

Fuel Parking Heater



Installation instructions and User's Manual





Product Description

Our Parking Heater uses the combustion of diesel fuel to generate the heat. The heat will be transferred through the aluminum shell, and then the hot air will be blown into the space which needs to be heated by the fan so that the ambient temperature reaches a certain comfortable level. This product is suitable for large trucks, construction vehicles, electric vehicles, RVs. There are two options available: 12V and 24V, and it can be used independently when the engine turn off.

Functional Characteristics

- ★ All control system chips adopt foreign-imported automotive-grade chips, and the quality of our products has exceeded the level of domestic factories;
- ★ The aluminum shell used in the internal parts of this unit is supplied by the manufacturers who supply the engine accessories to First Automotive Works(FAW); The combustion chamber is made of the imported pure stainless steel 316BS, which is characterized by high temperature resistance and longer working life. The quality ranks first in the industry.
- ★ The ignition plug is manufactured by the world's largest professional support factory, with the advantage of longer life and excellent quality.
- ★ We adopt the most advanced OLED display in the world which can show below information: 1.The voltmeter of the battery; 2.Tnumber of fan revolutions; 3.The watts you set; 4.The heater temperature. All these functions help driver to have a better understand of whether the battery is losing power, whether the fan is working normally, what the watt while it's working. 9 adjusted speeds and 500W different each speed making our heater more humane.
- ★ We use aerospace components as our wiring harness, effectively avoiding poor contact and open circuit, which making the entire machine more complete, more simple and safe.

Technical Parameters			
Model:	RHFB	RTHJ	RLHJ
Shell:	Plastic	Plastic	Aluminum alloy
Heating power:	5000/900	5000/900	5000/900
Voltage:	12V/24V	12V/24V	12V/24V
Air volume:	185/60	185/60	185/60
Start power consumption:	5-7A±1	5-7A±1	5-7A±1
Running power consumption:	1-2A±1	1-2A±1	1-2A±1
Control panel:	Digital Display	LCD Chinese	LCD remote control



Normally on/off

Long press for three seconds the ON/OFF to turn on the unit normally, long press for three seconds the ON/OFF to shut down the unit normally (Stop the power supply after shutting down the main unit). Press the + and - keys at the same time on the control panel of Model RHFB to start the oil pump directly. Simultaneously press the 3 keys: + and - keys of the control panel and the key of ON/OFF, then the three decimal points will light up to indicate that Plateau Mode has been activated.

Installation position

Use the four screws on the heater feet to secure the heater to the underside of the vehicle or the exterior wall of the vehicle.

When installing the heater, care should be taken to maintain adequate operating space for the air intake, the removal of the ignition plug and the controller. (The following is the recommended installation position method)

Truck installation position

In trucks, heaters are mainly installed in the cab. Or if it can not be installed in the cab, it can also be installed in the tool box or loading box.

- 1. The heater is located in front of the passenger seat.
- 2. The heater is located between the driver's seat and the passenger's seat.
- 3. The heater is located on the underside.
- 4. The heater is located under the rear seat.
- 5. The heater is located in the luggage compartment.

Installation position in the RV

In the RV, the heater is mainly installed in the room or in the trunk of baggage.

The heater can also be fixed to the underside of the vehicle, but care should be taken to prevent splashing.

- 1. The heater is located at the feet of the passenger seat
- 2. The heater is located on the rear wall of the cab
- 3. The heater is located under the driver's seat back
- 4. The heater is located inside the tool box

Installation position in car/large saloon

In car/large saloon, heaters are mainly installed in the passenger compartment or luggage compartment of the vehicle.

If it cannot be installed in the passenger compartment or trunk, the heater can also be fixed on the underside of the vehicle, but care should be taken to prevent splashing.

- 1. The heater is located in front of the passenger seat.
- 2. The heater is located between the driver seat and the passenger seat.





- 3. The heater is located on the underside.
- 4. The heater is located under the cargo compartment.
- 5. The heater is located in the luggage compartment.

Installation position in excavator cab

- 1. The heater is located inside the cabinet of the driver's seat.
- 2. The heater is located on the rear wall of the cab.
- 3. The heater is inside the protection box.

RHFB\RTHJ Fault description and precautions ON / OFF **RHFB LCD digital RTHJ LCD Chinese**

When the heater fails, the control switch OLED will display the error code. Different codes represent problems or contact failures in different parts to facilitate the corresponding maintenance process.

Error code	Cause of the failure	Solution			
1-2	Ourretourieur	Under the normal range 12V (8V-16V), 24V (19V-32V), check if the			
	Overtension	engine is generating too much power.			
1-3	Pump failure or poor	1. Check if there is looseness between the oil pump and the harness			
	contact	connector; 2. Unplug the aviation main plug, re-plug it and reset it;			
1-4	Ignition pin failure or poor	1. Check whether the main circuit board and the ignition pin plug are			
	contact	loose; 2. Unplug the aviation main plug, re-plug it and reset it;			
1-5		1. Check whether the main circuit board and the motor plug are			
	Moton foilung on noon	loose. 2. Unplug the main aviation plug and reconnect it, then restart			
	Motor failure or poor	it.			
	contact	3. Check if there are foreign objects or other obstacles next to the			
		motor, resulting in abnormal operation of the motor;			
1-6	Temperature sensor failure	1. Check whether the main circuit board and the temperature sensor			
	or poor contact	plug are in poor contact. 2. Unplug the main aviation plug and			
	or poor contact	reconnect it, then restart it.			
1-7		1. Check if there is air in the oil tube and unclog the oil circuit;			
		2. Check whether the fuel tank is short of oil, refuel it, re-exhaust it,			
		unclog the oil tube, and finally insert the machine and restart it;			
		3. Check the oil tube to see if it is frozen; 4, check the oil pump to see			
		if it is blocked;			
	Unsuccessful startup	5. Check the exhaust pipe, if there is the emergence of a small			
	Unsuccessful startup	amount of white smoke, then there is air in the oil circuit or there			
		enters a small amount of foreign matter, resulting in obstruction of			
		the oil circuit; and the small amount of white smoke is the reason of			
		the unsuccessful start.			
		6. Check the exhaust pipe, if there is a lot of white smoke, please			
		check if the filter screen next to the ignition needle of the combustion			

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		chamber is blocked, which will affect the amount of the intake air,		
		resulting in unsuccessful start;		
		7. Check the exhaust pipe, if there is no smoke, it means that the oil		
		circuit is frozen or the joint between oil tubes is not tight enough, so		
		please tighten it.		
		Note: There is no folding allowed in the joint between the oil		
		tubes otherwise it will lead to the startup unsuccessful and the		
		temperature rise;		
		8. Check the diesel filter to see if it is blocked;		
1-8		1. Temperature alarm \leq 220 degrees; 2. Check if the air inlet is		
	Overheating	blocked by foreign matter, which leads to high temperature alarm;		
1-9		1. Check whether the fuel tank is short of oil; 2. Check if the oil		
	Oil shortage failure	circuit is unimpeded; 3. Check whether the oil tube and oil circuit are		
		frozen; 4. Check whether the oil pump is working properly.		

1. After the first installation, the heater should be turned on several times in order to completely eliminate the air in the fuel supply system and make the fuel line full of fuel.

2. The heater needs to be tested before use. During the test run, carefully check all connections for leaks and conditions of safety. If there is smoke emission, abnormal combustion noise or fuel odor, the heater should be turned off, and the fuse should be unplugged. It can be used after being overhauled by professionals.

3. Before each heating season, a qualified professional must make an inspection to perform the following maintenance work:

Check the air inlet and air outlet to see if there are contamination or foreign matters;
Clean the exterior of the heater;
Check the circuit joints to see if there is corrosion or looseness;
Check the intake pipe and exhaust pipe to see if there is obstruction or damage;
Check the fuel pipe to see if there are leaks;

4. When the heater is not used for a long time, it should be run once every 4 weeks, about 10 minutes each time, and the oil pump and the air combustion fan must also be operated at regular intervals to prevent the mechanical parts from malfunctioning (block failure).

5. The inlet and outlet of the heater must be kept free of clogging and dirt, so that the warm air duct can be unblocked to prevent overheating.

6. When replacing the low-temperature fuel, the heater should be operated for at least 15 minutes to inject new oil into the fuel pipeline and the fuel pump.

7. The usage time of the heat exchanger of the Heater cannot exceed 10 years. After expiration, genuine parts must be used instead, and they should be replaced by the heater manufacturer or its authorized agent. The overheating sensor must also be replaced at this time.





8. The heater's exhaust pipe used for the emission of the combustion gas, if is placed in a person's area, when it is used for 10 years, it must be replaced with genuine parts.

9. When carrying out electric welding work on the car, the positive power line of the heater should be removed from the battery and grounded to prevent damage to the controller.

10. During the transportation and storage of the heater, the ambient temperature of the heater should not exceed the range of $-40^{\circ}C \sim 85^{\circ}C$ to prevent damage to the electronic components.

11. Only authorized customer service stations are allowed to install and maintain heaters, and non-original parts are prohibited to avoid danger.

12. The warranty doesn't cover user damage from maltreatment and/or negligence, such as unqualified unpacking or not being installed or operated in accordance with the regulations.

Instructions for use and fault description of the products RLHJ

Universal 12V-24V Instructions for use of three-wire LCD panel

1. Key functions

Settings \rightarrow Enter the setting state, you can press it to adjust the setting parameters and change the working status of the machine.

 $OK \rightarrow In$ the setting state, you can press it to confirm the current setting value and enter the next parameter setting;

In the non-setting state, you can press it to check the status of the machine.

 $\blacktriangle \rightarrow$ In the setting state, you can press it to increase the setting parameters; in the non-setting state, you can press to increase the set working temperature.

 $On/Off \rightarrow Short$ press the key to turn on the machine, the status light is on; long press the key for 2 seconds to power off, the status light flashes.

 \rightarrow In the setup state, you can press it to set the parameter down; in the non-setting state, you can press it to lower the set operating temperature.

2. Remote control code matching description

In the non-setting state, press the " \uparrow " key and the "OK" key at the same time, and keep them for more than 3 seconds to enter the remote control code matching interface with the display of HFA-. Press the "ON/OFF" of the remote control to launch the remote control code, after the code matching, exit the code matching interface, then the machine will enter the Boot-Up State. If the code matching fails, it will not enter the Boot-Up State. If the code matching fails, it will not enter the status of the code matching will be automatically exited.

3. Parameter Setting Description (press the setting key to enter, the corresponding status icon of the display will be lightened up)





- 1. Time setting
- 2. Timing POWER-ON/OFF setting
- 3. Management password input
- 4. Pump oil amount setting
- 5. Fan speed setting
- 6. Operating voltage setting
- 7. Speed signal selection
- 8. Management password modification

Press UP and DOWN keys to adjust parameters.

Press OK to set the hour and minute (24-hour format), then press the OK key to enter the next setting.

The default state is off, 1-OF will be displayed on the screen, when the UP key is pressed, 1-ON will be displayed.

Press OK key to set the first group of power on and off time, after the setting of second group of ON/OFF time, press the OK key to enter the next setting. Press the Up/Down key, when the correct value appears, press OK to enter the next digit. After the input of 4 correct digits, press the OK key to enter the next setting.

Press the Up/Down key to modify the minimum pump oil amount. After reaching the required value, press OK to enter the next setting.

Set the maximum pump oil amount, use the Up/Down key to modify, after reaching the required value, press OK to enter the next setting.

Press the Up/Down key to modify the minimum fan speed, when reaching the required value, press OK to enter the next setting.

Press the Up/Down key to modify the maximum fan speed setting, when reaching the required value, press OK to enter the next setting.

The motherboard operating voltage can only be selected in the Power-Off state, press Up/Down key to switch to the operating voltage.

Adjust the 12V system to the display of U-12, 24V system to the U-24 to complete the selection. (Before starting the machine, check whether the machine oil pump, motor and ignition plug are matched to avoid damage)

Press the Up/Down key to set the speed signal, if the two magnets of the impeller are of opposite polarity or if there is only one magnet, then select the parameter 1.

If the two magnets of the impeller have the same polarity, please select parameter 2. If this parameter is selected incorrectly, it will cause the 1 times difference in speed.

After entering, it will display the OFF state, if there is no need to modify the parameter please press the OK key to skip the password modification, and it will automatically exit after saving the parameters. Press the UP key, after the display of ON, press the OK key to enter the modification state, enter the 4-digit password, press the OK key to save the new password and the adjusted setting parameters, then it will exit automatically.

Note: After all the parameters are set, press the OK key to save the setting parameters and exit. If you press the SETTING key to exit, the parameters will not be stored. Please check each newly entered password carefully, remember and save it so that the next time you can enter the setting of parameter modification.





4. Machine status query description

Time display Ambient temperature display Set temperature display (automatic temperature control) / Setted pump oil amount display (manual temperature control)

In the non-setting state, press OK to make the cycle view. History fault code display Supply voltage display

5. Manual fuel filling description

In the non-setting state, first press the Down key and then press the OK key to enter the Manual Oil-Pump interface and the display shows H-OF. First release the OK key, then release the Down key, press the Up key to start the Manual Oil-Pump the display shows H-on, then you can hear the work sound of the oil pump and you can see the oil pump icon is lit. Press the Down key, or the SETTING key to turn off and exit the process of Manual Oil-Pump, the icon of the oil pump disappears.

6. Timing POWER-ON/OFF setting description

After the running time is set, press the OK key to enter the Timing POWER-ON/OFF setting. The default state is OFF, press the UP key to turn on the ON state, press the OK to set the hour and minute of the first group of Power-on Time, confirm and then enter to set the hour and minute of the Power-off Time. Press the OK key to enter the setting of the second group, the method of setting is the same as above, first set the hour and minute of power-on time, and then set the hour and minute of power-off time. Intervals can be left between the two sets of timing. The timer function only operates once. After the running, the current timer will be turned off. If you want to use it again, please turn it on and set the time again. If there is a timer setting, the alarm icon will light and the icon will disappear after the timer expires.

Instructions for use and fault description of the products RLHJ

LCD Model (Three-wire switch type)			
Fault description	Digital display status	Solution	
(Machine Failure)	(LCD icon Flashing)	Solution	
Undervoltage of the power	Panel display E-01	Raise the supply voltage	
Overvoltage of the power	Panel display E-02	Reduce the supply voltage	
	Panel display E-03	Check to see if the ignition plug has the	
Ignition plug failure		problem of open circuit or short circuit	
Oil pump failure	Panel display E-04	Check to see if the oil pump is powered off,	





		or has a problem of short circuit	
Orachaeting of the most inc	Panel display E-05	Check to see if the temperature sensor on the	
Overheating of the machine		housing, or if the fan speed is abnormal	
		Check the magnet polarity and the hall sensor	
Motor failure	Panel display E-06	position	
	Panel display E-07	Check to see if the panel connection plug,	
Disconnection fault		blue communication cable connection is	
		normal.	
	Panel display E-08	Check to see if there is air or blockage in the	
Flame extinguished		oil circuit. Check if the housing temperature	
		sensor is faulty or the socket terminals are in	
		good contact.	

Digital tube switch (Four-wire type)

Press and hold the ON/OFF key for three seconds, the machine enters the working state; press and hold for three seconds to enter the power-off state.

After the machine is installed, it is necessary to self-pump the oil. After the machine is turned on, press the switch five times to enter the self-pump state.

Note: Since the self-pump can only work when the power supply has just been switched on, do not install the tubing under the machine before the oil-pumping is completed, otherwise the over-combustion inside the machine will cause black smoke for the first ignition.

LCD Model (Three-wire switch type)			
Fault description	Digital	Solution	
(Machine Failure)	display status	Solution	
Undervoltage or overvoltage of	E01	Check the voltage or connection of the battery	
the power	E01	Check the voltage of connection of the battery	
Open or short circuit of the	E02	Check whether the pump and wiring harness are	
pump	E02	grounded or in virtual connection	
Open or short circuit of the	E03	Check concer thus or replace concer	
housing temperature sensor	E03	Check sensor plug or replace sensor	
Open or short circuit of the air	E04	Power off and re-power, replace the controller if the	





inlet sensor		fault is not removed.	
Open or short circuit of the ignition plug	E05	Check ignition plug or replace ignition plug	
Air intake sensor high temperature alarm	E06	Check whether inner air inlet is smooth	
Open or short circuit of the fan hall sensor	E08	Check the distance between the fan magnet and the sensor	
Flame extinguished fault	E09	Stop the oil supply midway to check the oil circuit	
Ignition failure	E10	Check power supply, ignition plug voltage and oil circuit	
Shell high temperature alarm	E11	Air Outlet blocked or housing temperature sensor improperly installed	
Connection failure between the switch and the host	E18	Check whether the harness switch port and controller port are in virtual connection	

 \times Both the digital panel and the LCD panel described in the table can be equipped with remote control. The fault content is exactly the same as the contents of the above table.

 \times The fault contents of the knob panel are the same as above. The fault display mode is indicated by the number of flashes of the indicator or the number of flashing indicators (the indicator display mode depends on the number of indicators).

If the above items are all normal and the heater still does not start up or work stably, please contact the seller or the manufacturer.

After-sale Warranty

Dealer: Day Month Year

Username	Heater model	
License plate number	Car model	
Repair time	Contact number	





Installation position	Installation date	
Installer		
Maintanence Item		

Warning

1. During installation, the fixed backboard must be kept tight with the car's sheet metal so that the combustion exhaust gas does not enter the cab through the gap and cause injury to the drivers.

- 2. Please use the appropriate international standard diesel to prevent diesel freezing.
- 3. Exhaust pipe length must not be less than 30 cm.
- 4. The exhaust gas outlet must be fixed and placed in an open space.
- 5. The outlet of the exhaust pipe is not allowed to face in the direction of traffic.

6. The host's hot air outlet and exhaust gas outlet should avoid facing flammable and explosive materials to avoid fire accidents.

7. If the driver is sleeping in the car for a long time, please open a little bit of the window to promote indoor air circulation so as to avoid excessive indoor temperature and bring unnecessary loss to the driver.

Recommendation: After the heater is fixed, it is recommended to seal the installation gap with a sealant. Our company reserve the right to update the notes without prior notice. We reserve all the right for the final explanation

