



AIR HEATER

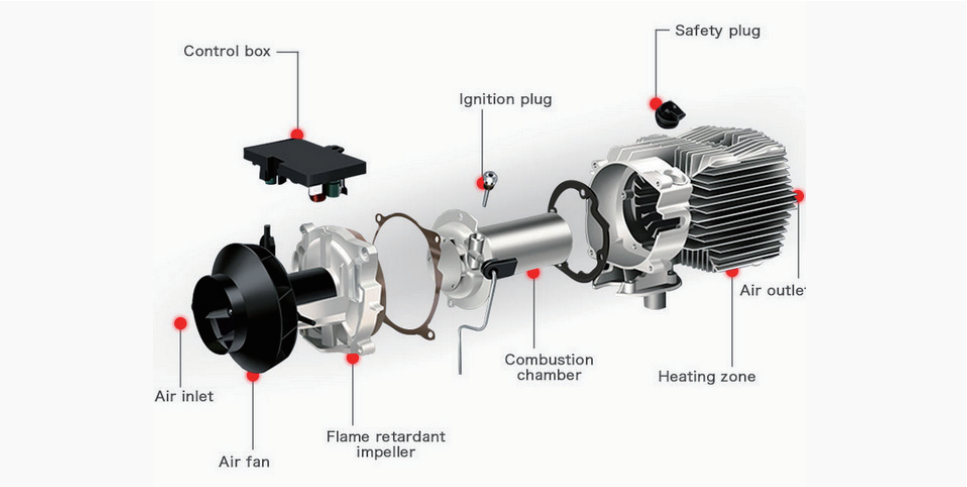
User Manual



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

Truck

1. on the co-driver's legroom.
2. on the back wall of the cab
3. Driver's seat backrest
4. within the tool box

RV

1. in front of the passenger seat
2. between the driver seat and passenger seat
3. 3&4 under the container
4. in the trunk

5 seater/7 seater

the heater is mainly installed in the passenger room or baggage room of the vehicle. If it cannot be installed, fix the heater under the underside of the vehicle, but beware of splashing.

excavator

1. inside the driver's seat.
2. on the back wall of the cab.
3. inside the protection box

4. Model

Type One		Type Three	
Type Two		Type Four	

5. Installation Diagram



6. Switch controller and Remote Control type

Switch controller		Remote Control	The battery of Remote Control
			Use 1*12V27A Battery, but not included 
			1* 12V27A Battery (Not included)
			Included 1*CR2025 Battery 
			Use 1*AAA Battery, but not included 
			1* AAA Battery (Not included)
			

6.1 LCD Panel Instructions(NO.1)



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, hows 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.

4. Query specification of machine state

Time show → Temperature show → Set up temperature show/pump capacity show In Unset ST, press confirm to loop check historical fault code show voltage show

5. Refueling fuel manually In unset state, first press the down regulation button, keep on and press the confirm button. Then enter the interface of Refueling fuel manually. Show H-on release confirm button, then release down regulation button. Press up regulation button, turn on the manual pump. Show H-on, can hear the working sound, then the pump icon light. Press down regulation button or set button can turn it off. Exit this model, the icon disappear.

6. Timing on-off After setting up the working time, press the confirm button to enter into the function of Timing on-off setting, it defaults of turn off state. Press up regulation button to enter into on state. Press the confirm button can set up the first group of turn on time, confirm it set up the turn off time. Press the confirm button can set up the second group. If set up successfully, the alarm clock icon light.

7. Temperature control mode switch In unset state, first press the up regulation button, keep on and press the confirm button, show P-x.x (xx mean pump capacity), means enter into the manual temperature control mode. The oil pump capacity is controlled between present capacity and initial capacity. Press number 2, show xx°C, means enter into the auto temperature control mode. The oil pump capacity is controlled between maximum capacity and initial capacity. The oil pump capacity of these two model according to the temperature variation. The difference is that, the oil pump capacity of auto mode can achieve the maximum. The manual model is limited in the present set point, can't achieve the maximum.

6.2 Remote Control Operation

Instructions(No.2)



Bi-directional Remote Control Operation Instructions

1. Operation instruction of buttons

On/Off button Press and hold for 2 seconds to turn on, or turn off

Confirm button View host working status

Up-regulation button Increase the oil mass or temperature according to the temperature control method.

Down-regulation button Increase the oil mass or temperature according to the temperature control method.

2. Remote control pairing operation

First, the receiving part which needs to be paired is put into the waiting pairing state. Then press the power button and confirm button on the remote control at the same time, and the interface of waiting pairing appears on the remote control. The remote control and the switch enter the automatic pairing process, and the code matching interface will be automatically exited after the successful code matching and the normal working parameters will be displayed. If the code matching failed, it would not enter the normal state of displaying working parameters. The code matching state will be automatically exited when it does not receive remote control code over time.

3. Temperature control mode switching

When the temperature control mode is selected by remote control, only press the up-regulation button and down-regulation button at the same time to display the temperature when switching to automatic temperature control, and it will display the oil mass if the temperature is controlled manually.

4. Working status adjustment

The working status of the heater can be adjusted at any time by remote control. The methods are as follows:

Increase the pump oil amount (manual temperature control mode) by up-regulation button or raise the setting temperature to increase the output temperature of the heater.

Decrease the of pump oil amount (manual temperature control mode) by down-regulation button or reduce the setting temperature to decrease the output temperature of the heater.

6.3 Remote Control Operation Instructions(No.3)



Operating mode:

① In manual mode, the gear can be adjusted within the range of 1~8;

② In automatic mode, the set temperature can be adjusted within the range of 8~36°C, and the position of the control switch varies according to The temperature in the cab changes, when the temperature rises or falls, the control switch will automatically Adjust the operating gear to quickly reach the set temperature, making the heater run more intelligently and economically.

③ When a fault occurs during operation, the fault code will be flashed on the display window of the control switch to find the fault location more accurately and intuitively.

Operating instructions:

On/Off: Press the button [On/Off button] (lower right) to turn on the machine in the off state; press the button [On/Off button] (lower right) to turn off in the on state;

Mode switching: In manual mode, press the [set key] (upper right) to switch to automatic mode, and press the [set key] (upper right) in automatic mode to switch to manual mode;

Gear adjustment: Press the [up adjustment key] (right upper middle) to run gear/temperature +1, up to 8 gears/36°C, Press the [downward adjustment key] (middle and bottom on the right) to run gear/temperature -1, the minimum is 1 gear/8°C;

Engineering mode: While powering on, press and hold the [up adjustment key] and [down adjustment key] for 3 seconds to enter the engineering mode, press the [up adjustment key] (right, middle and upper) item +1, and press the [down adjustment key] (Right Middle bottom) Item-1, display data items in the display area in engineering mode;

Item 1: the version number of the heater board;

Item 2: the fault code;

Item 3: Case temperature;

Item 4: Power supply voltage;

Item 5: Heater operating gear;

Item 6: Cab temperature;

Item 7: Altitude;

Item 8: Remote control matching enable

Item 9: Language selection

Remote control matching:

Method 1: In the engineering mode, press the adjustment key to adjust to the eighth item. The interface displays "rte". At this time, press a button on the remote control to successfully match. After the match is successful, it will automatically exit the engineering mode and return to the running interface.

Method 2: Long press the [upward adjustment key] (right upper middle) for 3s to quickly enter the remote matching mode, the interface displays "rte" at this time, click a button on the remote control and press a button at random to match successfully. After the match is successful Return to the running interface since exiting the project mode.

Language selection: In the engineering mode, adjust to the ninth item, the screen displays "v---", at this time, long press the setting key to enter the current language, press the [up/down adjustment key] to switch and select "v-EN" as English, "v-GN" It is German, "v-RU" is Russian, "v-OF" turns off the voice, long press the setting button to confirm the selection and automatically return to the running interface.

Pumping mode: After powering on, press and hold [Pump button] (upper left) for 7s, the pumping icon will light up, the display area will start a 300s countdown, start pumping oil, and automatically exit when the countdown ends. This operation needs to be completed before starting up. Cannot enter after booting;

Screen rest mode: There is no next operation within 30s after any operation, the screen will automatically rest, and the screen will turn on when you press any button.

Fault display: When the heater fails, the fault code flashes in the display area, see the table below for fault types;

6.4 Remote Control Operation

Instructions(NO.4)



1. Function

◀ ->Setting state,increase the data;If not,increase Hz/C.

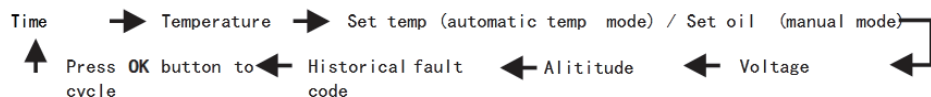
⏻ ->Press1 on,Press3 off

->Setting state,decrease the data;If not,decrease Hz/°C .The basic operation uses the above,and the settings uses the following operation:

⚙ Setting->Enter Setting state, adjust data, change working status.

OK ->Setting state, confirm the current data, and enter the next data to set ; if not,

2. ⚙ Check the Setting state(Press OK:Each time press to switch next state.)



3. Manual fueling description:

In the off state,press and hold ▶ and OK to enter the manual fueling.-Off.After releasing,press ◀ to start the operation.You can hear the working sound of the pump and the pump icon lights up.Press to ▶ exit the fuel fill and the pump icon disappears.The process of emptying air from the pipe line needs to be observed.When the oil reaches the position of the oil in let of the machine,it can stop.Excessive fuel enters the machine and there will be black smoke.

4. The switching description of Temperature control mode:

Press and hold the ◀ up and set keys ⚙ at the same time to switch the temperature control mode,manual temperature control,automatic temperature control The difference between the two temperature control methods is that the automatic mode pump oil can reach the maximum value of the parameter setting,the machine heat is higher,the manual mode pump oil quantity is limited to the current set value,and the parameter setting maximum oil quantity value will not be reached

5. The match of Remote control and LCD:On the"off"state.First,press the"power"and"confirm"button simultaneously on Remote controller until LCD screen displaying"wait for matching".Second,press off"and"on"buttonontheLCDscreenfor3~5seconds,then the screen will enter the"matching"interface.After match,it will exit automaticallyanddisplaythenormalworkingparameters.Any match failure,no displaying about the normal working parameters.Over time fail to match,exit the"matching"interface automatically also.

6. Parameter setting description(press the setting button to enter the setting state)

- 1) Time setting---Press the on or off button to adjust the parameters---Set the hour(24hoursystem),minute and other parameters,press the confirm button,then enter to the next interface.
- 2) Timing power-on Setting---Default off,display off,press on button then show the off,press confirm button--Set hours and minutes in turn,timing by count down,Max be 99minutes and 59seconds.
- 3) Timing power-off Setting---Default off,display off,press on button then show the off,press confirm button--Set hours and minutes in turn,timing by countdown,Max be 99minutes and 59seconds.
- 4) Input manage passport--Press the"on"or"off"button until it reach the correct value,then press the confirm button enter next interface,Any input error,it will comeback to the first digit.then no need to modify subsequent data,press the set button until exit,or wait for 10 seconds for exiting automatically.
- 5) Pump oil flow setting---Press the"on"or"off"button to adjust minimum pumping oil flow.after reach the value,press confirm button to set the max oil flow----Press the"on"or"off"button to adjust maximum pumping oil flow.after reach the value, press confirm button to enter next interface.
- 6) Fan speed setting---Press the"on"or"off"button to adjust min speed.after reach the value,press confirm button to set the max speed.Press the"on"or"off"button to adjust max speed.after reach the value, press confirm button to enter next interface.
- 7) Ignition plug power selection -----mother board operating voltage can be only selected under"off"state!Press the"on"or"off"button to switch--Set the working voltage,adjust the 12V system to display V-12,adjust the 24V system to display V-24, finish select.Please check the match status of oil pump,motor and ignition plug before turn-on.
-----Display5N-1,Press the"on"or"off"button to set the speed signal,same polarity for 2 magnets on impeller,select 5N-2,different polarity for 2magnets on impeller or only 1magnet (Defaults),select 5n-1.Any error for this parameters, 1times difference for the speed will lead to!
- 8) Ignition plug power selection,dispalyRF-5,press the"on"or"off"button,modify the value(1=35W,2=40W,3=45W,4=80W,5=85W,6=90W)Default value kindly recommend use the default value or modify the value after verification.
- 9) Manage password modification---Initial display off status,no need to change,press confirm button to skip the password modification,and save above modified parameters.Press the on button when modifying.Display oN status,press to confirm and enter the password modification status,press the on or off button to adjust.Afterthe4-digit password is entered correctly,press confirm button to enter next interface.After saving the new password and adjusting the setting parameters,it will exit automatically.

6.5 Remote Control Operation Instructions(NO.5)



1. Key operation instruction

On/off button----- Long press the ON / OFF button for 2 seconds to check the working status of the heater.

Right/left button ----According to temperature control method, increase oil quantity or temperature (adjust key according to temperature control method), low oil quantity or temperature.

2. Remote control pairing

First, the receiving part that needs + pair enters the state of waiting + pair. Then long press the power button and the confirmation button on the remote control at the same time, the remote control appears waiting + matching interface.

The remote control and switch enter the automatic + pairing process. If the code is successfully matched, it will automatically exit the code matching circle.

Screen, showing normal operating parameters. If the code matching fails, it will not enter the state of displaying the working parameters normally. If the remote control code is not received within the timeout, it will automatically exit the matching state.

3. Temperature control mode switch

When selecting the temperature control mode through the remote control, just press (Up + (Adjust key) at the same time, and the temperature will be displayed when switching to automatic temperature control, and the oil quantity will be displayed if the temperature is controlled manually.

4. Working state adjustment

The working state of the heater can be adjusted at any time by remote control. Methods as below;

Left button -- Increase the pump oil volume (manual temperature control mode), or increase the set temperature to increase the heater output temperature.

Right button --Reduce the pump oil volume (manual temperature control mode), or) lower the set temperature to reduce the heater output temperature.

6.6 Remote Control Operation

Instructions(NO.6)



1. Key Function



Set key→Long press the setting key to enter the parameter setting



ON/OFF→Short press to turn on, the screen will light up or there will be a voice prompt for turning on. Long press to shut down, there is a voice prompt to shut down

▲ Up button→In the non-setting state, increase the working temperature or oil level gear, in the setting state→up adjust the setting parameter

▼ Down button → In the non-setting state, down adjust the working temperature or oil level,In the setting state → lower the setting parameters

2. Manual fuel filling description

In shutdown state: short press the up key 5 times to start manual fuel filling, the screen displays the fuel pump icon .The sound of the oil pump can be heard. The oil pump starts working. Short press the key to turn off manual fuel filling, the fuel pump icon disappears,and the fuel pump stops working

The process of emptying the pipeline air requires manual observation. The oil can stop when it reaches the position of the machine's oil inlet, and too much fuel enters the machine. The ignition will emit black smoke.

3. Description of temperature control mode switch

In the power-on state: long press the key to switch the temperature control mode, manual temperature control (adjusting the oil volume to display L4). Automatic temperature control (adjusted temperature display 17°C). The difference between the two temperature control methods is that the automatic pump oil volume can reach the maximum value set by the parameter, and the machine heat is higher. The oil volume of the manual pump is limited to the current set value, and will not hit the maximum oil volume value set by the parameter. The gears are distinct and take into account the habits of some old drivers. Since the sensitive temperature sensing device is installed in the controller, after the user sets the temperature by himself, the remote control panel will automatically jump to the indoor temperature.

4. Remote control code description

In the shutdown state: long press the key to enter the remote control code matching interface, a red icon is displayed at the top of the screen ,Press the remote control on button to transmit the remote control code . The icon turns white, . The remote control code pairing is successful. If you press the remote control on button again, it will enter the power-on state. If the code matching fails, the icon color does not change . If the remote control code is not received after timeout, the remote control code matching will be automatically exited.

5. Language switch description

In the power-on state: long press the up key to switch the language, the system defaults the language to be English, and long press the up key in turn to switch to → Russian → German → Chinese

6. Description of parameter setting process

1. Enter the parameter setting → long press the up key to enter the password input interface, press the up or down key to adjust the value, and then press the set key to confirm to enter the next digit, the following values are set in sequence, and press the set key to confirm to enter the next item
2. Voltage setting→Press the up or down key to adjust the voltage 12V/24V. Press the set button to confirm to enter the next item
3. Ignition power selection→Press the up or down button to adjust the power to 6 levels, the default value 5. It is recommended to use the default value or modify it after verification. Press the set button to enter the next item
4. Fuel type selection → currently only diesel version. Press the set button to enter the next item
5. Minimum oil volume setting → Press the up or down button to adjust the minimum pump oil volume (0.8HZ-2.5HZ). It can be modified as required. Press the set key to enter the next item.
6. Maximum oil volume setting → Press the up or down button to adjust the maximum pump oil volume (3.0HZ-8.0HZ). It can be modified as required. Press the set key to enter the next item.

7. Minimum wind speed setting → Press the up or down button to adjust the minimum wind speed setting
8. (1360PRM-2600PRM). It can be modified as needed. Press the set key to enter the next item.
9. Maximum wind speed setting → press the up or down button to adjust the maximum wind speed setting (3000PRM-5000PRM). It can be modified as required. Press the set key to enter the next item.
10. Temperature control mode setting → press up to set automatic temperature control mode → press down to set manual temperature control mode. It can be modified as needed.

Modify password management → press the key to adjust the value, press the up key to confirm to enter the next digit, and modify the following values in turn

Note: After the parameter setting is completed, you must press the setting key to confirm and exit before saving the parameter setting. If you exit the parameter setting automatically, the data will not be saved. Please carefully check each newly entered password and save it so that you can enter to change the parameters next time. (No special requirements are not recommended to modify by yourself)

6.7 Remote Control Operation Instructions(NO.7)



Overall display:

⏻ :Off button;
 【▲】【▼】 : Gear/temperature/item adjustment button;
 M: Mode switch/setting key
 screen display area

Operating mode

- ① In manual mode, the setting gear can be adjusted within the range of 1~10;
- ② In automatic mode, the setting temperature can be adjusted within the range of 8~36°C, and the gear of the control switch changes with the temperature in the cab. When the temperature rises or falls, the control switch will automatically adjust the running gear. Quickly reach the set temperature, allowing the heater to operate more intelligently and economically.
- ③ When a fault occurs during operation, the fault code will be flashed on the display window of the control switch to facilitate more accurate and intuitive finding of the fault.

Instructions:

On/Off: Press 【⏻】 to turn on when the machine is off; press 【⏻】 to turn off when the machine is on;

Mode switching: press 【M】 in constant temperature mode to switch to gear mode, and press 【M】 in gear mode to switch to constant temperature mode;

Gear adjustment: press 【▲】 running gear/temperature +1, the maximum is 10 gears/36°C, press 【▼】 running gear/temperature-1, the minimum is 1 gear/8°C;

Time setting: In the power-on state, the screen displays the current time, long press the [M] key for 3s to enter the time setting:

Item 1: Set the current time, press 【M】 key to set, press 【▲】 【▼】 to switch;

Item 2: Set the automatic start time, the setting method is the same as above;

Item 3: It is the running time after automatic startup, the setting method is the same as above, and the switching unit is 0.5 hours;

Item 4: It is the ON/OFF setting for the auto-start function. After the auto-start function is turned on, the alarm clock icon on the screen is always on.

Engineering mode: Press 【▲】 【▼】 simultaneously for 3s to enter the engineering mode, press 【▲】 item +1, press 【▼】 item -1, the display area displays data items in engineering mode;

001: Heater motherboard version number; 002: Fault code; 003: Shell temperature; 004: Power supply voltage;

005: Heater running gear; 006: Cab temperature; 007: Altitude;

Remote control matching: In the power-on state, press and hold 【▲】 for 3s, the screen displays 'rte', then press any button on the remote control, the matching is successful, and it will automatically return to the running interface after success;

Language switching: Press and hold 【M】 【▼】 for 3s at the same time in the power-on state to switch, and switch circularly according to the sequence of 'English', 'Chinese', 'Russian' and 'Voice off';

Oil pumping mode: Press and hold the 【▼】 key for 7s in the shutdown state, the display area starts a 300s countdown, starts pumping oil, and automatically exits when the countdown ends, and cannot be manually exited except when the machine is turned off;

Fault display: When the heater fails, the fault code will flash in the display area, and the fault type is shown in the table below;

6.8 Remote Control Operation Instructions(NO.8)



Overall display:

- Off button;
- Gear/temperature/item adjustment knob;
- screen display area

Operating mode:

- ① In manual mode, the setting gear can be adjusted within the range of 1~10;
- ② In automatic mode, the setting temperature can be adjusted within the range of 8~36°C, and the gear of the control switch changes with the temperature in the cab. When the temperature rises or falls, the control switch will automatically adjust the running gear. Quickly reach the set temperature, allowing the heater to operate more intelligently and economically.
- ③ When a fault occurs during operation, the fault code will be flashed on the display window of the control switch to facilitate more accurate and intuitive finding of the fault.

Instructions:

On/Off: Press **[On/Off]** to turn on when the machine is off; press **[On/Off]** to turn off when the machine is on;

Mode switching: in manual mode, press and hold the [knob] for 3s to switch to automatic mode; in automatic mode, long press [knob] for 3s to switch to manual mode;

Gear adjustment: Rotate the [knob] clockwise to run the gear/temperature +1, up to 10 gears/36°C, Rotate the [knob] counterclockwise to run the gear/temperature-1, the minimum to 1st gear/8°C;

Engineering mode: Press **[ON/OFF]** [Knob] simultaneously for 3s to enter engineering mode, turn [Knob] item +1 clockwise, press [Knob] item -1 counterclockwise,

In engineering mode, the display area displays data items;

001: Heater motherboard version number; 002: Fault code; 003: Shell temperature;

004: Power supply voltage; 005: Heater running gear; 006: Cab temperature;

007: Altitude; 008: Remote matching enable

Remote control matching: In the power-on state, press the [knob] 3 times continuously, the screen will display 'rte', at this time, press any button on the remote control to match, and automatically return to the running interface after the matching is successful;

Language switching: In the power-on state, press the [knob] continuously twice to switch, and switch according to the sequence of 'English', 'Chinese', 'Russian' and 'Voice off';

Oil pumping mode: Press and hold the [knob] for 7s in the off state, the display area starts to count down for 300s and the oil pumping will start, and it will automatically exit when the countdown is over.

7. Description of LCD E code display

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	1. The glow plug is short-circuited or the connection wire is reversed 2. The insulation damage at the tail of the glow plug causes a short circuit 3. Leakage of glow plug 4. Poor contact of the glow plug connector 5. The glow plug is burned out and replaced
	E-04	Oil pump short circuit/oil pump open circuit	1. The oil pump is not connected properly, and the connection line of the oil pump is short-circuited or disconnected. 2. The pin socket control board is not firmly inserted 3. The oil pump circuit is disconnected and the oil pump is faulty
	E-05	The temperature of the shell is high, exceeding 260°C	1. The machine's air circulation is obstructed, and the air inlet and outlet are blocked, and the air duct is blocked 2. The installation space is too narrow 3. The oil pump with a large amount of oil is connected incorrectly 4. Oil leaking from the one-way valve of the oil pump 5. The sensor is damaged

LCD display	Panel display	cause of issue	Solution
	E-06	Fan short circuit / fan open circuit / fan magnet is too far away from the Hall sensor on the main board	1. The motor fan blade is stuck/carbon 2. Adjust the gap between the wind wheel and the main board 3. Motor failure/or replacement of the main board 4. The motor socket is not plugged in properly
	E-07	The controller has detected a wiring harness connection failure	Check wiring, connectors
	E-08	Extinguished	1. The oil tank is short of oil, the oil pump is abnormal, and the oil quality is problematic. 2. The oil circuit is leaking or there are bubbles in the old oil circuit, and the oil supply is not continuous 3. The intake and exhaust pipes are blocked
	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 ame	1. Whether the fuel tank is short of fuel or exhausted 2. Whether the oil pump is stuck or the oil pump is abnormal 3. Whether the oil circuit is correct, there are bubbles in the oil circuit, and the oil supply is not continuous 4. Poor power supply, oil problem

FAQ

For any questions you may have about the Hcalory product, please kindly copy this link [hcalory.com](https://www.hcalory.com) or scan below code to contact us . we will help you solve it as soon as possible.

If you are satisfied with our items, please leave a 5 star feedback on website to help others to know the items more.Appreciate your kind feedback and support.

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