INSTALLATION, USE & MAINTENANCE MANUAL

HEXAFRESH

REVERSIBLE MOBILE AIR CONDITIONER

Air Conditioning / Heating
Type:
HXF25-PRO + (CHP)

TABLE OF CONTENTS

SPECIFIC WARNINGS FOR R290 GAS

Please read these safety instructions carefully.

ATTENTION :
R290
Risque de feu

 (1)

 (2)

 (3)

(1) Read the user manual (ISO 7000-0790).

(2) User manual; user instruction (ISO 700-1641).

(3) Maintenance indicator; read the technical manual (ISO 700-1659).

ATTENTION:

- Do not use any methods to accelerate the defrosting process or to clean the air conditioner, other than those recommended by the manufacturer.

- The air conditioner must be stored in a room where there are no continuously operating sources of ignition (e.g., open flames, operating gas appliances, or operating electric heaters).

- Do not pierce or burn.

- Be aware that refrigerants may not have an odor.

The R290 refrigerant used in these mobile air conditioners is an environmentally friendly, non-fluorinated, flammable gas that complies with European eco-design directives related to energy and the environment. Its impact on global warming is very low (refer to the product information sheet at the end of this manual).

The device contains approximately:

- 100 g for the model HXF25-PRO +
(CHP)

- Conditions d'installation, d'utilisation et stockage :

• In order to prevent the possibility of refrigerant gas leaks accumulating in an unventilated room, which could be ignited by an electric arc or any other ignition source and lead to a fire or explosion, the device should only be installed, used, or stored in adequately ventilated spaces.

The device must be installed, used, and stored in:

- A room with a surface area larger than:
  · > 5 m² for the HXF25-PRO + (CHP))
- A location without continuous ignition sources (e.g., open flames, operating gas or electrical appliances).

• Keep and store the device in a safe location to prevent falls and mechanical

damage.

Maintenance, Maintenance, and Repair:

Please carefully read the safety instructions to be implemented in the case of maintenance and repair of the device as described at the end of this manual.

Authorization of Personnel:

• Anyone involved in work on or within a refrigerant circuit must hold a valid certificate issued by an assessment authority accredited by industry sectors, authorizing them to handle refrigerants safely in accordance with evaluation specifications recognized by industry sectors.

• All work that could affect the safety of property and individuals should only be carried out by competent individuals.

Manufacturer's Recommendation:

• Maintenance should only be performed according to the equipment manufacturer's recommendations.

Maintenance operations and repairs requiring the assistance of other specialists should be carried out under the supervision of an individual specialized in the use of flammable refrigerants.

WARNING! SAFETY INSTRUCTIONS

Please read this manual carefully before using the device.

- This air conditioner is designed exclusively for domestic use.
- It is suitable for indoor use only.
- Please use only accessories provided by the air conditioner manufacturer. Otherwise, the device could be damaged.
- This air conditioner can be used by children aged 8 and older and persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, if they are supervised or have been given instructions on how to use the appliance safely and understand the associated risks.
- Children must not play with this air conditioner.
- Ensure that the air conditioner is always placed on a flat, dry, and stable surface.
- The air conditioner should be placed away from heat sources and protected from direct sunlight.
- Do not install the air conditioner in a location exposed to water or any other liquid. Make sure water or any other liquid cannot enter the air conditioner.
- Do not use the air conditioner in the presence of explosive or flammable vapors.
- Never leave the air conditioner running unattended.
- Do not insert fingers or other objects into the air outlet.
- Regularly check the power cord. Do not use if the power cord, plug, or air conditioner is damaged.
- If the power cord or the flexible cable of this air conditioner is damaged, it must be replaced exclusively by the manufacturer, its service agent, or a similarly qualified person to avoid any risk.
- The voltage of the electrical socket must meet the requirements. Any damage resulting from incorrect power supply is not covered by the warranty.
- When unplugging the power cord, always pull it by the plug, not by the cord itself.
- An extension cord can be used if the power cord is too short. Be cautious not to place the cord in areas where it could be tripped over.
- Do not handle the plug or the air conditioner with wet hands.
- Cleaning and maintenance by the user must not be carried out by unsupervised children.
- Follow the instructions in this manual for cleaning the air conditioner.
- Always unplug the air conditioner from the power outlet when not in use, before moving it, or before cleaning it.
- Do not use chemicals or abrasive detergents for cleaning, as they could easily damage or deform your air conditioner.
- Never attempt to disassemble or repair the air conditioner yourself. Any potential risks incurred due to maintenance by an inexperienced person would be in violation of the warranty terms.

Special Caution for Use

Before using the air conditioner, please adhere to these recommendations:

Positioning and Environment:

• To prevent any damage, place the device horizontally for at least 24 hours before starting it for the first use.
• Use the device only on a horizontal and flat surface to prevent water leakage and ensure proper compressor operation.
• Position the air conditioner on a flat surface and install it horizontally to ensure proper compressor operation.
• The air conditioner should be placed at least 50 cm away from surrounding objects. Ensure that the air inlet and outlet openings are always clear.
• Do not use the air conditioner near gasoline or any other flammable liquid.
• It is recommended to use the air conditioner at a temperature of 7°C to 35°C.

Power Supply:

• The outlet must be in good condition and not damaged. It should not be replaced with an electrical plug.
• To operate the air conditioner, first plug in the power cord, then press the power on/off button.

Cleaning:

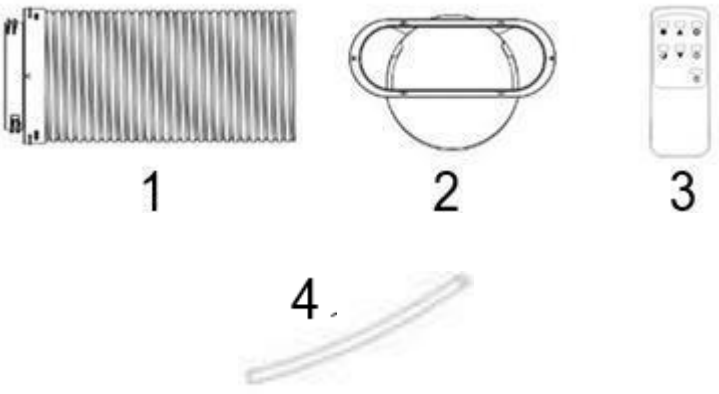
• Do not use spray agents, solvents, or other flammable substances near the air conditioner. This could cause plastic deformation or damage to electrical components.

1. PRODUCT PRESENTATION

1. Carrying Handle
2. Control Panel + LCD display
3. Cold Air Outlet (can be used as an exhaust connector in heating mode)
4. Drainage Plug
5. Filter Frame
6. Hot Air Outlet (can be used as an exhaust connector in air conditioner cooling mode)

The Accessories

1. 1.5-meter Exhaust Duct
2. Connector to the Recessed Panel
3. Remote Control
4. 0.6-meter Condensate Drainage Hose



2. User Manual: Tent

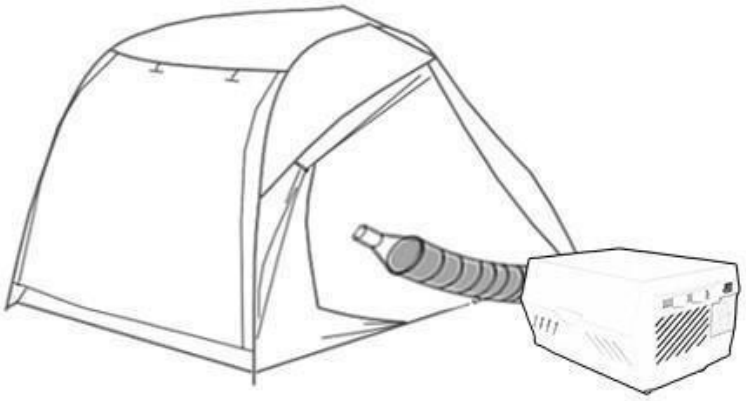
WARNING :

Always move the air conditioner in a horizontal position and place it on a flat surface. Do not install the air conditioner in bathrooms or damp rooms. Place it in a dry location.

1. Create an opening in the tent zipper with the cold end inside the tent and the hot end outside the tent.

N.B : Please note that the device shown is an illustration. The actual shape and dimensions may vary.

2. Place HEXA Pro outside the tent with the cold air vent directed towards the interior of the tent and the hose facing into the tent.



N.B: Please note that the device shown is an illustration. The actual shape and dimensions may vary.

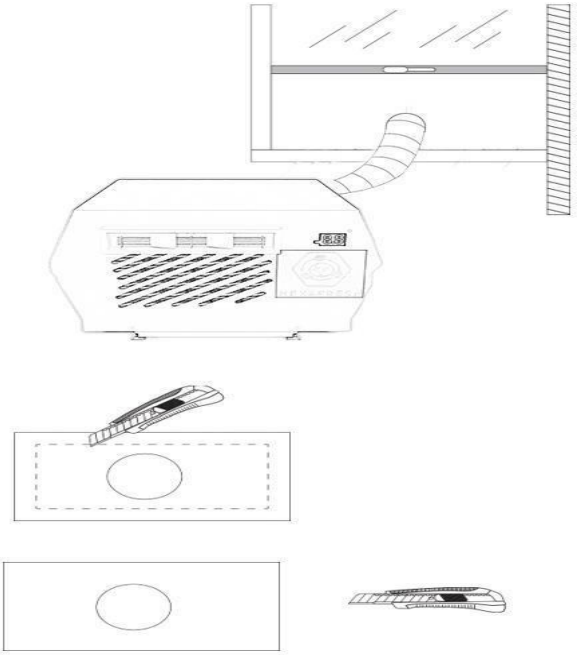
3. Place HEXA Pro inside the tent with the hot air vent facing outside of the tent and the hose facing outside of the tent.

N.B: Please note that the device shown is an illustration. The actual shape and dimensions may vary.

2. Instructions for Use: Fitted Van

WINDOW INSTALLATION

a. Visit our website: www.hexafreshpro.com or www.hexafresh.com
b. Select the window kit that matches your window type
c. Choose the correct size based on your window dimensions
d. Watch the installation video available on our website for step-by-step guidance
e. Connect the adapter between the device and the duct
f. Extend the duct to the window and secure it in the window extension



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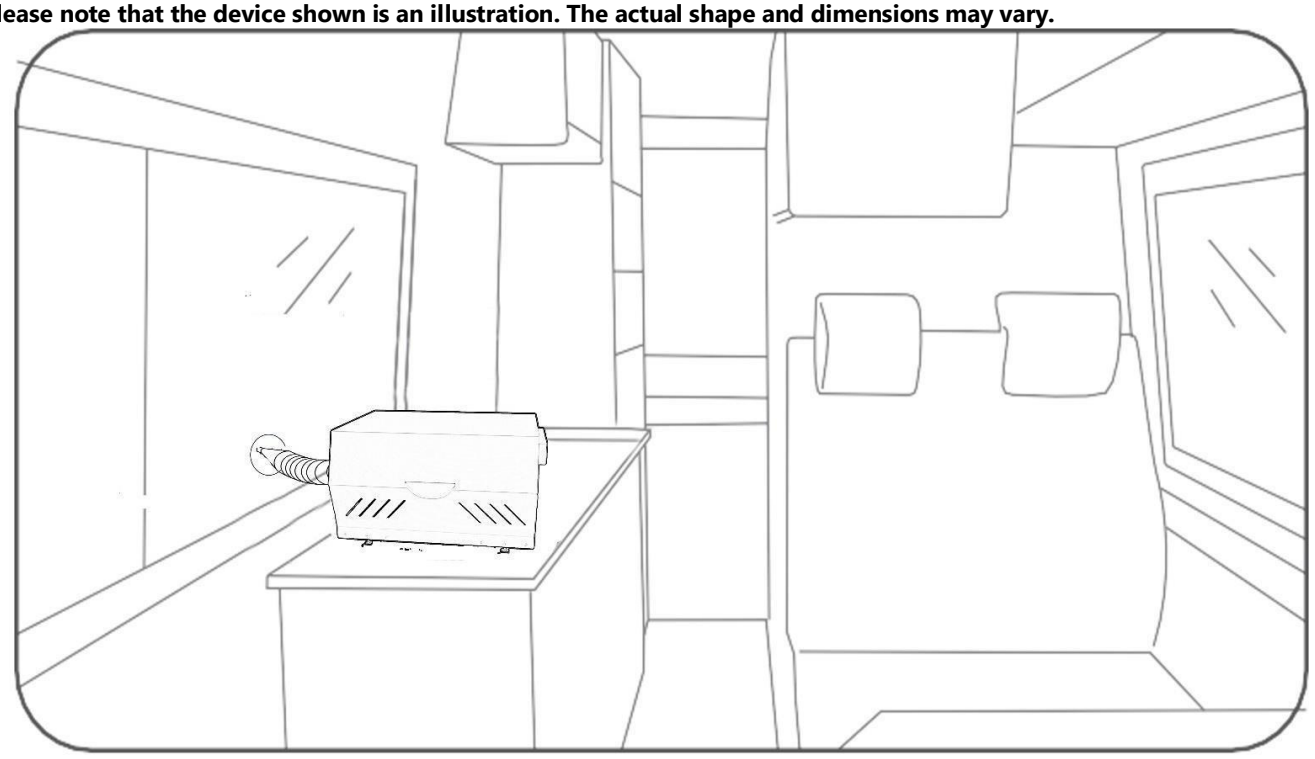
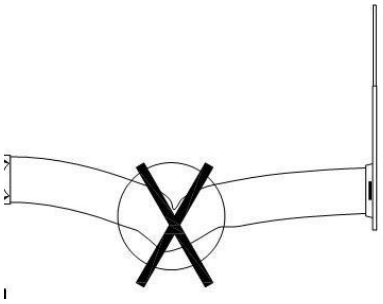
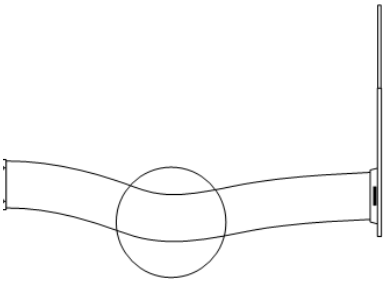


WARNING

Incorrect installation could affect the proper functioning of the air conditioner. The length of the exhaust duct is 280 ~ 1500 mm, and this length is based on the air conditioner's specifications. Do not use other models of exhaust ducts apart from the one provided with your air conditioner, and do not add any extension exhaust ducts. This could lead to malfunction.
The exhaust must be unobstructed. Otherwise, it could cause overheating.
The air inlet and outlet must not be blocked.
The duct should not be deformed or have a bending radius of more than 45°.



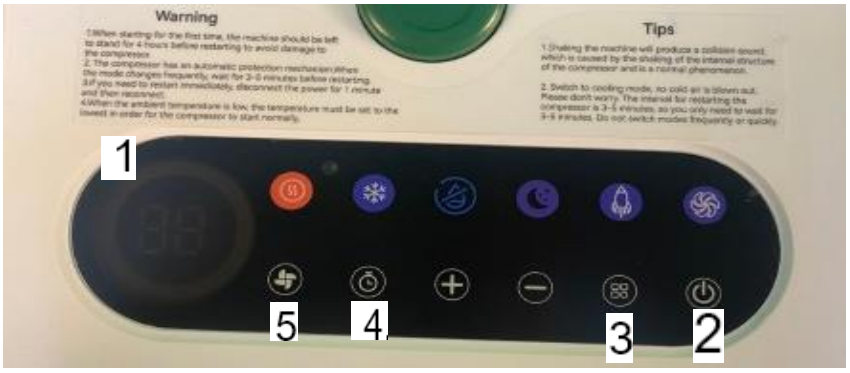


3. CONTROL PANEL AND REMOTE CONTROL -

REMOTE CONTROL OR AIR CONDITIONER PANEL OPERATION

A) CONTROL PANEL

1. Display Window
2. Power On Off
3. Mode selection button
4. Timer
5. Fan Speed



B) REMOTE CONTROL

1. POWER:

Press the ⏻ button to turn on / off the air conditioner. After powering on, the default mode is cooling with a single fan speed.

2. Turbo Mode:

Press the Turbo Button to activate the max power of the HEXA Pro +

3. Dehumidification :

Press the button to increase the dehumidification intensity.

4. ▼ & 5. ▲

In cooling and heating mode, press these buttons to adjust the desired temperature.

6. TIMER :

In power-on or standby mode, press the button to set the activation/deactivation time between 1 hour and 12 hours.

Press The "Mode" Button on the touch screen to switch between different modes (Sleep , Dehumidification , Turbo , Heat , Cold)

C) C) USAGE INSTRUCTIONS

When the air conditioner is turned on for the first time, a beep sound will be heard, and then it enters

standby mode.

COOLING MODE

- After turning on the air conditioner, the default mode is cooling.
- Press ON/OFF to start HEXAPRO.
- Press ▼ or to adjust the temperature (from 16°C to 32°C).

HEATING MODE

- Press the HEATING Button on the Touch screen or the remote control
- Set the desired temperature
- **You can use the heating mode without installing the Duct**

TIMER MODE

Setting the start time:

- Turn off the air conditioner.
- Press TIMER to set the power-on (start) time.
- Press ▼ and to set the timer duration (from 1 to 12 hours).
- The hour indicator will light up. The air conditioner will start after the selected number of hours.

DEHUMIDIFICATI▲I MODE

- Press ◯ to select the dehumidification mode, the dehumidification mode indicator will light up.

- **SAFEGUARDS**

Freezing Protection:
In cooling, dehumidification, or sleep (energy-saving) mode, if the temperature of the exhaust duct is too low, the air conditioner will automatically enter a safety state.

Once the**Protection:**
When the water tank is full, the air conditioner will sound an automatic alarm, and the "WF" indicator on the display panel will light up. At this point, move the condensate drainage hose connecting the air conditioner or water outlet to the sewer or another drainage area to empty the water.
Once the tank is emptied, the air conditioner will automatically return to its original state.

Automatic Defrosting (only reversible models have this function):
The air conditioner is equipped with an automatic defrosting function. Defrosting is achieved by reversing the four-way valve to temporarily warm the evaporator.

Compressor Protection:
To increase the compressor's lifespan, the air conditioner has a delayed start protection function of 3 minutes after being turned off.

It's recommended to start the machine for less than 10 consecutive hours . Exhaust duct temperature reaches a certain level, it can automatically return to normal operation.

DRAINAGE

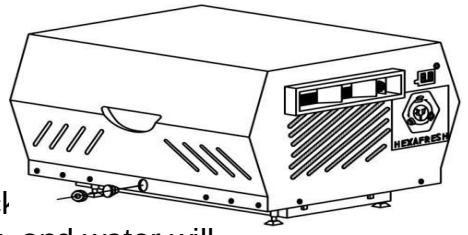
To optimize the performance of HEXA PRO+, please install the drainage cable and fill

the tank with 250 ml of cold water before starting the machine.
The integrated water recycling system enhances cooling efficiency and helps reduce heat.

The air conditioner has two drainage methods: manual drainage or continuous drainage.

Drainage Manuel :

1) Turn off the air conditioner and power off by unplugging the power cord.



Remarks: Please move the machine carefully to avoid spilling water from the tray located at the bottom of the unit.

2) Place a collecting tray under the side water outlet at the back
3) Remove the rubber stopper from the drainage hose outlet, and water will automatically flow into the collecting tray.
   Precautions:
   Keep the plastic plug and rubber stopper clean.
   During drainage, the unit may be slightly tilted backward.
   If the water tank cannot hold all the water, do not fill it to the maximum, replace the rubber stopper and plastic plug as soon as possible to prevent water from flowing onto the floor or carpet.
4) When water is drained, replace the rubber stopper and tighten the plastic plug.

To optimize the performance of HEXA PRO+, please install the drainage cable and fill the tank with 250 ml of cold water before starting the machine.
The integrated water recycling system enhances cooling efficiency and helps reduce heat.

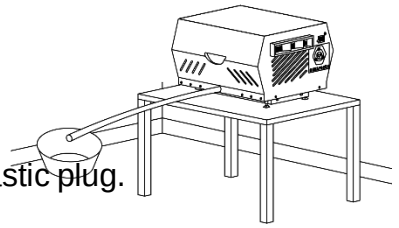
Continuous Drainage (recommended in dehumidification mode):

In dehumidification mode, the unit can recover up to :
- **HXF25-PRO + (CHP)**: 10 liters of water per day.

1) Unscrew the plastic plug and remove the rubber stopper from the drainage hose outlet.

2) Place the drainage hose into the outlet.

3) Connect the drainage hose to the bucket.



Precaution: · Keep the plastic plug and rubber stopper clean.

4) When water is drained, replace the rubber stopper and tighten the plastic plug.

N.B : Please note that the device shown is an illustration. The actual shape and dimensions may vary.

5. MAINTENANCE

Cleaning: Before cleaning and maintenance, turn off the air conditioner and power it off.

1. Clean the Surface

Clean the air conditioner's surface with a damp, soft cloth. Do not use detergents or chemicals such as benzene, alcohol, gasoline, etc., as they can cause damage. Avoid any water splashes inside the air conditioner.

2. Storage after the season :

1) Manually drain the condensate water and empty all the water from the tray (see chapter 4), without replacing the rubber stopper and plastic plug.
2) Turn on the air conditioner in low airflow ventilation mode. Let it run for 2 hours until the condensate drainage hose and the interior of the air conditioner are dry to prevent mold growth.
3) Turn off the air conditioner, unplug the power cord, and wind up the power cord. Reinstall the rubber stopper and tighten the plastic plug.
4) Remove the exhaust duct and compress it.
5) Cover the air conditioner with a plastic bag and place it in a dry storage area, out of children's reach.
6) Remove the batteries from the remote control.

6. TROUBLESHOOTING

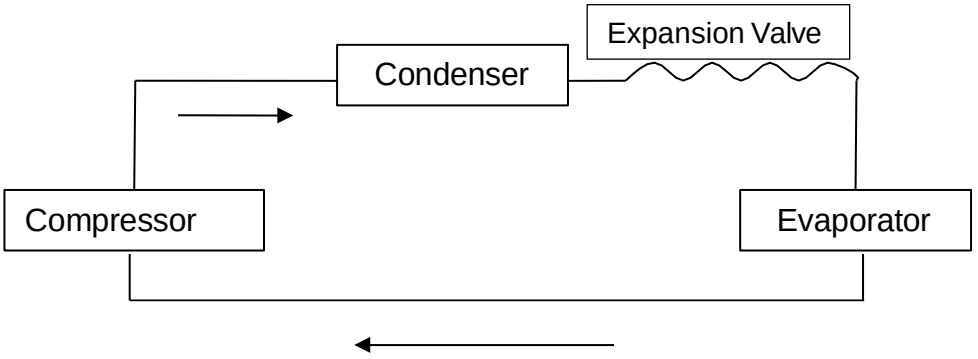
Do not repair or dismantle the air conditioner yourself. Repairs done by an unqualified person will result in warranty loss and could cause harm to users or their property.

Problems	**Possible Causes**	**Solutions**
The air conditioner is not working	The air conditioner is not powered on or is turned off	Check that your air conditioner is properly connected to its power source, that the power supply is good, and turn on the air conditioner.
	The ambient temperature is too low or too high	It is recommended to use the air conditioner within a temperature range of 7°C to 35°C.
	In cooling mode, the ambient temperature is lower than the set temperature. In heating mode, the ambient temperature is higher than the set temperature.	Adjust the temperature setting.
	In dehumidification mode, the ambient temperature is low.	Ensure the air conditioner is placed in a room with an ambient temperature higher than 17°C.
The cooling effect is not satisfactory	Direct sunlight	Pull the curtains.
	Doors or windows are open. There are many people or other heat sources.	Close doors and windows and eliminate heat sources.
	The filters are dirty.	Clean or replace the filters.
	The air inlet or outlet is blocked.	Check the air inlet and outlet, remove any obstructions.
Too Noisy	The air conditioner is not placed on a proper and level installation surface.	Place the air conditioner on a flat and sturdy surface, avoiding any surface that causes vibrations.
The compressor is not working	The compressor's thermal protection is activated.	Wait for 3 minutes for the temperature to drop, then restart the air conditioner.
The remote control is not working	The distance between the machine and the remote control is too far.	Get closer to the air conditioner and make sure the remote control is directly pointed at the remote control receiver.
	The remote control is not aligned with the remote control receiver's direction.	
	The batteries are defective.	Replace the batteries.

Note: If problems not listed in the table occur or if the recommended solutions do not work, please contact technical support.

7. ANNEXES

Schematic Diagram for Air Conditioning :



DISPOSAL OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) BY END USERS IN THE EUROPEAN UNION

This symbol on the product or container indicates that this product should not be disposed of with general waste. The user is responsible for disposing of this type of waste by placing it in a designated "electrical and electronic waste recycling point."

Selective collection and recycling of electrical equipment help conserve natural resources and ensure waste recycling to protect the environment and health. For more information on the collection and recycling of electronic and electrical waste, please contact your local municipality, household waste service, or the establishment where the product was purchased.

Fiche d’information produit

Model:	**HXF25-PRO + (CHP)**
Cooling Mode: **Energy Efficiency Class:** **Energy Efficiency Ratio (EER):** **Nominal Cooling Capacity:**	A + 2,6 1400 W
Maximum Sound Power Level:	51 dB(A)
Refrigerant Gas: **Type:**	Propane R290
GWP (Global Warming Potential):	3

SAFETY INFORMATION FOR MAINTENANCE AND REPAIR

1. Checking the working environment

Before beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. To repair the refrigeration system, the following instructions must be followed before proceeding with any work on the system.

1) General Work Area:

All maintenance personnel and other individuals working in the area must be informed about the nature of the ongoing work. Work in confined spaces should be avoided. The area around the workspace must be divided. Ensure that the conditions in the area have been secured by controlling flammable materials.

2) Refrigerant Presence Check:

The area should be checked with an appropriate refrigerant detector before and during work to ensure that the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment used is suitable for flammable refrigerants, meaning it doesn't produce sparks, is properly sealed, or has intrinsic safety.

3) Presence of Fire Extinguisher:

If hot work is to be performed on refrigeration equipment or any associated parts, appropriate firefighting equipment must be available. Install a dry powder or CO2 fire extinguisher near the charging area.

4) No Source of Ignition:

No person performing work related to a refrigeration system involving exposure to pipes containing or having contained flammable refrigerant should use heat sources in such a way that it could result in a fire or explosion risk. All potential sources of ignition, including smoking, should be kept sufficiently far away from the installation, repair, removal, and disposal area, during which flammable refrigerant may potentially be released into the surrounding space. "No Smoking" signs must be displayed.

5) Ventilated Area:

Ensure that the area is open to the air or properly ventilated before working on the air conditioner or performing hot work. Ventilation must be maintained throughout the work. Ventilation should safely disperse any released refrigerant and preferably exhaust it outdoors into the atmosphere.

2. Procédure de travail

The work must be carried out according to a controlled procedure in order to minimize the risk of presence of flammable gases or vapors during the execution of the work.

3. Refrigeration Equipment Checks

When electrical components are replaced, they must be suitable for the intended use and meet the appropriate specifications. The manufacturer's maintenance and servicing guidelines must be followed at all times. If in doubt, consult the manufacturer's technical service. The following checks must be applied to installations using flammable refrigerants:

- The volume of refrigerant charge complies with the size of the room in which the components containing the refrigerant are installed;
- The ventilation equipment and exhaust systems are functioning correctly and are not obstructed.

- If an indirect refrigeration circuit is used, the secondary circuit must be checked for the presence of refrigerant.
- The labeling on the equipment continues to be visible and legible. Illegible markings and signs must be corrected.
- The pipes or refrigeration components are installed in a position where they are not at risk of being exposed to a substance that could corrode components containing refrigerant, unless the components are constructed with inherently corrosion-resistant materials or adequately protected to safeguard them.

4. Electrical Equipment Checks

Repair and maintenance of electrical components should involve initial safety checks and component inspection procedures. If there is a defect that could compromise safety, no electrical power should be connected to the circuit until the issue is satisfactorily resolved. If the defect cannot be immediately corrected but operation needs to continue, an appropriate temporary solution must be employed. This should be communicated to the equipment owner so that all parties are informed. Initial safety checks should include:

- Discharging capacitors: This must be done safely to avoid any possibility of sparking.
- No live electrical components and cables are exposed during charging, recovery, or purging of the system.
- Continuity of grounding is present.

5. Réparations des composants scellés

1) During repairs of sealed components, all electrical power must be disconnected from the equipment before removing sealed covers, etc. If it is absolutely necessary to have electrical power for the equipment during maintenance, continuous monitoring must be performed, and a leakage detection system should be located at the most critical point to alert of a potentially hazardous situation.
2) Special attention must be given to the following points to ensure that work on electrical components does not alter the housing in a way that compromises the level of protection. This includes damage to cables, excessive number of connections, terminals not conforming to original specifications, damage to seal gaskets, improper mounting of cable glands, etc.
   Ensure that the apparatus is properly assembled.
   Ensure that gaskets or sealing materials have not deteriorated to the extent that they no longer prevent the penetration of flammable atmospheres. Spare parts must conform to the manufacturer's specifications.

NOTE: The use of silicone-based sealants may affect the efficiency of certain types of leakage detection equipment. Intrinsic safety components may not necessarily need to be isolated before working on them.

6. Repair of intrinsic safety components.

Do not apply any permanent inductive or capacitive load to the circuit without ensuring that it does not exceed the allowable voltage and current for the equipment being used. Intrinsic safety components are the only types that can be worked on while in a flammable atmosphere. The testing device must have the correct rating. Replace components only with parts specified by the manufacturer. Other parts could cause refrigerant ignition in the atmosphere due to leakage.

7. Wiring

Ensure that the wiring will not be subjected to wear, corrosion, excessive pressure, vibrations, sharp edges, or any other adverse environmental effects. The verification must also consider the effects of aging or continuous vibrations from sources such as compressors or fans.

8. Detection of flammable refrigerants.

Under no circumstances should potential sources of ignition be used to search for or detect refrigerant leaks. A halide torch (or any other detector using an open flame) should not be used.

9. Leak detection methods.

The following leak detection methods are considered acceptable for systems containing flammable refrigerants. Electronic leak detectors should be used to detect flammable refrigerants, but sensitivity may not be adequate or may require recalibration. (Detection equipment should be calibrated in an area free of refrigerant.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment should be set to a percentage of the refrigerant's Lower Flammable Limit (LFL) and must be calibrated with the refrigerant used, confirming the appropriate gas percentage (maximum 25%). Leak detection fluids can be used with most refrigerants, but the use of chlorine-containing detergents should be avoided as chlorine can react with the refrigerant and corrode copper lines.

If a leak is suspected, all open flames must be removed/extinguished. If a refrigerant leak requiring brazing is detected, all refrigerant must be recovered from the system or isolated (using shut-off valves) in a part of the system distant from the leak. Oxygen-Free Nitrogen (OFN) should then be purged through the system before and during the brazing process.

10. Removal and evacuation.

When entering the refrigerant circuit for repairs or any other purpose, use standard procedures. However, it's crucial that best practices are followed due to flammability considerations. The following procedure must be adhered to:

- Remove the refrigerant.
- Purge the circuit with an inert gas.
- Evacuate.
- Purge again with an inert gas.
- Open the circuit by cutting or brazing.

The refrigerant charge should be recovered into proper recovery bottles. The system should be "de-gassed" with Oxygen-Free Nitrogen (OFN) to make the unit safe. This process might need to be repeated several times. Compressed air or oxygen should not be used for this task. Flushing should be done by breaking the vacuum in the system with OFN, then continuing to fill it to reach working pressure, releasing into the atmosphere, and finally pulling back to vacuum. This process should be repeated until there is no more refrigerant in the system. When the last charge of OFN is used, the system should be vented to atmospheric pressure to enable the work to proceed. This operation is absolutely essential for any brazing operations on the piping.

Ensure that the vacuum pump outlet is not near ignition sources and that ventilation is present.

11. Charging procedures.

In addition to conventional charging procedures, the following requirements must be followed:

- Ensure that different refrigerants are not cross-contaminated when using charging equipment. Hoses or lines should be as short as possible to minimize the amount of refrigerant they contain.
- Bottles should be kept upright.
- Ensure that the refrigeration system is grounded before charging it with refrigerant.
- Label the system once the charging is completed (if not done already).
- Extreme care must be taken not to overfill the refrigeration system.

Before recharging the system, it must be pressure tested with Oxygen-Free Nitrogen (OFN). The system should undergo a leak test at the completion of charging but before being put into service. A leak check must be performed before leaving the site.

12. Shutdown procedures.

Before conducting this procedure, it is essential that the technician has a thorough understanding of the equipment and all its details. It is recommended, in accordance with best practices, to safely recover all refrigerants. Before performing the task, a sample of oil and refrigerant should be taken in case analysis is required before reusing the recovered refrigerant. It's crucial that electrical power is available before starting the task:

a) Familiarize yourself with the equipment and its operation.
b) Isolate the system electrically.
c) Before attempting the procedure, ensure that:
   - Mechanical handling equipment is available if needed for refrigerant bottle handling.
   - All personal protective equipment is available and used correctly.
   - The recovery process is supervised at all times by a competent person.
   - The recovery equipment and bottles comply with appropriate standards.
d) Pump out the refrigerant system, if possible.
e) If vacuuming is not possible, set up a manifold so that refrigerant can be removed from different parts of the system.
f) Ensure the cylinder is on the scale before recovery.
g) Start the recovery machine and use it according to the manufacturer's instructions.
h) Do not overfill the bottles (no more than 80% of the liquid charge volume).
i) Do not exceed the maximum service pressure of the bottle, even temporarily.
j) Once the bottles have been properly filled and the process is complete, ensure that the bottles and equipment are promptly removed from the site, and all equipment isolation valves are closed.
k) The recovered refrigerant should not be charged into another refrigeration system unless it has been cleaned and verified..

13. Shutdown labeling.

The equipment must bear a label indicating that it has been shut down and evacuated of refrigerant. The label should be dated and signed. Ensure that the equipment is labeled to indicate that it contains flammable refrigerant.

14. Recovery

When removing refrigerant from a system, whether for maintenance or shutdown, it is recommended to safely recover all refrigerants. When transferring refrigerant into bottles, ensure that only appropriate refrigerant recovery cylinders are used. Make sure the correct number of cylinders capable of holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labeled accordingly (i.e., special cylinders for refrigerant recovery). The bottles must be equipped with a pressure relief valve and associated shut-off valves in good working condition. Empty recovery bottles should be evacuated and, if possible, cooled before recovery.

The recovery equipment must be in good working condition, with a set of equipment instructions available, and should be suitable for recovering flammable refrigerants. Additionally, a set of calibrated scales must be available and in good working condition. Hoses should be complete with disconnected fittings leak-free and in good condition. Before using the recovery machine, ensure it is in good working order, properly maintained, and that all associated electrical components are sealed to prevent ignition in case of refrigerant release. Consult the manufacturer if in doubt.

The recovered refrigerant should be returned to the refrigerant supplier in the appropriate recovery bottle, and the corresponding waste transfer note should be in place. Do not mix refrigerants in recovery units and especially in bottles. If compressors or their oils need to be disposed of, ensure they have been evacuated to an acceptable level to ensure flammable refrigerant does not remain in the lubricant. The evacuation process should be carried out before returning the compressor to suppliers. Only electrical heating of the compressor body should be used to expedite this process. When oil is evacuated from a system, it must be done safely.