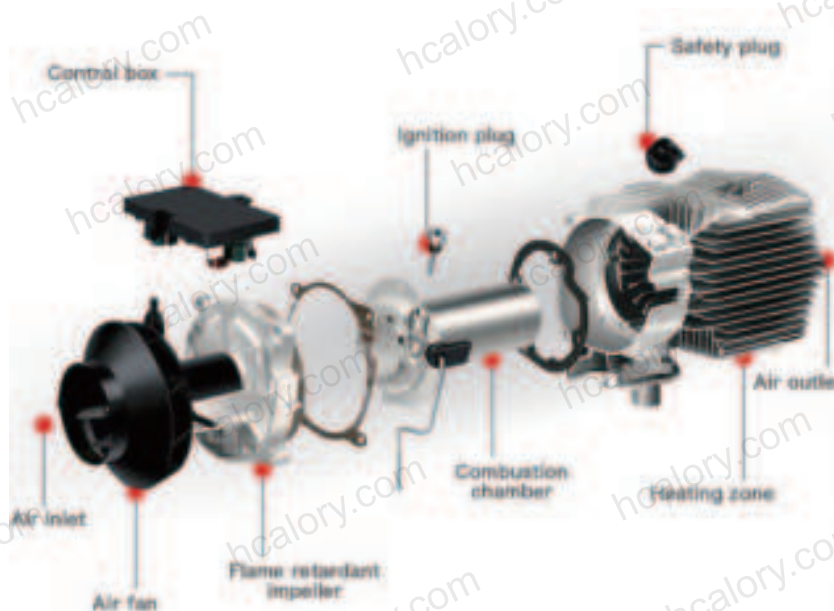


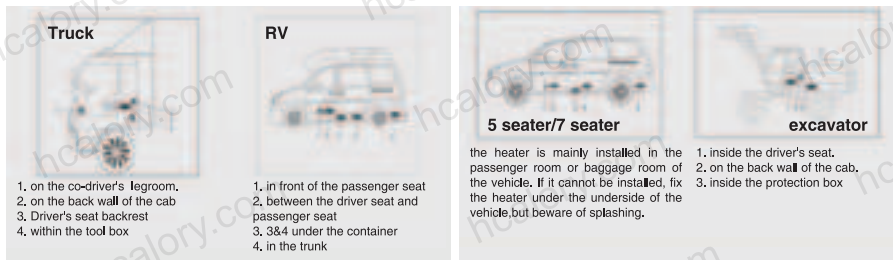
## 1. Function:

Get rid of damage to car causing by the sudden drop of temperature, improve the temperature inside the car, and preheat the engine coolant to avoid the engine wear at low temperature. Conducive to car interior thawing, car start, car glass defrost fog.

## 2. Internal Structure

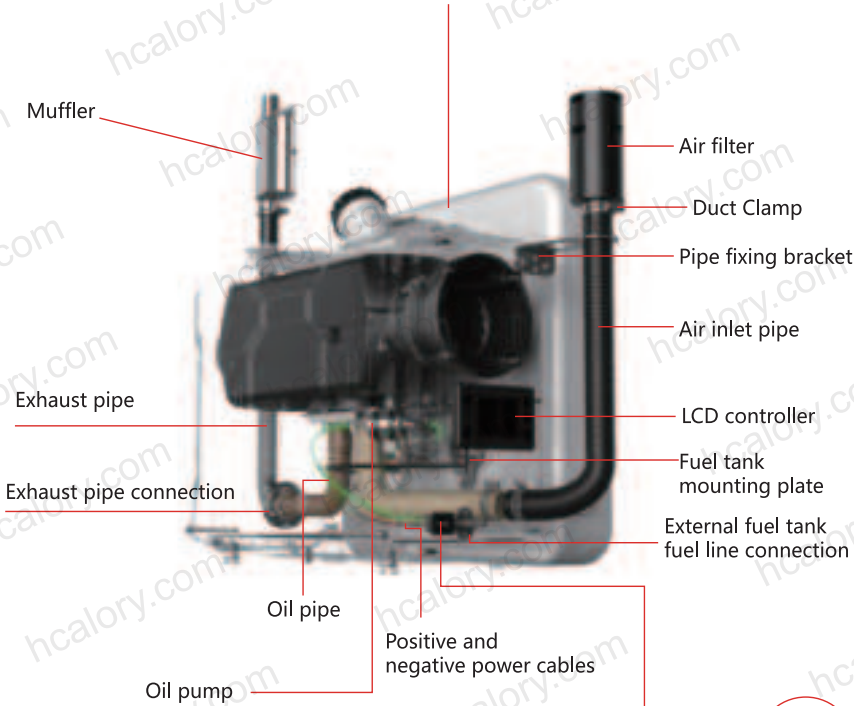


## 3. Installation Position



## 4. Product Structure Diagram

Figure for 15L fuel tank installation schematic for reference only, the product is sold in the configuration of **5L** fuel tank



① Connecting the battery power cable  
( Sold as standard )

② Hook up the cigarette lighter

③ Connect to AC-DC power supply



## 5.1 Remote Control Operation Instructions (NO.1)



### Working mode

① In the gear mode, the gears can be set within the range of 1~10 gears.



② In the temperature control mode, the setting temperature can be adjusted within the range of 8~36°C, and the gear of the control switch will change with the temperature in the cab.

When the temperature rises or falls, the control switch will automatically adjust the operating gear to quickly reach the set temperature, so that the heater The operation of the heater is more intelligent and economic.

③ When there is a fault in the operation, the fault code will be displayed through the control switch display window for more accurate and intuitive find the fault.

### Operating instructions.


#### On/off and mode switching:

Press [  ] to turn on the power in the off state; press button [  ] to turn off the power in the on state; press [ middle knob ] to switch the current gear/temperature control mode.

#### Gear adjustment:

Turn [knob] clockwise to run gear/temperature +1, maximum to 10 gears/36°C, turn [knob] counterclockwise to run gear/temperature -1, minimum to 1 gear/8°C.

#### Basic setting:

After power on, press and hold the [  ] key for 3s to enter the basic setting interface, the upper left corner shows the setting items, and the interface shows the specific data under the setting items.

**F0:Current time**

**F1:auto-start time**

**F2:Running time [after auto-start]**

**F3:Auto-start switch setting**

**F4:Language switch** [Chinese (C), English (E), Russian (R)]

**F5:Temperature compensation**

**F6: tank oil volume** [5-50L (switch unit 5L)] [display --- on behalf of not monitoring the tank situation]


**F7: oil pump power** [16/22/28/32UL (default is 22UL)]

**F8: Bluetooth switch**

**F9: automatic start/stop heater;** (in automatic mode, when the cab temperature reaches the set tempera-

ture, it will automatically turn off after 30s delay; when the cab temperature is lower than the set temperature by 2°C, it will automatically turn on after 30s delay)

Press [Knob] to modify, press [Knob] again to confirm the current data modification.

Rotate [knob] to adjust the setting items, after all the adjustments are successful, long press [  ] for 3s to save all the basic settings

### **Engineering Mode:**

Power on the state while holding down [  ] [  ] 3s into the project mode, the upper right corner shows the current project, the interface shows the specific data under the project, rotate the [knob] to adjust the project.

### **View data:**

En00:Heater main board version number [scrolling display]

En01:Fault code [see the following table for details]

En02:Case temperature

En03:Power supply voltage

En04:Heater operating gear

En05:Cab temperature

En06:Altitude [top left corner]

En07:Pump oil enable

En08:Remote control match

En09:Bluetooth match

### **Remote control matching:**


Enter the En08 interface, the interface shows "rte", long press the [knob] 3s to start matching, the screen shows "P1", then tap the remote control "adjustment plus +" button, the screen shows "P2" means "adjustment plus +" match successfully, P2, P3, P4 similarly, P4 automatically exit the project mode to return to the operating interface after a successful match, the specific key definitions are as follows

P1: Adjust plus button;

P2: Adjust minus button;

P3: Mode switch button;

P4: Switch on/off button.

Clear the last remote control matching data: press and hold [  ] for 7s when power on self-test, the interface shows "CLr" to start clearing, when the interface shows "SUC" to clear successfully.

### **Pump oil mode:**

Press and hold the [lower left pumping] key during the power-on self-test until the screen displays '-P-' after the pumping icon lights up, the display area starts 300s countdown to release the key, start pumping, countdown the end of the countdown automatically exit, this operation needs to be completed when the power is on, the power self-test is over and cannot be entered.

### **Fill up the tank:**

After the power is on, long press the [pump oil] key for 7s to fill up the interface tank display icon.

**Bluetooth matching:**

Please kindly download APP with below methods,then please follow the steps to connect and control the heater via cell phone .




**IOS APP:**

APP Store search "airHeaterBle" or scan below QR code to download directly.

**Android APP :**

Google Play search "AirHeaterBLE" or scan below QR code to download directly


**1.Query the Bluetooth name:** press [  ] [Knob] 3s at the same time after power on, the screen displays 'bLE', the Bluetooth version of the upper side of the screen displays the 6-digit character name (0-F).





**2.Connect to the mobile phone via Bluetooth :** Click on the Bluetooth symbol in the upper right corner, find the corresponding local Bluetooth number : BYD + MAC address of the Bluetooth device + 4 digits from the controller(Refer to the picture above),then click on the Bluetooth number to connect;





3. Long press the [  ] to turn on/turn off the heater ;



4. Click the [  ] button to go to the settings screen, you can set the language(English/Chinese), password and click “save” to save the settings;  
After setting the password, adjust the switch to enter the engineering mode En09, the interface display “BLE” long press [knob] 3s, the upper right corner from  flashing the original password to display the set password, the interface display changes to “SUC”, after the successful match automatically return to run Interface



5. Click "mode" button to switch the gear mode or temperature control mode, then Click "up +" / "down -" button to increase + or decrease- the level (level 1-10) / temperature (8°C ~ 36°C);



6. Fault display: when the heater fails, it will display the fault code E-xx, see the following table for the type of fault.





Panel display	type of fault	Solution
E-01	Start-up failure	Check whether the oil pump is working; check whether the interfaces of the oil circuit are hanging wax or blocked.
E-02	Lack of oil and stalling	Checking the fuel tank for lack of oil.
E-03	Abnormal voltage	<ol style="list-style-type: none"> <li>1. check that the heater supply voltage type matches the actual vehicle voltage.</li> <li>2. check that the supply voltage is not higher than 32V or lower than 18V for the 24V version.</li> <li>3. check that the supply voltage is not higher than 18V or lower than 9V for 12V version.</li> <li>4. check that the main harness connector is not loosely connected.</li> </ol>
E-04	Air outlet temperature sensor failure	<ol style="list-style-type: none"> <li>1. detecting whether the outlet air temperature sensor connector is loose and falsely connected.</li> <li>2. failure of the outlet air sensor, replace the main board.</li> <li>3. main board failure, replace the main board.</li> </ol>
E-05	Inlet air temperature sensor	Inlet air sensor failure, replacement of the motherboard.
E-06	Oil pump abnormality	<ol style="list-style-type: none"> <li>1. check the oil pump plug for loose false connections.</li> <li>2. check the main wiring harness for disconnection.</li> <li>3. oil pump failure, replace the oil pump.</li> </ol>
E-07	Fan abnormalities	<ol style="list-style-type: none"> <li>1. check whether the fan impeller of the car is jammed.</li> <li>2. check whether the fan plug is loose and falsely connected.</li> <li>3. fan failure, replacement of the fan.</li> <li>4. check whether the wind wheel induction magnet is missing or has the wrong polarity.</li> <li>5. check whether the main board wind speed sensor is normal.</li> <li>6. main board failure, replace the main board.</li> </ol>
E-08	Ignition plug abnormalities	<ol style="list-style-type: none"> <li>1. check the ignition plug for false connections.</li> <li>2. faulty ignition plugs, replace the ignition plugs.</li> <li>3. main board failure, replace the main board.</li> </ol>
E-09	High temperature protection	<ol style="list-style-type: none"> <li>1. incorrect or faulty furnace temperature sensor type, replace the sensor.</li> <li>2. main board failure, replace the main board.</li> </ol>
E-10	Furnace temperature sensor abnormal	<ol style="list-style-type: none"> <li>1. check the furnace temperature sensor connector for loose false connection.</li> <li>2. incorrect or faulty type of furnace temperature sensor, replace the sensor.</li> <li>3. main board failure, replace the main board.</li> </ol>

## Contact us

For any question you may have about the Hcalory product, please kindly send to us the mail to the address : [hcalory@hcalory.com](mailto:hcalory@hcalory.com) or contact us from the related selling Link.  
Appreciate your kind feedback and support .



## 5.2 Remote Control Operation Instructions

### (NO.2)



#### 1. Key Function

Set → enter the set state, can adjust and set parameter. Change the working state.

Confirm → In the set state, confirm current set point, enter next parameter setting. In the Unset state, can check the status.



→ In the set state, up regulation set the parameter.

In the Unset state, up regulation set the operating temperature.

On-off → Short Press to turn on, status light is always. Long press 2 seconds to turn off, status light is flickering.




→ In the set state, down regulation set the parameter. In the Unset state, down regulation set the operating temperature.


#### 2. Match Code


In the Unset state, first press the up-regulation button, meanwhile


press the confirm button, keep more than 3 seconds. Enter the match code interface, shows HFA-, press the on button to send the remote code. After finishing the match code, then exit the interface. The machine enter the turn on state. If match code failed, it will not enter the turn on state.


#### 3. Set up parameter (press the set button to enter, the related icons in display screen will be light)


(1) Time setting  — Up and down button adjust the parameter. Press the confirm button, in turn, sets up hour, minute. Press confirm button enter next state.


(2) Timing on-off setting  — Defaults to off, shows 1-oF. Press the up regulation button to open, show 1-on, enter. Press confirm button, in turn, set up the first group, turn on and off time. And the second group. After finish the adjusting, press confirm button to enter to next step.


(3) Manage password input  — Press the up and down regulation button. After showing the correct value, press the confirm button to enter into next step. After inputting the correct 4 numbers, press the confirm button to enter into next step.










(4) Pump capacity setting  — Press the up and down regulation button, change the minimum pump capacity. After achieve the demand value, press the confirm button to enter into next step. Maximum pump capacity setting. Press the up and down regulation button to change it. After achieve the demand value, press the confirm button to enter into next step.

(5) Fans' rotational speed setting  — Press the up and down regulation button, change the minimum speed. After achieve the demand value, press the confirm button to enter into next step. Maximum speed setting. Press the up and down regulation button to change it. After achieve the demand value, press the confirm button to enter into next step.

(6) Operating voltage setting  — Only on the status is off, can choose the main board operating voltage, press the up and down regulation button, choose switch voltage. The 12V system should change to show U-12. The 24V system should change to show U-24.

(7) Speed signals setting  — Press the up and down regulation button to set up speed signals. The 2 magnet polarity of vane wheel are opposite or there only 1 magnet, choose number 1. If the 2 magnet polarity of vane wheel are same, choose number 2. If choose wrong, will lead to speed with one time difference.

(8) Change manage password  — After enter into, if shows OFF state, it is no need to change, press confirm button, pass this step. And save the parameter then auto-exit. Press up regulation button, shows on, then press the confirm button to enter into the change state, input the new 4 password, then press the confirm button, save the new password and parameter then auto-exit. Notes: After finishing all parameters, must press the confirm button. Only do this can save the parameters. Please check and save new password.

LCD display	Panel display	cause of issue	Solution
	E-01	12V model: voltage higher than 18V/voltage lower than 10V	Check the power supply voltage, external power supply
	E-02	24V model: voltage higher than 32V/voltage lower than 20V	Check the power supply voltage, external power supply
	E-03	Glow plug short circuit/Glow plug open circuit	<ol style="list-style-type: none"><li>1. The glow plug is short-circuited or the connection wire is reversed</li><li>2. The insulation damage at the tail of the glow plug causes a short circuit</li><li>3. Leakage of glow plug</li><li>4. Poor contact of the glow plug connector</li><li>5. The glow plug is burned out and replaced</li></ol>
	E-04	Oil pump short circuit/oil pump open circuit	<ol style="list-style-type: none"><li>1. The oil pump is not connected properly, and the connection line of the oil pump is short-circuited or disconnected.</li><li>2. The pin socket control board is not firmly inserted</li><li>3. The oil pump circuit is disconnected and the oil pump is faulty</li></ol>
	E-05	The temperature of the shell is high, exceeding 260℃	<ol style="list-style-type: none"><li>1. The machine's air circulation is obstructed, and the air inlet and outlet are blocked, and the air duct is blocked</li><li>2. The installation space is too narrow</li><li>3. The oil pump with a large amount of oil is connected incorrectly</li><li>4. Oil leaking from the one-way valve of the oil pump</li><li>5. The sensor is damaged</li></ol>
	E-06	Fan short circuit / fan open circuit / fan magnet is too far away from the Hall sensor on the main board	<ol style="list-style-type: none"><li>1. The motor fan blade is stuck/carton</li><li>2. Adjust the gap between the wind wheel and the main board</li><li>3. Motor failure/or replacement of the main board</li><li>4. The motor socket is not plugged in properly</li></ol>
	E-07	The controller has detected a wiring harness connection failure	Check wiring, connectors
	E-08	Extinguished	<ol style="list-style-type: none"><li>1. The oil tank is short of oil, the oil pump is abnormal, and the oil quality is problematic.</li><li>2. The oil circuit is leaking or there are bubbles in the old oil circuit, and the oil supply is not continuous</li><li>3. The intake and exhaust pipes are blocked</li></ol>
	E-09	Case sensor short circuit/case sensor open circuit	Replace the temperature sensor, or the connector is in poor contact
	E-10	Ignition failure Failed to start (have tried to start both sides) Failed to form a flame	<ol style="list-style-type: none"><li>1. Whether the fuel tank is short of fuel or exhausted</li><li>2. Whether the oil pump is stuck or the oil pump is abnormal</li><li>3. Whether the oil circuit is correct, there are bubbles in the oil circuit, and the oil supply is not continuous</li><li>4. Poor power supply, oil problem</li></ol>