

Technical Support and E-Warranty Certificate www.vevor.com/support

# DIESEL HEATER

We continue to be committed to provide you tools with competitive price. "Save Half", "Half Price" or any other similar expressions used by us only represents an estimate of savings you might benefit from buying certain tools with us compared to the major top brands and doses not necessarily mean to cover all categories of tools offered by us. You are kindly reminded to verify carefully when you are placing an order with us if you are actually saving half in comparison with the top major brands.



# **DIESEL HEATER**

MODEL:CY-5002







#### **NEED HELP? CONTACT US!**

Have product questions? Need technical support? Please feel free to contact us:

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This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

Symbol	Symbol Description
	<b>Warning:</b> To reduce the risk of injury, the user must read the instructions manual carefully.
<u>^</u>	This symbol, placed before a safety comment, indicates a kind of precaution, warning, or danger. Ignoring this warning may lead to an accident. To reduce the risk of injury, fire, or electrocution, please always follow the recommendations shown below.
	CORRECT DISPOSAL: This product is subject to the provision of European Directive 2012/ 19/EC. The symbol showing a wheelie bin crossed through indicates that the product requires separate refuse collection in the European Union. This applies to the product and all accessories marked with this symbol. Products marked as such may not be discarded with normal domestic waste, but must be taken to a collection point for recycling electrical and electronic devices.
	Warning: Toxic material. Take care to avoid coming into contact with toxic material.
	<b>Warning:</b> Flammable material. Take care to avoid causing a fire by igniting flammable material.

#### **SAFETY INSTRUCTION**



#### **WARNING:**



Read all safety warnings, instructions, illustrations, and specifications provided with this diesel heater. Failure to follow all instructions listed below may result in electric shock, fire, and /or serious injury.

- 1. The following measures shall not be adopted
  - Change the important component of the diesel heater.
  - Make use of spare parts from other manufacturers without permission.
  - Disobey the instruction and guide during installation or operation.
- 2. Only allow using original attachment and spare parts during installation and maintenance.

- 3. The heaters shall not be used in places where they may form flammable vapor or dust, for example:
  - Fuel depot
  - Carbon storehouse
  - Timber storehouse
  - Granary and similar sites
  - Diesel/petrol station

And keep away from fuel tanks, compression tanks, fire extinguishers, clothes, or other flammable objects.

- 4. Do not use cigarette lighter for startup.
- 5. Do not use the heater in closed and/or unventilated places.
- 6. The heaters shall be turned off when filling fuel.
- 7. Do not cut off the electric power in operation.
- 8. If the fuel leak or discharge from the fuel system of heaters, please contact VEVOR for repair.
- 9. Place the exhaust outlet outside to prevent any penetration of exhaust fumes.
- 10. In the process of work, it is forbidden to cut off the electric power directly to stop the heater from working.
- 11. Seal all gaps between the mounting plate and the car body.
- 12. The machine will stop heating after over-temperature protection. Please do not power off. After the machine is naturally cooled and turned off, it can be restarted.
- 13. After turning off the machine, please do not immediately disconnect the power supply. It takes 3-5 minutes for the machine to stop working completely.
- 14. After starting the machine for 3-5 minutes, it will work normally and heat up. Please wait patiently.
- 15. When the heater is just started, the current is relatively high, so an adapter with a voltage of 12V and a current of 15A or greater is required for the power supply.
- 16. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

#### 17. WARNING: Flammable material



During installation/use, service, and disposal of the appliance, please pay attention that there should be no flammable substances around the exhaust pipe. The temperature of the exhaust pipe is very high when it

is working. Take care to avoid causing a fire by igniting flammable material.

Please strictly follow the following methods to correctly install insulation sleeves on the exhaust pipe and reduce surface temperature:



#### 18. WARNING: Toxic material



- 19. During installation/use, service, and disposal of the appliance, please install the appliance with space for ventilation to prevent carbon monoxide poisoning. Place the exhaust outlet outdoors to prevent exhaust gas from seeping in.
- ① To prevent the risk of carbon monoxide poisoning caused by improper installation, the product is equipped with a carbon monoxide alarm. When the carbon monoxide content in the enclosed space reaches 300ppm, the LCD switch will prompt CO to exceed the limit. When the content reaches 500ppm, an alarm will be triggered and the machine will be shut down. The leakage point needs to be checked and repaired immediately before starting up for use.
- ② The carbon monoxide alarm device is equipped with a 2m extension cable, which can install the probe in any position. It is not recommended to install it too far away from the diesel heater or too close.



# SAVE THESE INSTRUCTIONS

#### **FCC INFORMATION**

**CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment!

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This product may cause harmful interference.
- 2)This product must accept any interference received, including interference that may cause undesired operation.

**WARNING:** Canges or modifications to this product are not expressly approved by the party. Responsibility for compliance could void the user's authority to operate the product.

**Note:** This product has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules, These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This product generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful

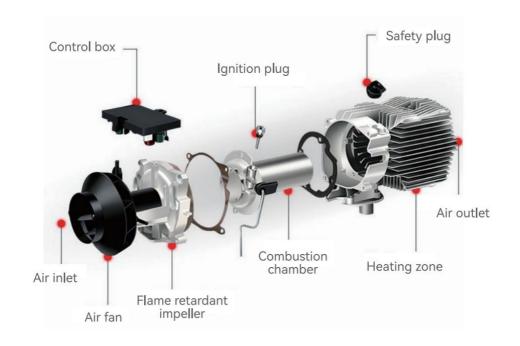
interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the distance between the product and the receiver.
- Connect the product to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

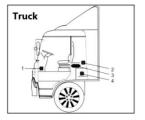
#### PRODUCT FUNCTION

- 1. The diesel heater (hereinafter referred to as the heater) is independent of the original engine system. It makes use of a 12-24V direct current to drive. There are two kinds of control modes for the heater: Automatic control mode and Manual control mode. The heater adopts light diesel, which corresponds to the environmental temperature as fuel, and it can be started and operated normally at a temperature of above 40N. The inhaled fresh air is heated to hot air through the heat exchanger by the energy that comes from burning fuel, then blown to where it is needed. This type of heater has the advantage of compact structure, lightweight, high thermal efficiency, economy of electricity and fuel, and easy installation.
- 2. The heater gets rid of damage to the car caused by the sudden drop in temperature, improves the temperature inside the car, and preheats the engine coolant to avoid engine wear at low temperature. Conducive to car interior thawing, car start, and car glass defrost fog.

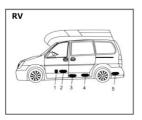
#### **INTERNAL STRUCTURE**



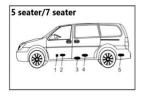
#### **INSTALLATION POSITION**



- 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.



- 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.



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 be ware of splashing.



- 1. Inside the driver's seat.
- 2. On the back wall of the cab.
- 3. Inside the protection box.



- 1. Installed in the garage against the wall
- 2. There should be no foreign objects blocking the front and rear air vents.
- 3. No flammable materials around the exhaust pipe



- 1. Installed against the wall of the warehouse
- 2. There should be no foreign objects blocking the front and rear air vents.
- 3. No flammable materials around the exhaust pipe



# The installation of the machine requires professional personnel to install it.



It is recommended to use high-grade diesel fuel when refueling the diesel heater. Other types of fuels, such as kerosene, vegetable oil, gasoline, waste oil, etc., cannot be used. Otherwise, the heater may have an unpleasant odor and malfunction during operation.

# **MODEL**

Model	CY5002	CY5004
Appearance		
Power ZWH	8KW	
Heating medium	Air	
Fuel	Diesel	
Ratings	DC12-24V/40W	
Adapter	100-120V∼, 50-60Hz, 12V/1 100-240V∼, 50-60Hz, 12V/12/	

# **PACKING LIST**

Model		CY-5002	CY-5004
Main engine		1	1
Carbon monoxide module		1	1
Power cord		1	1
Extension line	b	1	1
Remote control	(M) (M) (M) (M)	1	1
Rotary tuyere	-	/	1

Adapter	1800	1	1
Machine fixing piece		4	4
User Manual	VEVOR 	1	1
Silencer with 1 fixing piece and 2 screws		1	1
Intake pipe		1	1
Exhaust pipe		1	1
Blowpipe		4	1
Blowpipe clamp		4	1
Clamp		6	6
Pipe clip	C	2	2
Air filter element		1	1
Screw for the lock catch		6	6
Quick connector		1	1
Protective sleeve		1	1
Silencer retaining screw		1	1
Machine fixture bolts	[:	4	4

Refer to the installation diagram below and carefully read the precautions when installing or using:

#### 1. No Side Installation:

\* Side installation of the diesel heater will result in oil leaks inside the machine after a period of use, producing a large amount of smoke and carbon monoxide poisoning. During installation, leave a space of 10cm around the heater to ensure good ventilation.

\* If installing the heater inside a building:

- ① With the heater placed indoors: Make holes in the wall for the exhaust pipe to be placed outdoors. Pay attention to insulating the exhaust pipe as it can become very hot and could cause a fire.
- ② With the heater placed outdoors: It's necessary to extend the exhaust pipe to avoid the exhaust from being sucked into the building from the back fan position of the heater, which can lead to carbon monoxide poisoning.





Incorrect Installation Direction

**Correct Installation Direction** 

# 2. Precautions for the power supply:

- ※ The power supply for the diesel heater must meet the following requirements: Voltage: 12V; Current: ≥20A, either from a direct power source or a battery. When powered by a battery, do not charge the battery while using the heater as insufficient current can cause malfunction. Ensure a firm and secure connection to the battery. Using clamps for fixation can result in poor contact.
- When extending the power cable for the diesel heater, the wire diameter should be >2mm². Using a thin wire can lead to insufficient current, causing the heater not to work. After connecting, use insulating tape to protect the connection and prevent electrical leakage, which might lead to fires.
- \*Do not disconnect the power when the diesel heater is operating at high temperatures. This can cause backfire due to high temperatures. Repeatedly doing so can cause permanent damage. Solutions:
- If power is cut and you immediately turn on the heater: Wait until the internal heat of the heater has completely dissipated before turning it on for normal operation.
- If the heater is turned on a long time after a power cut: Incomplete combustion inside may produce a large amount of smoke. Wait for the smoke to clear, and the heater will automatically start and operate normally.



It is recommended to use high-grade diesel fuel when refueling the diesel heater. Other types of fuels, such as kerosene, vegetable oil, gasoline, waste oil, etc., cannot be used. Otherwise, the heater may have an unpleasant odor and malfunction during operation.

# **PRODUCT INFORMATION**

#### Model:CY-5002



1	Fuel tank port	2	Fuel tank scale
3	Carbon Monoxide Alarm	4	liquid crystal shutter
5	Outlet	6	footing
7	Air inlet	8	Power supply port
9	exhaust port	10	Air intake

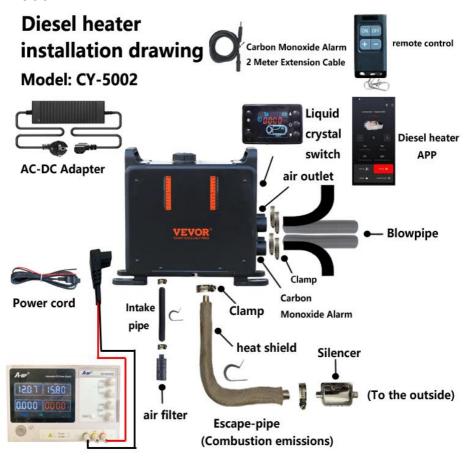
#### Model:CY-5004



1	handle	2	Outlet
3	footing	4	Fuel tank port
5	liquid crystal shutter	6	Carbon Monoxide Alarm
7	Fuel tank scale	8	Air inlet
9	Power supply port	10	Air intake
11	exhaust port		

#### **INSTALLATION DIAGRAM**

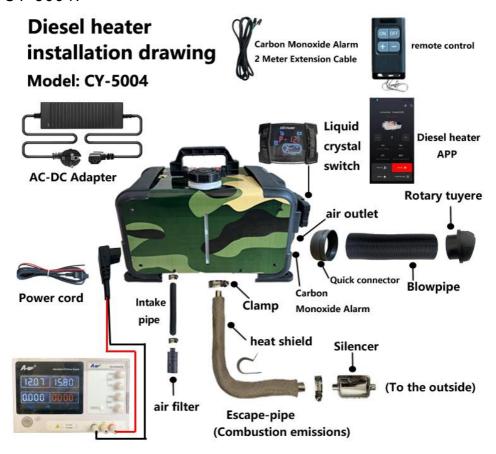
#### CY-5002:





When the heater is just started, the current is relatively high, so an adapter with a voltage of 12-24V and a current of 12A or greater is required for the power supply.

#### CY-5004:



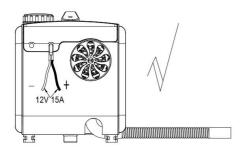


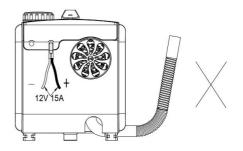
When the heater is just started, the current is relatively high, so an adapter with a voltage of 12-24V and a current of 12A or greater is required for the power supply.



# Warning:

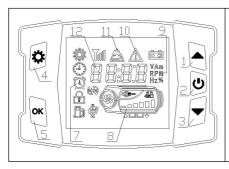
- 1. The air inlet shall not be blocked, and keep the inlet open and clear.
- 2. Keep the exhaust pipe clear. The exhaust pipe outlet shall be kept away from anything flammable, and avoid heating and igniting the flammable goods and loading cargo on the ground.
- 3. To ensure optimal combustion, please remember that the smoke exhaust pipe cannot be placed upward, but must be placed horizontally or downward.





# **Panel operation instructions**

### ─. The control panel is shown in the following figure

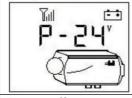


- 1. Adding keys;2.0n/0ff button;
- 3. Subtraction key; 4. Set key;
- 5.0K key;
- 7. State symbols; 8. Host schematic diagram;
- 9.Data unit;10. Fault symbols;
- 11. Plateau symbol; 12. Display data and parameters;

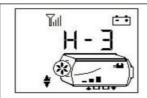
Display time: The time displayed in standby mode is natural time; Run time: The time displayed in the startup state is the time when the machine starts running from startup.

# 二、Usage operation

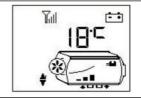
### 1. On/off Operation



Power off status



Power on status (manual mode)



Power on status (automatic mode)

### 1)Power on operation

In the shutdown state, press and hold the "U" button for 2 seconds to turn on the device, and the display will show "Power on status" as shown in the above picture.

# 2) Shutdown operation

In the power on state,long press the "U"button for 2 seconds, and the device enters the shutdown and cooling process, displaying "OFF". After the device cools down, it shuts down and displays the "shutdown status" as shown in the above picture. Do not force power off when displaying "OFF". Power off may damage accessories due to high temperature inside the machine and inability to dissipate heat! Wait until the machine is displayed in the shutdown state before powering off!.

#### 3) Manual mode operation

The manual mode consists of 6 gears (H1-H6). H6 represents the maximum power,as shown in the "power on state" in the figure above, Use the "▲" or "▼" key to increase/decrease the gear.

### 4) Automatic mode operation

Automatic mode, as shown in the above figure, with a setting of  $18^{\circ}$ C. Use the " $\blacktriangle$ " or " $\blacktriangledown$ " keys to increase or decrease the temperature value, and set the range to  $0-40^{\circ}$ C.Long press the " $\clubsuit$ " button for 2 seconds to switch between manual/automatic modes.Automatically upshift/downshift outside the set temperature range of  $\pm$  3°C.

# 2. Switching to display data on startup

Power on status. Short press the "U" button to switch between displaying data in the following order:

gear(or set temperature)->shell temperature ->working voltage ->ambient temperature ->Carbon monoxide concentration

#### 3. Temperature unit switching

Simultaneously press and hold the "U"+" \( \Lambda \) "keys for 2 seconds to switch the temperature unit to "Fahrenheit/Celsius".

#### 4. Manual oiling operation

In the shutdown state, press the "▲" or "▼" button simultaneously for 2 seconds to manually control the oil pump to pump oil. Release the button and stop pumping oil.

#### 5. Plateau mode operation

Simultaneously press and hold the "\* "+"OK" keys for 2 seconds to enter highaltitude mode. The icon displays the start of high-altitude mode. In high-altitude mode, the wind oil ratio decreases to adapt to high-altitude hypoxia, and then press and hold the "\* "+"OK" keys for 2 seconds to exit high-altitude mode.

#### 6. Time on/off time operation

Press and hold the "OK"+ "▼" keys for 2 seconds to enter the timer setting

interface, and the indicator symbol " will be displayed. Display to set the shutdown time and not to set the startup time. If the timer function is already enabled, turn off the timer function and the " symbol will go out.



- 1) Press the "▲" or "▼" key to adjust the time value. The time adjustment range is from 00:00 to 23:59
- 2)Press the "U"key to switch and adjust the number position, and the corresponding number will flash.
- 3)Press the "OK" button or operate without a button for 15 seconds to save the set value. If you are setting the startup time, switch to the shutdown time setting. Otherwise, exit the timer setting.
- 4) Press the "\* key to not save the set value. If you are setting the startup time, switch to the shutdown time setting. Otherwise, exit the timer setting.
- 5)In the unset state, press the "\* key to cycle through the display of the scheduled time for the day.

After activating the timer function, the clock will automatically start up when it reaches the scheduled startup time; Automatically shut down when the scheduled shutdown time is reached. When the panel is powered off, the timer function status will be saved, and after power on, the timer function status will be restored.

If the timer function is not manually turned off, as long as the clock reaches the scheduled on/off time, the device will automatically turn on/off.

#### 7. Clock synchronization operation

Press and hold the "OK" button for 2 seconds to enter the clock adjustment interface, and the indicator symbol "" "" "will be displayed.

- 1)Press the "▲" or "▼" key to adjust the time value. The time adjustment range is from 00:00 to 23:59
- 2)Press the "U"key to switch and adjust the number position, and the corresponding number will flash.
- 3) After adjusting the time, press the "OK" button or operate without a button for 15 seconds to exit this interface. Automatically synchronize phone time when connecting to the App.

#### 8. Remote control matching operation

In the shutdown state, press and hold the "♥"+"▼"keys for 2 seconds to enter the remote control matching interface, as shown in the following figure.

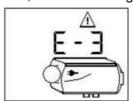
# HFA I

1)Press the "▲" or "▼"key to adjust the storage address: HFA1、HFA2、HFA3、HFA4, corresponding to four remote controls.

- 2)Select the remote control number, press any key on the remote control, the machine will successfully match the code and exit the match status.
- 3)Press the "U" key to exit the remote code pairing.
- \*Remote control requirements: frequency band 433MHz, 24 bit code.

#### 9. Fault alarm

As shown in the figure below, the corresponding fault symbol flashes, and the corresponding faulty component icon flashes. The displayed data is the fault code, and its meaning can be found in the fault table.



\*Spark plugs, oil pumps, fans, sensors, power supplies, and other symbols flash to indicate that the corresponding components have malfunctioned.

# 10. This panel supports mobile apps to control this device through Bluetooth.

#### Instructions for use

- 1. It is prohibited to use in environments with high humidity, conductive dust.flammable and explosive gases, dust, materials, corrosive media, strong light exposure, and strong magnetic, high-voltage, and high current equipment in the vicinity.
- 2. Power supply voltage range: DC24V controller applicable(18-32)V; DC12Vcontroller is suitable for(9-16)V; Different voltage controllers are not interchangeable and are prohibited from exceeding the applicable voltage range.
- 3. Do not open the controller shell without permission.
- 4. The equipment must be installed strictly according to requirements and used under safe conditions.

5. When the body is hot and the fan cannot operate normally, it is necessary to quickly cool down the body, Blow cold air into the combustion intake hole to cool down and lower the body temperature below  $80\,^{\circ}$ C. Prevent high-temperature damage to components or fire.

When heating the equipment, it is necessary to ensure that each air duct is unobstructed and that the pipeline is free of bends, pressures, and blockages in order to effectively ensure the heating efficiency and normal operation of the equipment. Blocked channels can cause high temperatures in the body, reduce heating efficiency, shorten equipment lifespan, or damage equipment. The use of qualified fuel is essential to ensure the normal use and lifespan of the equipment.

#### Fault table

Fault code	Cause of malfunction	treatment
E-2	Power supply voltage range	Normal range:24V(18-32V), 12V(9-16V)Check if the battery or generator is functioning properly,and check if the fuse is aging
E-3	Ignition plug malfunction	<ol> <li>Check whether the ignition plug is incorrectly connected.</li> <li>The ignition plug is faulty; replace the ignition plug.</li> <li>Main board is faulty; replace the main board.</li> </ol>
E-4	Oil pump malfunction	<ol> <li>Check whether the oil pump plug is loose and connected falsely.</li> <li>Check the main wiring harness for disconnection.</li> <li>Oil pump is faulty; replace the oil pump.</li> </ol>
E-5	High temperature alarm (inlet air>50℃; casing>230℃)	<ol> <li>Incorrect or faulty furnace temperature sensor type; replace the sensor.</li> <li>Main board is faulty; replace the main board.</li> <li>Check if the air outlet and exhaust pipes are bent or too long, which affects the ventilation and prevents heat from dissipating.</li> <li>Check if the fan is running normally</li> </ol>

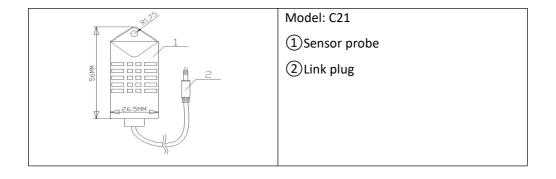
E-6	Fan Failure	<ol> <li>Check whether the fan impeller of the car is jammed.</li> <li>Check whether the fan plug is loose and falsely connected.</li> <li>The fan is faulty; replace the fan.</li> <li>Check whether the wind wheel induction magnet is missing or has the wrong polarity.</li> <li>Check whether the main board wind speed sensor is normal.</li> <li>The main board is faulty; replace the main board.</li> </ol>
E-7	Communication Failure	Detecting wiring harnesses
E-8	Turn off the engine	1) Check for oil shortage,low temperature solidification of oil, blocked oil circuit, and stuck oil pump 2) Check if the oxygen intake and exhaust ducts are unobstructed 3) Check if the casing temperature sensor is in full contact with the casing and if the pressure spring is strong.
E-9	Sensor fault	Is the temperature sensor connection wire and connector damaged or loose, and is the sensor damaged

E-10	Unsuccessful startup	1) The temperature of the casing is too high, and it failed to cool the casing after starting for 3 minutes 2) There is a large amount of white smoke in the exhaust gas 2.1)Check if the filter screen next to the ignition plug is clean. If it is not clean, clean or replace it 2.2)Check if the oil pump sprays oil forcefully 2.3)Check if the ignition plug is aging 3)There is a small amount of white smoke or no smoke in the exhaust gas 3.1)Check for oil shortage, frozen or blocked oil circuits 3.2)Check if the oil pump is stuck or damaged, and if the oil pump is not functioning properly 3.3)Check if the combustion intake and exhaust channels are unobstructed 3.4)Check if the ignition plug is damaged 3.5)Is the clearance between the inner wind turbine too large 4)Ignite normally but still report ignition failure fault Check if the casing temperature sensor is in full contact with the casing, if the pressure spring is strong, and if the sensor is functioning properly
The exha ust pipe turns red	Abnormal combustion chamber or oil pump	Immediate shutdown is required, and the aluminum body should be disassembled to check if the internal combustion chamber is sealed or replaced;
Abno rmal nois e	Exhaust blockage	It should be immediately shut down and checked for blockages in the exhaust pipe, muffler, and exhaust outlet. If there are blockages, clean them and resume normal operation;
Oil leak age	Internal oil leakage of the machine	The heater cannot be installed on the side, and the oxygen hole on one side of the ignition plug will allow oil to flow out along the hole. The

		correct installation method is to have the intake/exhaust ports facing downwards; 2. Poor oil quality causes blockage of the ignition plug atomization network in the combustion chamber, which does not ignite and flows out along the exhaust pipe. The ignition plug atomization network should be replaced and high-grade diesel should be replaced;
Emitt ing black smo ke	Insufficient oxygen intake&carbon buildup in the combustion chamber	<ol> <li>Check if there is any blockage in the intake pipe causing insufficient oxygen intake;</li> <li>The small space of the air inlet position leads to air intake obstruction;</li> <li>Disassemble the internal combustion chamber of the machine to check for carbon deposits, and replace the combustion chamber in a timely manner;</li> </ol>
Emitt ing blue smo ke	Poor oil quality	Diesel heaters can only use high-grade diesel, and negative temperature diesel should be used in winter;
Emitt ing white smo ke	Ignition failure	1. Check if the internal pump oil volume of the machine is too high, causing the ignition plug to fail to ignite. The oil pipe should be removed and restarted 2-3 times before returning to normal, and then the oil pipe should be inserted;  2. Use a hair dryer to blow into the intake pipe for a period of time until it works properly;
Dies el flavo r	Diesel assisted combustion	Confirm that the fuel tank is filled with diesel, as other fuels may cause odor;     Open the machine casing to check for any oil leakage inside;
Plast ic odor	Whether to use external accessories	1. Extension or modification requires the purchase of high-temperature resistant accessories, otherwise the high heat of the heater will cause an unpleasant and pungent odor;  2. The extension tube should not be bent or too long, as it will cause heat to be unable to be discharged and high internal temperature will produce a plastic odor;  3. The installation of perforated exhaust pipes

does not require protection. Normally, exhaust gas is discharged through the exhaust pipes. If it is a wooden floor, large holes need to be opened and iron plates need to be used for protection. The heat of the exhaust pipe can reach up to 400 degrees and adhesive substances cannot be applied on the surface, otherwise it will cause unpleasant odor and even carbon monoxide production. High temperature resistant materials need to be purchased for sealing

#### CO CONTROLLER OPERATION INSTRUCTIONS



# **Product specifications/parameters**

- 1.To prevent the risk of carbon monoxide poisoning caused by improper installation, the product is equipped with a carbon monoxide alarm. When the carbon monoxide content in the enclosed space reaches 300ppm, the LCD switch will prompt CO to exceed the limit. When the content reaches 500ppm, an alarm will be triggered and the machine will be shut down. The leakage point needs to be checked and repaired immediately before starting up for use.
- 2. The carbon monoxide alarm device is equipped with a 2m extension cable, which can install the probe in any position. It is not recommended to install it too far away from the diesel heater or too close.

	Configuration Table - Model: C21					
N O.	Function	Parameter	NO.	Function	Parameter	
1	detection range	0-990ppm	7	operation temperature	-20~50℃	
2	Detecting overload	2000ppm	8	Pressure Range	Standard atmospheric pressure ± 10%	
3	repeatability	±3%	9	Supply Voltage	5.2V±0.5V	
4	Response time (t90)	≤30 s	10	consumption	<10.0mA	
5	Resolution ratio	≤5 ppm	11	Extension line	2m	
6	Zero drift (-20~40 °C)	≤10 ppm	/	1	1	

# **Emergency response methods for controller alarms**

- 1. When the CO concentration within the detection range of the controller exceeds the limit, the switch will display a fault/the controller indicator light will flash, and the switch will automatically turn off the heater to avoid a continuous increase in CO concentration; Ventilation should be done immediately (if the environment is narrow and conditions permit, open the ventilation openings to create an open environment as much as possible. When the environment is open or ventilation is inconvenient, it is recommended to increase ventilation equipment to accelerate air circulation and discharge CO gas), and personnel in the environment should evacuate immediately from the environment where the current CO concentration exceeds the standard:
- 2. If the installation and usage environment is correct, it is recommended that personnel return to the working area and restart to check the CO concentration to see if it meets the standards.
- 3. During the use of this product, it is important to maintain long-term air circulation and regularly check the concentration of carbon monoxide (international standard  $50 \text{mg/m}^3 \approx 40 \text{PPM}$ ) to ensure personal safety. If symptoms of carbon monoxide poisoning occur (such as dizziness, headache, nausea, etc.), one should immediately stay away from the source of pollution, breathe fresh air, and seek medical assistance.

- 4. This product uses electrochemical sensors, which are easily affected by local temperature and humidity interference, resulting in slight impact on detection accuracy. Therefore, to ensure your safety, please use this product objectively and reasonably. Its service life is affected by the environment, and the accuracy of the sensor is regularly tested. If the error is too large, please replace the sensor.
- 5. Even if a carbon monoxide alarm is installed, the room must be properly ventilated to prevent excessive CO emissions during sleep from not being dealt with in a timely manner.

# Precautions and usage specifications

- 1. Please do not open the product casing at will; Prevent external forces from damaging the sensor;
- 2. Products should avoid contact with organic solvents (including silicone rubber and other adhesives), coatings, chemicals, fuel oils, and high concentration gases;
- 1. The product should not be completely encapsulated with resin materials during use and storage, nor should it be immersed in an anaerobic environment for a long time, otherwise it will damage the performance of the sensor; Affects the detection accuracy of the product;
- 2. This product cannot be used for a long time in environments containing corrosive gases;
- 3. During installation and use, it is necessary to avoid vertical air intake from the front;
- 4. The product air inlet must not be blocked or contaminated;
- 5. This product needs to be installed firmly and not subjected to excessive impact or vibration;
- 6. Do not use if the shell is damaged or deformed;
- 7. Prohibit long-term storage and use of this product in high concentration alkaline gases;
- 8. Please replace the controller with a new one in a timely manner when it reaches its expected service life;
- 9. Prohibit long-term storage and use of this product in high concentration alkaline gases;
- 10. Please replace the controller with a new one in a timely manner when it reaches its expected service life;

#### **BLUETOOTH OPERATION**

Search and download the corresponding APP name "AirHeaterCC" : Alternatively, scan the QR code below with your phone and click on the corresponding system to download, then follow the steps below to connect and control the device with your phone.





Get the best experience on your mobile device!

Download Android

2 Download on Google Play

Download on the App Store

- [1] Option is for Android system
- [2] Option is Google Download
- [3] Option is IOS system
- 1. Turn on the Bluetooth function of the phone, run the APP program

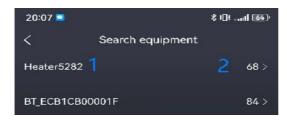




- 1.Bluetooth link,
- 2.Set buttons,
- 3.Bluetooth connection status,
- 4, Equipment status and fault description,
- 5, "-" key,
- 6, Display temperature/gear,
- 7, "+" key,
- 8, working voltage,
- 9.altitude,
- 10, Aluminum body temperature,
- 11, Ambient temperature,
- 12, Ventilation mode,
- 13,On/Off Heating button,
- 14,Plateau switch,
- 15, Mode switching switch <sub>o</sub>

#### 2. Device connection via Bluetooth:

Press [ Bluetooth link button] to enter the following page:





Select 1 as "Heater+Machine Code" (when the device is powered on, short press the OK button on the switch panel to display it), (The machine code on the picture is for reference only, and the actual displayed machine code shall prevail.)

2 is the Bluetooth signal strength (as shown in signal 68 above, the smaller the value, the stronger the signal). If no device is found, check if there are other phones already connected to this device (each device can only be connected to one phone), or power on the device again and turn on the Bluetooth function of the phone before proceeding to the first step.

# 3. After successful linking, it will be displayed as shown in the following figure:



Shutdown status



Power on status (manual mode)



Power on status (temperature mode)

#### 1) Power on operation

In shutdown mode, press the [heating button], The device is turned on for heating and displays the "power on status" as shown in the above picture. Press the [+] button to upshift the device, press the [-] button to downshift the device, press the [mode switch] button to switch between manual/constant temperature mode (0-40 degrees), and press the [plateau button] button to switch between plateau/plain mode.

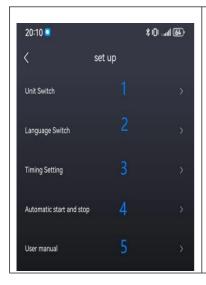
#### 2) Shutdown operation

In the power on state, press the [heating button], and the device enters the shutdown and cooling process, displaying "cooling in progress". The device can only be powered off after being cooled down and displaying the "shutdown status" as shown in the above picture.

#### 3) Ventilation operation

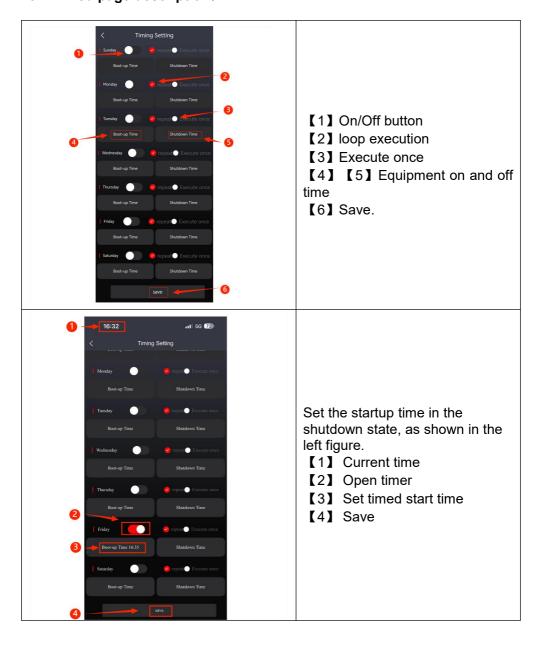
In the shutdown state, press the ventilation button to turn on/off ventilation, and adjust the fan speed by pressing [+] or [-].

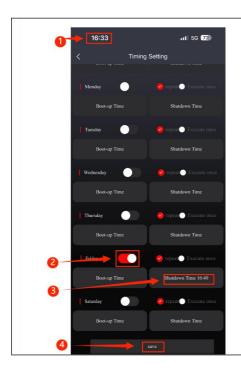
#### 4. Set Page Description:



- 1) Unit settings include: Fahrenheit, Celsius, feet. meters。
- 2 ) Language settings include: Chinese, English, Spanish, French, German, Italy, Poland, Netherlands, Sweden, Russian.
- 3) The timing function includes: Monday to Sunday, and can be set to start time, close time, single time, and cycle mode.
- 4) Automatic start stop function: After being turned on, the machine works effectively in constant temperature mode (some devices do not have this function).
- 5) The user manual includes fault codes and troubleshooting methods.

#### 5. Timed page description:





Set the shutdown time in the power on state, as shown in the left figure.

- [1] Current time
- [2] Open timer
- [3] Set timed shutdown time
- [4] Save

#### 6. Automatic start stop function page description:

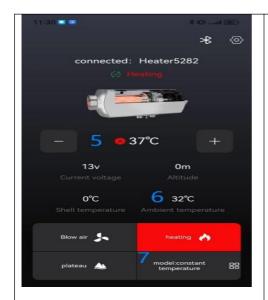


- 1.Button on \
- 2.Select the device startup temperature (3-10  $^{\circ}$ C)
- 3.Select device shutdown temperature  $(3-10 \, ^{\circ}\text{C})$
- 4.Save
- 5.(A-Automatic) Working in automatic power on/off mode, the required temperature can be adjusted by pressing the [+] and [-] buttons (0-40 °C

),

- 6.The surrounding temperature of the equipment is the reference temperature
- 7.Automatic start stop is only effective when working in constant temperature mode. The above diagram shows: set

the temperature to  $37\,^{\circ}\text{C}$ , turn on the



temperature to 5  $^{\circ}$ C, turn off the temperature to 5  $^{\circ}$ C, stop heating when the surrounding temperature of the equipment is 42  $^{\circ}$ C, and turn on heating when the surrounding temperature of the equipment is 32  $^{\circ}$ C (the timed on/off function is also effective).

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