

Diesel Air Heater

User Manual

Read Carefully Before Use
Keep for Future Reference



Disclaimer

Read this disclaimer completely and carefully before proceeding with the rest of the manual content.

1. Product Modifications

Any modifications or alterations to Orion Motor Tech (OMT) products void any warranties and may result in damage or injury. OMT shall not be liable for any damages resulting from such modifications or alterations.

2. Compliance with Laws

Customers shall be liable for ensuring that the use of OMT products complies with all applicable laws and regulations in their respective jurisdictions. OMT shall not be responsible for any violations of laws or regulations resulting from the use of OMT products.

3. Correct Use

Always use OMT products only as directed in the accompanying manuals. Failure to follow instructions may result in injury or damage.

Always ensure the assembly, installation, operation, maintenance, or repair of OMT products is carried out by a competent person.

Regular maintenance should be performed throughout the lifecycle of OMT products. You are responsible for ensuring the products operate as intended.

Always wear appropriate protective gear.

4. Third-Party Products

OMT shall not be liable for any damages or losses resulting from the use of third-party products in conjunction with OMT products. Customers shall refer to the third-party's guidelines and/or warranties (if any) for any third-party products used.

5. Limitation of Liability

OMT shall not be liable for any direct, indirect, punitive, incidental, special, or consequential damages to property or life, whatsoever arising out of or connected with the use or misuse of OMT products. In no event shall OMT's liability exceed the value of the products sold.

6. Warranty

Refer to the sales page for warranty information.

This disclaimer states the entire obligation of OMT with respect to OMT products. If any part of this disclaimer is determined to be void, invalid, unenforceable, or illegal, including but not limited to the warranty disclaimers, liability disclaimers, and liability limitations set forth above, the invalid or unenforceable provision will be deemed superseded by a valid and enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.

Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us and we'll address your issues ASAP!



support@orionmotortech.com



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Content

1	Safety Information	1
2	Specifications	2
3	Parts List.....	3
4	Product Diagram	4
	4.1 Diesel Air Heater	4
	4.2 Control Panel.....	5
	4.3 Remote Control	5
5	Installation.....	6
	5.1 Connection	6
	5.2 Test	7
6	Operation	8
	6.1 Adding Diesel	8
	6.2 Changing Modes.....	10
	6.3 Setting Basic Parameters	10
	6.3.1 Setting the Local Time	10
	6.3.2 Setting the Appointment Time.....	11
	6.3.3 Setting the Run Time.....	11
	6.3.4 Setting the Scheduled Auto-Start	12
	6.3.5 Setting the Voice Prompt Language.....	12
	6.3.6 Setting the Temperature Compensation.....	13
	6.3.7 Setting the Temp-Based Start/Stop	14
	6.3.8 Setting the Temperature Unit.....	15
	6.3.9 Setting the Altitude Unit.....	15
	6.3.10 Setting the Screen Brightness	16
	6.4 Using the Booyood App.....	16
	6.5 Pairing the Remote	19
	6.6 Restoring Factory Settings.....	21
	6.7 Additional Engineering Parameters.....	21
7	Maintenance.....	22
8	Troubleshooting.....	23
9	Disposal.....	24

1 Safety Information

Danger

- **ONLY** use this product as directed in these instructions, and in full compliance with all applicable local laws and regulations concerning diesel fuel and heating equipment. Failure to do so may result in legal liability, serious property damage, or severe personal injury, including death.
- This product can be used by children aged 8 years and older, persons with reduced physical, sensory, or mental capabilities, or those who lack experience or knowledge, **ONLY** if they are properly supervised or have been instructed in its safe and understand the risks involved.
- **ALWAYS** disconnect the vehicle's battery before installing, adjusting, maintaining, or repairing the heater.
- To prevent carbon monoxide poisoning, **ALWAYS** install a carbon monoxide alarm in the area where the heater is used. **NEVER** use the heater in hazardous locations, such as fuel depots, carbon storage areas, or timber warehouses.
- If symptoms such as headache, dizziness, or nausea occur, **IMMEDIATELY** stop using the heater and move it to a well-ventilated area. Seek medical attention if symptoms persist.
- **DO NOT** operate the heater under the influence of alcohol, drugs, or medication that may impair judgment or reflexes.
- **ONLY** use diesel fuel. If a fuel leak occurs, **IMMEDIATELY** shut down the heater and disconnect the fuel line. Repairs must be performed **ONLY** by a licensed technician.
- If the power cord is damaged, replace either the cord or the entire power adapter with one provided by the manufacturer or authorized service agent.
- **DO NOT** allow children to play with, clean, or maintain the appliance without supervision.

Warning

- Install the heater in a well-ventilated, spacious area, away from combustible or flammable materials.
- **NEVER** operate the heater in a confined space without proper ventilation. Failure to do so may result in harmful gas buildup.
- **DO NOT** modify the heater to bypass safety features.
- Check the heater before each use. Perform regular maintenance and replace damaged components **ONLY** with identical parts.
- **ALWAYS** turn off the heater before refueling.
- Keep the appliance and its cord out of the reach of children under 8 years old.
- Never leave the appliance unattended when it is connected to a power supply.
- Store the heater in a dry, ventilated area. **DO NOT** transport it with fuel inside. Protect it from moisture, impact, and direct sunlight.

2 Specifications

Model	5 kW Heater	8 kW Heater
Input Power	110–120 V AC, 60 Hz	
Inrush Current	8 A	
Rated Current	0.8 A	
Heating Power	5 kW 6.7 hp	8 kW 10.7 hp
Fuel Type	Diesel	
Combustion Efficiency	≥ 88%	
Fuel Consumption	0.2–0.35 L/h 0.05–0.09 gal/h	0.3–0.5 L/h 0.08–0.13 gal/h
Temperature Adjustment	8–36 °C 46–97 °F	
Exhaust Temperature	230–400 °C 446–752 °F	
Altitude	< 5500 m < 18 ft	
Over Temperature Protection	≥ 270 °C ≥ 550 °F	
Fuel Capacity	5 L 1.3 gal	6.6 L 1.4 gal
Remote Control Range*	≤ 60 m ≤ 196 ft	
Bluetooth Control Range*	≤ 50 m ≤ 164 ft	
Dimensions	37 × 25.5 × 28.5 cm 14.6 × 10.1 × 11.3 in	39.5 × 26 × 28.5 cm 15.6 × 10.2 × 11.2 in
Weight	8 kg 17.6 lb	8.5 kg 18.7 lb

*The control range is theoretical and requires an unobstructed line of sight between the remote control or phone and the heater.

3 Parts List

<div>A</div> <div>Air Heater</div> <div></div> <div>× 1</div>	<div>B</div> <div>Air Outlet Pipe</div> <div></div> <div>× 1</div>	<div>C</div> <div>Air Intake Pipe</div> <div></div> <div>× 1</div>	<div>D</div> <div>Fume Exhaust Pipe</div> <div></div> <div>× 1</div>
<div>E</div> <div>Tuyere</div> <div></div> <div>× 1</div>	<div>F</div> <div>Air Filter</div> <div></div> <div>× 1</div>	<div>G</div> <div>Muffler Assembly</div> <div></div> <div>× 1</div>	<div>H</div> <div>Feet & Bolts</div> <div></div> <div>× 4</div>
<div>I</div> <div>Big Hose Clamps</div> <div></div> <div>× 2</div>	<div>J</div> <div>Small Hose Clamps</div> <div></div> <div>× 3</div>	<div>K</div> <div>Inlet/Outlet Brackets*</div> <div></div> <div>× 1</div>	<div>L</div> <div>Carbon Monoxide Detector Set</div> <div></div> <div>× 1</div>
<div>M</div> <div>Ring Terminal Power Adapter</div> <div></div> <div>× 1</div>	<div>N</div> <div>Power Cables with Ring Terminals</div> <div></div> <div>× 2</div>	<div>O</div> <div>Remote Control</div> <div></div> <div>× 1</div>	<div>P</div> <div>Self-Drilling Screws*</div> <div></div> <div>× 6</div>

*For home use, the air inlet and exhaust pipes do not need to be fixed with self-drilling screws and brackets.

4 Product Diagram

4.1 Diesel Air Heater

Back



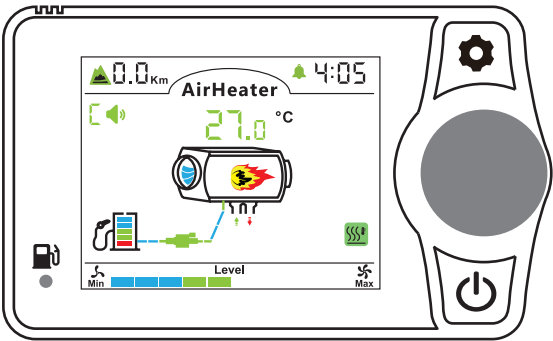
Front



Left



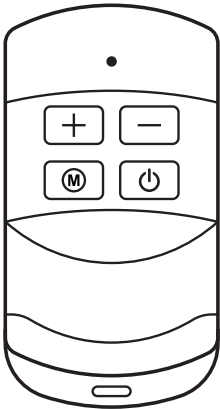
4.2 Control Panel



Buttons		Hold for 3 seconds to enter settings or save changes.
		Press to turn on/off the heater.
		Hold for 3 seconds to pump the oil*.
Knob		Press to change modes or confirm changes.
		Turn to adjust parameters.

***DO NOT** use this button unless the automatic fuel pump has failed multiple times.

4.3 Remote Control



Button	Description
	Press to increase the temperature or fan speed level.
	Press to decrease the temperature or fan speed level.
	Press to change operating modes.
	Press to turn on/off the heater.

5 Installation

Warning

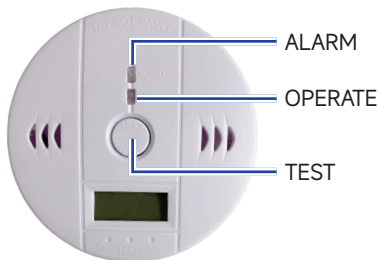
- **DO NOT** block the air inlet, and keep the inlet open and clear.
- Keep the exhaust outlet clear and away from anything flammable.
- Avoid direct contact with the exhaust pipe during use.
- To ensure optimal combustion, the exhaust pipe must be placed horizontally or downward. **DO NOT** point it upward.

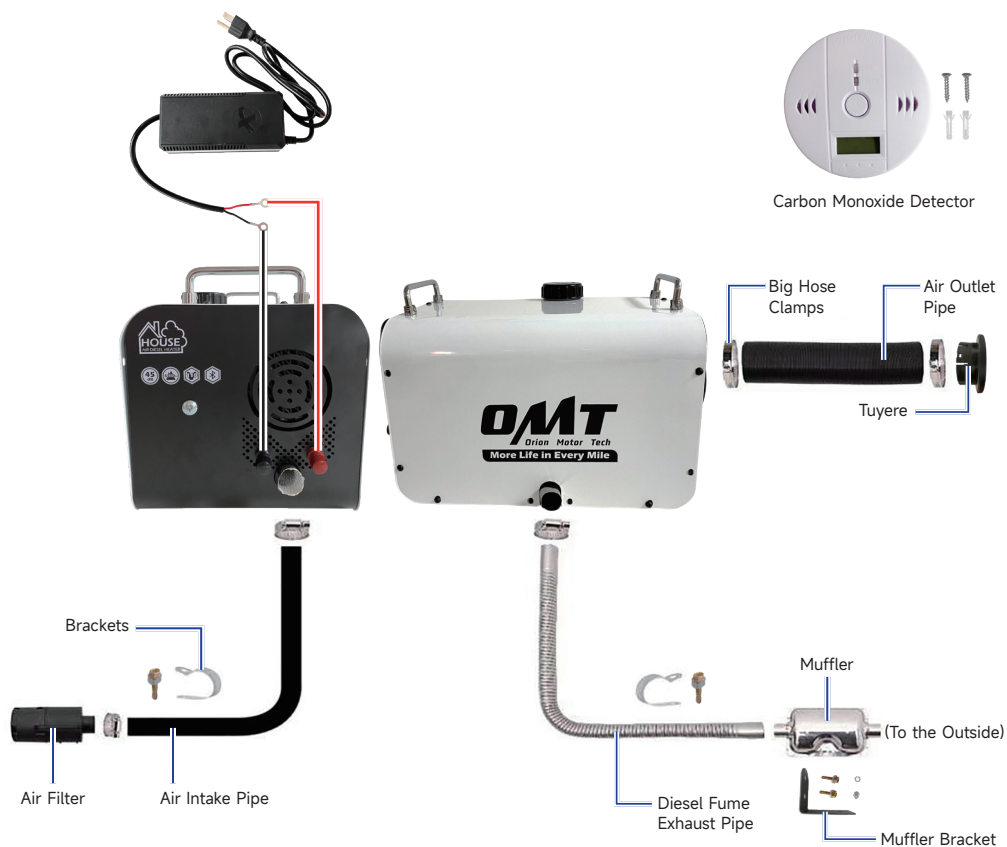


5.1 Connection

Warning

- Power the heater using either a vehicle power supply or mains power. When using mains power, the power adapter **MUST** be used.
- Before using the carbon monoxide detector, insert three 1.5 V AA batteries and press the **TEST** button. If the **ALARM** and **OPERATE** indicators flash red and the detector beeps twice, it functions properly.





5.2 Test



Warning

DO NOT skip the leak test. Exhaust leaks can cause dangerous gas accumulation in confined spaces.

Before operating the heater, perform a leak test to ensure the exhaust system is properly sealed:

1. Seal the muffler with a suitable plug or cap.
2. Blow non-toxic smoke into the exhaust pipe using a smoke tester.
3. Check all connection points for visible smoke leakage.

If any leaks are found, re-tighten or reseal the connections and repeat the test until no leaks remain.

6 Operation

Warning

- **DO NOT** add diesel while the heater is powered on.
- **DO NOT** start the heater without diesel.
- **DO NOT** connect the heater to the power supply until all pipe connections are complete.
- The heater can be connected to a battery or a power supply. Battery voltage must be **12 V** or **24 V**.
- **DO NOT** connect the heater directly to a power supply exceeding 24 V. Always use the power adapter.

6.1 Adding Diesel

Warning

- Use the correct grade of diesel fuel for the season to ensure proper operation.
 - ✧ Summer-grade diesel: for warm weather use.
 - ✧ Winter-grade diesel: for temperatures down to approximately $-20\text{ }^{\circ}\text{C}/-4\text{ }^{\circ}\text{F}$, based on its cold filter plugging point.
 - ✧ Arctic or super diesel: for very cold or alpine regions below $-20\text{ }^{\circ}\text{C}/-4\text{ }^{\circ}\text{F}$.
- Disconnect the power supply before adding diesel.

1. Remove the leakproof oil cap.

Note

DO NOT remove the filter mesh. It is essential for proper diesel filtration and system protection.

2. Add diesel to the heater.

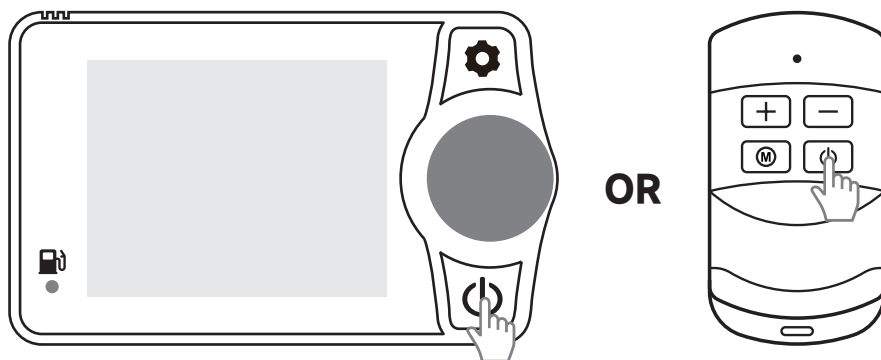
Note

DO NOT fill diesel above the filter mesh.


3. Tighten the oil cap.
4. Reconnect the heater to the power supply.
5. Press the power button on the control panel or remote to turn on the heater.

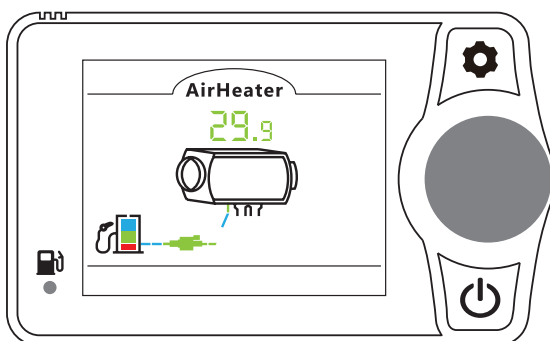
If the remote indicator flashes red but the heater does not respond, see **§6.5** on **Page 18** to pair the remote.

If the remote indicator does not light up after you press the power button, install a new 23 A battery.



Warning

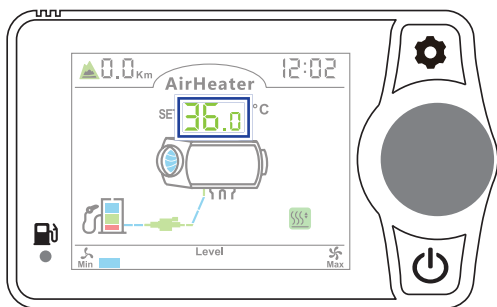
On first use, the heater will automatically pump fuel for **3.5** minutes. If the heater fails to start after 3.5 minutes, restart the system and try again. If it still does not start, hold the fuel pump button for 3 seconds to start manual fueling. Press  to stop fueling within **1** minute.



6.2 Changing Modes

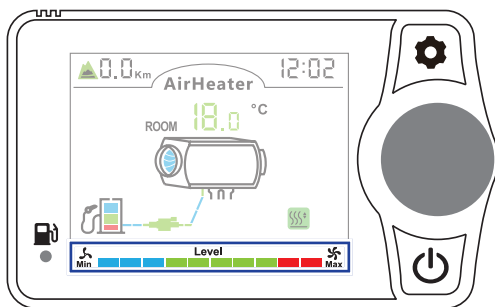
1. Press the knob on the control panel or  on the remote to select a mode.

Temperature Control Mode



The heater runs at the selected temperature.

Fan Speed Mode




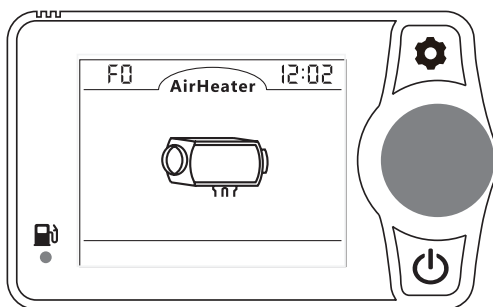
The heater runs at the selected fan speed.


2. Turn the knob to adjust the settings.

6.3 Setting Basic Parameters

6.3.1 Setting the Local Time

1. Hold  for 3 seconds to enter the settings page.




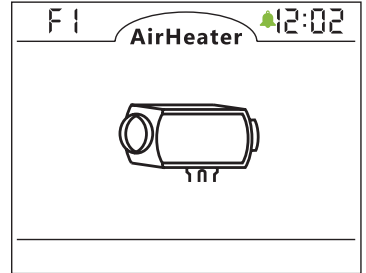
2. Press the knob to enter the local time setting.
3. Turn the knob clockwise or counterclockwise to set the hour, then press the knob to confirm.
4. Turn the knob to set the minutes, then press the knob again to confirm.
5. Hold  for 3 seconds to save changes.


6.3.2 Setting the Appointment Time

Note

- Enable **Scheduled Auto-Start** (see **Page 12**) first; otherwise, this setting has no effect.
- F1 on the display indicates the appointment time can be set.

1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until F1 displays.




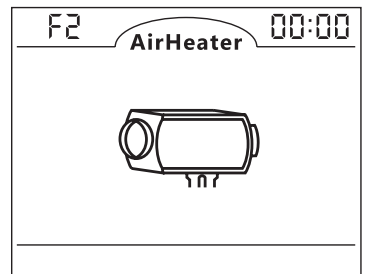
3. Press the knob to enter the appointment time setting.
4. Turn the knob clockwise or counterclockwise to set the hour, then press the knob to confirm.
5. Turn the knob to set the minutes, then press the knob again to confirm.
6. Hold  for 3 seconds to save changes.


6.3.3 Setting the Run Time

Note


- Enable **Scheduled Auto-Start** (see **Page 12**) first; otherwise, this setting has no effect.
- F2 on the display indicates the run time can be set.
- The run time setting range is 0-10 hours, adjustable in 0.5-hour intervals.

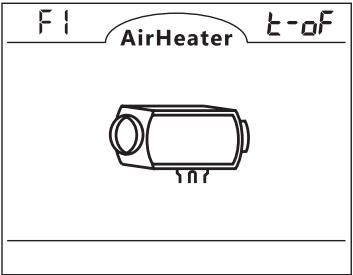
1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until F2 displays.
3. Press the knob to enter the run time setting.






4. Turn the knob clockwise or counterclockwise to set the run time hours, then press the knob to confirm.
5. Turn the knob to set the run time minutes, then press the knob again to confirm.
6. Hold  for 3 seconds to save changes.

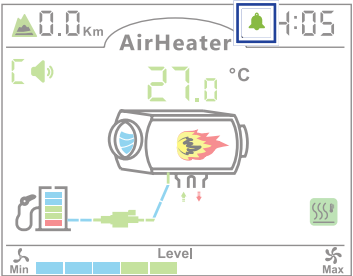
6.3.4 Setting the Scheduled Auto-Start

1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until F3 displays.




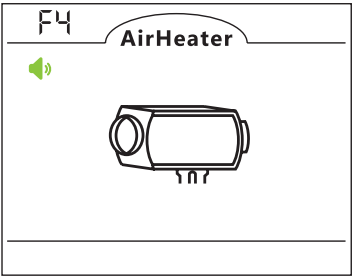
3. Press the knob to enter the scheduled auto-start setting.
4. Turn the knob clockwise or counterclockwise to enable () or disable () the function.
5. Press the knob to confirm the change.
6. Hold  for 3 seconds to save changes.

A bell icon appears on the home page when Scheduled Auto-Start is enabled and F1 and F2 are set.




6.3.5 Setting the Voice Prompt Language

1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until F4 displays.

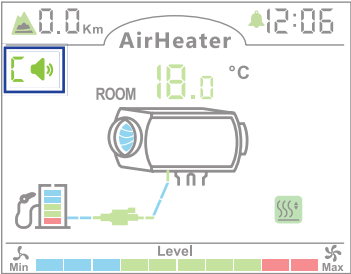


- Press the knob to enter the language setting.
- Turn the knob clockwise or counterclockwise to select a language from the table below.

ㄘ	Chinese
£	English
ㄖ	Russian
-	Voice Prompts Off

- Press the knob to confirm the change.
- Hold  for 3 seconds to save changes.

After setup, the letter for the selected language appears in the upper-left corner of the home page.




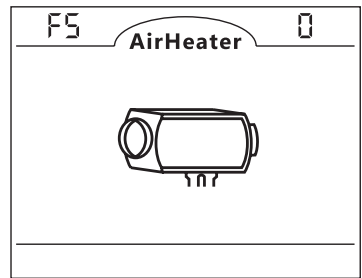
6.3.6 Setting the Temperature Compensation


Note

- If the temperature on the home page differs from the actual temperature, go to the F5 setting to compensate for the difference.
- The compensation setting range is -9 to 9 °C (16-48 °F), adjustable in 1 °C intervals.
- Temperature compensation can only be adjusted in degrees Celsius (°C). Refer to the table below for Fahrenheit (°F) conversion.

Celsius (°C)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit (°F)
-9	16	1	34
-8	18	2	36
-7	19	3	37
-6	21	4	39
-5	23	5	41
-4	25	6	43
-3	27	7	45
-2	28	8	46
-1	30	9	48
0	32		

1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until F5 displays.




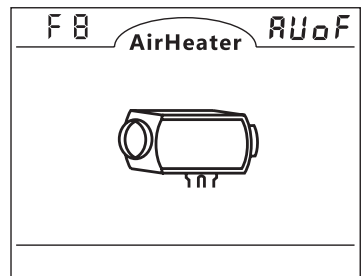
3. Press the knob to enter the temperature compensation setting.
4. Turn the knob clockwise or counterclockwise to set the parameter.
5. Press the knob to confirm.
6. Hold  for 3 seconds to save changes.


6.3.7 Setting the Temp-Based Start/Stop

Note

This function **ONLY** works in the temperature control mode. See §6.2 on Page 10 to change the mode.


1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until F8 displays.

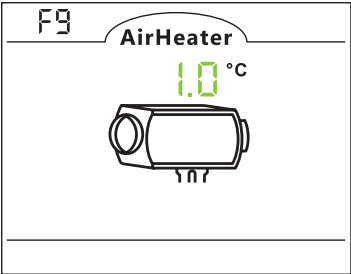



3. Press the knob to enter the temp-based start/stop setting.
4. Turn the knob clockwise or counterclockwise to enable (ON) or disable (OFF) this function.
5. Press the knob to confirm the change.
6. Hold  for 3 seconds to save changes.

When this function is enabled, the heater shuts off 30 seconds after reaching the set temperature, and restarts 30 seconds after the temperature drops 2 °C (36 °F) below the set temperature.


6.3.8 Setting the Temperature Unit

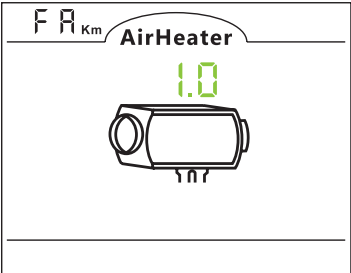
1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until F9 displays.



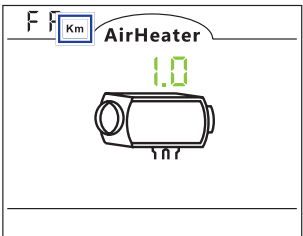
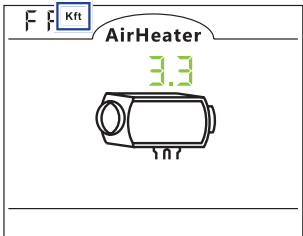
3. Press the knob to enter the temperature unit setting.
4. Turn the knob clockwise or counterclockwise to select °C or °F.
5. Press the knob to confirm.
6. Hold  for 3 seconds to save changes.


6.3.9 Setting the Altitude Unit

1. Hold  for 3 seconds to enter the settings page.
2. Turn the knob clockwise until FA displays.



3. Press the knob to enter the altitude unit setting.
4. Turn the knob clockwise or counterclockwise to select kft or km.



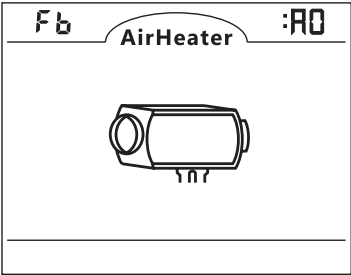
5. Press the knob to confirm.
6. Hold  for 3 seconds to save changes.

6.3.10 Setting the Screen Brightness

Note

The brightness level can be set from 0–100, in steps of 1 from 0–10 and steps of 10 from 10–100. RD represents level 100.

- 1. Hold ⚙️ for 3 seconds to enter the settings page.
- 2. Turn the knob clockwise until *Fb* displays.
- 3. Press the knob to enter the screen brightness setting.
- 4. Turn the knob clockwise or counterclockwise to adjust the brightness.
- 5. Press the knob to confirm.
- 6. Hold ⚙️ for 3 seconds to save changes.



After 2 minutes without operation, the screen returns to the configured brightness level.

6.4 Using the Booyood App

Note

The heater is compatible with the Booyood app. Scan the QR code below or download it from your phone's app store.

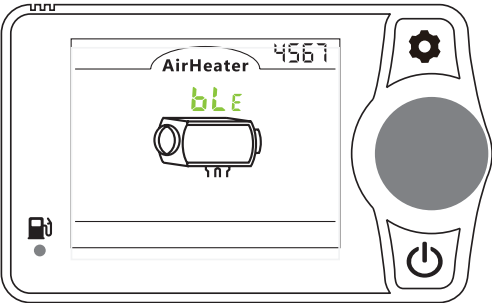


Google Play

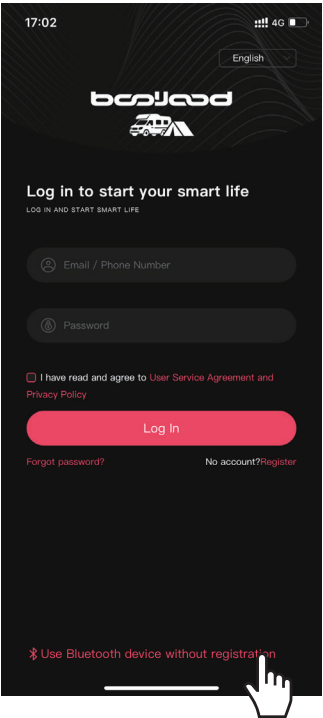


IOS App Store

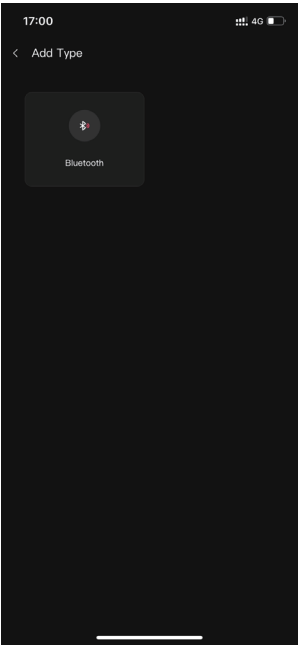
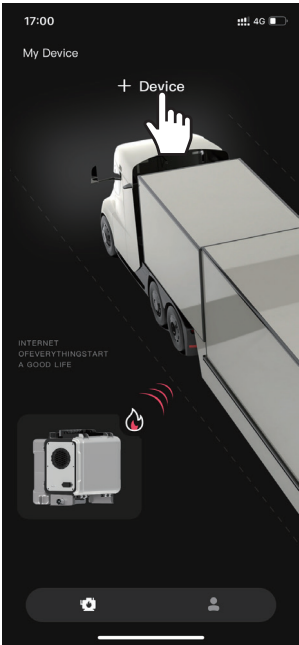
- 1. Hold ⚙️ and ⏻ at the same time for about 5 seconds to enter the engineering mode.
- 2. Turn the knob clockwise until *bLE* displays.



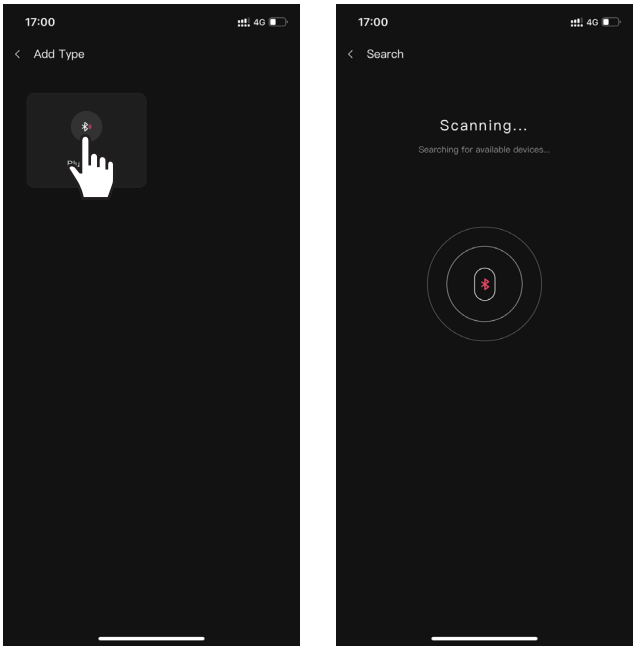
3. Open the app and tap **Use Bluetooth device without registration.**



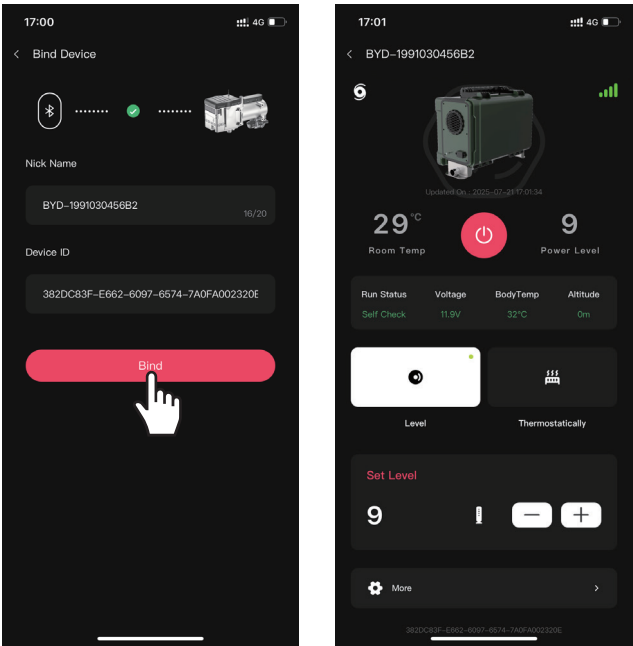
4. Tap **+ Device** and enter the **Add Type** page.



5. Tap **Bluetooth** to search for the device.





6. Tap **Bind** to pair the device and enter the operating page.
- On the operating page, you can turn the device on or off, change modes, and configure parameters.

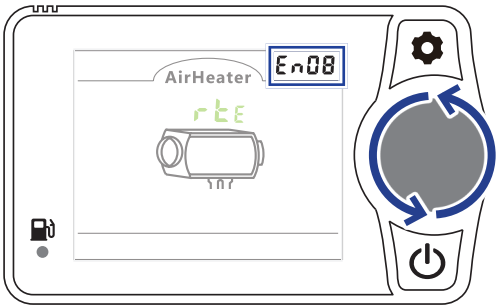


6.5 Pairing the Remote

Note

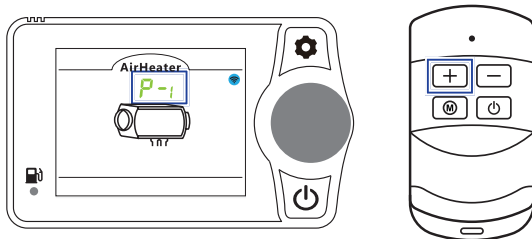
The remote control is pre-paired at the factory. If the pairing is lost, follow the steps below to re-pair it.

1. Hold  and  at the same time for about 5 seconds to enter the engineering mode.
2. Turn the knob clockwise until **En08** displays.



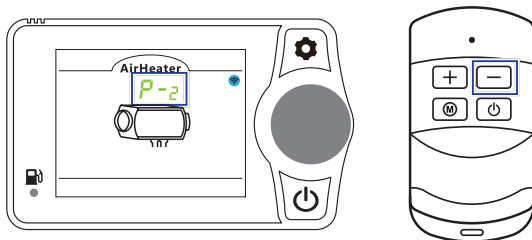
3. Hold the knob for 3 seconds to select *P-1*, then press **+** on the remote.

When the **+** button is paired successfully, *P-2* appears on the display.



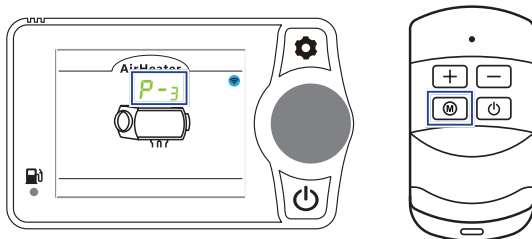
4. Press **-** on the remote.

When the **-** button is paired successfully, *P-3* appears on the display.

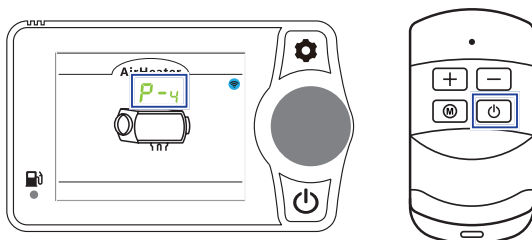


5. Press **M** on the remote.

When the **M** button is paired successfully, *P-4* appears on the display.





6. Press **⏻** on the remote to return to the home page.

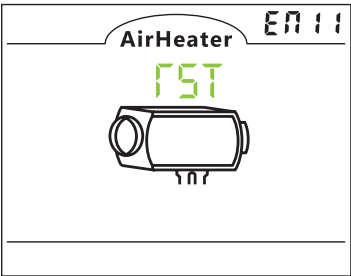


6.6 Restoring Factory Settings

Warning

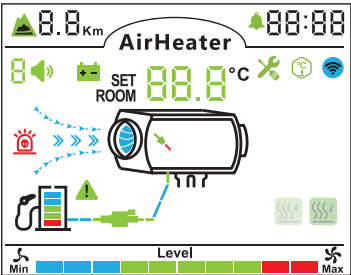
This action cannot be undone. Proceed with caution.

1. Hold  and  at the same time for about 5 seconds to enter the engineering mode.
2. Turn the knob clockwise until **EN11** displays.





3. Hold the knob for 5 seconds.

The factory reset is successful if the display shows all the icons illustrated below.



6.7 Additional Engineering Parameters

1. Hold  and  at the same time for about 5 seconds to enter the engineering mode.
2. Turn the knob clockwise or counterclockwise to view the parameters in the table below.

Non-Adjustable Parameters	
EN00	Control Board Version
EN01	Error Codes
EN02	Housing Temperature
EN03	Voltage
EN05	Ambient Temperature
EN06	Altitude

Adjustable Parameters	
EN04	Set Temperature or Fan Speed
EN08	Remote Control Pairing Mode
EN09	Bluetooth Pairing Mode
EN11	Restore Factory Settings

7 Maintenance

Danger

Poorly ventilated exhaust can be **FATAL**. Follow **ALL** ventilation instructions carefully.

- Periodically inspect all electrical connections and tighten any that are loose.
- Regularly check the fuel level to ensure there's enough diesel to keep the heater running.
If the fuel level drops below 1 L, top off the tank without overfilling.
- Clean the air filter regularly. Remove the filter from the heater and gently tap it against a hard surface to remove loose debris. Use a clean cloth or brush to remove minor dirt, then reattach the filter to the heater. It is recommended to clean the filter every 1 to 3 months based on usage.
- Check the fuel lines and connections for any signs of leaks, such as fuel spots or a strong diesel odor. Tighten any connections to prevent further leaks. If you are unsure how to tighten the connections, consult your vehicle's manual or a licensed diesel heating technician.
- Check the exhaust pipe regularly for blockages. Clean the pipe if needed.
- If the heater has not been used for over 3 months, perform a test run before using it:
 - a. Turn on the heater and let it run for a few minutes. Observe the fuel level, temperature, and exhaust pipe.
 - b. If everything works normally, the heater is ready for use.
If you notice any dirty or damaged components, clean or replace them.
 - c. For serious issues, seek assistance from a licensed diesel heating technician.
- Perform a leak test on the exhaust system every 3 months:
 - a. Seal the muffler with a suitable plug or cap.
 - b. Blow non-toxic smoke into the exhaust pipe using a smoke tester.
 - c. Check all connection points for visible smoke leakage.
If any leaks are found, re-tighten or reseal the connections and repeat the test until no leaks remain.

8 Troubleshooting

Repairs must be performed **ONLY** by experienced electricians. **DO NOT** disassemble or attempt to repair the heater yourself.

Error Code	Problem	Solutions
E01	Startup Failure	Check whether the fuel pump is functioning properly. If it is not, replace the fuel pump.
		Check all pipe connections and ensure they are secure and leak-free.
		Inspect the air inlet and exhaust outlet for blockages, and remove any found.
E03	Voltage Abnormality	Check whether the input voltage is within 10–32 V.
		Check the main power terminals and connection pins for looseness or damage.
E06	Fuel Pump Failure	Ensure the fuel pump connector is firmly in place.
		Inspect the main wiring harness for breaks. If it is damaged, replace it with a new one.
		Replace the fuel pump if it is damaged.
E07	Fan Failure	Check whether the fan is stuck or not rotating properly. If it is stuck, clear any blockages.
		Check whether the fan motor and controller function normally. Replace the motor if needed.
E08	Ignition Plug Failure	The ignition plug may be open or short circuited. If the plug is damaged, replace it with an identical one.
E09	Overheat	If the heater exceeds the high-temperature limit, ensure the air inlet and outlet are at least 10 cm away from obstacles.
E10	Sensor Failure	The temperature sensor may be open or short circuited. If the sensor is damaged, replace it with an identical one.

9 Disposal

Electrical products should not be disposed of with household products. In the EU and UK, according to the European Directive 2012/19/EU for the disposal of electrical and electronic equipment and its implementation in national laws, used electrical products must be collected separately and disposed of at the collection points provided for this purpose. Locations in Australia, Canada, and the United States may have similar regulations. Contact your local authorities or dealer for disposal and recycling advice.





User Manual