

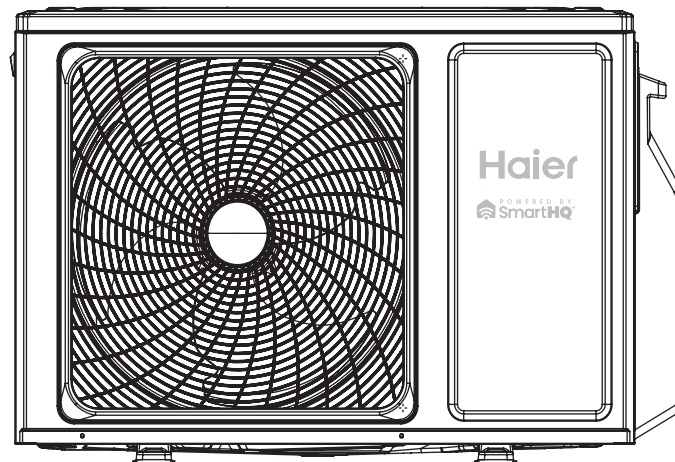


Installation Manual
Manuel d'installation
Instrucciones de instalación

Ductless Single Zone Outdoor Unit

Unité extérieure monozone sans conduits

Unidad Exterior de Zona Simple Sin Conducto



Design may vary by model number

L'aspect peut varier selon le numéro
de modèle.

El diseño puede variar según el
número de model.

**READ CAREFULLY.
KEEP THESE INSTRUCTIONS.**

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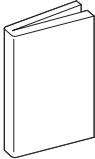
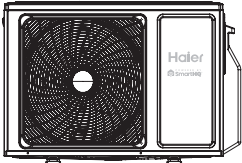
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IMPORTANT SAFETY INFORMATION

⚠ WARNING

For your safety; the information in this manual must be followed to minimize the risk of fire, electric shock, or personal injury.

- Use this equipment only for its intended purpose as described in this manual.
- This heat pump must be properly installed in accordance with these instructions before it is used.
- All wiring should be rated for the amperage value listed on the rating plate. Use only copper wiring.
- All electrical work must be completed by a qualified electrician and completed in accordance with local and national building codes.

For any service which requires entry into the refrigerant sealed system, Federal regulations require that the work is performed by a technician having a Class II or Universal certification.

- All air conditioners contain refrigerants, which under federal and/or local law must be removed prior to product disposal. If you are getting rid of an old product with refrigerants, check with the company handling disposal.
- These R454B heat pumps systems require that contractors and technicians use tools, equipment and safety standards approved for use with this refrigerant.
- DO NOT use equipment certified for R22, R32 or R410A refrigerant only.

⚠ WARNING

RISK OF ELECTRIC SHOCK. Could cause injury or death.

- An adequate ground is essential before connecting the power supply or charging with refrigerant.
- Disconnect all connected electric power supplies before servicing.
- Aluminum building wiring may present special problems - consult a qualified electrician.
- The surrounding conditions (ambient temperature, direct sunlight, and rainwater) shall be noticed during electrical wiring, with effective protective measures being taken.
- The dedicated branch circuit must be used, and leakage protector with sufficient capacity must be installed.
- Repair or replace immediately all electrical wiring that has

become frayed or otherwise damaged. Do not use wiring that shows cracks or abrasion damage along its length or at either end.

- When the unit is in the STOP position, there is still voltage to the electrical controls.
- Copper wire cable in line with local standards shall be used as the power line and connector wire.
- Both the indoor unit and outdoor unit shall be reliably earthed.
- Wiring for the outdoor unit shall be made first and then the indoor unit. The air conditioner can only be powered on after wiring and pipe connection.

⚠ WARNING

RISK OF FIRE. Could cause injury or death.

- Do not store or use combustible materials, gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

⚠ ATTENTION

- Please do not use extension cords in this system.
- Aluminum building wiring may have special problems, please consult a licensed electrician.
- If the unit has the leak detection system installed, the unit must be powered except for service.

READ AND SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY INFORMATION

For more help, visit geappliancesairandwater.com or call the technical support line at 1.844.487.9443

BEFORE YOU BEGIN

Read these instructions completely and carefully.

- **IMPORTANT** – Save these instructions for local inspector's use.
- **IMPORTANT** – Observe all governing codes and ordinances.
- **Note to installer** – Be sure to leave these instructions with the Consumer.
- **Note to consumer** – Keep these instructions for future reference.
- **Skill level** – A licensed certified technician (to handle refrigerant, recovery, etc) and a qualified electrician are required for installation and service of this split heat pump system.
- Proper installation is the responsibility of the installer.
- Product failure due to improper installation is not covered under the limited warranty.
- For personal safety, this system must be properly grounded.
- Protective devices (fuses or circuit breakers) acceptable for installation are specified on the nameplate of each unit.
- Make sure to minimize wiring or plumbing inside the wall when installing.

⚠ WARNING

- This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the product.
- Ensure that the unit shall be installed in accordance with local and national wiring codes.
- For the dimensions of the space necessary for correct installation of the appliance, including the minimum permissible distances to adjacent structures, refer to this document.
- Ensure only approved units are connected together and that all refrigerant line dimensions and refrigerant charging requirements are followed to prevent exceeding the maximum operating pressure.
- **ONLY** connect units that are labeled with the same refrigerant.
- Any damage of electrical supply must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Means for disconnection must be incorporated in the fixed wiring in accordance with wiring rules. Disconnect ampere rating must be at least 115% of the Minimum Circuit Ampacity listed on the rating plate for this product. Disconnect must be installed within sight and readily accessible. Refer to local and national electric code for any additional requirements specified in your region of install.

Safety Awareness

1. **Procedures:** Operation shall be made as per controlled procedures to minimize the probability of risks.
2. **Area:** Area shall be divided and isolated appropriately, and operation in an enclosed space shall be avoided. Before the refrigeration system is started or before hot working, ventilation or opening of the area shall be guaranteed.
3. **Site inspection:** The refrigerant shall be checked.
4. **Fire control:** A fire extinguisher and a "No Smoking" sign shall be placed in the installation area during installation. The installation area shall remain free from fire/ignition sources during installation.

READ AND SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY INFORMATION

Unpacking Inspection

Outdoor unit: the leak detection equipment shall be extended into the packing box of the outdoor unit, to check whether the refrigerant is leaking. If the refrigerant leakage is identified, installation is not allowed, and the outdoor unit shall be delivered to the maintenance department.

Inspection on Installation Environment

1. Inspection on the surrounding environment of place of installation: the outdoor unit of flammable refrigerants air conditioner cannot be installed inside an enclosed room reserved.
2. Power supply, switches or other high-temperature articles such as the ignition source and oil heater shall be avoided below the indoor unit.
3. The power supply shall be provided with grounding wire and be reliably grounded.
4. User shall verify in advance whether water/electricity/gas pipelines are hidden in the wall in locations that may be punctured with an electric drill. It is recommended that the through-wall holes reserved shall be used as much as possible.

Safety Principles of Installation

1. Favorable ventilation shall be maintained at the place of installation (doors and windows are opened).
2. Open fire or high-temperature heat source (including welding, smoking and oven) higher than 548°F is not allowed within the scope of flammable refrigerant.
3. Anti-static measures shall be taken, such as the wearing of cotton clothes and cotton gloves.
4. The place of installation shall be convenient for installation or maintenance and cannot be adjacent to heat source and flammable and combustible environment.
5. In case of refrigerant leakage of the indoor unit during installation, the valve of the outdoor unit shall be closed immediately, and windows shall be opened, and all the personnel shall be evacuated. After the leakage of refrigerant is handled, the indoor environment shall be subject to concentration detection. Further handling is not allowed until the safety level is reached.
6. In case the product is damaged, it must be delivered to the maintenance point. Welding of refrigerant pipelines at the user's site is not allowed.
7. The installation position of air conditioner shall be convenient for installation or maintenance. Barriers shall be avoided around the air inlet/outlet of the indoor/outdoor unit, and the electrical appliance, power switches, sockets, valuables, and high-temperature products within the scope of both sidelines of the indoor unit shall be avoided.

⚠ CAUTION

- Refrigerant should be only added or removed by a licensed HVAC technician.
- Before adding additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.

READ AND SAVE THESE INSTRUCTIONS

REQUIREMENTS FOR OPERATION

Requirements for Operation, Service and Installation of Appliances Using Flammable Refrigerants

⚠ 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 odor.



Warning; Flammable Materials, Refrigerant class per ISO 817



Owner's Manual; Operating Instructions



Read Owner's Manual



Service Indicator; Read Technical Manual

General

- During installation, due to the extended refrigerant pipes, additional **REFRIGERANT** may be charged. Please complete the **REFRIGERANT** label provided in the manual, and securely paste it near the appliance marking.
- Handling, installation, cleaning, servicing and disposal of refrigerant must comply with the local regulation and the instruction.
- Servicing shall be performed only as recommended by the manufacturer.
- Spaces where refrigerant pipes are allowed shall comply with the below requirement:
 - that piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and be in compliance with national and local codes and standards, such as ASHRAE 15, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection prior to being covered or enclosed.
 - that the installation of pipe-work shall be kept to a minimum.
 - that mechanical connections made at joints that made in the installation between parts of the refrigerating system in shall be accessible for maintenance purposes.
 - that protection devices, piping, and fittings shall be protected as far as possible against adverse environmental effects, for example, the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris.
 - that piping in refrigeration systems shall be so designed and installed to minimize the likelihood of hydraulic shock damaging the system.
 - that precautions shall be taken to avoid excessive vibration or pulsation.

REQUIREMENTS FOR OPERATION

Requirements for Operation, Service and Installation of Appliances Using Flammable Refrigerants

General (cont.)

- that after completion of field piping for split systems, the field pipework shall be pressure tested with an inert gas and then vacuum tested prior to refrigerant charging, according to the following requirements:
 - The minimum test pressure for the low side of the system shall be the low side design pressure and the minimum test pressure for the high side of the system shall be the high side design pressure, unless the high side of the system, cannot be isolated from the low side of the system in which case the entire system shall be pressure tested to the low side design pressure.
 - The test pressure after removal of pressure source shall be maintained for at least 1 hour with no decrease of pressure indicated by the test gauge, with test gauge resolution not exceeding 5% of the test pressure.
 - During the evacuation test, after achieving a vacuum level specified in the manual or less, the refrigeration system shall be isolated from the vacuum pump and the pressure shall not rise above 1500 microns within 10 min. The vacuum pressure level shall be specified in the manual, and shall be the lessor of 500 microns or the value required for compliance with national and local codes and standards, which may vary between residential, commercial, and industrial buildings.
- that field-made refrigerant joints indoors shall be tightness tested according to the following requirements: The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0.25 times the maximum allowable pressure. No leak shall be detected.

Qualification of workers

The manual shall contain specific information about the required qualification of the working personnel for maintenance, service and repair operations. Every working procedure that affects safety means shall only be carried out by competent persons.

Examples for such working procedures are:

- breaking into the refrigerating circuit;
- opening of sealed components;
- opening of ventilated enclosures.

The competent persons are trained by the national training organizations or manufacturers that are accredited to teach the relevant national competency standards that may be set in legislation. The achieved competence should be documented by a certificate.

Information on servicing

Prior to beginning work on systems containing **FLAMMABLE REFRIGERANTS**, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the REFRIGERATING SYSTEM, the below requirement shall be completed prior to conducting work on the system:

- Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapor being present while the work is being performed.
- 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 shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i. e. non-sparking, adequately sealed or intrinsically safe.
- If any hot work is to be conducted on the refrigerating 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.

REQUIREMENTS FOR OPERATION

Requirements for Operation, Service and Installation of Appliances Using Flammable Refrigerants

Information on servicing (cont.)

- No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work 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 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. “No Smoking” signs shall be displayed.
- 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.
- 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**:
 - marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
 - refrigerating 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.
- 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, intrinsically safe components

- Sealed electrical components shall be replaced.
- Intrinsically safe components must be replaced.
- 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.

REQUIREMENTS FOR OPERATION

Requirements for Operation, Service and Installation of Appliances Using Flammable Refrigerants

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.
- The following leak detection methods are deemed acceptable for all refrigerant systems.
 - Electronic leak detectors may be used to detect refrigerant leaks but, in the case of **FLAMMABLE REFRIGERANTS**, 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 also 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.
- NOTE: Examples of leak detection fluids are:**
 - bubble method,
 - fluorescent method agents.
- 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. Removal of refrigerant shall be according to the manual.

Removal and evacuation

- When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:
 - a) safely remove refrigerant following local and national regulations;
 - b) purge the circuit with inert gas;
 - c) open the circuit by cutting or brazing.
- The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times.
- Compressed air or oxygen shall not be used for purging refrigerant systems.

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 in an appropriate position according to the instructions.
- Ensure that the **REFRIGERATING 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 **REFRIGERATING SYSTEM**.
- Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. 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.

REQUIREMENTS FOR OPERATION

Requirements for Operation, Service and Installation of Appliances Using Flammable Refrigerants

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 recovered 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 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 **REFRIGERATING SYSTEM** unless it has been cleaned and checked.

Labeling

- Equipment shall be labeled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing **FLAMMABLE REFRIGERANTS**, ensure that there are labels on the equipment stating the equipment contains **FLAMMABLE REFRIGERANT**.

REQUIREMENTS FOR OPERATION

Requirements for Operation, Service and Installation of Appliances Using Flammable Refrigerants

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 is 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 all appropriate refrigerants including, when applicable, **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.

INSTALLATION INSTRUCTIONS

Operating Environment

NOTE: This air conditioner is designed to be operated under condition as follows and performance may be reduced outside of these operating temperatures.

Operating Range	Cooling	Tempo 115V	23°F~115°F(-5°C~46°C)
		Arctic	
		FlexFit	
	Heating	Tempo 230V	14°F~115°F(-10°C~46°C)
		Tempo 115V	-4°F~75°F(-20°C~24°C)
		Tempo 230V	
		FlexFit	-15°F~75°F(-26°C~24°C)
		Arctic	-31°F~75°F(-35°C~24°C)

Note:

To achieve optimal capacity and efficiency at 5°F (-15°C) and below, it is recommended to operate the indoor unit fan at the highest setting (Turbo Mode for some models).

Required Tools for Installation

- 5/8" (16mm), 7/8" (22mm), 1" (25mm) or adjustable wrench
- Adhesive tape
- Conduit cable clamp 1/2"*
- ACR Copper line set (refer to outdoor installation manual for line set size)
- #2 phillips screwdriver
- Drill
- R454B flaring tool
- Hex wrench
- Hole saw 2 1/4"
- Refrigerant scale
- Level
- Manifold gauge set
- Measuring tape
- Micron gauge
- Mini-split adapter (5/16" F to 1/4" M)
- Nitrogen*
- Pipe cutter
- Razor knife
- Reamer
- Saddle clamp (L.S.) w/ screws
- Sealant, non-expanding (for lineset hole)
- Soap/water solution* or gas leakage detector
- Stud finder
- Torque wrench
- Vacuum pump
- Wire strippers
- All usual and customary HVAC hand and power tools, meters, and testing devices
- Valve core removal tool
- Fire extinguisher or dry powder
 - * consumable

Supplied by Installer

Refrigerant Line Set: for sizing please refer to the Outdoor Unit Rating Plate

- 14/4 AWG SOOW Non-Shielded Stranded Copper Cable
- R454B Refrigerant (if extra charge is needed, see next section)
- Refrigerant Line Insulation (follow local code requirements)
- PVC Pipe (optional)
- Condensate Drain Tubing Clamp
- 16/2 AWG Shielded SOOW Cable for high speed communication
- Hardware to secure ODU feet to platform
 - Suggestion: M10*30 (bolt diameter is M10; bolt length is 30 mm)"

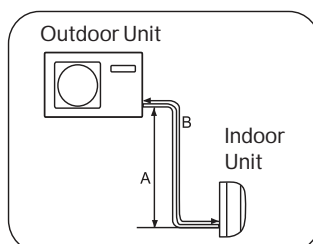
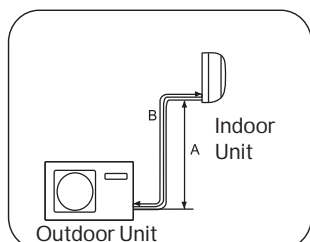
NOTE: Disconnect, panel breaker, supply cable for connecting wires from the disconnect to the ODU.

INSTALLATION INSTRUCTIONS

Refrigerant Linesets

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent into the atmosphere.

Refrigerant type: R454B



CAUTION

- Max. Elevation: **A max**
- Max. Length: **B max**
- Min. Length: **B min**

1. The pipe length without extra gas needed when $25\text{ft} \geq B \geq 10\text{ft}$.
2. In case the pipe length B is more than 25ft ($\leq B \text{ max}$), the refrigerant should be charged, according to below table.

Outdoor Unit	A max (ft)	B max (ft)	** B min (ft)	Liquid pipe (in)	* Extra charge amount per ft after standard length (oz)
1Q07~15	33	66	10	1/4	1/5
1Q18	50	83			
1Q24	100	165		3/8	1/2
1Q3036					

Notes: Refrigerant piping must be kept to a minimum.

* Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced performance.

** The suggested shortest pipe length is 10ft, in order to avoid noise from the outdoor unit and vibration. (Mechanical noise and vibration may occur depending on how the unit is installed and the environment in which it is used.)

3. Refrigerant charge label

Contains fluorinated greenhouse gases covered by the Kyoto Protocol

R454B

1 = kg

2 = kg

1+2 = kg

A: Contains fluorinated greenhouse gases covered by the Kyoto Protocol

B: Factory refrigerant charge of the product: see unit nameplate

C: Additional refrigerant amount charged in the field

D: Total refrigerant charge

E: Outdoor unit

F: Refrigerant cylinder and manifold for charging

1 – The factory refrigerant charge of the product.

2 – The additional refrigerant amount charged in the field.

1+2 – The total refrigerant charge.

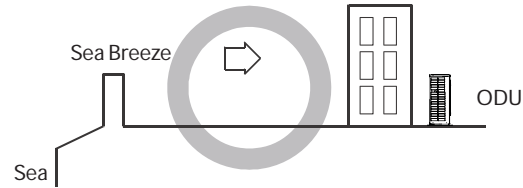
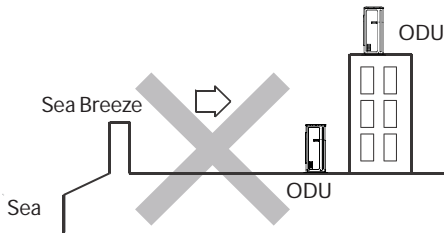


After the total refrigerant charge is calculated, refer to the installation instructions of the indoor unit. Depending on the room size, a refrigerant leak sensor may need to be installed on the indoor unit.

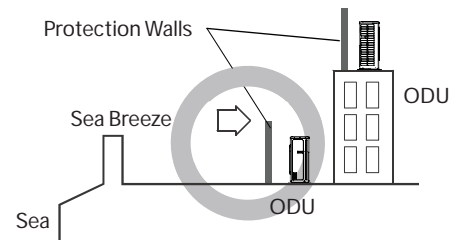
INSTALLATION INSTRUCTIONS

SALTWATER COAST INSTALL

- The outdoor unit should be installed at least ½ mile away from the salt water, including seacoasts and inland waterways. If the unit installed from ½ mile to 5 miles away from the salt water, including seacoasts and inland waterways, please follow the installation instruction below.
- Install the outdoor unit in a place (such as near buildings etc.) where it can be protected from sea breeze which can damage the outdoor unit.



- If you cannot avoid installing the outdoor unit by the seashore, construct a protection wall around it to block the sea breeze.
- A protection wall should be constructed with a solid material to block the sea breeze. The height and the width of the wall should be 1.5 times larger than the size of the outdoor unit. Also, allow at least 28" (700mm) between the protection wall and the outdoor unit for air circulation to ventilate.
- Install the outdoor unit in a place where water can drain freely.
- If the above conditions cannot be met, contact GE Appliances for assistance.



LOW AMBIENT INSTALL

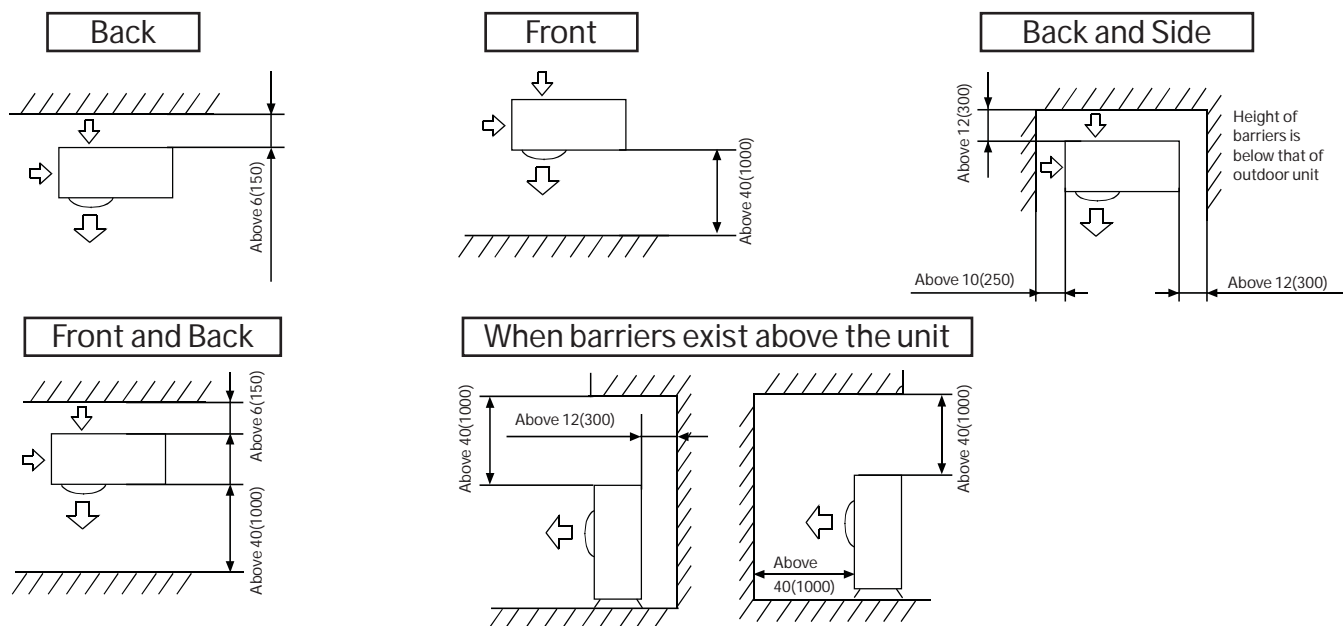
- If the outdoor unit is installed in a region that is affected by strong wind or snow accumulation, it is recommended to install wind baffle or/and top cover accessories. Corresponding top cover and wind baffle model number can be found in product catalog. The installation instructions can be found in the manual shipped with each accessory or on-line at GEAppliancesairandwater.com.

INSTALLATION INSTRUCTIONS

INSTALLATION AND MAINTENANCE SPACE

Selection of installation location of outdoor

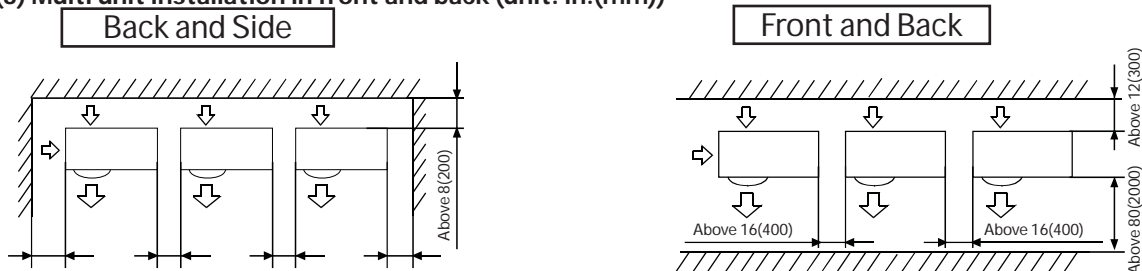
(1) Single unit installation (unit: in.(mm))



The top and two side surfaces must be exposed to open space, and barriers on at least one side of the front and back shall be lower than the outdoor unit.

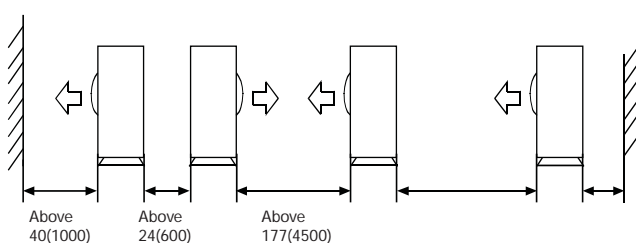
(2) Multi unit installation (unit: in.(mm))

(3) Multi unit installation in front and back (unit: in.(mm))



Height of barriers is below that of the outdoor unit

Standard



If wall is half the height of the unit, **8 (250)**.
If wall is between half the height of the unit and the same height of the unit, **12 (300)**.

INSTALLATION INSTRUCTIONS

Step 1 - Preparation

Select the Outdoor location:

- Choose a level place solid enough to bear the weight and vibration of the OD unit and where the operation noise will not be amplified.
- Choose a location where the hot air discharge and/or noise will not create a nuisance for neighbors.
- Ensure there is sufficient space to maneuver the OD unit into place.
- Ensure there is sufficient space and no obstructions for the air inlet and outlet.
- Install the unit's power/communication wiring at least 10 feet away from television and radio sets to prevent interference.
- Ensure any moisture sensitive items are kept away from the condensate drain path of the OD unit.

NOTES:

- OD unit cannot hang from a ceiling or be stacked.
- Ensure that accumulated snow and debris will not block the air inlet or the coil if installing the outdoor unit with a fence or guard rail around it.
- Ensure ventilation in case of refrigerant leakage.
- Avoid installing the OD unit where corrosive gases, such as sulfur oxides, ammonia, and sulfurous gas are produced. Questions and product liabilities pertaining to third party corrosion-proof or anti-rust additives and the impact upon systems operation should be directed to the manufacturers of those products.

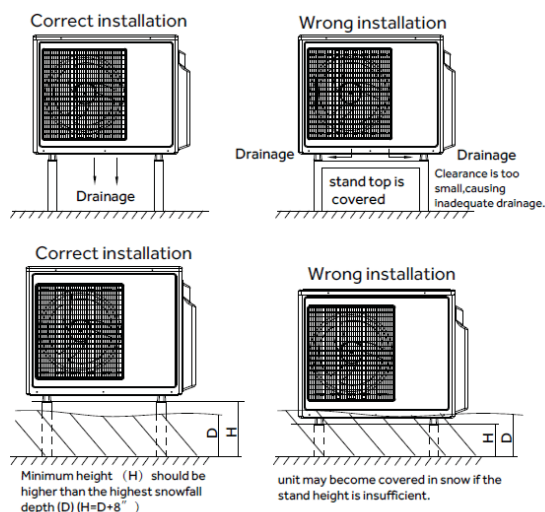
Step 2 - Installation of the Indoor Unit

Please refer to the Indoor unit installation manual.

Step 3 - Installation of the Outdoor Unit

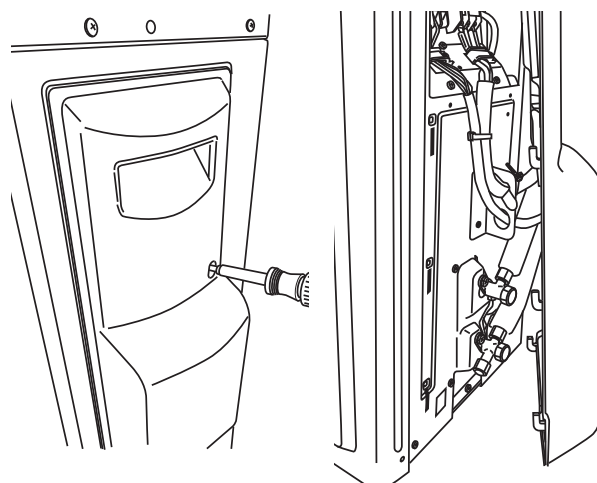
A. Proper Installation for Drainage

Set the unit on mount or pad using team lift.



B. Prepare the Outdoor Unit for Installation

- Remove all packaging.
- Place supplied vibration pads onto outdoor unit's feet.
NOTE: Heat pump models may need a 3rd party drain pan if condensate management is required by local codes.
- Remove the cover plate of the outdoor unit to expose the terminal block connections.



1. Remove Screw

2. Slide the panel down to release the clips and pull away.

INSTALLATION INSTRUCTIONS

Step 3 - Installation of the Outdoor Unit

C. Electrical Connections for the Outdoor Unit

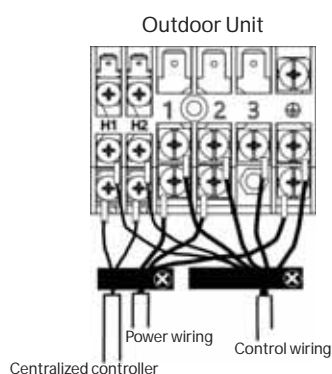
⚠ WARNING RISK OF ELECTRIC SHOCK.

Could cause injury or death.

Make sure power is off before touching wires.

NOTE: Be certain all wiring complies with local building codes and NEC and that the supply voltage for this system is correct.

- Connect the wiring for both the power source and the indoor wiring using a conduit cable bracket on the side of the outdoor unit.
- Using a wire stripper, remove the insulation and separate the wires.
- Verify that the wiring connections match the indoor connections wire for wire.
- Spade terminals are recommended. If spade terminals are not used then the wires should not be twisted prior to connecting to the screw terminals.
- Ensure each wire is under the screw terminal plate and the plate is tightened with no fraying.
- Ensure the 14/4 control cable and the 16/2 high speed communication cable are both secured under the strain relief bracket.
- Verify that all connections are secured.



NOTE: Models 1QFF24* and 1Q3036* must connect ground to the provided screw on the chassis, not the ground screw of the terminal block.

NOTE: Failure to follow the wiring guidelines can result in control board damage and communication issues (E7 error code). This includes improper wire size, use of solid core wire, midline splicing and poor terminal connections.

Note:

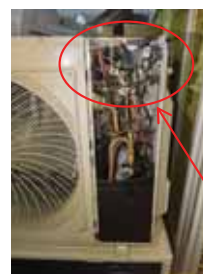
1Q3036FF2*** models can operate at either 36K or 30K capacity, to match the capacity of the connected indoor unit. The default setting from the factory is 36K.

To change capacity from 36k BTUs to 30k BTUs, change the SW2-4 dip switch by following the below instructions:

Step 1: Remove the top cover.



Step 2: Remove the right cover.



DIP Switch is here:



Step 3: The SW2-4 must be adjusted to OFF

SW2-1: ON
SW2-2: OFF
SW2-3: OFF
SW2-4: OFF



INSTALLATION INSTRUCTIONS

Step 3 - Installation of the Outdoor Unit (Cont.)

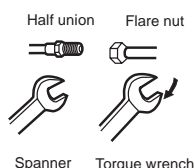
D. Install Copper Lineset

- Cut the line set to length.
- Place nut over the pipe and then flare with the R454B flaring tool.
- NOTE:** Follow standard practices as dictated by the flare tool manufacturers for creating pipe flares. When cutting and reaming the tubing, use caution to prevent dirt or debris from entering the tubing. Remember to place nut over the tubing before flaring.
- To join the line set, directly align the tubing flare to the fitting on the other pipe. Slide the nut onto the fitting and hand tighten.
- Torque the fittings according to the specifications shown in the torque chart below.

Forced fastening without careful centering may damage the threads and cause a refrigerant leak.

Pipe Diameter (ø)	Fastening torque
1/4"	18 N.m / 13.3 Ft.lbs
3/8"	42 N.m / 30.1 Ft.lbs
1/2"	55 N.m / 40.6 Ft.lbs
5/8"	60 N.m / 44.3 Ft.lbs

- Two wrenches are required to join the flare connection; one standard wrench and one torque wrench adjusted to the proper settings.
- Repeat the process for attaching the other end of the line set.



E. Leak Test

- Remove the cap on the service valve.
- Using a tank of dry nitrogen and approved regulator, charge the system with 150 psig of dry nitrogen using mini split adapter to connect the valve.
- Check for leaks at the flare fittings using soap bubbles or another detection device. If a leak is detected, make repairs to the fittings and recheck. If no leaks are detected within 3 minutes, proceed.
- Using the same tank/regulator, charge the system to 300 psig.
- Check for leaks as earlier. If no leaks are detected within 3 minutes, proceed.
- Using the same tank/regulator, charge the system to 500 psig.
- Check for leaks as earlier. Keep system pressurized for at least 20 minutes.

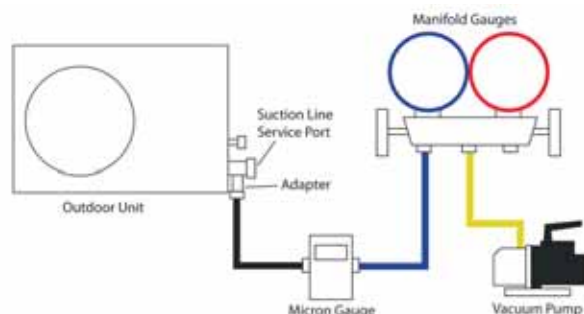
⚠ WARNING

Do not use acetylene, oxygen, compressed air or any mixture containing anything other than dry nitrogen. Use only dry nitrogen for pressure testing. Do not use mixtures of hydrogen containing refrigerant and air above atmospheric pressure for pressure testing, as they may become flammable and could result in an explosion. Refrigerant, when used as a trace gas, should only be mixed with dry nitrogen for pressurizing units. Failure to follow these recommendations could result in death or serious injury as well as equipment or property damage.

F. System Evacuation

NOTE- Do not open service valve.

- Attach a manifold gauge, micron gauge, and vacuum pump to the suction line port using adapter AD-87 (see illustration).
- Evacuate the system to at least 350 microns.
- Close the vacuum pump valve and check the micron gauge. If the gauge rises 150 microns in 60 seconds, the evacuation is incomplete or there is a leak in the system. If the gauge does not rise 150 microns in 60 seconds, the evacuation is complete.
- Once evacuation is complete, remove the adapter and hose connection from the suction line port and replaced the cap.



INSTALLATION INSTRUCTIONS

G. Refrigerant Charging

- Add any additional refrigerant after evacuation using a digital scale.

NOTE: Charge liquid only.

- Fill out the refrigerant charge label using indelible ink.
- Place the factory refrigerant charge found on the outdoor nameplate in box number 1.
- Place the amount of additional refrigerant added in box number 2.
- Add boxes 1 and 2 together and place the value in the sum box (D).
- Adhere the filled out label in the proximity of the product charging port and under the outside unit valve cover.
- Write amounts on outdoor unit with permanent marker above the charging port if the label is missing.
- Remove the cap from the liquid line valve. Using a hex wrench, open the valve, then replace and tighten the cap securely to avoid leaks.
- Remove the cap from the suction line valve. Using a hex wrench, open the valve, then replace and tighten the cap securely to avoid leaks.
- Wrap the line set, drain line, and 14/4 AWG wiring starting at the bottom of the bundle with an overlap type wrap until you reach the piping hole.
- Use a sealant to seal the piping on both sides of the wall in order to prevent drafts, weather, or pests from entering the building.

Step 4 - Final Check

Explaining Operation To the End User

- Using the User Manual, explain to the user how to use the air conditioner/heat pump, (the remote controller, adding/removing the air filters, placing or removing the remote controller from the remote control holder, cleaning methods, precautions for operation, etc.).
- Review precautions for operation.
- Recommend that the user read the Operating Instructions carefully.

UACT32A Central Controller (Optional Accessory)

If installing a central controller, use RS485 communication compliant 16/2 AWG shielded SOOW wire and connect the wiring to terminals C1 and C2 on the outdoor unit terminal block. See section C of Step 3 in this manual for the location of C1 and C2 on the terminal block.

Check Items for Test Run

- ☐ No gas leak from linesets?
- ☐ Are the linesets insulated properly?
- ☐ Are the connecting wirings of indoor and outdoor firmly inserted to the terminal block?
- ☐ Is the connecting wiring of indoor and outdoor fixed?
- ☐ Is condensate draining correctly?
- ☐ Is the ground wire securely connected? Is the indoor unit securely fixed?
- ☐ Is power source voltage correct according to local code?
- ☐ Is there any odd noise?
- ☐ Does the cooling temperature drop between 20-30°F?
- ☐ Does the heating temperature raise between 35-40°F?
- ☐ Is the room temperature display accurate?

HAIER DUCTLESS HVAC LIMITED WARRANTY

GEAppliances.com. Please save your receipt showing the date of original purchase and the date of installation.

For the product models listed on Attachment 1 (the "Product"), this Standard Limited Warranty is provided to the Original Owner of the Product:

For The Period Of:	GE Appliances Will Replace:
1 Year <u>Remote Controller Warranty</u> From the date of the original installation	If the Remote Controller proves to be defective due to improper workmanship and/or material for a period of one (1) year from the date of installation , GE Appliances, A Haier Company ("Haier") will provide a new or refurbished controller, at Haier's sole discretion.
5 year <u>Limited Parts Warranty</u> From the date of the original installation	If any parts should prove to be defective due to improper workmanship and/or material for a period of five (5) years from the date of installation , Haier will replace any defective parts without charge for the part. Parts used for replacement may be new or refurbished parts, determined at Haier's sole discretion, and provided to your licensed HVAC technician installer.
10 Year <u>Registered Limited Parts Warranty</u> From the date of the original installation (ONLINE REGISTRATION REQUIRED at GEAppliances.com) MUST BE A RESIDENTIAL SINGLE-FAMILY HOME	If any of the parts should prove defective due to improper workmanship and/or material for a period of ten (10) years from the date of installation , Haier will replace any defective parts without charge for the part. The replacement part is warranted for the remainder of the original ten (10) year warranty period. Parts used for replacement may be new or refurbished parts, determined at Haier's sole discretion, and provided to your licensed HVAC technician installer. This Registered Limited Parts Warranty requires online registration within sixty (60) days from the original date of installation or occupancy. NON-RESIDENTIAL/COMMERCIAL APPLICATIONS ARE NOT ELIGIBLE FOR THIS REGISTERED LIMITED PARTS WARRANTY.

LABOR NOT COVERED:

These limited warranties **DO NOT** include labor or any other costs incurred for service, maintenance, repair, removing, replacing, installing, complying with local building or electrical codes, shipping or handling, replacement of the system, compressors or other parts.

EXCLUDED COMPONENTS:

The following components are not covered by this warranty: cabinets, cabinet pieces, air filters, driers, refrigerant, refrigerant line sets, belts, wiring, fuses, oil nozzles, unit accessories and any parts not affecting unit operation.

WHAT IS THE DATE OF PURCHASE:

The "Date of Purchase" is the date the Product is purchased by the Original Owner. The "Date of Installation" is the date that the original installation was completed and all Product start-up procedures were properly completed and verified by the installer's invoice. If the installation date cannot be verified, then the Date of Installation will either be sixty (60) days after the manufacture date, as determined by the Product's serial number or thirty (30) days from the Date of Purchase. You should keep and be able to provide your original sales receipt from the installer as proof of the Date of Purchase and the Date of Installation. For new construction, the Date of Purchase will be the date of purchase of the residence by the Owner from the builder.

WHO IS COVERED:

Owner occupied: The "Original Owner" means the original owner (and his or her spouse) of a residential single family where the Product was originally installed.

Non-Owner occupied: The "Non-Owner occupied" is defined as a) single family or multi-family residential buildings that are not Owner Occupied, or b) light commercial applications, (such as office buildings, retail establishments, hotels/motels).

For Non-owner occupied, this limited warranty requires that the Product be installed and maintained annually by a licensed HVAC technician (proof of annual maintenance is required).

HOW CAN YOU GET SERVICE:

Contact your licensed HVAC technician installer. All installation and service must be performed by a licensed HVAC technician. Failure to use a licensed HVAC technician for installation of this Product voids all warranty on this Product.

HAIER DUCTLESS HVAC LIMITED WARRANTY

WHAT GE APPLIANCES WILL NOT COVER:

- Improper service or installation.
- Damage in shipping.
- Defects other than manufacturing defects (i.e., other than workmanship or materials).
- Damage from misuse, abuse, accident, alteration, lack of proper care and/or regular maintenance.
- Damage resulting from floods, fires, wind, lightning, accidents or similar conditions.
- Product that was not installed or serviced by a licensed HVAC technician.
- Labor and related services for repair or installation of the Product.
- A product purchased from an unauthorized online retailer.
- Damage as a result of subjecting Product to an atmosphere with corrosives or high levels of particulates (such as soot, aerosols, fumes, grease).
- Modification, change or alteration of the equipment, except as directed in writing by Haier.
- Use of contaminated or refrigerant not compatible with the unit.
- Operation with system components (indoor unit, outdoor unit, and refrigerant control devices) which are not an AHRI match or meet the specifications recommended by Haier.
- A Product sold and/or installed outside of the 50 United States, the District of Columbia, or Canada.
- Batteries for the controller and other accessories provided with the Product for installation (e.g., plastic hose).
- Normal maintenance, such as cleaning of coils, cleaning filters, and lubrication.
- For Product installed in non-owner occupied applications, Product that has not been maintained annually by a licensed HVAC technician (proof required).
- Damage caused by a used or unapproved component or part by Haier (e.g., a used and/or unapproved condenser / air handler).
- Component or parts not provided by Haier.
- Product that has been moved from its original installation to a new residence or building.
- Accident, or neglect or unreasonable use or operation of the equipment including operation of electrical equipment at voltages other than the range specified on the unit nameplate (includes damages caused by brownouts).
- Damage to the product caused by accident, fire, floods or acts of God.
- Incidental or consequential damage caused by possible defects with this product.

LEGAL RIGHTS:

Some states and provinces do not allow warranty terms to be subject to registration. In those states and provinces, the 10 year Registered Limited Parts Warranty applies. In addition, if allowed by the law of the state or province where the Product is installed, the subsequent owners of the residence or building may have additional rights or longer warranty terms.

REGISTERED LIMITED PARTS WARRANTY COVERAGE REQUIREMENTS:

- The unit is a GE Appliances or a Haier branded unit.
- The unit is installed in a residential application.
- The unit is properly registered at **GEAppliances.com** within 60 days after the original date of installation or occupancy.
- The unit is part of a complete AHRI matched system and installed by a state certified or licensed contractor in accordance with the unit installation, operation, and maintenance instructions provided with the unit.
- Indoor and outdoor ductless units are covered only when they are branded GE Appliances and are purchased and installed as a system along with a qualifying unit. (Third party coils are not covered).
- Installation is in compliance with applicable laws, regulations, codes, and ordinances.
- Unit was not ordered via the internet. Proof of purchase may be required.

HAIER DUCTLESS HVAC LIMITED WARRANTY

EXCLUSION OF IMPLIED WARRANTIES:

EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, THIS LIMITED WARRANTY IS EXCLUSIVE AND GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

UNDER NO CIRCUMSTANCES SHALL HAIER BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT LIMITATION, LOST GOODWILL, LOST REVENUE OR PROFITS, WORK STOPPAGE, SYSTEM FAILURE, IMPAIRMENT OF OR DAMAGE TO OTHER EQUIPMENT OR GOODS, COST OF REMOVAL AND REINSTALLATION OF THE SYSTEM, LOSS OF USE, INJURY TO PERSONS OR PROPERTY ARISING OUT OF OR RELATED TO THE SYSTEM. HAIER'S TOTAL LIABILITY, IF ANY, UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE INVOICE VALUE PAID BY THE CUSTOMER FOR THE SYSTEM WHICH IS THE SUBJECT OF A CLAIM OR DISPUTE.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR ALLOW DISCLAIMERS OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO THE CUSTOMER. THIS LIMITED WARRANTY GIVES THE CUSTOMER SPECIFIC LEGAL RIGHTS. CUSTOMERS MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

The remedy provided in this warranty is exclusive and is granted in lieu of all other remedies. This warranty does not cover incidental or consequential damages. Some states and provinces do not allow the exclusion of incidental or consequential damages, so this limitation may not apply to you. Some states and provinces do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary by state and province. This warranty covers Products within the 50 United States, the District of Columbia and Canada.

This warranty is provided by:

**GE Appliances, a Haier company
Louisville, KY 40225**

For US Customers: This limited warranty is extended to the original purchaser for products purchased for home use within the USA. In Alaska and Hawaii, the limited warranty does not include the costs of shipping units.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.

**Warrantor: GE Appliances, a Haier company
Louisville, KY 40225**

HAIER DUCTLESS HVAC LIMITED WARRANTY

ATTACHMENT 1:

Product is defined as GE Appliances or Haier branded Ductless Split Units. The Product contains 2 sub-categories of goods: "Indoor and Outdoor Products" and "Selected Installation Products," which are further defined below: "Indoor and Outdoor Products" can further be identified by the following model number descriptions: 1Q*, 2Q*, 3Q*, 4Q*, 5Q*, 1G*, 2G*, 3G*, 4G*, 5G*, QS*, QA*, GA*, GS*, US*.

RECORD KEEPING

Thank you for purchasing this Haier product. This installation manual will help you get the best performance from your new heat pump.

For future reference, record the model and serial number located on the label on the side of your air conditioner/heat pump, and the date of purchase. Staple your proof of purchase to this manual to aid in obtaining warranty service if needed.

To register your new Haier Duct Free system, go to geappliancesairandwater.com and input the model/serial number information on this page.

Model number

Serial number

Date of purchase