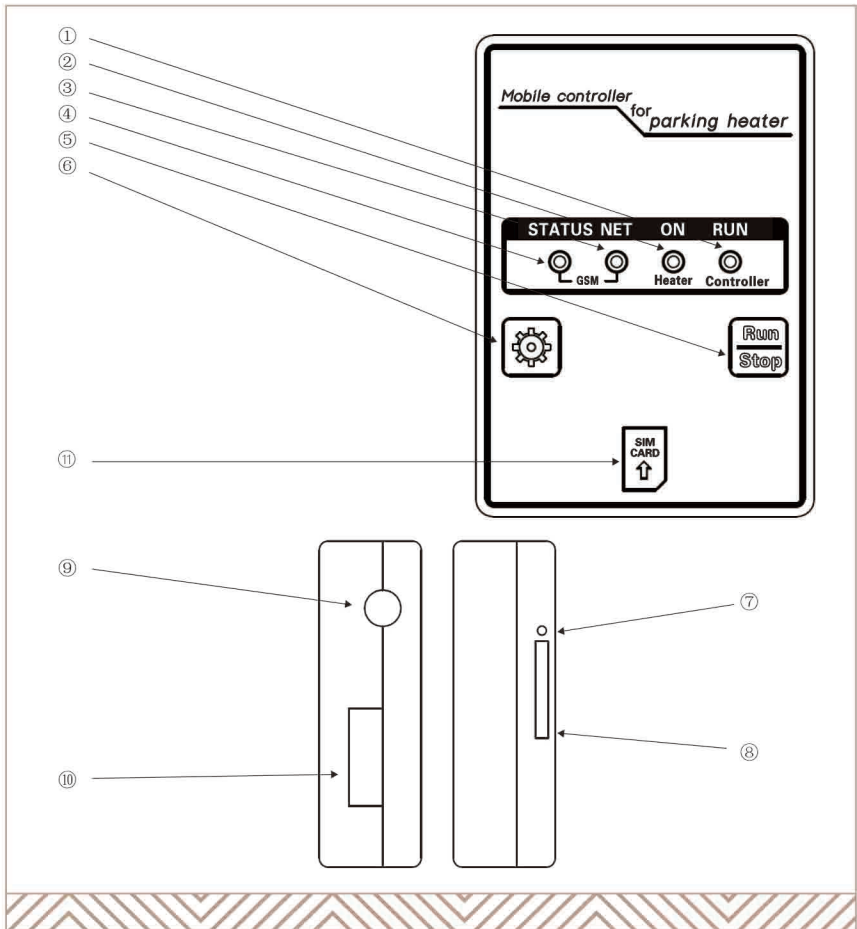
"OFF" flashes;

#### Functions

1. Can remotely start or stop master, show current running status of master
2. Master status is unknown, automatically power off after 5 minutes

### ( 3 ) Operation of mobile remote control

#### Fuel parking heater mobile controller



- ①. Status indication of mobile phone controller  
Master running: always light on;  
Master failure: failure code flashes;
- ②. Master start instruction: electric quantity, master starts;

③. Network indicator: signal is normal if flash and "Lighting Time" is less than "Extinguish Time"

④. Status indicator: light indicates that controller is in standby state, and extinguish indicates no SIM card or device failure;

⑤. Start / stop: long press "1s" to start or stop master;

⑥. Setting: long press "Setting" and "RUN" indicator flashes quickly. Call to mobile controller to make authorization successful, and "RUN" indicator is always on;

⑦. Remove card: press to pop up "SIM Card";

⑧. SIM card drawer: press "Remove Card" to pop up drawer automatically, install "SIM Card" and put the SIM card in direction prompted by the panel;

⑨. Antenna interface: install dedicated antenna interface of the mobile controller;

⑩. Cable interface: install dedicated cable interface of the mobile controller

### Functions

Start or stop master by calling phone, sending SMS. If there is no SM card, you can manually start or stop master through the "Start" on mobile controller panel. You can query current working status of master when master is running,

#### ( 1 ) Start

1-Autostart: call to master and start after hearing "hang up" with the authorized number

#### 2- Manual start

1. SMS start: send "start", "heat" or "preheat" to master with the authorized number

2. Press button to start: long press the control panel "Start / Stop"

#### ( 2 ) Stop

1-Autostop: call to master and stop after hearing "hang up" with the authorized number.

#### 2 – Manual stop

1. SMS stop: send SMS "stop", "close" or "power on" to master with the authorized number

2. Press button to stop: long press the control panel "Start / Stop"

#### ( 3 ) Check

Send "check" to master with the authorized number

#### ( 4 ) Number authorization

Automatic: see the smart reply in follow

Manual: send SZHM# password # 手机号

Initial password 123456

## Smart reply

### 1. Automatic authorization

Success authorization: reply "authorization number" to complete number matching

### 2. Manual authorization

Success authorization: reply "authorization number" to complete number matching

Fail authorization: reply "Wrong password error, fail operation" or "Wrong format, fail operation"

### 3. start

Success start: reply "heating, current water temperature is 27 degrees, heating will complete after 40 minutes

Fail star: reply failure code, see failure code table for details

### 4. Stop

Reply "stopping, current water temperature is 75 degrees, used 20 minutes.

### 5. Check

The following may be replied based on master status

1. Heating completed, stopping, current water temperature is 75 degrees, used 20 minutes.

2. Heating, current water temperature is 70 degrees, used 20 minutes.

3. stopping, current water temperature is 75 degrees, used 20 minutes.

4. The heater is turned off, call or send SMS to start the heater

6. Heating completed

7. Reply "Heating completed, stopping, current water temperature is 75 degrees, used 20 minutes"

## ( 4 ) YWH-B801 plumbing mobile phone control box description

### I . Overall display

·a : 4 digits \* 7 digits digital display (hour);

·b : 4 digits \* 7 digits digital display (hour);

·c : 4 digits \* 7 digits digital display  
(separate);

·d : indicator light 1 (two-color)

·e : indicator light 2 (two-color)

START: start button, start the heater;

DEC: decrease button;

M: matching button;

ADD: add button;



## II . Operation instructions and page display

### 1. Standby display page: Press [ADD], [DEC] to switch page.

1) Real time: display current time;

Press [M] and [a] flashes, press [ADD], [DEC] to adjust;

Press [M] again and [b] flashes, press [ADD], [DEC] to adjust;

Long press [M] to confirm the adjustment. (Figure 1)



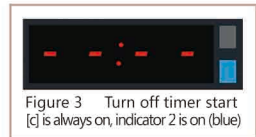
2) Timer: start the heater at definite time;

Press [M] and [a] flashes, press [ADD], [DEC] to adjust with range of "0-23";

Press [M] again and [b] flashes, press [ADD], [DEC] to adjust with range of "0-59"; (Figure 2)



Interface displays "-:-" means turning off timer start when adjust to "00:00"; long press [M] to confirm the adjustment. (Figure 3)



3) Running time: remaining running time of the heater

Press [M], [a] and [b] flashes, [c] is always on, press [ADD] and [DEC] to adjust 10 minutes each time. The maximum setting is 1 hour;

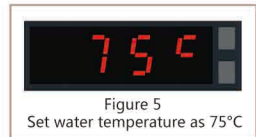
Long press [M] to confirm the adjustment. (Figure 4)



4) Water temperature: current water temperature, set water temperature;

Press [M], [a] and [b] flashes, press [ADD] and [DEC] to adjust 5°C each time with range of "0-75°C";

Long press [M] to confirm the adjustment. (Figure 5)



5) Self-start switch: start and stop heater automatically

Press [M] and [b] flashes, press [ADD], [DEC] to adjust;

Long press [M] to confirm the adjustment. Interface displays "A-OF" means non-self-start mode. The heater will be stopped when running time countdown ends or water temperature reaches the set value; (Figure 6)



Interface displays "A-ON" means self-start mode, which is divided into time-limited and time-unlimited mode.

Time-unlimited mode: heater operates in cycle, heating to set temperature → standby → temperature is lower than the preset temperature → heating;

Time-limited mode:

Heater is turned off when running time ends;

When running time not ends, water temperature reaches the preset value of the main board, heater and controller stand by, water temperature is lower than the preset value of the main board, operate automatically;

Running time is "00:00" means time-unlimited mode;

Running time greater than "00:00" means time-limited mode; (Figure 7)



## 2. Start and stop control of heater

### 1) Heater start: display running time

Under standby mode, Long press [START] for 3s to start the heater.

Under standby mode, use the matching number to dial SIM card number in the controller. Start success when hang up after two rings; Start fail when hang up after only one ring;

Under standby mode, send "heat", "start", "preheat" "YR", "1002";

Under standby mode, "heat", "start", "preheat" "YR", "1002"

Phone and SMS mode start successfully will receive a reply message "Heating, current water temperature is XX° C, complete after XX minutes". Controller interface displays "Send" to indicate sending SMS; (Figure 8)

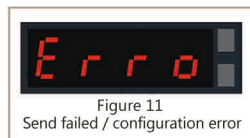


### 2) Heater stop: display "OFF"

Under start state, long press [START] for 3s to stop the heater;

Under start state, use the matching number to dial SIM card number in the controller. Stop success when hang up after two rings; Stop fail when hang up after only one ring;

Under start state, send "stop", "close", "turn off", "tz", "1003"; (Figure 9)



### 3. Matching and check of mobile phone

1) Phone matching call to SIM card in the controller, and match success when hang up after two rings and receive message "match success";

Phone matching call to SIM card in the controller, there is no matching when hang up after only one ring, the number is not authorized, interface displays "OFFL"; (Figure 10)

2) Check: Check heater status, use the matching number to send SMS "check", "CX", "cx", "1001". Interface displays "Error" if send SMS failure/program configuration error; (Figure 11)

### 4. Engineering mode, check heater parameters, long press [ADD] and [DEC] for 3s to enter the engineering mode, press [ADD] and [DEC] to switch;

001: version number of heater

002: operating state of heater

003: housing temperature of heater: t-1: Xx °C

004: exhaust temperature of heater: t-2: xx °C

005: voltage of heater: XXv

006: pump current of heater: x-xA;

### 5. Other basic settings, sleep setting: enter sleep mode if there is no operation for 10s under standby mode;

Buzzer: Under press and normal operation mode, the buzzer "beep" once, and three "beep" means error.

## VI. Repair and maintenance

The heater shall be taken off from the car for cleaning and overhaul after use in winter. Usually, it doesn't require overhaul during one heating season. Please find reason in time if there are failures such as obviously reduced heat efficiency and uneasy igniting.

Please clean the heat spreader inside water jacket and carbon deposit in combustor if heat efficiency decreases due to too much carbon deposit.

Oil tank, oil pipe and oil filter device should be kept clean and unblocked, and be washed regularly according to the actual situation.

Antifreeze or antifreeze mixture suitable for ambient temperature should be used as the coolant medium in the parking heater's circulation system.

In season when parking heater is not used, please disconnect parking heater's power supply, keep the parking heater clean and dry. The heater should not be invaded into water or exposed to rain, or to the sun for a long time. It is best to start the heating function 1 to 2 times a month with at least 5 minutes each time.

## VII. Analysis and elimination of common failure

Failure code table

| Failure code | Description                        |   |
|--------------|------------------------------------|---|
| E-01         | Secondary start failed             | Abnormal oil line, check whether there is oil shortage or oil line blockage                     |
| E-02         | Flameout                           | Abnormal oil line, check whether there is oil shortage or oil line blockage                     |
| E-03         | Abnormal voltage                   | Battery voltage is too high or too low  |
| E-04         | Furnace temperature sensor failure | Abnormal furnace temperature sensor, replace sensor or computer board' s connector is loose.    |
| E-05         | Water temperature sensor           | Abnormal water temperature sensor, replace sensor or computer board' s connector is loose.      |
| E-06         | Ultra-high temperature sensor      | Abnormal ultra-high temperature sensor, replace sensor or computer board' s connector is loose. |
| E-07         | Oil pump                           | Oil pump disconnected, check power supply line of oil pump                                      |
| E-08         | Fan                                | Motor failure or motor connector is loose   |
| E-09         | Water pump                         | Abnormal water pump, check water pump or pump connector   |
| E-10         | Ignitor plug                       | Abnormal ignitor plug, replace ignitor plug or ignitor plug is loose                            |
| E-11         | Overheating protection             | Temperature of master is too high, add antifreeze.  |
| E-16         | Wrong key                          |   |
| E-17         | Start failed                       |   |
| E-18         | Stop failed                        |   |

### Solution

|   |  |
|---|--|
| Report E-01 failure, the heater does not fire, or combustion is interrupted after fire, or report E-02 failure, flameout after fire |  |
| Poor sealing of oil pipe interface  | Check oil pipe interface and tighten the loose place   |
| Oil line has gas  | Exhaust the gas  |
| Oil pipe blockage solution  | Check whether oil level in oil tank is lower than the oil pipe' s suction port, replenish fuel or replace the oil pipe in time |
| Oil pump failure  | Check whether the oil pump is working or out oily  |
| Start the heater under normal conditions and report E-06 failure  |  |
| Overheating sensor damages  | Replace overheating sensor   |
| Poor contact of overheating sensor connector  | Check whether the connector is loose and reconnect to the normal position.   |

Report E-03 failure, power supply voltage is not in the normal working range. 24V machine is between 18V and 32V; 12V machine is between 9 and 16V

Check whether the battery is losing power

Whether the heater harness wire is securely connected

Whether main power harness wire is too thin or too long

Turn on the heater's water pump and heater does not respond

|   |  |
|---|--|
| Harness wire connector is not in place                          | Check whether the harness wire connector is securely connected   |
| Whether the harness wire fuse blown                             | Replace corresponding fuse   |
| Whether positive and negative electrode are connected correctly | Check positive and negative electrode of power cord, red wire is connected to the positive electrode, and the black wire is connected to the negative electrode. |

## VIII. Measures of heater failure

Check whether plug of the fuse box is connected well and firmly if there is heater failure.

The following failures can be processed by user operation

**Error description :** Self-stop of heater

Heater cannot start

Heater stops during heating

**Potential cause :** There is no combustion after start or secondary start, the flame is extinguished during operation.

Problem of heater's oil line supply

Heater stops during heating

**Solutions :** Check the heater's power supply and ground connection

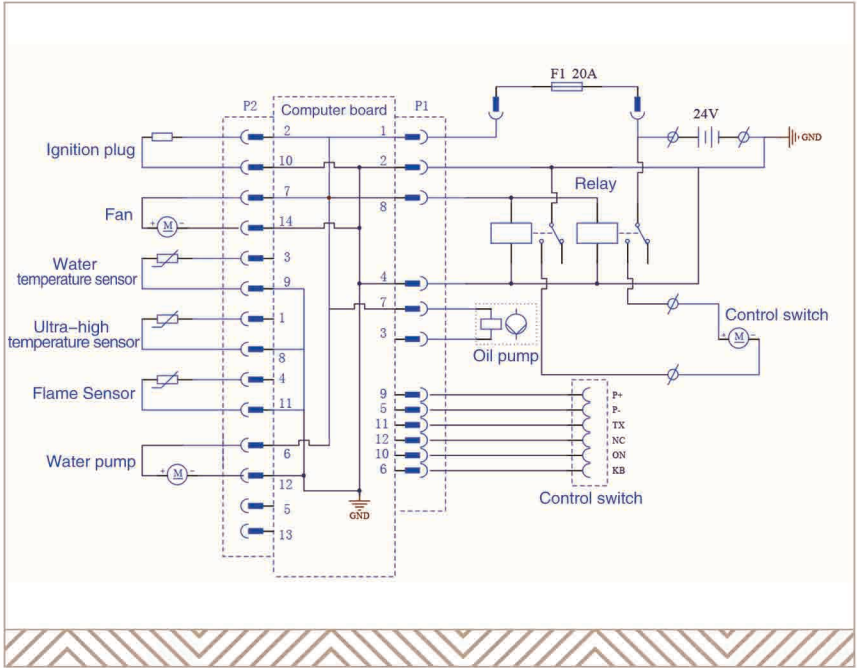
Add cooling liquid according to the manufacturer's requirements

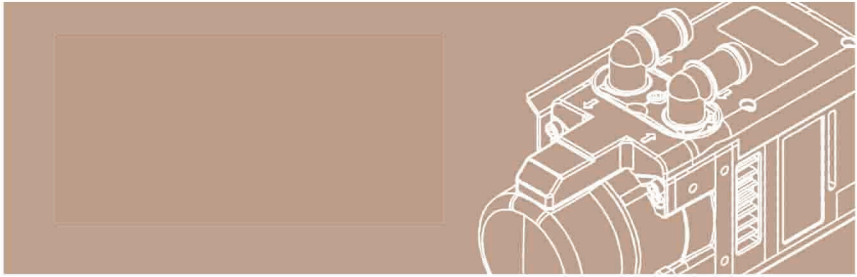
Temperature of heater casing after installation is too high

1. Release outlet pipe of heater and exhaust all gas until antifreeze flows out, then connect water pipe and fasten pipe clamp.

2. If there is still overheating protection after exhaust gas for several times, please check water level of the engine expansion tank and replenish water according to the actual situation.

## IX. Main board circuit diagram





## After-sales warranty regulation of product

1. Please keep this after-sales service certificate with purchase voucher properly.

2. Free warranty length of this product is six months if it's used under normal situations (by default to April 1 of the following year).

3. Product failure or damage caused by abnormal conditions are not covered by the warranty. Manual and material costs are charged as appropriate during maintenance.

4. Without permission of our company, damage caused by maintenance of yourself or maintenance point not specified by our company is not covered by the warranty.

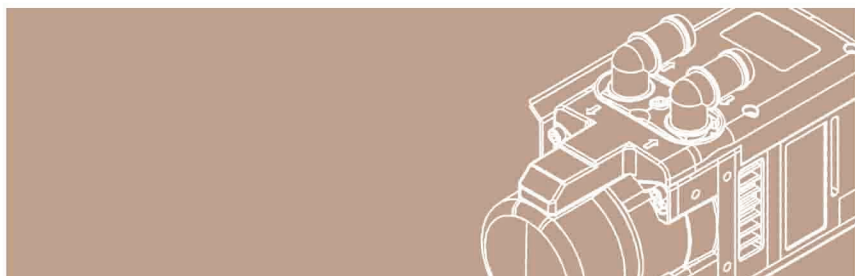
5. Normal situations refers to that customer does not violate regulations when using this product, installs and uses according to the installation guide and operation guide.

6. Product model number on the warranty card must be the same as that of the product being repaired without alteration.

7. Please contact distributor or after-sales service network of our company immediately or directly mail it back to our after-sales service department for maintenance if there are failures.

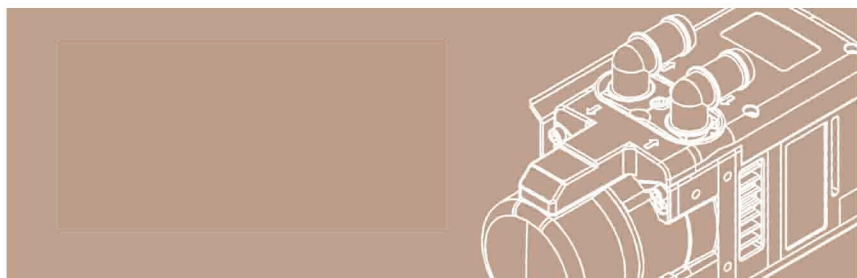
The following conditions are not covered by the warranty

- Unusual use or damage caused by accidental factors
- Natural disasters, artificial damage, improper access of power or replacement of non-factory accessories.



## After-sales service card of product

|                          |                          |                       |  |
|--------------------------|--------------------------|-----------------------|--|
| User name                |                          | Contact number        |  |
| Heater model             |                          | Installation location |  |
| Car number               |                          | Installation time     |  |
| Vehicle model            |                          | Installer             |  |
| Maintain and repair time | Maintain and repair item |                       |  |
|                          |                          |                       |  |
|                          |                          |                       |  |
|                          |                          |                       |  |
|                          |                          |                       |  |
|                          |                          |                       |  |
|                          |                          |                       |  |



## **Water-heated Parking Heater Instruction**