



# Installation Guide

## Air GSM



ECE 122R - 000056  
ECE 10R - 025849

Welcome to the Nordkapp® Air diesel air heater. This guide will walk you through the safe and proper installation and operation of your unit.

Please read all instructions carefully before beginning installation or use.

## **Important Safety Instructions**

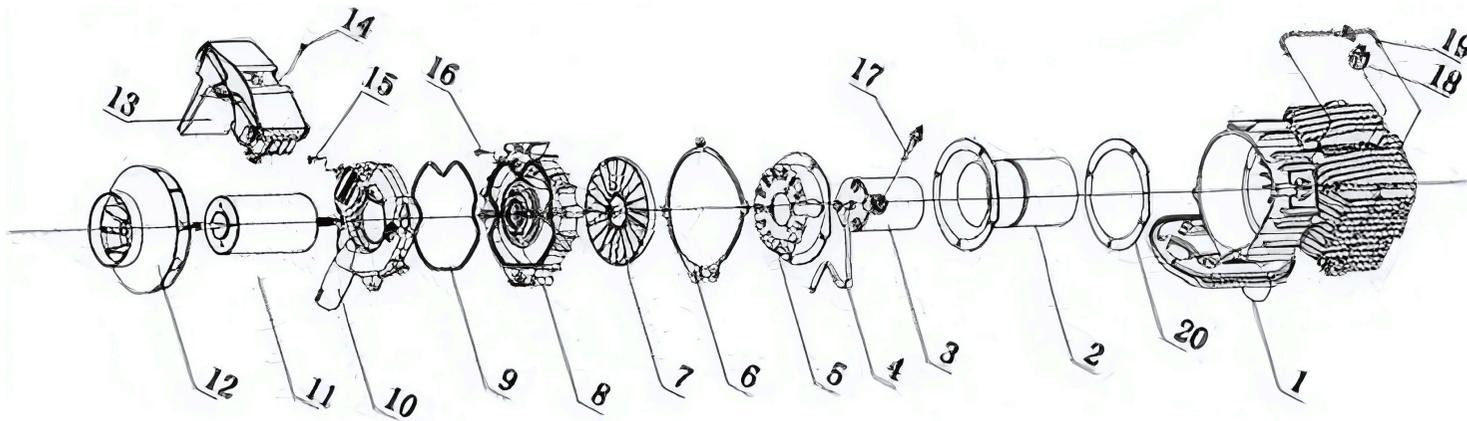
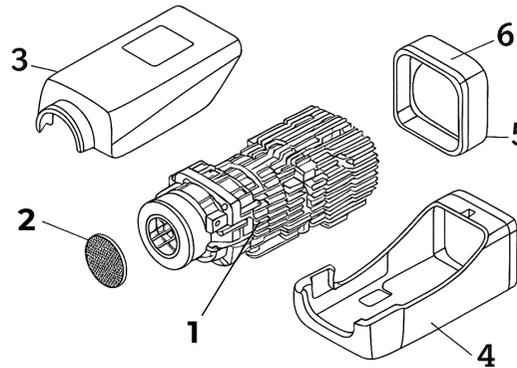
 Follow these precautions to avoid injury or damage:

- Do not use biofuels. Use only EN590 standard diesel.
- Do not use the heater to dry people or animals.
- Do not cover the heater, air intake, or air outlet.
- Exhaust pipe gets hot. Do not install near flammable materials or fuel system components.
- Turn off the heater before refueling or maintenance.
- Do not use the heater in areas with flammable vapors or materials (e.g., gas stations, storage sheds).
- Ensure proper ventilation at the installation site.
- A fire extinguisher must be present in the vehicle.
- Disconnect the heater from the battery before repairs or welding.
- Never connect or disconnect plugs while the device is operating.
- Use only parts and accessories approved by the manufacturer.
- This heater is not intended for uninterrupted, continuous use.

# NORDKAPP™ Air-Heater Installation

## Structure Overview

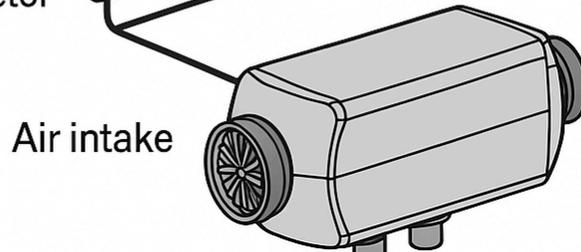
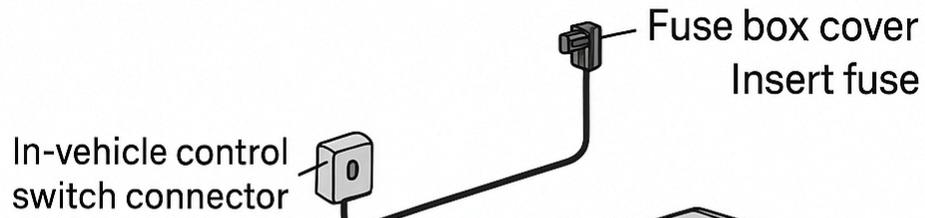
- 1.Engine
- 2.Air intake
- 3.Upper protective cover
- 4.Lower protective cover
- 5.Air outlet
- 6.Rear protection cover



- |                           |  |                        |
|---------------------------|--|------------------------|
| 1.Exhaust pipe            | 7. Fan blades                          | 14. Adjustment screws  |
| 2.Combustion chamber pipe | 8. Fan housing                         | 15. Adjustment screws  |
| 3.Combustion chamber      | 9. Gasket                              | 16. Adjustment screws  |
| 4.Fuel line               | 10. Combustion chamber air intake pipe | 17. Igniter            |
| 5.Air intake guide        | 11. Fan motor                          | 18. Temperature sensor |
| 6.Gasket                  | 12. Hot air fan                        | 19. Sensor bracket     |
|                           | 13. Control panel                      |                        |

Fuse box cover  
Insert fuse

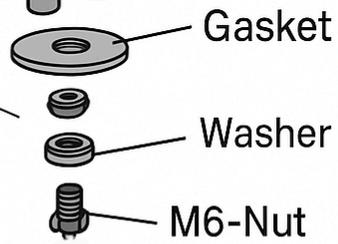
In-vehicle control  
switch connector



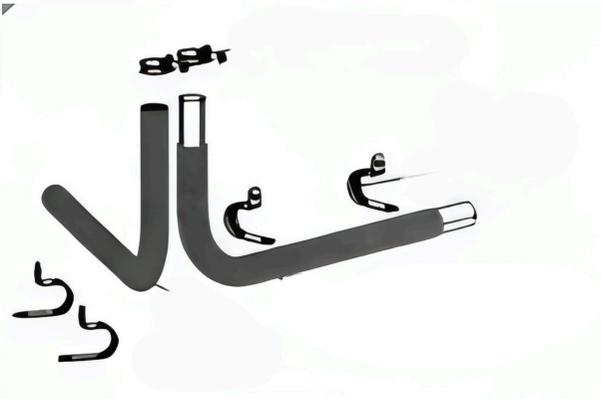
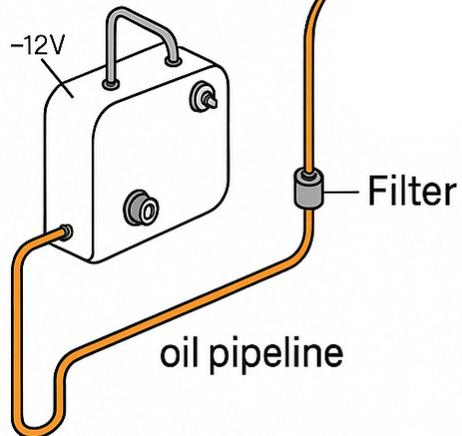
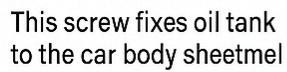
Gasket

Washer

M6-Nut



This screw fixes oil tank  
to the car body sheetmetal



## Site Selection

### Choose an installation location with:

- At least 50 mm clearance for air intake
- At least 150 mm clearance for air outlet
- Protection from water, impact, and excessive heat
- Splash protection if installed outside
- Unobstructed airflow if installed inside
- Proper exhaust placement in boats to avoid water ingress during tilt

## Required Tools and Materials

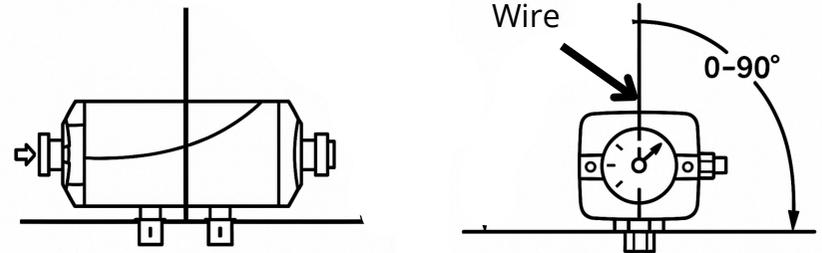
- Drill and M6 drill bit
- Screwdriver or socket wrench for M6 screws
- Wire cutters
- Fire extinguisher (mandatory in vehicles)

## Mounting the Heater

### 1: Choose the Location

- Flat, dry, unobstructed
- Not exposed to luggage or the elements
- Where air intake and exhaust can operate unhindered
- Flat mounting surface (max deviation 1 mm)
- The recommended mounting position for the heater is with the pipes pointing downwards.
- However, if you wish to mount the heater on its side, the line coming from the motherboard should be on top. Please note that mounting on its side makes the heater more susceptible to fuel leaks.

Recommended installation position



## 2: Prepare the Surface

- Clean of grease and dust
- Place the included gasket between the mounting surface and heater

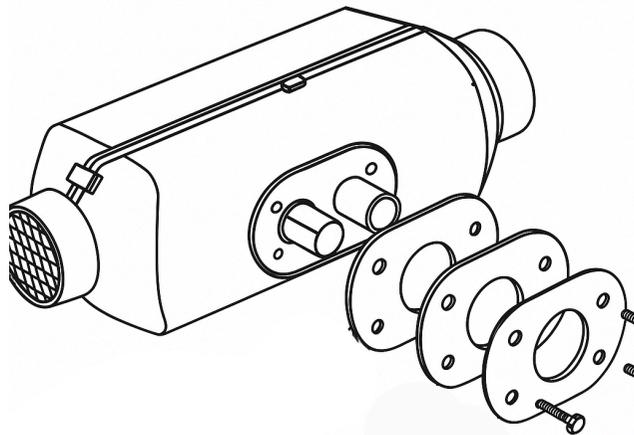
## 3: Drill Mounting Holes

Aseta mukana toimitettu pohjalevy asennuspinnalle ja merkitse ruuvien paikat.

- Use the supplied base plate to mark hole positions
- Drill four holes for M6 screws or use existing holes

## 4: Secure the Heater:

- Place heater on the base plate
- Tighten screws evenly
- Ensure fan blades spin freely (test manually)



# Fuel System Installation

## 1: Select Fuel Tank

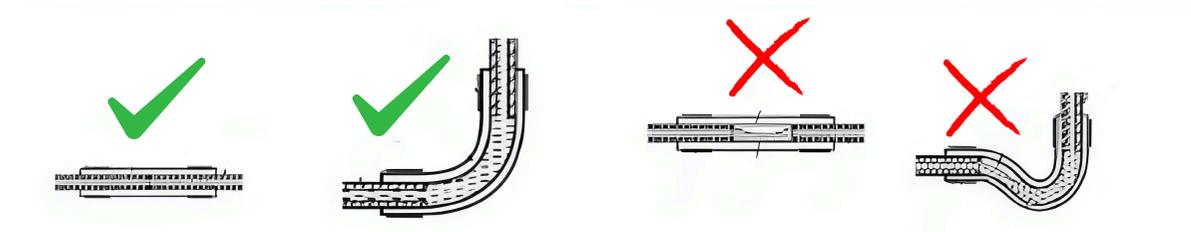
- Use the included intake pipe to connect to the vehicle's fuel tank (preferred method)
- If using a separate tank (not included, sold separately), install it outside or in a protected, non-cabin area

## 2: Install Suction Pipe

- Insert pipe into tank, 30–40 mm from bottom to avoid sediment
- Seal connection properly

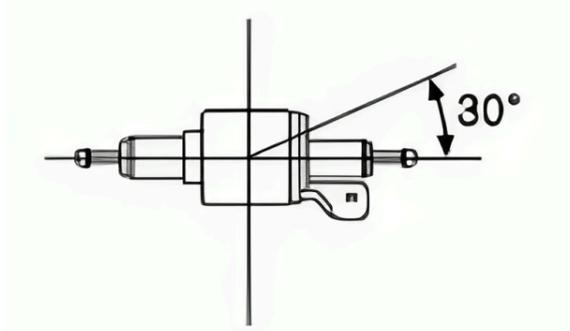
## 3: Route Fuel Line

- Use included fuel-resistant tubing
- Max 1 m from tank to pump, 4 m from pump to heater
- Avoid sharp bends and air pockets



#### 4: Install Fuel Pump

- Mount at 15–35° angle (arrow indicates flow direction)
- Use vibration-damping bracket
- Place fuel filter on pump's inlet side
- Keep away from heat and water

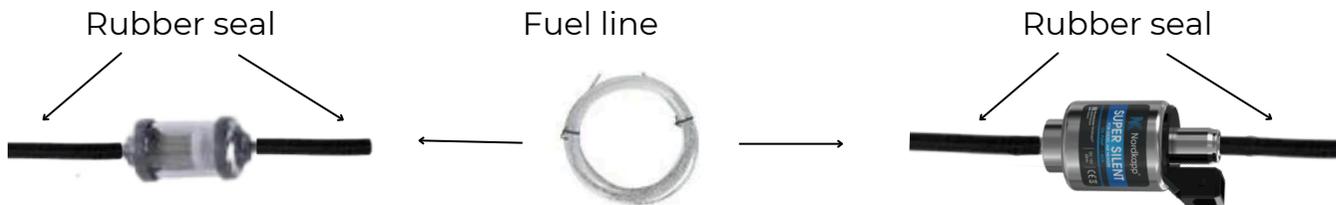


#### 5: Connect and Secure Lines

**Use rubber seals and clamps at all joints:**

- Tank → Line
- Line → Filter
- Filter → Pump
- Pump → Heater

Insert line deep into connectors and tighten clamps



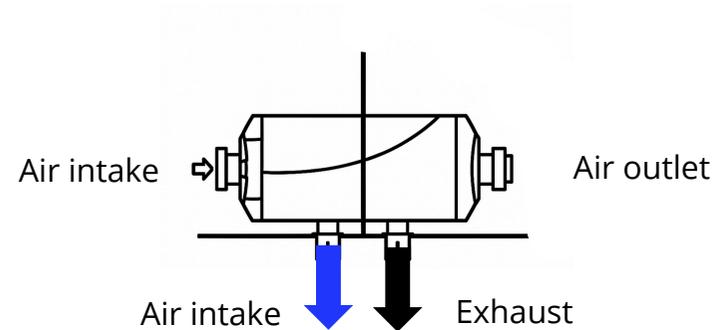
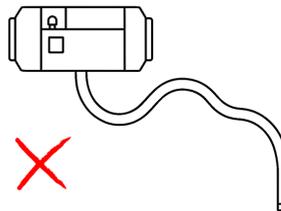
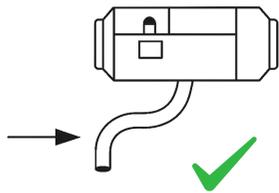
# Air Intake and Exhaust Installation

## 1: General Guidelines

- Intake supplies combustion air; exhaust vents gases
- Both must exit the vehicle
- Ensure no blockages or low ground clearance

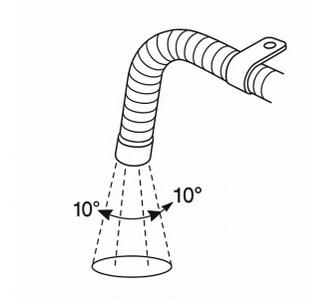
## 2: Air Intake Hose

- Made of aluminum, connects to heater intake
- Avoid exposure to water, dirt, direct rain
- Route downward or horizontally, secure with clamps



### 3: Exhaust Pipe

- Stainless steel, gets very hot during use
- Route against driving direction at 90° downward angle
- Keep intake and exhaust ends at least 20 cm apart
- Direct both ends downward to avoid water ingress
- Minimum bend radius: 50 mm
- Optional 4 mm drain holes for condensation
- Use heat shields if exposed or accessible

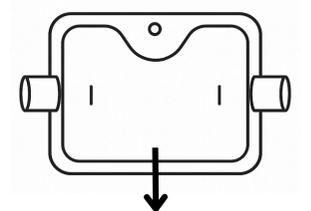


### ! 4: Safety Notes

- Do not allow exhaust pipe to touch fuel lines, wiring, or vehicle body
- Use only fireproof insulation through walls/doors
- Avoid flammable materials (e.g., foam, plastic)
- Consult a professional installer if unsure

### 5: Install Muffler (exhaust pipe)

- Reduces external noise
- Install near exhaust outlet
- Ensure condensation drain faces downward
- Optional: pre-drill condensation hole before muffler
- Use clamps or hose clips to secure



# Air Duct Instalation

## 1: Overview

- Ducts direct heated air to desired areas
- Connect to heater's warm air outlet
- Use included duct or purchase splitter for multiple areas

## 2: Routing the Duct

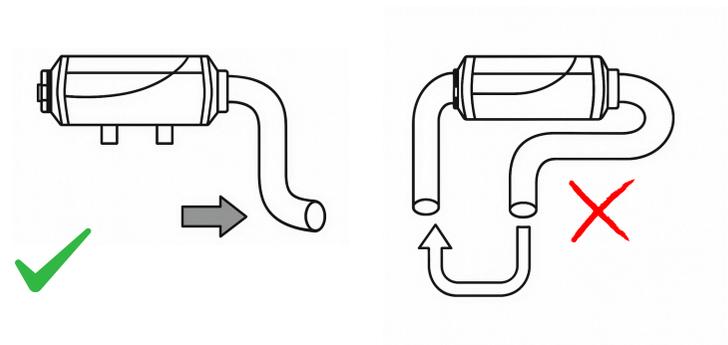
- First 1 meter should be straight
- Avoid sharp bends or crushing
- Do not step on ducts
- Avoid 90° angles

## 3: Outlet Placement

- Avoid blowing hot air directly at people or sensitive surfaces
- Use grilles or adjustable nozzles to direct airflow

## 4: Safety

- Never recycle hot air into heater intake
- Do not connect to vehicle HVAC system
- Use heat-resistant ducts (min. 130°C)



## **Nordkapp™ Air Share Kit** (optional, sold separately)

If necessary, you can install an air distribution kit on the heater to distribute the heat to multiple separate spaces.

You can find the Air Share Kit in the Nordkapp online store.



- Use only simple configurations to avoid airflow restriction
- Excessive complexity can cause overheating and loss of efficiency
- Keep first meter of duct straight
- Do not use 90° bends in the first meter

# Electrical Wiring

## 1: General Notes

- Compatible with 12V or 24V systems (check model)
- Power from vehicle battery or external AC-DC adapter (230V/220V → 12V/24V)
- Always use correct polarity and fuse

## 2: Battery Connection

- Red wire to positive, black to negative terminal
- Use 15A fuse close to battery on positive wire
- Never connect/disconnect while heater is on
- Avoid routing wires near metal without protection

## 3: AC Operation (Optional)

- Use Nordkapp™ AC adapter in dry, protected area
- Check all wires and connections before starting
- UPS (uninterruptible power supply) recommended for outages

### **⚠ If operating on AC without UPS**

If the heater is used via a mains power adapter without a UPS device, the power supply will be suddenly interrupted in the event of a power outage.

#### **This may lead to the following issues:**

- Fuel remaining in the combustion chamber can cause sooting or malfunction during the next start-up
- The heater does not have time to complete the automatic cooling process
- The control unit may lose settings or remain in an error state
- The heater must always be turned off from the control panel and the power must only be disconnected when the fan has stopped.

**⚠** It is the user's responsibility to ensure that the heater is turned off as instructed. Do not leave the heater on unattended when connected to the mains if the UPS is not in use.

### **4: Wire Protection and Finishing**

- Route wires neatly and secure with clips
- Keep away from moving or hot parts
- Check all connections are tight and safe from being pulled

# Startup and Shutdown

## 1: First Startup

- Ensure all installations are correctly and securely completed.
- Check fuel lines for leaks or air bubbles.
- Initial use may produce smoke and strong odor (normal).
- Odors typically fade after a few hours at full power.
- Ensure good ventilation during initial operation.
- Heater begins with a glow plug preheating cycle (up to 2 minutes, no visible signs).

## 2: Shutdown

- Always turn off using the control panel or power switch.
- Never disconnect power during operation.
- Heater performs an automatic cooling cycle with low-speed fan.
- Wait until the fan fully stops before cutting power.

## 3: Restarting the Heater

- If the heater fails to start, wait 5–10 seconds before retrying.
- Check for error codes on the display (refer to control panel manual).

# Maintenance and Service

**⚠ Warranty is void if the following maintenance is neglected.**

Regular maintenance improves the reliability of the heater, prevents sooting and extends its service life. Below are instructions that will keep the device in good condition.

## Monthly Maintenance:

- Run the heater at full power for 20 minutes monthly.
- Burns off potential deposits and ensures fuel circulation.

## Annual Inspection:

- Check all fuel line and connector seals.
- Inspect electrical wiring and signs of corrosion.
- Clean and inspect air intake and exhaust systems.
- Remove debris or soot from exhaust outlet.

## Fuel System Maintenance:

- If unused for long periods, drain tank and lines (for separate tanks).
- Flush with clean diesel (never use gasoline).
- If using kerosene, ensure system is completely dry before switching back to diesel.

## Storage

- Disconnect from battery or power supply.
- Store in a dry, clean location.

# GSM-Control Panel Manual

## Display

While the heater is running, relevant data such as system voltage, ambient temperature, altitude, and equipment temperature are displayed in real time to help users understand the heater's operating status.



## To switch displayed content:

- Press the "Settings Key" briefly. The screen will switch cyclically through:
  - System voltage
  - Ambient temperature
  - Altitude (not available on non-high-altitude models)
  - Device temperature
  - Device code
  - System time
  - Pump oil mode selection (this item is not available after the heater is turned ON)

## Buttons and Functions:

### Button:

**Power:** Short press = ON, long press = OFF

**Up(+):** Raise the temperature, adjust the time, etc. upwards

**Down (-):** Lower the temperature / adjust the time, etc. downwards

**Settings:** Enter or confirm settings.

**Fuel Pump Key** Starts and stops fuel pumping

## Usage Instructions

### Turn on the machine

- When the heater is not turned ON, press and hold the "Power on/off" button for 3 seconds or press it briefly. The screen will display "ON", and the gear lights will light up in a clockwise sequence, indicating that the heater is on.

### Turn off the machine

- After the heater is turned on, press and hold the "Power on/OFF" button for 3 seconds or press it briefly. The screen will display "OFF", and the gear lights will light up in a counter-clockwise order, indicating shutdown. After the power OFF is completed, the screen automatically switches to ambient temperature display, showing that shutdown and heat dissipation are complete.
- **Note:** During the heat dissipation process when the heater is turned off, it is NOT allowed to turn it on again.

### Pump oil separately

When using the heater for the first time or after replacing the oil pump or pipe, you must fill the oil line fully for normal operation.

### Steps:

- Ensure the heater is not turned on.
- Press and hold the "Fuel Pump Key" for 3 seconds, or:
  - Briefly press "Settings Key" to enter pump oil mode
  - Then press and hold "Settings Key" for 3 seconds to activate individual oil pumping
- The screen shows "P-E" indicating pump oil mode
- To stop pumping: briefly press either "Fuel Pump Key" or "Settings Key"
- Auto-stop: After 3 minutes, the heater will automatically stop pumping to avoid overfilling
- If the oil line is still not filled, repeat the procedure.

**Note:** This function **cannot be used if the heater has a fault.**

## Ventilation mode

Steps:

1. Ensure the heater is not turned on
2. Press and hold the "Down key" for 3 seconds
3. Screen shows "P-F", indicating ventilation mode is active
4. Briefly press "Down key" again to stop ventilation

**Note:** Ventilation mode **cannot be used if the heater has a fault.**

## Remote control matching

Before using a remote control, it must be paired with the screen panel.

Steps:

1. Ensure the heater is not turned on
2. Press and hold "Up" key and "Down" key simultaneously for 3 seconds
3. Screen shows "---", indicating matching mode
4. Press and hold "Power on/off" button on the remote until pairing completes
5. Pairing successful → system exits automatically
6. To exit pairing manually, briefly press any key

**Note:** If the remote is replaced or lost, re-pairing is required.

## Query device code

To retrieve the device's unique code for app binding, activation, or support:

- After turning on the heater, press and hold the "Down key" for 3 seconds
- The device code will be shown on the screen

## Selection of working mode

The heater supports two modes:

- Gear mode: User sets the gear manually
- Constant temperature mode: Heater adjusts output to maintain target temperature

Default mode after ignition is gear mode.

### ► To switch to constant temperature mode:

1. Press and hold the "Up key" for 3 seconds
2. Temperature icon lights up, gear icon turns off
3. Screen displays "F+ Constant Temperature"
4. Adjust temperature:
  - Up key = +2°C
  - Down key = -2°C
  - Range: 18°C to 30°C, default: 24°C

### ► To switch back to gear mode:

1. Press and hold the "Up key" again for 3 seconds
2. Gear icon lights up, temperature icon turns off
3. Screen displays "P+ Gear"
4. Adjust gear:
  - Up key = +1 gear
  - Down key = -1 gear
  - Range: 1 to 8, default: 4

**Note:** If the heater is turned off or has a fault, it will **automatically exit constant temperature mode** and return to gear mode.

## System time setting

Users can pre-set scheduled functions such as automatic start/shutdown by setting the system clock.

### Steps:

1. When the heater is not turned on, press and hold the "Setting key" for 3 seconds. The screen displays "A" and the alarm icon flashes, indicating entry to system time setting.
2. Briefly press the "Setting key". The current time appears, and the first two digits (hours) will flash:
  - "Up key" = increase by 1 hour
  - "Down key" = decrease by 1 hour
  - Range: 0–23 hours
3. Press the "Setting key" again. The last two digits (minutes) flash:
  - "Up key" = increase by 1 minute
  - "Down key" = decrease by 1 minute

Range: 0–59 minutes

**Note:** If the screen shows device code or pump oil mode, press "Setting key" briefly to switch to another display first, then press and hold for 3 seconds to enter time setting.

## Set the scheduled startup time

Allows the heater to start automatically at a specific time.

### Steps:

1. When the heater is not turned on, press and hold the "Setting key" for 3 seconds → screen shows "A"
2. Briefly press the "Setting key" → screen changes to "b", alarm icon and "ON" icon flash
3. Briefly press the "Setting key" again → scheduled startup time appears:
  - First two digits (hours) flash
    - Up/Down key = adjust 0–23 h
  - Press "Setting key" → last two digits (minutes) flash
  - Up/Down key = adjust 0–59 min

Once the system time matches the scheduled ON time, the heater automatically turns on.

**Note:** If the heater has a fault, the scheduled ON function cannot be used.

## Set save exit

This step saves all changes and exits the settings menu.

### Steps:

- While in the settings menu, press and hold the "Setting key" for 3 seconds to save and exit.

### Indicators after exiting:

- If scheduled ON/OFF is enabled:
  - Alarm icon, "ON", and "OFF" icons flash slowly
- If voice control is enabled:
  - Microphone icon stays ON
- If voice control is disabled:
  - Microphone icon turns OFF

## Screen goes off and wakes up

To reduce power consumption and avoid disturbing rest, the screen turns off automatically.

- After 5 minutes of inactivity, the screen enters sleep mode
- To wake the screen, press any key on the panel or any key on the remote control

## Error display

When the heater detects a fault:

1. Screen displays "E+ Error Code"
2. Heater automatically shuts down and enters heat dissipation (except fan-related faults)
3. After dissipation:
  - Check the error code
  - Resolve the issue
  - Restart the unit by pressing and holding or briefly pressing the Power On/Off button
4. If the error persists, the system will shut down and display the error again until the issue is resolved

### Note:

- During heat dissipation, the heater cannot be restarted
- Fan faults do not affect the heat dissipation process

## Heater Fault Code Table

<b>Code</b>	<b>Description</b>	<b>Solutio</b>
<b>E01</b>	High voltage: 24V >32V, 12V >17V	Check the supply voltage.
<b>E02</b>	Low voltage: 24V <18V, 12V <10V	Check whether the power supply voltage and battery are drained or if the power supply wire cable is too thin.
<b>E03</b>	Glow plug cannot be detected	Check whether the glow plug lead is loosely connected or replace the glow plug.
<b>E04</b>	Oil pump cannot be detected	Check whether the oil pump lead is loosely connected or replace the oil pump.
<b>E05</b>	Motor cannot be detected	Check if the motor leads are loosely connected or replace the motor.
<b>E06</b>	Sensor cannot be detected	Check if the sensor lead is loosely connected or replace the sensor.
<b>E07</b>	Shell overheating	Check if the air inlet and outlet are blocked or replace the sensor.
<b>E08</b>	Flame extinguished	Check if the equipment is short of oil or if air has entered the oil pump's oil supply pipe.
<b>E09</b>	Ignition failure	Check whether the oil pipeline delivers oil to the equipment or if the power supply wire cable is too thin.
<b>E10</b>	Ambient temperature is too high	Check the air intake and keep it away from heat sources. Check if the temperature sensor is damaged.

## Heater Fault Code Table

<b>Code</b>	<b>Description</b>	<b>Solutio</b>
<b>E11</b>	Temperature sensor failure	Check if the temperature sensor is damaged.
<b>E12</b>	Abnormal communication with panel	Check whether the leads of the screen panel are loosely connected or replace the screen panel.
<b>E13</b>	Mainboard communication anomaly	Check if the mainboard communication leads are loosely connected or replace the mainboard.
<b>E15</b>	Glow plug short circuit	Check whether the lead of the glow plug is short-circuited or replace the glow plug.
<b>E16</b>	Oil pump short circuit	Check whether the oil pump lead is short-circuited or replace the oil pump.
<b>E17</b>	Motor short circuit	Check if the motor leads are short-circuited or replace the motor.
<b>E18</b>	Sensor short circuit	Check if the sensor leads are short-circuited or replace the sensor.

# Connecting the Mobile App

## Description

You can control the heater and view its data using the mobile app, provided it is connected to the device. Follow these steps:

-First, watch the instruction video on the [nord-kapp.com/pages/documents](http://nord-kapp.com/pages/documents)

-Download the NordkApp mobile app.

- Download the Nordkapp app from your app store (search term: Nordkapp-Nordk) or by scanning the QR code (Android). You can also find the Android version directly at this link: <http://nordk.ltd/> If the link doesn't open directly, copy and paste it into your web browser.

1. When the display has been on for one minute, press and hold the "ON" button for 3 seconds to start the device.
2. A device code will appear automatically (6 digits — first 4 digits, then 2 digits).
3. Press and hold the "Settings" button for 3 seconds. A flashing signal icon will appear on the screen → pairing mode is now active.
4. Open the mobile app → go to device pairing → select "Input Binding".
5. Enter the device code shown on the screen → press "Confirm Binding".
6. When the pairing is successful, the code will flash 4 times and the pairing mode will exit automatically.
7. You can also manually exit pairing mode by pressing the "Settings" button for 3 seconds.

Note:

- A working internet connection is required for pairing.
- If the heater encounters a fault, pairing mode will automatically be interrupted.

If you experience issues with pairing, more detailed instructions are provided on the next page

## See these instructions if you have a problem connecting

A helpful instruction video about pairing is available at [nord-kapp.com](http://nord-kapp.com), under the [Documents](#) section.

Download the Nordkapp app from your app store (search term: Nordkapp-Nordk) or by scanning the QR code (Android). You can also find the Android version directly at this link: <http://nordk.ltd/>

If the link doesn't open directly, copy and paste it into your web browser and log in as shown in the instruction video.

- Ensure that **the SIM card is inserted correctly** (chip facing the screen). When placed correctly, you should hear a click sound (use a tool if necessary to press the SIM into place). That confirms the SIM is properly installed. **Disable the SIM card's PIN code request** and ensure that the subscription **supports 4G/5G**. **Restart the device after inserting the SIM card**. If the connection still doesn't work, even though the SIM is inserted correctly, try using a different SIM card.
- When the display has been on for one minute, press and hold the "ON" button for 3 seconds to start the device. A device code will appear automatically (6 digits — first 4 digits, then 2 digits). Press and hold the "Settings" button for 3 seconds. A signal icon will begin to flash.
- Open the mobile app, go to the "Input Binding" section, and enter the 6-digit code shown on the control panel.

### If the standard pairing method doesn't work, try this alternative:

- In the app, go to "Shared Validation Binding"
- Select "Password Binding"
- Enter the password: 1234
- Then, enter the device code
- Finally, press "Confirm Bind"

### Note on pricing:

The app is free for the first two weeks. After that, the subscription cost is €1.99/month.

When the trial period ends, the app will prompt you to confirm the payment.

After completing the payment, close and reopen the app.

## Important safety and manufacturer information

### Common Mistakes to Avoid

- Cutting power before cooling fan finishes
- Passing exhaust through wall without fireproof insulation
- Intake and exhaust too close together
- Installing muffler upside-down
- Leaving heater unattended on AC without UPS
- Overcomplicated or blocked air ducts

### Safety Reminder

- Always follow this guide
- Never use heater if fuel leaks, electrical faults, or abnormal noises occur
- Do not use continuously without breaks
- For concerns, consult the control panel troubleshooting guide or contact support
- Ignoring the instructions can lead to damage to the heater or a safety risk.

**Note!** We reserve the right to change the manuals. The latest and updated versions can always be found on our website: [www.nord-kapp.com/pages/documents](http://www.nord-kapp.com/pages/documents)

Manufacturer

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