COOL-J

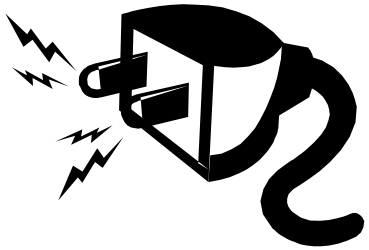
# HB9000 Plus

## HEAT PUMP

Operation, maintenance and installation manual



# CAUTION



## For safe operation, this unit must:

1.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.
2. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
3. The appliance have full disconnection switch in the fixed wiring in accordance with the wiring rules.

**Failure to do so can result in property damage, personal injury and /or death.**






**WARNING**

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.)
Do not pierce or burn.
Be aware that refrigerants may not contain an odour.

The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation-a warning that the appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).
The appliance shall be stored so as to prevent mechanical damage from occurring.

The compliance with national gas regulations shall be observed;
Min applicable area of this machine is 15m .
Please ensure that there are no obstacles in front of the machine, keep ventilation openings clear of obstruction.
Servicing shall be performed only as recommended by the manufacturer.

Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.
Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

Before servicing the appliance

**Checks to the area:**

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is linimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system

## Work procedure:
Work shall be undertaken under a controlled procedure so as tominimise the risk of a flammable gas or vapour being present while the work is being performed.

## General work area:
All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

## Checking for presence of refrigerant:
The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

## Presence of fire extinguisher:
If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

## No ignition sources:
No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks.

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

## Checks to the refrigeration equipment:
Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using flammable refrigerants:
-- the charge size is in accordance with the room size within which the refrigerant containing parts are Installed;
-- the ventilation machinery and outlets are operating adequately and are not obstructed;
-- if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
-- marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
-- refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode

refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

## Checks to electrical devices:

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised. Initial safety checks shall include:
that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
that no live electrical components and wiring are exposed while charging, recovering or purging the system;
that there is continuity of earth bonding.

## Repairs to sealed components:

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
Ensure that apparatus is mounted securely.
Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in NOTE
*The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.*

## Repair to intrinsically safe components:

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use. Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating. Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak

## Cabling:

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

## Detection of flammable refrigerants:

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

## Leak detection methods:

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants.
Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)

Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. If a leak is suspected, all naked flames shall be removed/ extinguished.If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

## Removal and evacuation:

When breaking into the refrigerant circuit to make repairs-or for any other purpose-conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration.
The following procedure shall be adhered to:

- remove refrigerant;
- purge the circuit with inert gas;
- evacuate;
- purge again with inert gas;
- open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be “flushed” with OFN to render the unit safe.
This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.
Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum.
This process shall be repeated until no refrigerant is within the system.
When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.
This operation is absolutely vital if brazing operations on the pipework are to take place.
Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

## Charging procedures:

In addition to conventional charging procedures, the following requirements shall be followed.
-- Ensure that contamination of different refrigerants does not occur when using charging equipment.
Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
-- Cylinders shall be kept upright.
-- Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
-- Label the system when charging is complete (if not already).
-- Extreme care shall be taken not to overfill the refrigeration system.
Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

## Decommissioning:

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

a) Become familiar with the equipment and its operation.
b) Isolate system electrically.
c) Before attempting the procedure ensure that:
- mechanical handling equipment is available, if required, for handling refrigerant cylinders;
- all personal protective equipment is available and being used correctly;
- the recovery process is supervised at all times by a competent person;
- recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system, if possible.
e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f) Make sure that cylinder is situated on the scales before recovery takes place.
g) Start the recovery machine and operate in accordance with manufacturer's instructions.
h) Do not overfill cylinders. (No more than 80 % volume liquid charge).
i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

## Recovery:

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.
When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available.
All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery

of refrigerant). Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order.
Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order.
Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. Do not mix refrigerants in recovery units and especially not in cylinders. If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

Instructions handbook for operation, maintenance and installation
**Heat pump**

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# 1 General information

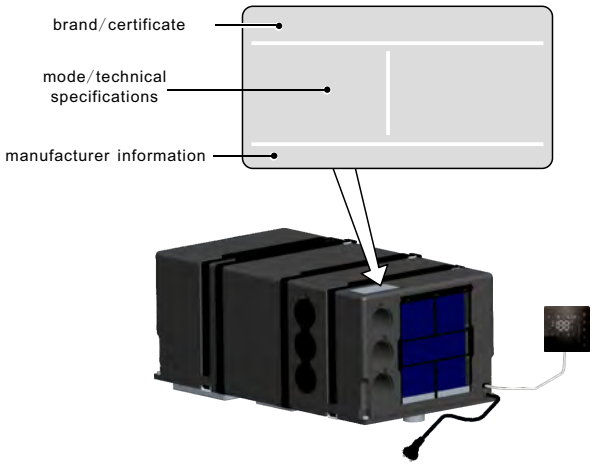
## 1.1. Scope of the manual

This manual has been drawn up by the Manufacturer and is an integral part of the machine.
The information it contains, if observed, can guarantee correct use of the machine.
The first part of the manual is for the user , while the second part is for the expert personnel who install the machine.

To highlight some parts of the text, the following symbols have been added:

This operation may be a source of danger.
Useful advice.
Information on being environment friendly.

## 1.2. Manufacturer and machine identification

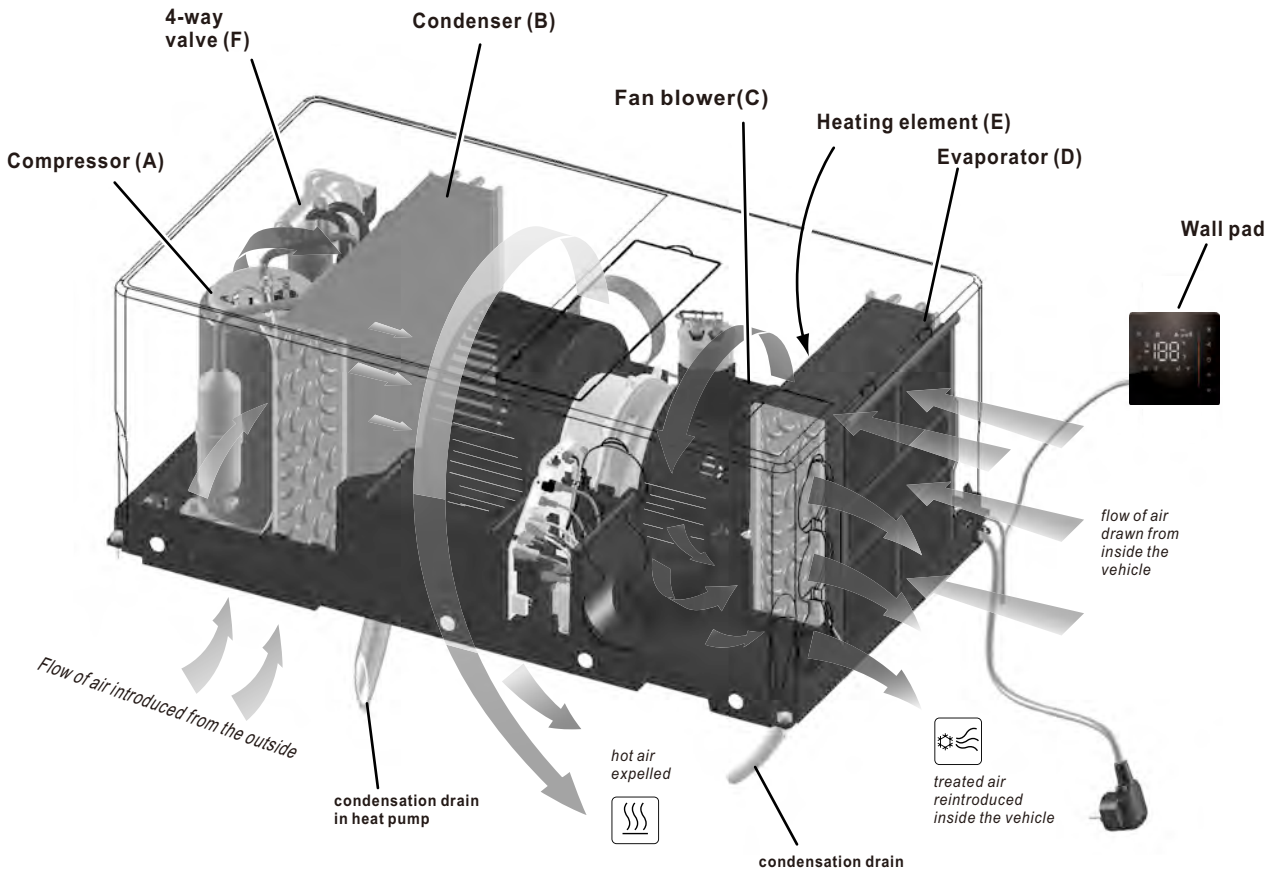



## 1.3. Machine description

This machine has been designed and built to be installed on vehicles (motor homes, caravans, special vehicles, etc.) in order to improve the internal temperature. When the weather is hot it supplies cool and dehumidified air; when the weather is cold it supplies hot air without however replacing the vehicle's original heating system. In both cases the air temperature is adjustable.

**Cool air - Description of operation(FIG.5)**
The system is composed of: compressor(A), condenser(B), evaporator (D) a 4-way valve (F) and the pressurized refrigerant.
The refrigerant, by changing physical state from liquid to gas, heats or cools the components through which it passes.
The evaporator that has been made cold is crossed by the internal air blown by the fan blower (C).
It comes out cooled and dehumidified. This action protracted over time creates a reduction in the temperature inside the vehicle.

**Hot air - Description of operation(FIG.5)**
The refrigerating cycle is reversed by the 4-way valve switching over (F); the internal coil changes from evaporator to condenser, thereby heating the air passing through it.
The system is equipped with a heating element (E) that increases the efficiency of the heat pump at low temperatures.


4-way
valve (F)
Condenser (B)
Fan blower(C)
Heating element (E)
Evaporator (D)
Compressor (A)
Wall pad
flow of air
drawn from
inside the
vehicle
Flow of air introduced from the outside
condensation drain
in heat pump
hot air
expelled
treated air
reintroduced
inside the vehicle
condensation drain

## 1.4. User tips

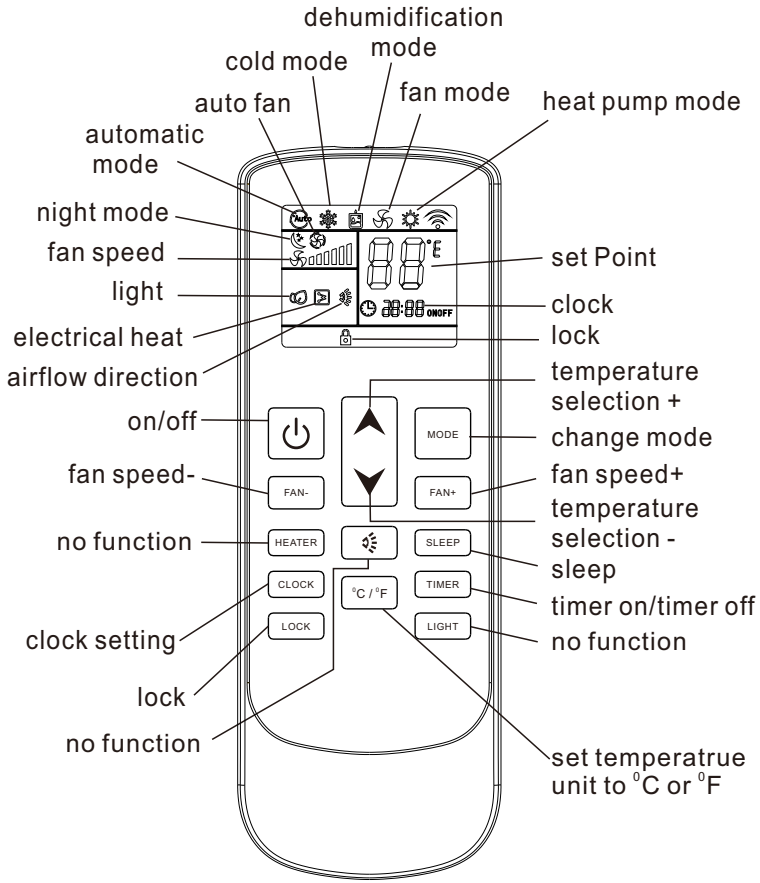
The machine performance can be improved by taking some precautions.

- Improve the vehicle's heat insulation by eliminating openings and covering the glass surface with reflecting curtains.
- Avoid frequently opening doors and windows when not necessary.
- Select the appropriate temperature and fan speed. Direct the air vents suitably.
- In order to avoid machine malfunctioning and risks of injury, take the following precautions:
- Do not obstruct the ventilation air inlet and outlet with cloth, paper or any other items;
- do not put your hands or any other items into the openings;
- do not spray water inside the machine;
- keep flammable substances well away from the machine.
- Clean the air filter periodically.

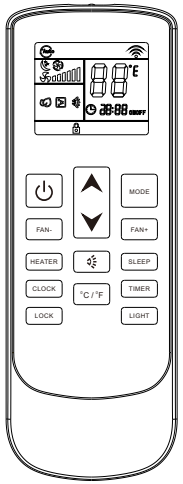
## 1.5. Description of the controls

**Selecting functional status**

At the time of **switching on, the system waits for a few minutes before operating the compressor.**
Press the "**MODE**" button to move between the possible states (automatic, cold, dehumidification, ventilation, heat pump) and wait two seconds on the selected state for this to be confirmed by the system with an audible warning (the buzzer is inside the machine). Always point the remote control towards the wall pad to send all the signals.



## Automatic mode




| | | |
|---|---|---|
| 1 | ⏻ | Press the on/off button to switch on the machine. |
| 2 | MODE | Press the change mode button to select automatic mode[1]. |
| 3 | ▲ ▼ | The temperature selection buttons are disabled. |
| 4 | FAN- FAN+ | Press the fan speed button to select low, medium or high speed or automatic speed[2]. |
| 5 | ⏻ | Press the on/off button to switch off the machine. This mode stays in memory for switching on the next time. |

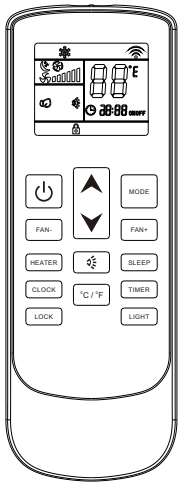
note[1]: In this mode the machine manages the compressor, heat pump and fan speed entirely automatically by comparing the set temperature with the internal temperature according to table A.

note[2]: on automatic speed the correct ventilation is set according to the difference in temperature between the set point and the ambient temperature.

TABLE A

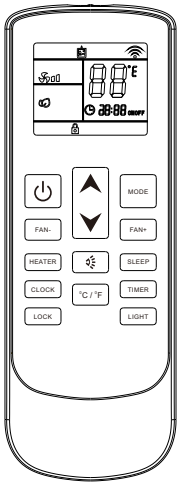
| Intenal temperature | T≤20°C | 20°C<T<25°C | T≥25°C |
|---|---|---|---|
| Operating mode | Heat pump o ventilation | Dehumidification o ventilation | Cold |
| Set point | | | |

## Cold mode



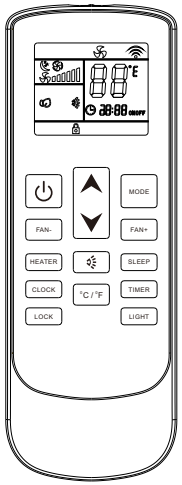

| | | |
|---|---|---|
| 1 | ⏻ | Press the on/off button to switch on the machine. |
| 2 | MODE | Press the change mode button to select cold mode. |
| 3 | ▲ ▼ | Press the selection buttons to set the ambient temperature on the desired value between 18°C and 30°C. |
| 4 | FAN- FAN+ | Press the fan speed button to select low, medium or high speed or automatic speed[2]. |
| 5 | ⏻ | Press the on/off button to switch off the machine. This mode stays in memory for switching on the next time. |

## Dehumidification mode



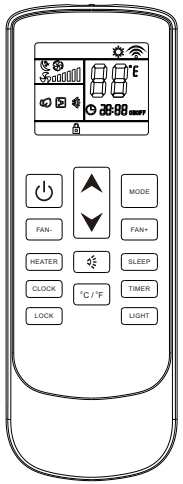

| | | |
|---|---|---|
| 1 | ⏻ | Press the on/off button to switch on the machine. |
| 2 | MODE | Press the change mode button to select dehumidification mode. |
| 3 | ▲ ▼ | Press the selection buttons to set the ambient temperature on the desired value between 18°C and 30°C. |
| 4 | FAN- FAN+ | The fan speed selection button is disabled. |
| 5 | ⏻ | Press the on/off button to switch off the machine. This mode stays in memory for switching on the next time. |

## Fan mode



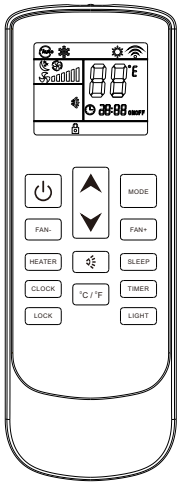

| | | |
|---|---|---|
| 1 | ⏻ | Press the on/off button to switch on the machine. |
| 2 | MODE | Press the change mode button to select fan mode. |
| 3 | ▲ ▼ | Press the selection buttons to set the ambient temperature on the desired value between 18°C and 30°C. |
| 4 | FAN- FAN+ | Press the fan speed button to select low, medium or high speed or automatic speed[2]. |
| 5 | ⏻ | Press the on/off button to switch off the machine. This mode stays in memory for switching on the next time. |

## Heat pump mode



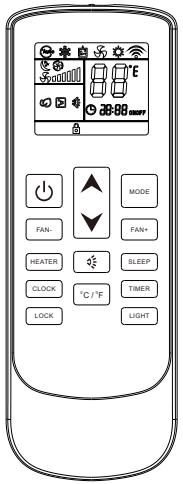

| | | |
|---|---|---|
| 1 | ⏻ | Press the on/off button to switch on the machine. |
| 2 | MODE | Press the change mode button to select heat pump mode. |
| 3 | ▲ ▼ | Press the selection buttons to set the ambient temperature on the desired value between 18°C and 30°C. |
| 4 | FAN- FAN+ | Press the fan speed button to select low, medium or high speed or automatic speed[2]. |
| 5 | ⏻ | Press the on/off button to switch off the machine. This mode stays in memory for switching on the next time. |

## Sleep mode



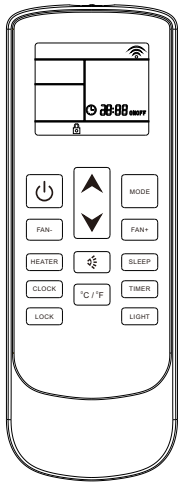

| | | |
|---|---|---|
| 1 | ⏻ | Press the on/off button to switch on the machine. |
| 2 | MODE | Press the change mode button to select the desired mode from all the ones available. |
| 3 | TIMER | Press the sleep mode button to turn this function on and off. |
| 4 | ▲ ▼ | Press the selection buttons to set the ambient temperature on the desired value between 18°C and 30°C. |
| 5 | FAN- FAN+ | This mode sets the ventilation on low speed therefore it is not possible to switch onto the other available options. |
| 6 | ⏻ | Press the on/off button to switch off the machine. This mode stays in memory for switching on the next time. |

## Timer off mode




| | | |
|---|---|---|
| 1 | ⏻ | Press the on/off button to switch on the machine. |
| 2 | MODE | Press the change mode button to select the desired mode from all the ones available. |
| 3 | ▲ ▼ | Press the selection buttons to set the ambient temperature on the desired value between 18°C and 30°C. |
| 4 | FAN- FAN+ | Press the fan speed button to select low, medium or high speed or automatic speed[2]. |
| 5 | TIMER | Press the timer button to set the time when the machine must switch off [3]. |
| 6 | ▲ ▼ | Press the selection button to change the time when the machine must switch off. |
| 7 | TIMER | Press the timer button to confirm the data entered. |
| 8 | TIMER | Pressing the timer button a third time si disables this function. |

## Timer on mode




| | | |
|---|---|---|
| 1 | ⏻ | The machine must be off . |
| 2 | TIMER | Press the timer button to set the time when the machine must switch on[4]. |
| 3 | ▲ ▼ | Press the selection buttons to change the time when the machine must switch on. |
| 4 | TIMER | Press the timer button to confirm the data entered[5]. |
| 5 | TIMER | Pressing the timer button a third time disables this function. |

note[3]: When you press the button the first time the symbol on the display flashes to signal you are programming a switch-off; pressing it a second time saves the data and the icon stays on steady to signal activation of the timer off function; pressing it a third time turns off the timer off mode.

note[4]: When you press the button the first time the symbol on the display flashes to signal you are programming a switch-on; pressing it a second time saves the data and the icon stays on steady to signal activation of the timer on function; pressing it a third time turns off the timer on mode.

note[5]: At the set time the machine will start in automatic mode.

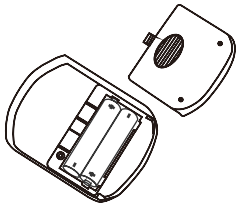
## 1.6. Installing and changing the remote control batteries

Take off the battery cover.

Insert the two batteries supplied(size AAA), paying attention to their polarity.

Fit the battery cover back on.

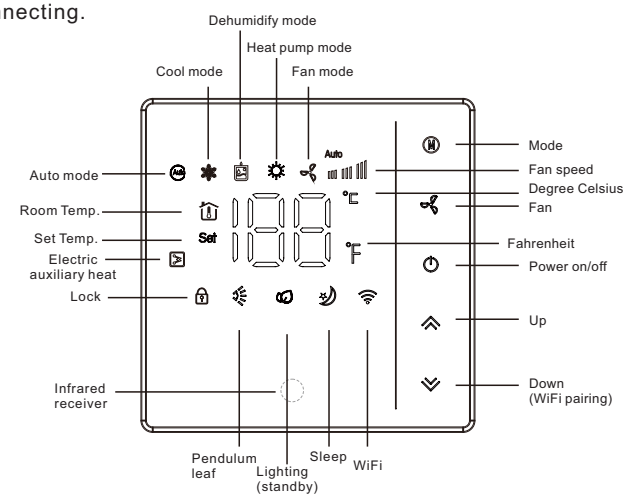
Check the remote control works properly by pressing the on button: if, on pressing the button, no icon appears on the display then you need to re-install the batteries checking their polarity. The machine is connected to the power supply and ready for use.



## 1.7. Description of the wall pad

**1. Mode key (M)**
(1) Press the mode key briefly to switch the thermostat mode, automatic mode, cool mode and dehumidify mode, fan mode, heat pump mode.
(2) Press and hold the mode key to enter the special mode option. There are four special modes, including Fan switch, sleep switch, Electric auxiliary heat switch, Light switch, the above four items are switch by short press after entering special mode. After turning on the sleep mode, the fan is switched on switch to low speed. In which sleep cannot be started in fan mode and dehumidify mode;

**2. FAN (fan)**
Press the fan key briefly to switch the fan speed, automatic, high speed, medium speed wind and low speed.
The electric auxiliary heat switch can only be turned on in heating mode(refer to infrared remote control).
**3.Turn on the key (POWER)**
Press the switch button briefly to switch the switch state.
**4. UP key (up)**
Press short to increase the set temperature and increase the values of other options.
**5. DOWN key (down)**
Short press to reduce the set temperature and other options.
**6. Child Lock Button(UP+DOWN)**
Press the up key and the down key for a long time to open the child lock state. In this mode, the keys are invalid. Press and hold the up and down keys once again to cancel the child lock state.
**7. WIFI connection (down button in shutdown state)**
Press the down key for a long time in the off state to enter the WiFi connecting.



**8. AUTO WIFI**

WI-FI CONNECTION

Before using your Wi-Fi thermostat for the first time, you must configure the Wi-Fi signal and setting through your smartphone or tablet. This will allow communication between your connecteddevices.

Step 1 Download your APP (Fig1-1)

Fig 1-1 Fig 1-2 IOS Fig 1-3 Android

Search for “Smartlife” in Apple Store or Google Play or use a browser to scan the QR code above (Figure 1-2), and complete account registration and installation according to the guidance of the APP.

Step 2. Connect the thermostat

Check the tutorial below to complete the connection and setup.

Method 1: Scan the QR code to configure the network guide (Fig 2.1-Fig 2.3)




Fig 2.1




Fig 2.2

Scan this QR code




Fig 2.3

Method 2: Ordinary distribution network guidance (Fig 2.1&Fig 2.3.1)




Fig 2.3.1




Fig 2.4




Fig 2.5

**Network distribution mode:**

1. EZ Mode

When the thermostat is off, press and hold the “ ⩛ ” until the thermostat screen flashes quickly and displays the “ ” icon, and then operate according to the following figure (Fig2.4-Fig 2.7)




Fig 2.6




Fig 2.7

2. APP Mode
When the thermostat is off, press and hold the " ∨ " until the thermostat screen flashes slowly and the " " icon is displayed(if the " " icon appears, continue to press the " ∨ " until the thermostat screen Flashes slowly and displays the " " icon),and then operate according to the following figure (Fig2.8-Fig 2.14)



Fig 2.8



Fig 2.9



Fig 2.10



Fig 2.11



Fig 2.12



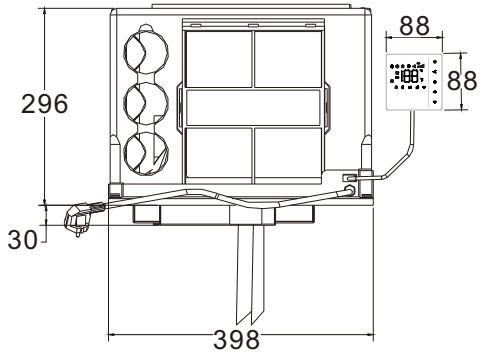
Fig 2.13

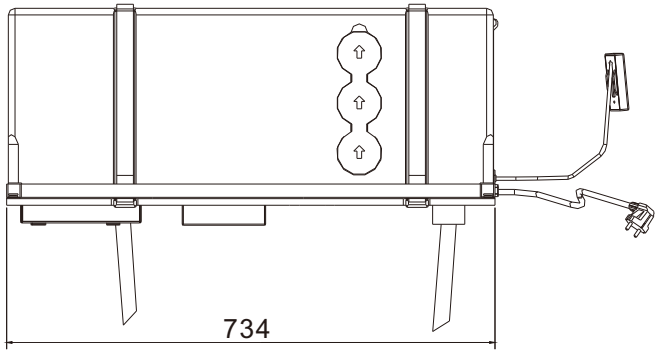
After connecting to this hotspot, return to the "smartlife" APP



Fig 2.14

## 1.8. Technical data



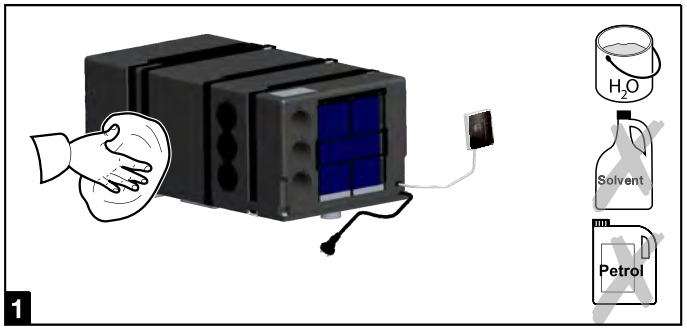




| Description | Unit of measurement | Model HB9000 Plus | |
|---|---|---|---|
| Refrigerant type/quantity | see machine dataplate | | with no CFCs |
| Refrigerating capacity | Watt | 2650 | |
| Heating capacity | Watt | 2700+540W | |
| Consumption when cooling | A-Watt | 4.2 - 945 | |
| Consumption when heating | A-Watt | 5.1 - 1264 | (724W+540W) |
| Additional heating element | Watt | 500 | |
| Electricity supply | V-Hz | 230 - 50 | |
| Protection class | IP | X5 | |
| Treated volume of air (max) | $m^3/h$ | 350 | |
| Max volume(recommended with insulated walls) | $m^3$ | 30 | |
| Weight | kg | 29 | |
| Ventilation | Speed no. | 3 | |
| Operating temperature | °C | from -7 to +40 | |

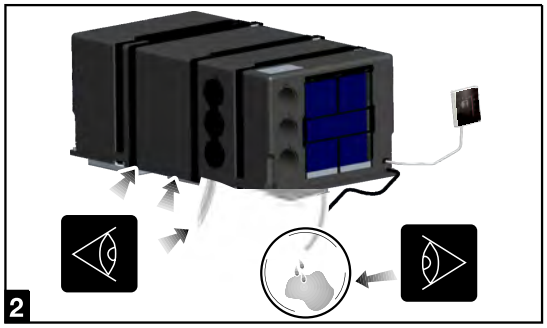
* Additional heating element

** according to EN 14511

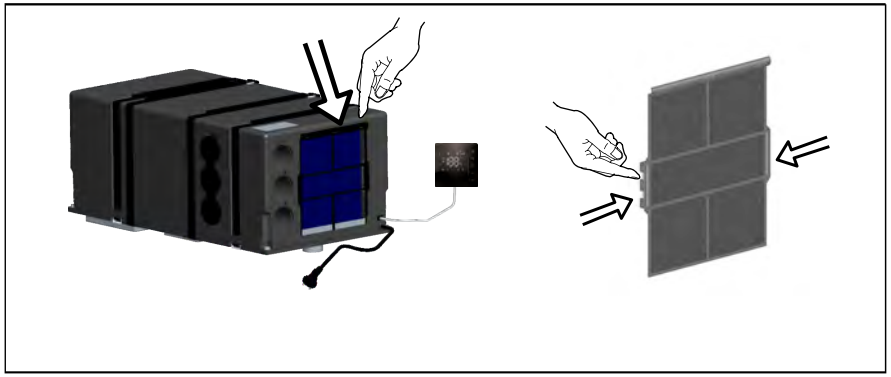
## 1.9. Routine maintenance




**Cleaning:** Do it periodically, removing the dust with a moist cloth. If necessary, use a non-aggressive detergent. Never use petrol or solvents.




**Checking:** Do it periodically, making sure that:
- the condensation drain holes are not obstructed.
- the openings in the floor are not obstructed.

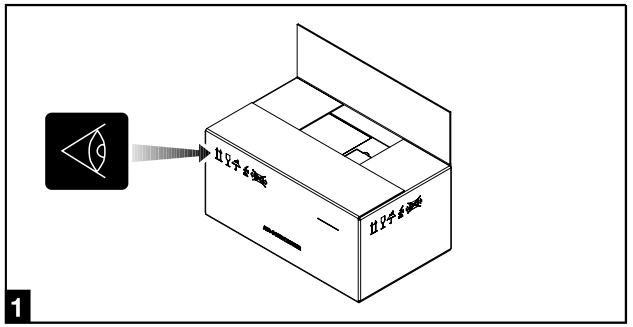


**Filters cleaning:** periodically carry out this operation; wash the filters with a detergent solution and allow to dry before refitting.

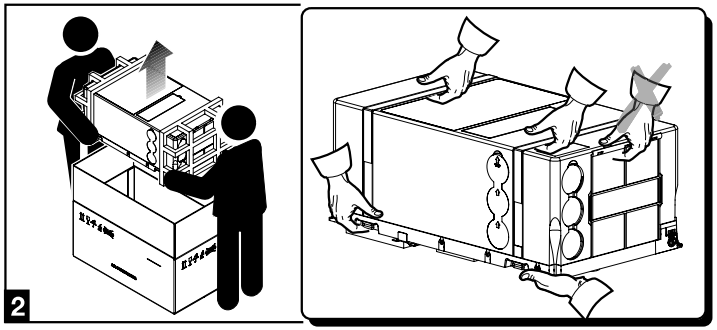
## 2 Information on installation

Installation can be performed by persons with specific technical knowledge. In addition to this requirement, installers must have adequate working conditions in order to ensure their own safety and that of others.

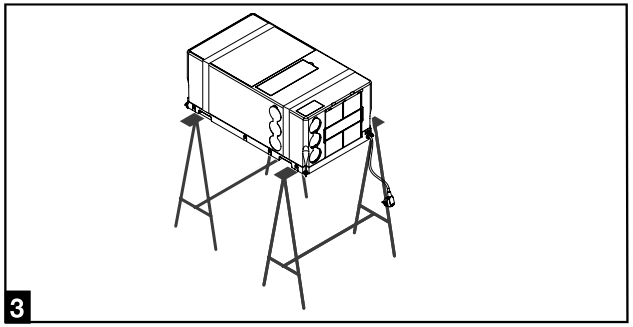
### 2.1. Packing, unpacking and handling

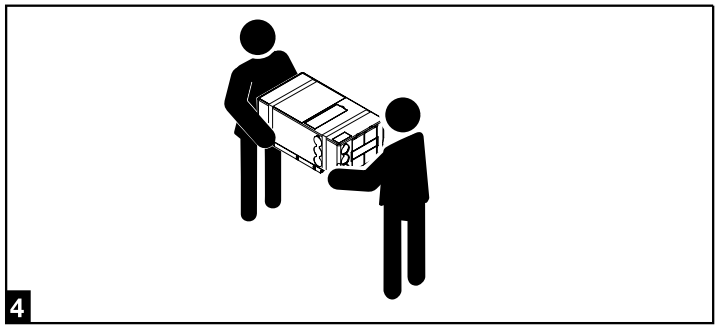



Observe the instructions given on the packing.




Lift the machine, checking it is sound.
**Lift it using the handles or the belts on the base.**




Transfer the machine to the place of installation in conditions of safety.

## 2.2. Choice of the place of installation

To accomplish uniform climate control in a vehicle, the machine must be installed as near the middle as possible, in a housing or a similar device.

Position the machine so as to ensure easy access for servicing and to facilitate disassembly and installation.

Place the assembly template in the compartment intended for installation and check the space available for the openings in the floor.

To minimize the transmission of noise and vibration during operation, the machine must have a minimum clearance on each side of 30mm from the walls and fittings.

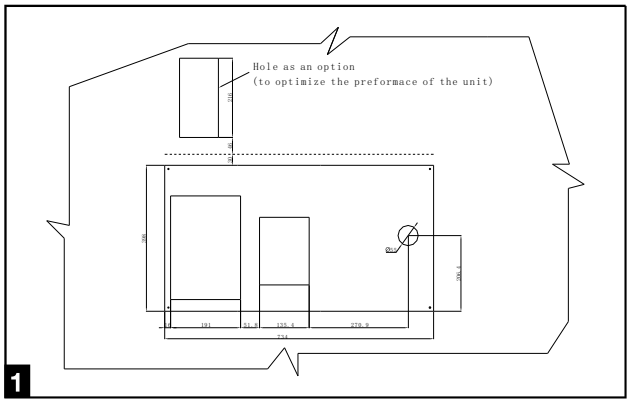
The machine must be installed on the floor.

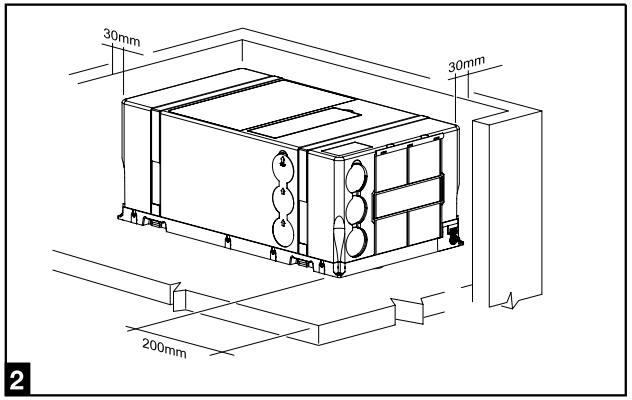
To make renewing the filter easier, keep a distance of 200mm between the front of the machine and the walls of the comprtment.

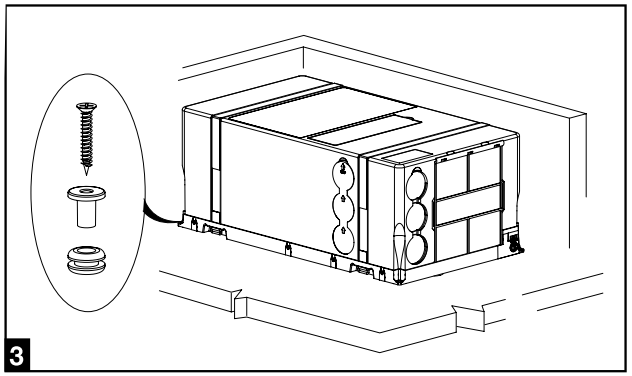
If fitting in external compartments(e.g., false bottoms), the air to be treated must be drawn in from the vehicle's passenger compartment.

Drawing in outside air can significantly reduce the power of the system.

## 2.3. Preparing the opening and fixing



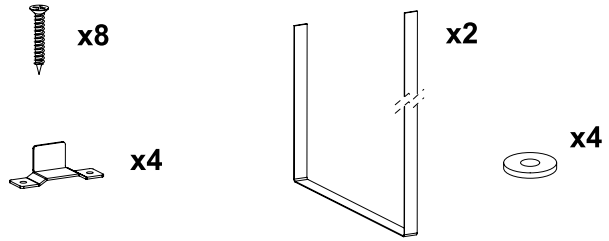



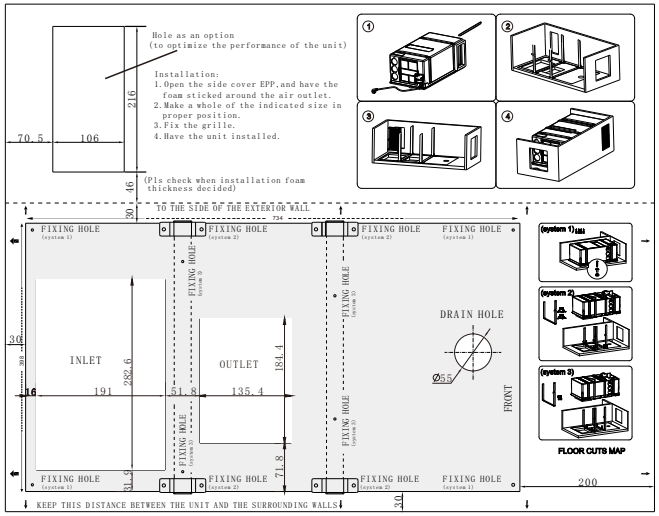

To install the machine it is necessary to create openings in the floor.
The openings in the floor of the vehicle must be accessible and, therefore, must not bo covered by parts of the chassis frame behind or the like.
These openings must not be reached by splashes from the wheels; fit a splash guard or something similar if necessary.
Take care to leave a gap of at least 30mm between the machine and the adjacent walls. Secure the machine to the floor using the kit provided.

**⚠ The machine must preferably be installed level. Maximum angle 10° to prevent condensation coming out.**
**Before making the holes, always check there are no cables, gas pipes, parts of the chassis frame or the like underneath or hidden. Seal the machined surfaces of the openings in the floor with water-repellent products.**

## 2.3.1 Fixing systems

Parts supplied for the a/c fixing

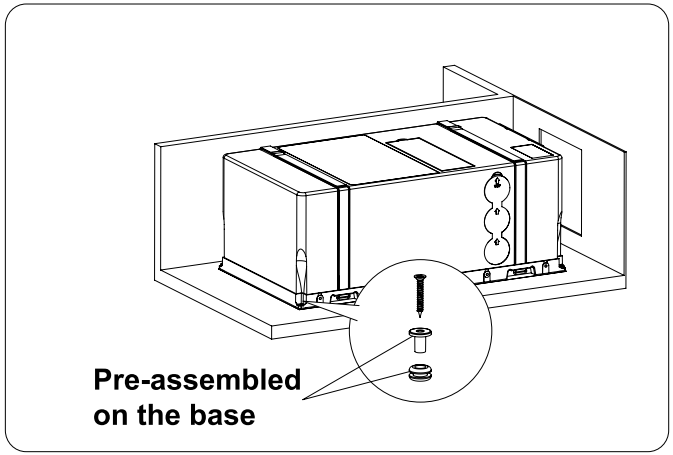


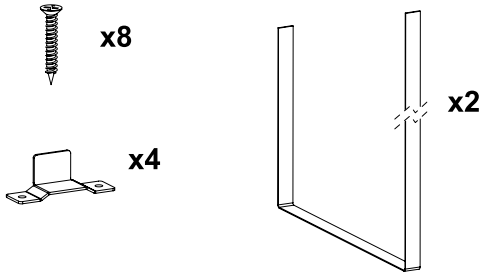

x1

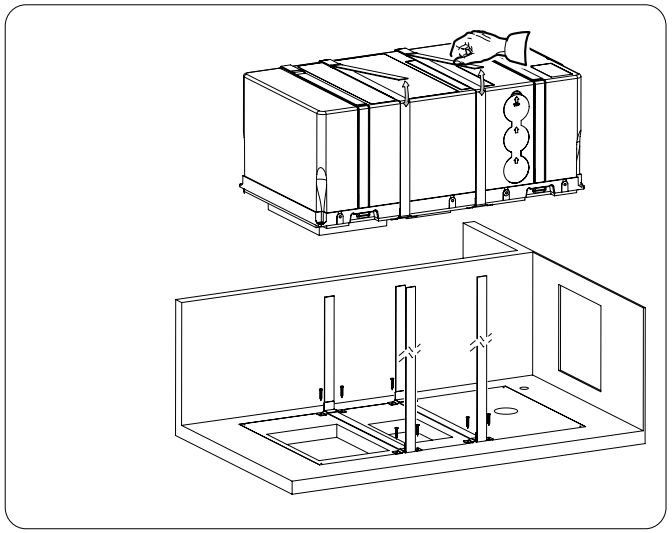
Mode 1: use n° 4 screws for the a/c fixing



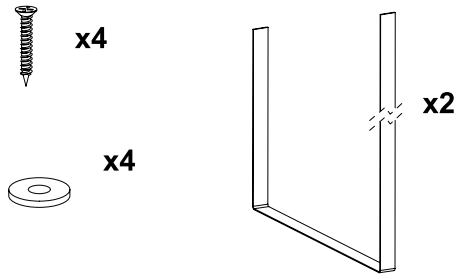



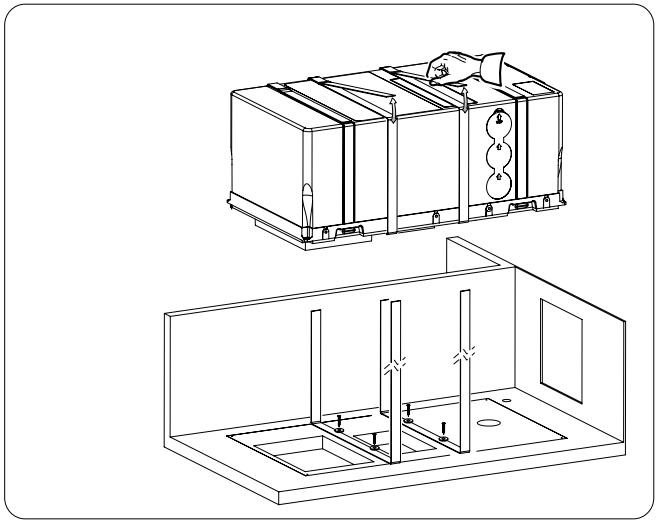
Mode 2: use n° 8 screws, n° 4 brackets and n° 2 belts for the a/c fixing



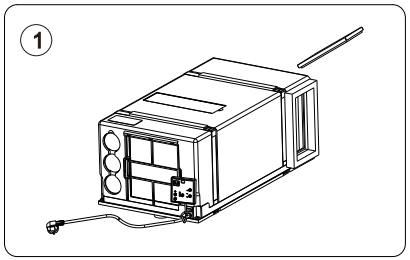
Mode 3: use n° 4 screws and n° 4 washers for the a/c fixing

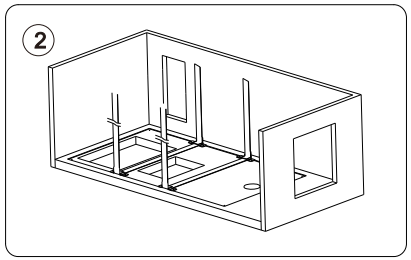


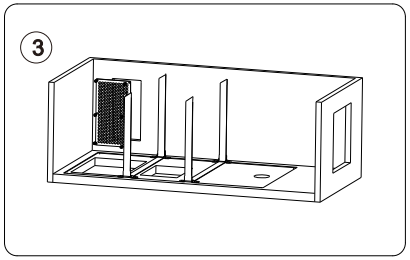



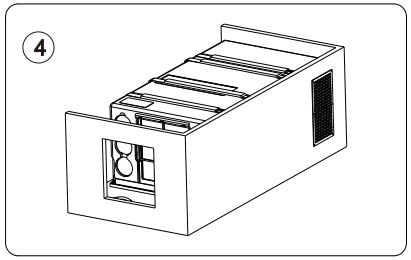
Hole as an option
(to optimize the performance of the unit)

Installation:
1.Open the side cover EPP,and have the foam sticked around the air inlet.
2.Make a whole of the indicated size in proper position.
3.Fix the grille.
4.Have the unit installed.

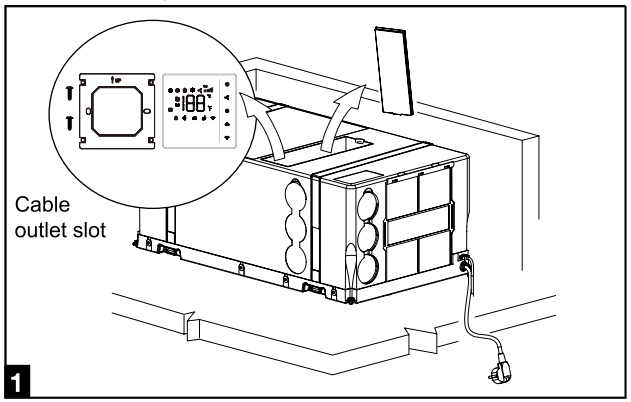


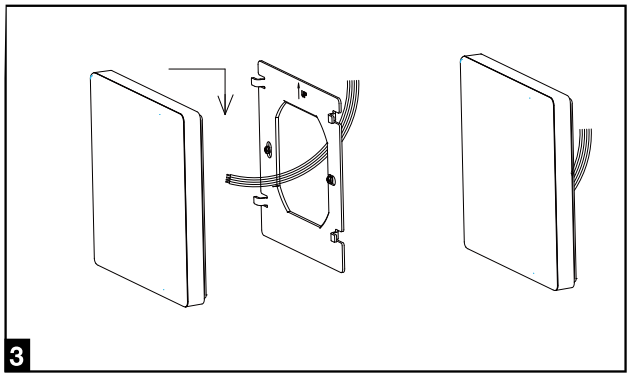



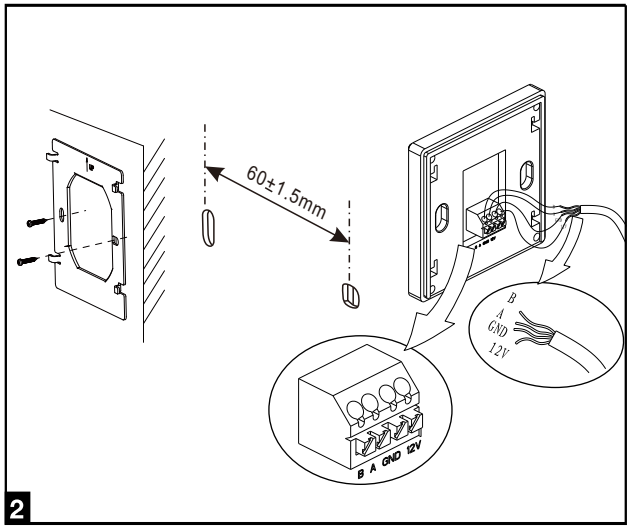



## 2.4. Fitting the infrared wall pad

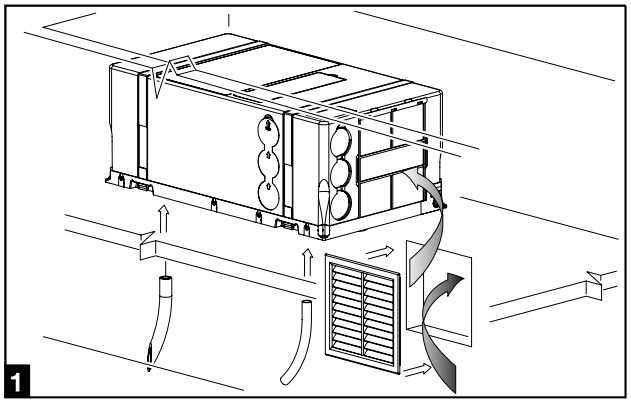


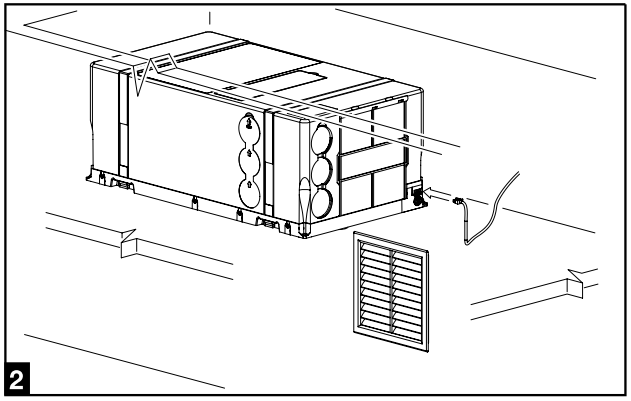




Fix the steel plate on the wall with self-tapping screws.
The distance between two holes is 60mm, and the hole diameter should be less than 50mm, the screw is M4*15mm pan head cross pointed tail tapping screw.
After the correct wiring, place the thermostat against the steel plate, and then slide down the buckle to fix it.
The installation is complete.

## 2.5. Compartment opening and electrical hook-up




Make a hole in the compartment where the machine has been installed to permit recirculation of the internal air; Close this hole with a grille supplied that allows at least 300cm$^2$ of air to pass through. Install the condensation drain pipes provided, connect the receiver extension to the machine and lastly power up by inserting its plug into a socket outlet 230V - 50Hz.

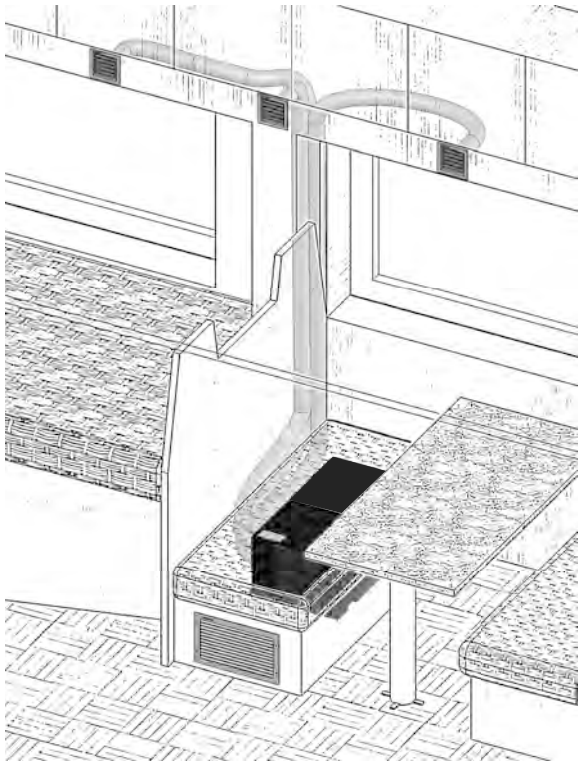
Before switching on, make sure that the campsite column and the extension used are able to withstand the power input required by the machine(see technical data or data plate)

## 2.6. Air ducting

Make the air ducting with trade parts that are not supplied.
It is recommended to use cardboard pipe for air conditioning with an aluminium core and external covering of PVC with an inside nominal diameter of 60 mm. This pipe has an outside diameter of 64mm.
The ventilation pipes are joined by pressing them together thanks to the tapered hole on the air outlet.
The pipes can be connected either on the outlet on the coil side or, by removing the guard and closing the front holes, on the side outlet.

To achieve the best efficiency it is recommended to:
- lay the air pipes so they are as short and straight as possible;
- not use pipes any longer than 5m;
- not place the pipes near sources of heat.

The recirculation air is drawn in through a grille or through other openings with a total cross-section of at least 300cm$^2$.
The recirculation air opening must be made near the machine, if this is not the case then make sure that the air flow cannot be obstructed by anyting(if necessary, create an air duct between the opening and the machine).
The recirculation air must be taken from inside the passenger compartment; if it were taken from the outside then machine efficiency would suffer.



## 3.1.Trouble, causes, remedies

Operations the user can perform

Operations authorized personnel can perform

| CAUSE / SOLUTION | the temperature is lower than 18°C | the temperature is higher than 30°C | check the Set Point temperature | Defective thermal protection | The Mode button is not in the right position | damaged electric heating element | low gas charge | damaged compressor | dirty heat exchange coils | defective internal fan | obstructed air filter | defective external fans | clogged condensation drain holes | damaged 4-way valve | no power arrives | voltage too low (less than 200V) | defective electric condenser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| the machine does not cool | ○ | | ○ | ● | ○ | | ● | ● | ● | | | ● | | | | | |
| the machine does not heat | | ○ | ○ | ● | ○ | ● | ● | ● | ● | | | | | ● | | | |
| air no longer circulates inside the vehicle | | | | | | | | | ● | ● | ○ | | | | | | |
| water seeps into the vehicle | | | | | | | | | | | | | ○ | | | | |
| the machine will not start | | | | ● | | | | ● | | | | | | | ○ | ● | ● |
| the machine stops working | | | | ● | | | | | ● | | ○ | ● | | | | ● | ● |

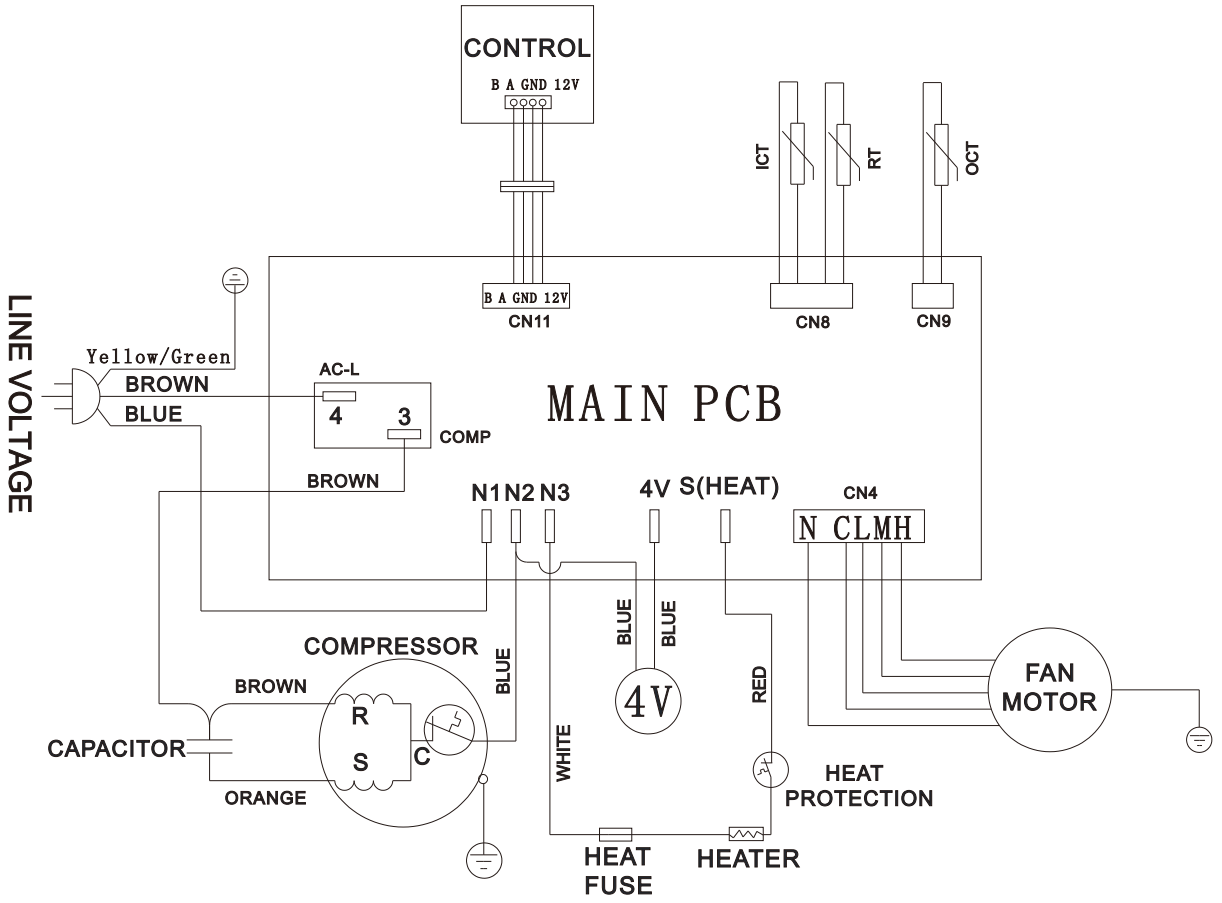
## 3.2.Special maintenance

For better efficiency it is advisable to have your dealer/workshop perform special cleaning before using:
1. heat exchange coils;
2. condensation drain holes.

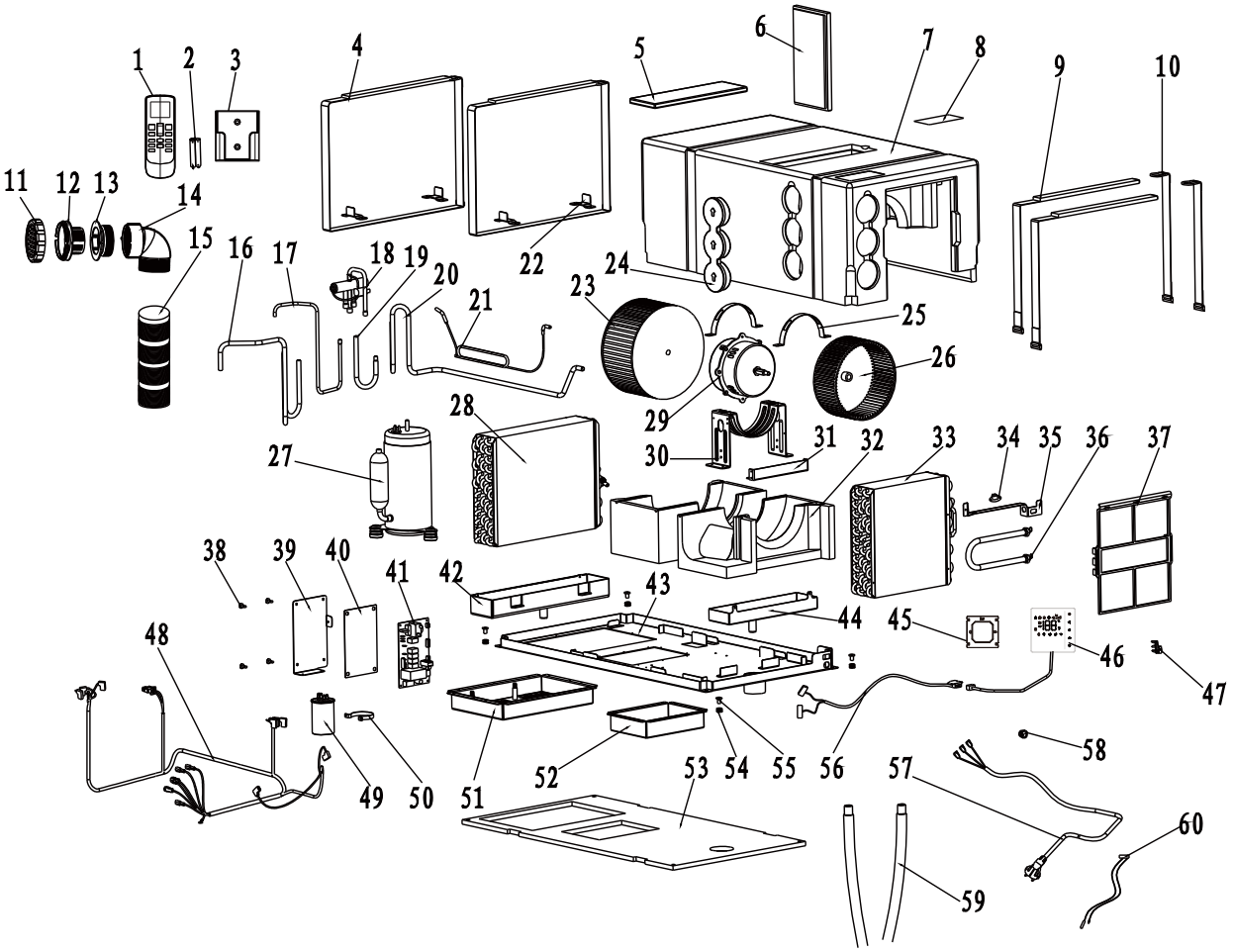
## 3.3.Decommissioning and recycling

For scrapping and recycling, observe the national law. Please contact your environmental authorities or authorized boards.

## Wiring diagram



## Spare parts catalogue table



# Spare parts catalogue table HB9000 Plus

| No. | DESCRIPTION |
|---|---|
| 1 | REMOTE CONTROL |
| 2 | BATTERIES(SIZE AAA) |
| 3 | REMOTE CONTROL SUPPORT |
| 4 | FIXING BELT |
| 5 | ACCESSORIES DOOR |
| 6 | SIDE COVER |
| 7 | COVER |
| 8 | MACHINE DATAPLATE |
| 9 | BELT |
| 10 | BELT |
| 11 | GRILLE |
| 12 | GRILLE SUPPORT |
| 13 | BUSH |
| 14 | 90° CURVE |
| 15 | AIR PIPE |
| 16 | SUCTION PIPE |
| 17 | DISCHARGE PIPE |
| 18 | 4-WAY VALVE |
| 19 | HIGH PRESSURE PIPE |
| 20 | LOW PRESSURE PIPE |
| 21 | CAPILLARY ASSY |
| 22 | BUCKLE |
| 23 | CONDENSER FAN |
| 24 | AIR OUTLET PLUG |

| No. | DESCRIPTION |
|---|---|
| 25 | MOTOR FIXING STRIP |
| 26 | EVAPORATING FAN BLOWER |
| 27 | COMPRESSOR |
| 28 | CONDENSER |
| 29 | MOTOR |
| 30 | MOTOR SUPPORT |
| 31 | MOTOR REINFORCE |
| 32 | BASE EPP |
| 33 | EVAPORATOR ASSY |
| 34 | THERMOSTAT FOR HEATER |
| 35 | THERMOSTAT BRACKET FOR HEATER |
| 36 | HEATING STRIP |
| 37 | FILTER |
| 38 | SPACER FOR PCB |
| 39 | PCB FIXING BOARD |
| 40 | PCB BACKPLATE |
| 41 | PCB |
| 42 | DRAIN PAN FOR COND |
| 43 | BASE PAN |
| 44 | DRAIN PAN FOR EVAP |
| 45 | WALL PAD SEAT |
| 46 | WALL PAD CONTROLLER |
| 47 | SENSOR BRACKET |
| 48 | MAIN CORD |

| No. | DESCRIPTION |
|---|---|
| 49 | COMPRESSOR CAPACITOR |
| 50 | CAPACITOR FIXATION CLAMP |
| 51 | COMPRESSOR FIXNG BOARD |
| 52 | AIR OUTLET FIXING BOARD |
| 53 | BASEPAN FOAM |
| 54 | RUBBER BRACKET |
| 55 | PLASTIC BRACKET |
| 56 | WIRE HARNESS |
| 57 | POWER CORD |
| 58 | WIRING LOOP |
| 59 | DRAIN PIPE |
| 60 | Room temperature Sensor |