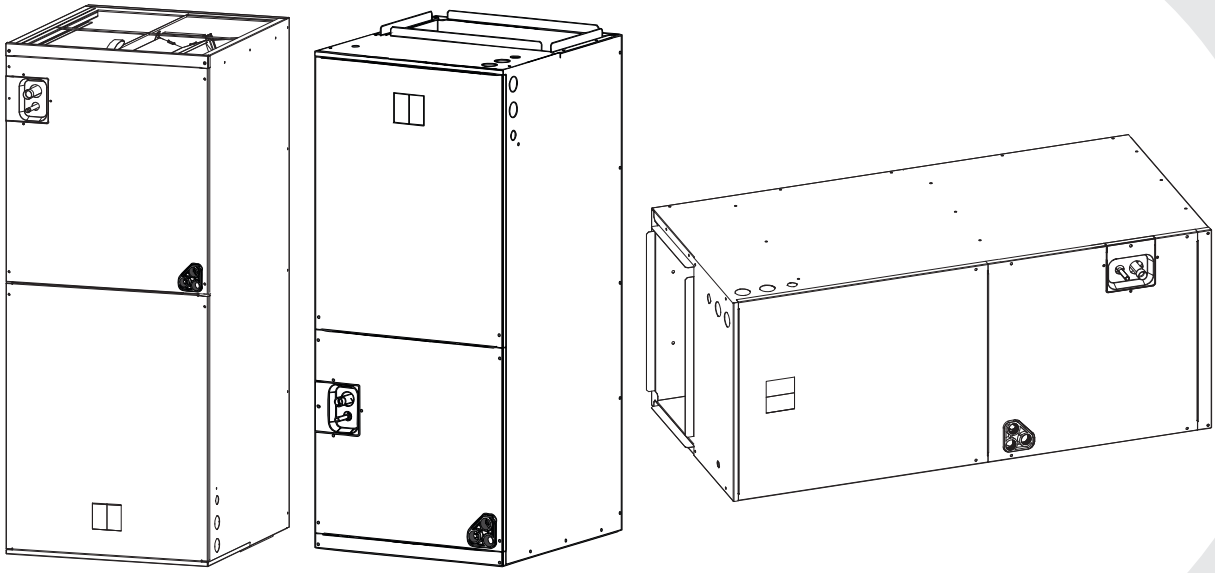
KIDT SERIES

Central Ducted High-Efficiency

Multi-Position Air Handler - TXV (R454B)

Installation & User's Manual

2 Ton (24,000 BTU/h) - 5 Ton (60,000 BTU/h)



Models Covered:
KIDT24H2-41X
KIDT36H2-41X
KIDT48H2-41X
KIDT60H2-41X

KLIMAIRE®
Mark of Superior Quality

IMPORTANT NOTE:
Read this manual carefully before installing or operating your new air conditioning unit.
Be sure to keep this manual for future reference.
For more information, please visit www.klimaire.com

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Scan the QR code to visit our Help Center for installation guides, manuals, videos and more.

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1. Safety Precautions

Read and Understand All Safety Precautions Prior to Installation. Improper installation, adjustment, or servicing due to negligence of these instructions may result in **death, serious injury, or property damage.** The level of potential risk is classified and indicated by the following symbols.

⊘ DANGER

This symbol indicates an action that must never be attempted may result in death or serious injury.

⚠ WARNING

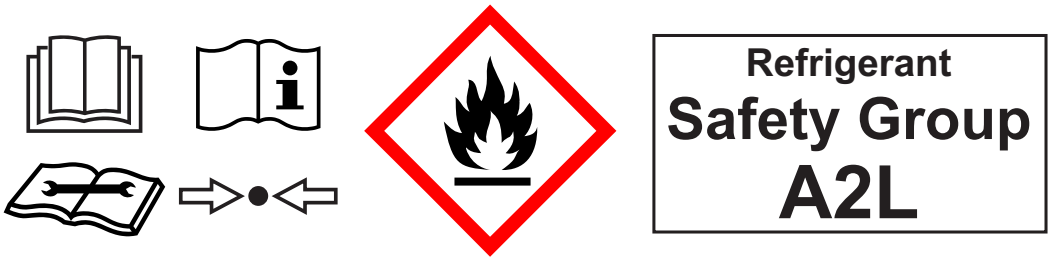
This symbol indicates that ignoring the related instructions **may cause death or serious injury.**

❗ CAUTION

This symbol indicates that ignoring the related instructions **may cause minor or moderate injury** or result in **damage to the appliance or property.**

ⓘ NOTICE

This symbol indicates that the instruction provides **important information** to ensure correct installation, operation, and maintenance of the unit.



Refrigerant
Safety Group
A2L

⚠ CAUTION

Risk of fire
This unit a mildy flamable (A2L) refrigerant. See A2L refrigerant safety considerations to ensure safe installation, operation, and servicing of the unit.

* The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details.
* The shape and position of buttons and indicators may vary according to the model, but their function are the same.

1. Safety Precautions

⚠ WARNING

GENERAL SAFETY PRECAUTIONS

Qualified & Certified Personnel Required (Must Be Certified for R-454B A2L Refrigerant)

- Installation, service, maintenance, and recycling/disposal of the KIDT indoor unit must be performed only by qualified HVAC technicians certified to handle A2L refrigerants.
- Installation and servicing must comply with all local, state, and national regulations.
- Improper installation or servicing may result in refrigerant release, fire, explosion, electrical shock, serious injury, or death.

Electrical Shock, Fire, or Explosion Hazard — R-454B (A2L Refrigerant)

- Disconnect all power circuits before accessing terminals or removing covers.
- Dangerous voltage may remain even when the system is off.
- Never service the unit while energized. Failure may cause serious injury or death.
- Keep the unit away from flames, sparks, smoking materials, and ignition sources.
- Do not heat, pierce, weld, or modify refrigerant-containing components.
- Mishandling A2L refrigerants may cause fire or explosion.

Supervision of Children & Vulnerable Persons

- Children aged 8+ and individuals with reduced physical, sensory, or mental abilities may operate the appliance only with supervision or instruction.
- Children must not play with or near the appliance.
- Cleaning and maintenance must not be performed by children or untrained persons.

Installation & Clearance Requirements

- Install the indoor unit in accordance with national wiring regulations and applicable codes.
- Maintain a minimum of 12 inches (305 mm) clearance from combustible materials (curtains, blinds, fabric, etc.).

Leak Detection System Requirement

- A leak detection system must be installed as required for A2L refrigerant systems.
- The leak detection system must remain powered at all times, except when power is intentionally disconnected for service.

Before Servicing

- Disconnect all power circuits before performing maintenance or opening terminals.
- Failure to follow these steps may result in electric shock, fire, or equipment damage.

Ventilation & Storage Requirements

- Keep ventilation openings clear and unobstructed.
- Install or store the unit only in well-ventilated areas appropriately sized for the unit's capacity.
- Do not store or operate the unit in rooms with open flames or ignition sources (gas appliances, electric heaters, etc.).

1. Safety Precautions

! CAUTION

Risk of Minor Injury or Equipment Damage

- Do not place hands or objects inside the indoor unit while it is operating.
- Do not climb on or place heavy objects on top of the indoor unit.
- Do not insert sticks or foreign objects into the appliance; doing so may cause injury or damage.

Avoid Damage to Electrical Components

- Do not operate the indoor unit if any part is wet or has been exposed to water. Moisture can lead to short circuits, component failure, or electric shock.
- Do not bend, crush, tug, or stress electrical wiring. Damaged wiring must be replaced by certified personnel.

Proper Use & Environment

- Do not operate the appliance in environments containing corrosive gases, sulfur, or excessive moisture.
- Do not block or obstruct air intake or air discharge openings. Reduced airflow may cause system malfunction.

Airflow & Temperature Considerations

- Long-term exposure to cold discharge air may negatively affect plants or animals.
- Ensure airflow direction is properly adjusted for heating and cooling modes.

Component Protection

- When refrigerant-containing components are exposed, handle them carefully to prevent puncture or deformation.
- Never attempt to accelerate defrosting or cleaning using unapproved methods.

Filter & Maintenance Precautions

- Always operate the unit with the air filter installed. Operating without the filter can cause dust accumulation, reduced efficiency, and potential equipment damage.
- Regular maintenance must be performed by qualified personnel.

1. Safety Precautions

NOTICE

Outdoor Unit Requirements

- KIDT indoor units are TXV-equipped and must be paired with a compatible Klimaire R-454B outdoor unit (KOIT series or equivalent matched outdoor unit).
- If a different-brand outdoor unit is used, it must be fully compatible with the KIDT indoor unit's capacity, refrigerant type (R-454B), and TXV requirements, as improper matching may result in reduced performance, higher energy consumption, refrigerant imbalance, or system malfunction.
- The TXV model must match the outdoor unit's system capacity to ensure proper operation and performance.

Klimaire Matched Systems Recommended

- All Klimaire split systems are AHRI-rated only when TXV-equipped KIDT indoor units are properly matched with the corresponding Klimaire KOIT R-454B outdoor unit.
- Using manufacturer-approved matched systems ensures maximum efficiency, accurate capacity performance, reduced service issues, and increased overall reliability and system lifespan.
- Always install matched indoor air handler and outdoor central condensing heat pump units as recommended by Klimaire engineering standards.

Grounding Required

- Failure to use proper maintenance tools or follow correct procedures may result in equipment damage or personal injury.
- Ensure all grounding devices are reconnected after servicing.
- Verify that every component capable of conducting electrical current is properly grounded.
- If any grounding wire, screw, strap, clip, nut, or washer is removed during maintenance, it must be reinstalled and securely fastened to restore full grounding integrity.

Fire Risk & Code Compliance

- This indoor air handler is intended for residential or light commercial applications.
- All ventilation ductwork and piping connected to this unit must comply with the latest NFPA 90B standards or applicable local codes.

Blower Motor & Mechanical Fastening

- Ensure the blower motor bracket is securely fastened using all required mounting bolts (see Figure 1.1).
- Before operating the unit, verify that the blower wheel is firmly attached to the motor shaft and rotates freely without obstruction.

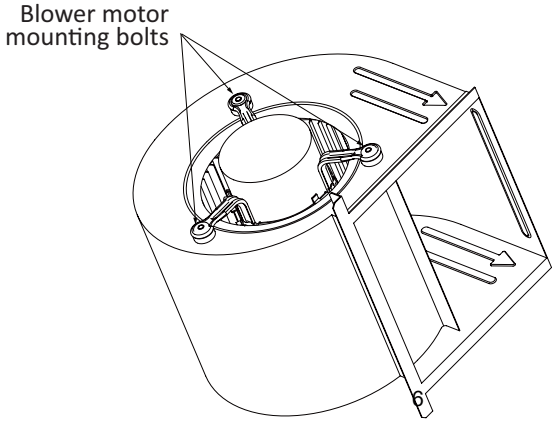
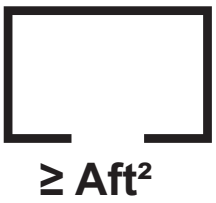


Figure 1.1
Blower Motor Assembly and Mounting Bolts

2. Safety Guidelines for A2L Refrigerants (R454B)

A2L



Safety Information for A2L Refrigerants

Because this unit contains **R454B (A2L)** refrigerant, it must be installed, operated, and serviced with extreme care. R454B is a **mildly flammable refrigerant** — any improper handling, open flame, or lack of ventilation can create serious fire or explosion hazards. Always follow this manual and comply with **all federal, national, and local codes** regarding flammable refrigerants.

⚠ WARNING

- This appliance contains R454B (A2L), a mildly flammable refrigerant. Improper handling can cause fire, explosion, serious injury, or death.
- The appliance must be installed, operated, and stored in a room **free from open flames or continuous ignition sources** (e.g., gas stoves, heaters, or electric heaters).
- **Never use open flames or halide torches to detect leaks.**
- **Disconnect all power** before opening service panels or performing electrical or refrigerant work.
- Always keep a **dry-powder or CO_2 fire extinguisher** accessible near the work area.
- **Do not pierce, weld, burn, or heat** sealed components or piping.
- **Do not accelerate the defrosting process** or apply external heat sources except as approved by the manufacturer.
- Do not vent refrigerant to the atmosphere; follow all EPA and local regulations.
- Be aware that **R454B may be odorless** — leaks may not be easily detectable.
- Only **qualified technicians** trained to handle A2L refrigerants may install, service, or decommission this appliance.
- Clearly **label all equipment and cylinders** to indicate A2L refrigerant content.
- R454B is **heavier than air** and can accumulate in low areas, creating ignition or suffocation hazards.
- If a leak is suspected, **turn off power, extinguish flames, evacuate personnel, and ventilate the area immediately.**

2. Safety Guidelines for A2L Refrigerants (R454B)

CAUTION

- Use only A2L-rated tools, leak detectors, hoses, and service equipment when working on the refrigerant circuit.
- Confirm earth-bond continuity before re-energizing the system.
- Discharge all capacitors before touching electrical or control circuits.
- Replace — never repair — sealed or safety-critical electrical components.
- Maintain correct breaker configuration and voltage polarity before restoring power.
- Ensure adequate ventilation around the outdoor unit during servicing to prevent the accumulation of flammable vapors.
- Keep all wiring secured away from sharp edges, moving components, and hot surfaces.
- Do not use compressed air or oxygen for leak testing or pressurizing the system — use Oxygen-Free Nitrogen (OFN)only.
- Use only tools and instruments that are intrinsically safe and non-sparking.
- Maintain clear airflow around the condenser and service area throughout the work process.
- Ensure all service valves and access ports are properly tightened and leak-tested after servicing.
- Verify that all panels, covers, and protective guards are reinstalled before system startup.

Information for Servicing (R454B)

1. **Check the information in this manual**
   - Determine the required installation space for the device, including the minimum clearances from adjacent structures.
2. **Protect pipework from damage**
   - Pipework must be protected from physical damage and must not be installed in an unventilated space smaller than 13 ft^3 (4 m^3).
3. **Compliance with regulations**
   - Compliance with national gas regulations must be observed.
4. **Accessibility for maintenance**
   - Mechanical connections must be accessible for maintenance purposes.
5. **Follow the instructions in this manual**
   - All instructions for handling, installing, cleaning, maintaining, and disposing of the refrigerant must be followed.
6. **Ventilation openings**
   - Ensure that all ventilation openings are kept clear of obstructions.
7. **Servicing must follow manufacturer guidelines**
   - Servicing must be performed only as recommended by the manufacturer.
8. **No open flames or ignition sources**
   - The appliance must be stored in a room without continuously operating open flames (e.g., operating gas appliances) or ignition sources (e.g., operating electric heaters).
9. **Certification for refrigerant work**
   - Anyone working on a refrigerant circuit must hold a valid and up-to-date certificate issued by an industry-accredited authority confirming competence in handling refrigerants.
   - Service operations must follow manufacturer recommendations.
   - Repairs requiring additional personnel must be supervised by someone competent in the use of flammable refrigerants.

2. Safety Guidelines for A2L Refrigerants (R454B)

Information for Servicing (R454B)

10. Competent personnel only

Any working procedure that affects safety devices or safety-related components must be carried out only by competent personnel.

11. Checks to the Area

A) 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 following precautions shall be complied with prior to conducting work on the system.

B) Work procedure

- Work shall be undertaken under a controlled procedure to minimize the risk of a flammable gas or vapor being present while the work is being performed.

C) 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.

D) Checking for the Presence of Refrigerant

- The area must be checked with an appropriate refrigerant detector before and during work to ensure the technician is aware of any potentially flammable atmosphere.
- Ensure that the leak detection equipment used is suitable for flammable refrigerants — it must be non-sparking, adequately sealed, or intrinsically safe.

E) Presence of Fire Extinguisher

- If any hot work is to be performed on the refrigeration equipment or associated components, suitable fire extinguishing equipment must be readily available.
- Keep a dry powder or CO_2 fire extinguisher adjacent to the charging area.

F) No Ignition Sources

- No person carrying out work on a refrigeration system that involves exposing any pipework shall use sources of ignition in a manner that could lead to a risk of fire or explosion.
- All potential ignition sources, including smoking, must be kept well away from the area where installation, repair, removal, or disposal work is being performed — particularly when refrigerant may be released into the surrounding space.
- Before beginning any work, survey the area around the equipment to ensure that no flammable hazards or ignition risks are present.
- **No Smoking**" signs must be clearly displayed.

G) Ventilated Area

- Ensure that the work area is either outdoors or adequately ventilated before breaking into the system or performing any task that may generate heat.
- Ventilation must be maintained throughout the duration of the work.
  The ventilation system should safely disperse any released refrigerant and, if possible, discharge it to the outside atmosphere.

2. Safety Guidelines for A2L Refrigerants (R454B)

H) Checks to the Refrigeration Equipment

The refrigerant charge size complies with the room size in which the refrigerant-containing parts are installed.

- The ventilation equipment and outlets are functioning properly and are not obstructed.
- If an indirect refrigerating circuit is used, the secondary circuit must be checked for the presence of refrigerant.
- Equipment markings remain visible and legible; any damaged or illegible markings or signs must be replaced or corrected.
- Refrigeration pipes and components are installed in locations where they are not likely to be exposed to substances that could cause corrosion, unless the components are made of corrosion-resistant materials or are suitably protected against corrosion.

I) Checks to Electrical Devices

- When replacing electrical components, ensure that they meet the correct specifications and are suitable for their intended purpose.
- Repair and maintenance of electrical components must include initial safety checks and component inspection procedures.
- If a fault exists that could compromise safety, the electrical supply must not be connected to the circuit until the issue has been satisfactorily resolved.
- If the fault cannot be corrected immediately but continued operation is necessary, an adequate emporary solution may be implemented.
- This must be reported to the equipment owner to ensure that all parties are informed.

Initial safety checks must include:

Ensuring that capacitors are fully discharged in a safe manner to avoid the risk of sparking.

Confirming that no live electrical components or wiring are exposed while charging, recovering, or purging the system.

Verifying the continuity of earth bonding.

12. Repairs to Sealed Components

- Before carrying out repairs to sealed components, all electrical supplies must be disconnected from the equipment being serviced prior to removing any sealed covers or enclosures. If it is necessary to keep the electrical supply connected during servicing, a continuously operating leak detection system must be installed at the most critical location to provide an early warning of any potentially hazardous situation.

- Particular attention must be given to ensuring that any work on electrical components does not compromise the integrity or protection level of the equipment casing. This includes avoiding:
  - Damage to cables
  - Excessive numbers of connections
  - Terminals not made to the original specification
  - Damage to seals
  - Incorrect fitting of cable glands, etc.
  - Ensure that all apparatus is securely mounted

- Check that seals or sealing materials have not deteriorated to the point that they no longer prevent the ingress of flammable atmospheres.
- All replacement parts must conform to the manufacturer’s specifications.

2. Safety Guidelines for A2L Refrigerants (R454B)

NOTE:

The use of silicone sealant may reduce the effectiveness of certain types of leak detection equipment. Ensure that replacement parts are suitable for use with flammable refrigerants.

13. Repair to Intrinsically Safe Components

- Do not apply any permanent inductive or capacitive loads to the circuit without first ensuring that this will not exceed the permissible voltage and current limits for the equipment in use.
- Only intrinsically safe components may be worked on while live in the presence of a flammable atmosphere.
- Any test apparatus used must be correctly rated for the application.
- Replace components only with parts specified by the manufacturer — the use of non-approved parts may cause ignition of refrigerant vapors in the event of a leak.

14. Cabling

Check that all cabling is protected against wear, corrosion, excessive pressure, vibration, sharp edges, and any other adverse environmental conditions.
The inspection must also consider the effects of aging and continuous vibration from sources such as compressors or fans.

15. Detection of Flammable Refrigerants

- Under no circumstances should potentially sources of ignition be used to locate or detect refrigerant leaks.
- A halide torch or any other detector that uses an open flame must not be used.

16. Leak Detection Methods

The following leak detection methods are acceptable for systems containing flammable refrigerants:

- Electronic leak detectors must be used to detect flammable refrigerants; however, their sensitivity may vary and may require periodic re-calibration.
- Detection equipment must be calibrated in a refrigerant-free area.
  Ensure that the detector is not a potential source of ignition and is suitable for use with the specific refrigerant employed.
- Detection equipment must be set to detect a percentage of the refrigerant's Lower Flammable Limit (LFL) and calibrated accordingly.
  The detection threshold must not exceed 25% of the LFL.
- Leak detection fluids are generally suitable for use with most refrigerants. However, avoid detergents that contain chlorine, as chlorine may react with the refrigerant and cause corrosion of copper pipework.

If a leak is suspected, all open flames must be extinguished or removed from the area.
If a refrigerant leak requiring brazing is identified, all refrigerant must first be recovered from the system or isolated using shut-off valves in a section remote from the leak.
Oxygen-free nitrogen (OFN) must then be purged through the system both before and during the brazing process.

2. Safety Guidelines for A2L Refrigerants (R454B)

17. Removal and Evacuation

When breaking into the refrigerant circuit for repairs — or for any other purpose — standard service procedures must be followed. However, when working with flammable refrigerants, it is essential that best practices be strictly observed due to the associated fire and explosion risks.

The following procedure must be followed:

1 Safely remove the refrigerant in accordance with local and national regulations.
2 Evacuate the system.
3 Purge the circuit with inert gas (optional for A2L refrigerants).
4 Evacuate again (optional for A2L refrigerants).
5 Continuously flush or purge with inert gas when using a flame to open the circuit.
6 Open the circuit.

Additional requirements:

- Compressed air or oxygen must never be used for purging refrigerant systems.
- For appliances containing flammable refrigerants, purging should be performed by breaking the vacuum in the system with OFN, filling until working pressure is reached, venting to the atmosphere, and then pulling down to a vacuum (optional for A2L refrigerants).
  This process must be repeated until the system is confirmed free of refrigerant (optional for A2L refrigerants).
- When the final OFN charge is complete, vent the system to atmospheric pressure before commencing any work.
- The outlet of the vacuum pump must not be located near any potential ignition sources, and adequate ventilation must be provided.

18. Decommissioning

Before beginning this procedure, the technician must be fully familiar with the equipment and its details. It is considered best practice to ensure that all refrigerants are recovered safely.
Prior to starting the task, take both an oil sample and a refrigerant sample for possible analysis before any reclaimed refrigerant is reused.
It is essential that electrical power is available before commencing the procedure.

Procedure:

1. Become familiar with the equipment and its operation.
2. Electrically isolate the system.
3. Before proceeding, ensure that:
  - Mechanical handling equipment is available, if required, for moving refrigerant cylinders.
  - All personal protective equipment (PPE) is available and being used correctly.
  - The recovery process is always supervised by a competent person.
  - Recovery equipment and cylinders comply with the relevant standards.

4. Pump down the refrigerant system, if possible.
5. If a vacuum cannot be achieved, install a manifold so that refrigerant can be removed from different parts of the system.
6. Ensure that the recovery cylinder is placed on scales before the recovery process begins.
7. Start the recovery machine and operate it in accordance with the manufacturer's instructions.
8. Do not overfill recovery cylinders — the fill level must not exceed 80% of the liquid volume.
9. Do not exceed the cylinder's maximum working pressure, even temporarily.

2. Safety Guidelines for A2L Refrigerants (R454B)

10. When the cylinders have been filled correctly and the process is complete, ensure that the cylinders and associated equipment are promptly removed from the site and that all isolation valves on the system are closed.

11. Recovered refrigerant must not be charged into another refrigeration system unless it has been properly cleaned and tested.

19. Refrigerant Removal and Recovery Procedures

When removing refrigerant from a system — either for servicing or decommissioning — it is considered best practice to ensure that all refrigerants are removed safely.

When transferring refrigerant into cylinders:

- Use only approved refrigerant recovery cylinders designed for that specific refrigerant type.
- Ensure that enough cylinders are available to contain the total system charge.
- All cylinders must be clearly labeled for the recovered refrigerant and equipped with a pressure relief valve and shut-off valves in good working order.
- Empty recovery cylinders should be evacuated and, if possible, cooled before recovery begins.

20. Safety Instructions for Transportation and Storage

1. No Fire or Smoking:

- During transportation and storage, ensure that there are no open flames, ignition sources, or smoking in the vicinity of the equipment or refrigerant containers.

2. Compliance with Regulations:

- All transportation and storage activities shall be carried out in accordance with applicable local laws and regulations, including those governing the handling of flammable refrigerants.

3. Installation Safety Guidelines (R454B / A2L)

Important Considerations

1. Professional Installation Required -- The air conditioner must be installed by qualified personnel only. This Installation Manual is intended exclusively for professional installers. All installation work must comply with the company's after-sales service regulations and local safety standards.
2. Caution When Handling Flammable Refrigerant -- Extreme care must be taken when charging the system with flammable refrigerant. Improper or careless operation may result in serious injury or property damage.
3. Leak Testing-- A leak test must be performed after installation is completed to ensure the system is fully sealed and safe for operation.
4. Safety Inspection Before Maintenance -- Before servicing or repairing any air conditioner containing flammable refrigerant, a comprehensive safety inspection must be conducted to minimize the risk of fire or explosion.
5. Controlled Operation -- The unit must be operated under a controlled and monitored procedure to reduce the risk of ignition from flammable gases or vapors during operation.
6. Installation Requirements -- The maximum refrigerant charge and the minimum room area required for installation are specified in the following tables. Ensure compliance with these parameters before installation.

The maximum charge and the required minimum floor area

$m_1 = (212ft^3) \times LFL$, $m_2 = (1836ft^3) \times LFL$, $m = (9178ft^3) \times LFL$

Where LFL is the lower flammable limit in lb/m^3, R454B LFL is 0.0184 lb/ft^3

For the appliances with a charge amount $m_1 < M = m^2$:

The maximum charge in a room shall be in accordance with the following:

$m_{max} = 0.5 \times LFL \times 2.2 \times A$

The required minimum floor area A min to install an appliance with refrigerant charge M(lb) shall be in accordance with following: $q_{min} = 30 \times mc/LFL$

Refrigerant Charge and Room Area Limitations

According to UL/CSA 60335-2-40, R454B is classified as an A2L refrigerant, indicating mild flammability. R454B is suitable for systems requiring larger refrigerant charges, if installation conditions limit the room area being served by the system.

The total refrigerant charge in any system must not exceed the allowable maximum specified for the room size and application.

The maximum allowable refrigerant charge is determined based on the floor area of the room(s) served by the system, in accordance with UL/CSA 60335-2-40 requirements.

NOTICE

The nouns in this section are explained as follows:

M_c: The actual refrigerant charge in the system.

A: The actual room area where the appliance is installed. Amin: The required minimum room area.

M_{max}: The allowable maximum refrigerant charge in a room. Qmin: The minimum circulation airflow.

Anv_{min}: The minimum opening area for connected rooms.

TA_{min}: The total area of the conditioned space (For appliances serving one or more rooms with an air duct system).

TA: The total area of the conditioned space connected by air ducts.

3. Installation Safety Guidelines (R454B / A2L)

1. The Room Area Calculation Requirements

⚠ CAUTION

- The space considered shall include any area that contains refrigerant-bearing components or into which refrigerant could potentially be released.
- When determining the maximum allowable refrigerant charge, use the room area (A) of the smallest enclosed and occupied space served by the system.

Determination of Room Area (A) For the purpose of calculating the refrigerant charge limit, the room area (A) shall be determined as follows:

– The room area (A) is defined as the floor area enclosed by the projections of the surrounding walls, partitions, and doors of the space in which the appliance is installed.
– Spaces connected only by drop ceilings, ductwork, or similar openings shall not be considered a single space.
– Units installed at a height greater than 70.
– Rooms located on the same floor and connected by an open passageway may be considered a single room if air circulation between the spaces is unrestricted. determining compliance to Amin, if the passageway complies with all the following.

1) It is a permanent opening.
2) It extends to the floor.

It is intended that people be able to walk through all areas of the connected rooms on the same floor, which are linked by permanent openings in the walls and/or doors between occupied spaces, including gaps between the wall and the floor. These connected areas may be considered a single room when determining compliance with Amin, provided all the conditions outlined in Figure 2-1 are met.

1) Low level opening

① The opening shall not be less than Anvmin in Table 2-1.
② The area of any openings above 11-13/16 inch from the floor shall not be considered in determining compliance with Anvmin.
③ At least 50% of the opening area of Anvmin shall be below 7-7/8 inch from the floor.
④ The bottom of the opening is not more than 3-15/16 inch from the floor.
⑤ The opening is a permanent opening that cannot be closed.
⑥ For openings extending to the floor the height shall not be less than 25/32 inch above the surface of the floor covering.

3. Installation Safety Guidelines (R454B / A2L)

2) High level opening

① The opening shall not be less than 50% of Anvmin in Table 2-1.
② The opening is a permanent opening that cannot be closed.
③ The opening shall be at least 59 inch above the floor.
④ The height of the opening is not less than 25/32 inch.

3) Room size requirement

① The room into which refrigerant can leak, plus the connected adjacent room(s) shall have a total area not less than Amin. Amin is shown in Table 2-3.
② The room area in which the unit is installed shall be not less than 20% Amin. Amin is shown in Table 2-3.

NOTICE

- The requirement for the second opening can be met by drop ceilings, ventilation ducts, or similar arrangements that provide an airflow path between the connected rooms.

3. Installation Safety Guidelines (R454B / A2L)

The minimum opening for natural ventilation (Anvmin) in connected rooms is related to the room area (A). The actual refrigerant charge of refrigerant in the system (Mc), and the allowable MAXIMUM REFRIGERANT CHARGE in the system (Mmax), Anvmin can be determined according to Table 2-1.

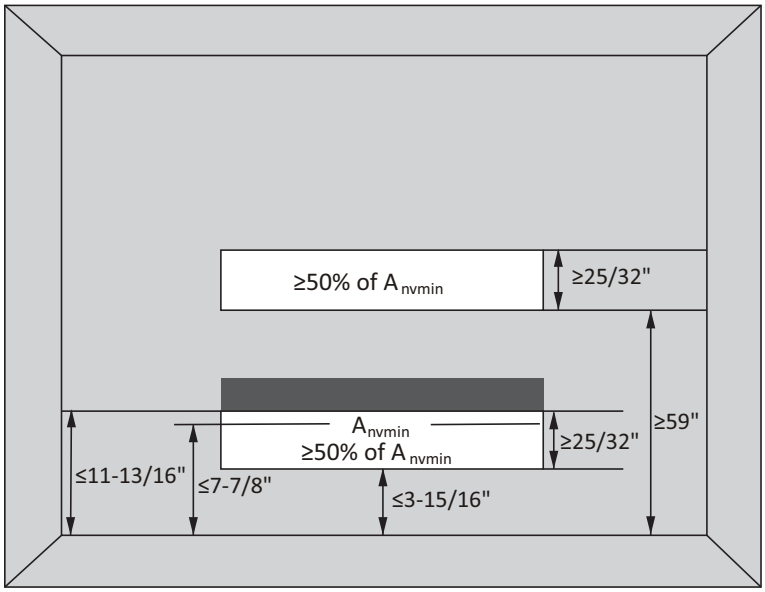


Fig.2-1 Opening Conditions for Connected Rooms

The minimum opening area for connected rooms

Table 2-1

A(ft^2)	M_c (lbs/oz)		M_{max} (lbs/oz)		A_{nvmin}(ft^2)
	lbs	oz	lbs	oz	
40	9	9	2	10	0.9
50	9	9	3	5	0.8
60	9	9	4	0	0.7
70	9	9	4	10	0.6
80	9	9	5	5	0.6
90	9	9	6	0	0.5
100	9	9	6	10	0.4
110	9	9	7	5	0.3
120	9	9	8	0	0.2
130	9	9	8	10	0.2
140	9	9	9	5	0.1
150	9	9	10	0	0.0
160	9	9	10	10	0.0

Note: Take the M_c=9 lbs 9 oz as an example.

For appliances serving one or more rooms with an air duct system, The room area calculation shall be determined based on the total area of the conditioned space(TA) connected by ducts taking into consideration that the circulating airflow distributed to all the rooms by the appliance integral indoor fan will mix and dilute the leaking refrigerant before entering any room.

3. Installation Safety Guidelines (R454B / A2L)

2. The allowed maximum refrigerant charge and required minimum room area

If the fan incorporated to an appliance is continuously operated or operation is initiated by a REFRIGERANT DETECTION SYSTEM with a sufficient CIRCULATION AIRFLOW rate, the allowable maximum refrigerant charge (Mmax) and the required minimum room area(Amin/TAmin) is shown in Table 2-2 and Table 2-3.

The allowable maximum refrigerant charge

Table 2-2

A/TA(ft^2)	M_{max} (lbs/oz)		A/TA(ft^2)	M_{max} (lbs/oz)	
	lbs	oz		lbs	oz
40	2	10	160	10	10
50	3	5	170	11	5
60	4	0	180	12	0
70	4	10	190	12	10
80	5	5	200	13	5
90	6	0	210	14	0
100	6	10	220	14	10
110	7	5	230	15	5
120	8	0	240	16	0
130	8	10	250	16	10
140	9	5	260	17	5
150	10	0			

The allowable minimum refrigerant charge

Table 2-3

M_c (lbs/oz)		A_{min}/TA_{min}(ft^2)	M_c (lbs/oz)		A_{min}/TA_{min}(ft^2)
lbs	oz		lbs	oz	
4	6	66.1	11	0	165.3
4	13	72.7	11	7	171.9
5	4	79.3	11	14	178.5
5	11	86.0	12	5	185.1
6	2	92.6	12	12	191.7
6	9	99.2	13	3	198.4
7	0	105.8	13	10	205.0
7	7	112.4	14	1	211.6
7	15	119.0	14	8	218.2
8	6	125.6	14	15	224.8
8	13	132.2	15	6	231.4
9	4	138.8	15	14	238.0
9	11	145.5	16	5	244.6
10	2	152.1	16	12	251.2
10	9	158.7	17	3	257.9

3. Installation Safety Guidelines (R454B / A2L)

The minimum circulation airflow

Table 2-4

M_c (lbs/oz)		Q_{min}(CFM)	M_c (lbs/oz)		Q_{min}(CFM)
lbs	**oz**		lbs	oz	
4	6	119	11	0	298
4	13	131	11	7	310
5	4	143	11	14	322
5	11	155	12	5	334
6	2	167	12	12	346
6	9	179	13	3	358
7	0	191	13	10	370
7	7	203	14	1	382
7	15	215	14	8	394
8	6	227	14	15	405
8	13	239	15	6	418
9	4	251	15	14	430
9	11	263	16	5	442
10	2	275	16	12	454
10	9	287	17	3	466

CAUTION

- The allowable maximum refrigerant charge of the Table 2-2 or the required minimum room area of the Table 2-3 is availlable only if the following conditions are met:
  - Minimum velocity of 3.28 ft/s, which is calculated as the indoor unit airflow divided by the nominal face area of the outlet. And the grill area shall not be deducted.
  - Minimum airflow rate must meet the corresponding values in Table 2-4, which is related to the actual refrigerant charge of the system (M_c).
  - R454B refrigerant leakage sensor is configured.
- If the actual room area, air outlet height, or refrigerant charge amount are not represented in the tables above, more conservative conditions shall be considered using the data provided in Tables 2-1 through 2-4.

NOTICE

- The maximum refrigerant charge limit described above applies to unventilated spaces. When additional measures are implemented—such as mechanical or natural ventilation—the allowable refrigerant charge may be increased, or the required minimum room area may be reduced.
- When an R-454B refrigerant leak detection sensor is installed in the indoor unit and the required circulation airflow is provided, the maximum allowable refrigerant charge or the minimum required room area may be determined in accordance with Table 2-2 or Table 2-3.

3. Installation Safety Guidelines (R454B / A2L)

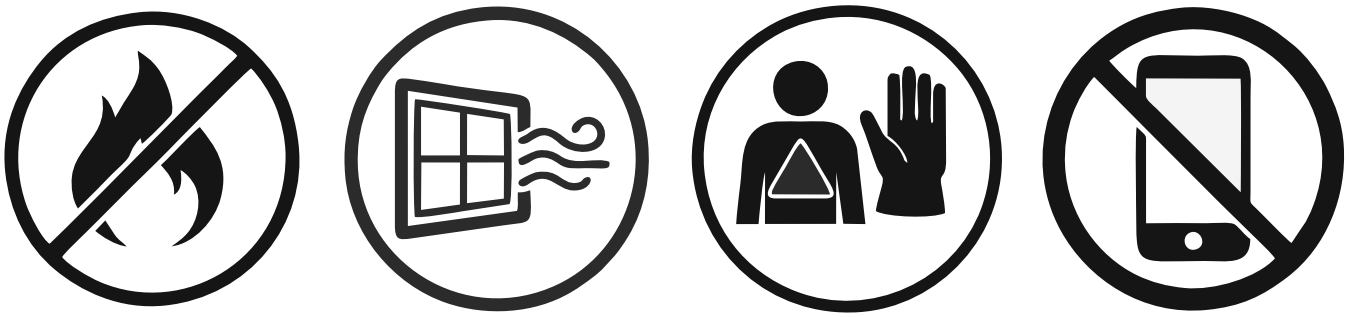
3. Installation Safety Principles

1. Site Safety

- Open flames are prohibited in the installation area.
- Maintain ventilation at all times during installation and service.
- Keep the work area free of oil and debris that could ignite.

2. Operation Safety

- Wear protective clothing and anti-static gloves.
- Do not use mobile phones or other electronic devices near refrigerant piping.



Open Flames Prohibited | **Ventilation Necessary** | **Wear Protective Clothing / Anti-Static Gloves** | **Do Not Use Mobile Phone**

3. Installation Safety

- Use a Refrigerant Leak Detector suitable for A2L (R454B) refrigerants.

Select an appropriate installation location that meets all safety distance requirements.

Please Note:

1. The installation site must be well-ventilated to ensure adequate air circulation and safe operation of the equipment.
2. Installation or maintenance shall be performed in areas free from open flames, welding operations, smoking, drying ovens, or any heat sources exceeding 1018°F (550°C) that could ignite a fire.
3. When installing an air conditioner using refrigerant R454B, anti-static precautions must be taken, such as wearing anti-static clothing and gloves.
4. Choose an installation site where the air inlets and outlets of both the indoor and outdoor units are unobstructed, away from combustible materials and easily accessible for maintenance.
5. If a refrigerant leak occurs during installation, immediately close the outdoor unit's service valve. Allow the refrigerant to fully disperse before re-entering. Any damaged product must be returned to the authorized service center. Welding of refrigerant pipes or other repair attempts on the user's site are strictly prohibited.
6. Avoid installing the indoor unit directly above electrical devices, power outlets, kitchen cabinets, beds, sofas, or other valuable items, or where piping runs along either side of such areas.

3. Installation Safety Guidelines (R454B / A2L)

Suggested Tools

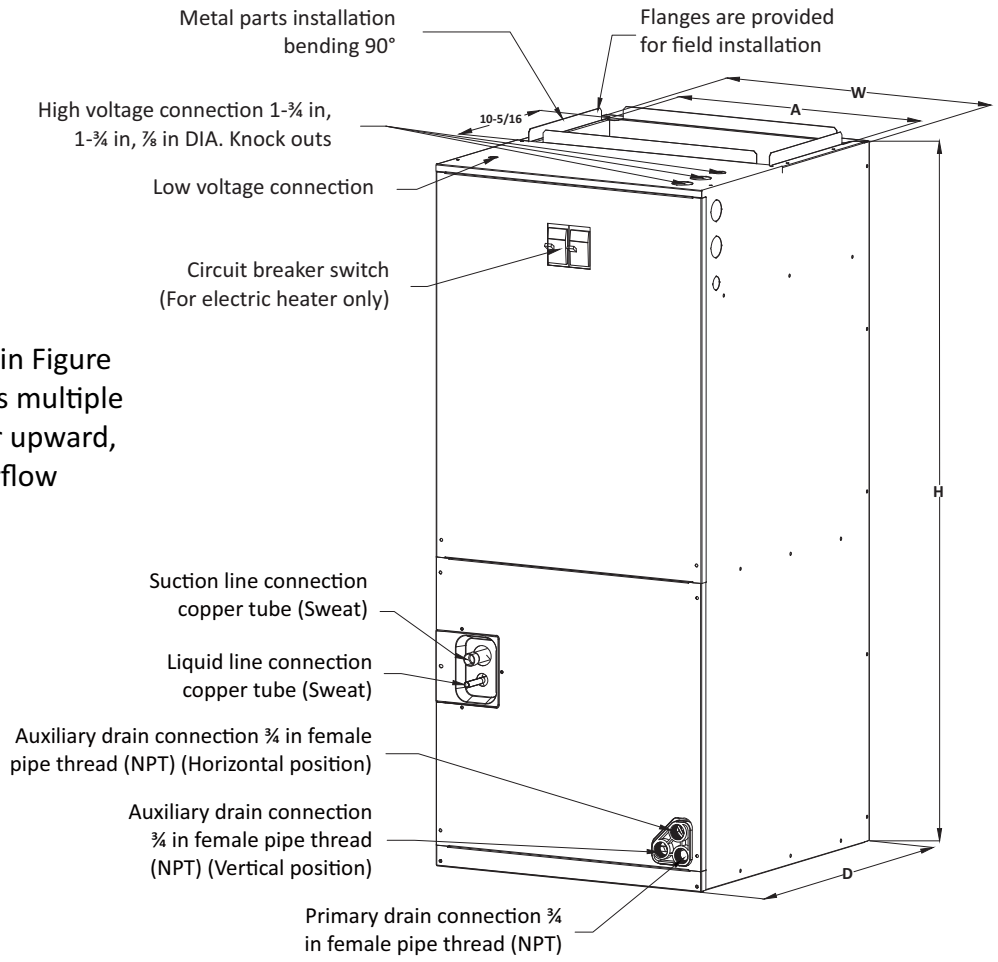
Tool	Picture	Tool	Picture	Tool	Picture
Standard Wrench		Pipe Cutter		Vacuum Pump	
Adjustable/ Crescent Wrench		Screw drivers (Phillips & Flat blade)		Safety Glasses	
Torque Wrench		Manifold and Gauges		Anti-static Gloves	
Hex Keys or Allen Wrenches		Level		Refrigerant Scale	
Drill & Drill Bits		Flaring tool		Micron Gauge	
Hole Saw		Clamp on Amp Meter		Welding Gun	

All tools must be clean, dry, and approved for R454B (A2L) use.

4. Unit Dimensions & General Information

4.1 Indoor Unit Dimensions Overview

Figure 4.1 - Indoor Unit Dimensional Diagram



Upward airflow unit shown in Figure 4.1.This air handler supports multiple return-air configurations for upward, downward, or horizontal airflow applications.

NOTICE

Field Wiring & Knockout Information

- Knockouts for electrical wiring connections are located on the top and both sides of the unit.
- Field-installed electrical conduit is required at the low-voltage wire entry point.
- Failure to properly seal wire entry points may allow animals (such as frogs, snakes, or insects) to enter the control box and cause PCB damage. The manufacturer reserves the right to deny warranty claims resulting from improper conduit installation.

Table 4.1 - Indoor Unit Dimensions

Model	Dimension Inches						Weight Lbs (Net / Gross)
	Height "H"	Width "W"	Dimension "D"	Air outlet "A"	Liquid Line	Suction Line	
KIDT24H2-41X KIDT36H2-41X	46-½	21	21	19-¼	⅜	¾	122 / 154
KIDT48H2-41X KIDT60H2-41X	56	24-½	21	22-¾	⅜	⅞	154 / 190

4. Unit Dimensions & General Information

4.2 Clearance Requirements

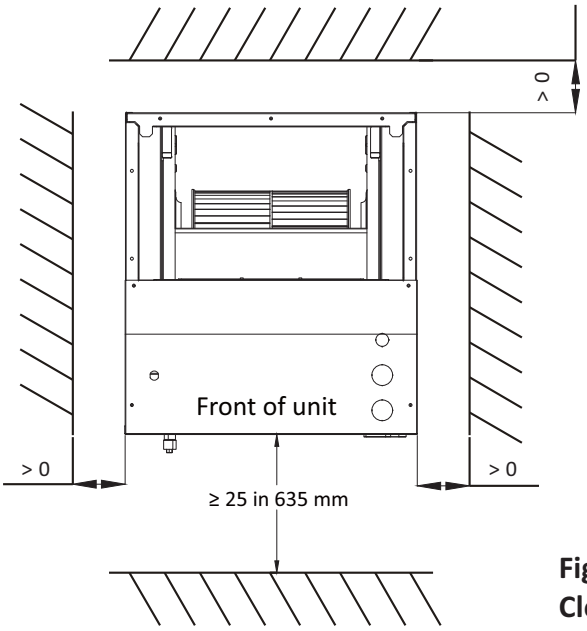


Figure 4.2A - Vertical Installation Clearance Requirements

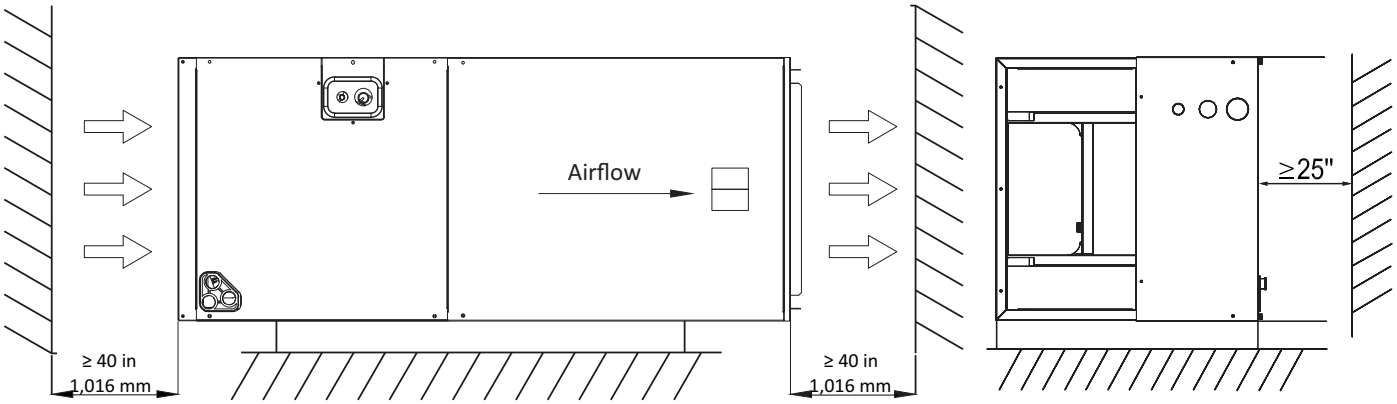


Figure 4.2B - Horizontal Installation Clearance Requirements

To ensure proper installation, airflow performance, and service accessibility, the air handler can be configured for upward, downward, or horizontal airflow applications. This unit supports the following return-air configurations:

- Bottom air return when installed in the upward-airflow position
- Top air return when installed in the downward-airflow position
- Left or right air return when installed in the horizontal-airflow position

Vertical Installation Clearance

- The minimum front clearance must be at least 25 inches (635 mm) to allow proper airflow, service access, and safe operation.

Horizontal Installation Clearance

- The minimum horizontal clearance on both sides of the unit must be at least 40 inches (1016 mm).
- This ensures proper airflow circulation, safe maintenance access, and compliance with recommended installation spacing.

4. Unit Dimensions & General Information

NOTICE

Installation, Wiring & Airflow Configuration Requirements

To ensure proper installation and system performance, the air handler must be installed with the required clearances shown in Figures 4.2A and 4.2B. Failure to follow these clearance requirements may result in equipment damage and/or premature equipment failure.

Maintain all required clearances and refer to the following sections for installation guidance:

- Refer to Section 6 – Electrical Wiring for all high-voltage and low-voltage wiring requirements.
- Refer to Section 8 – Airflow Performance for fan-speed selection and airflow performance data.
- Refer to Section 12 – Internal Function DIP Switch Description to configure the correct airflow settings for upward, downward, or horizontal applications.

Adequate clearance must always be maintained to allow safe installation, wiring access, servicing, and routine maintenance.

WARNING

Fire & Safety Hazard

- Keep all flammable materials and vapors (such as gasoline, solvents, aerosols, or cleaning chemicals) away from the air handler. Failure to follow these instructions may result in fire, explosion, serious injury, or death.

4. Unit Dimensions & General Information

4.3 Installation Orientation Examples

The air handler can be installed in multiple airflow orientations to accommodate a wide range of applications. The following figures illustrate typical installation layouts for vertical upflow, vertical downflow, and horizontal installations (floor-supported or suspended).
These examples show proper drain pan placement, cabinet orientation, and airflow direction to assist with field installation.

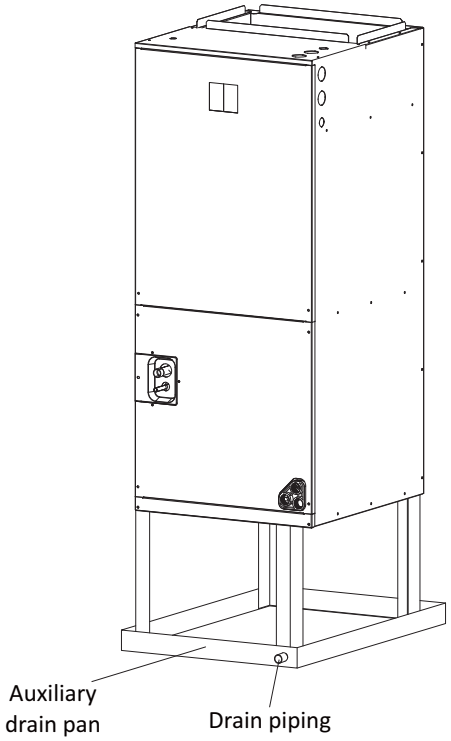


Figure 4.3A - Vertical Upflow Installation (Floor-Mounted)

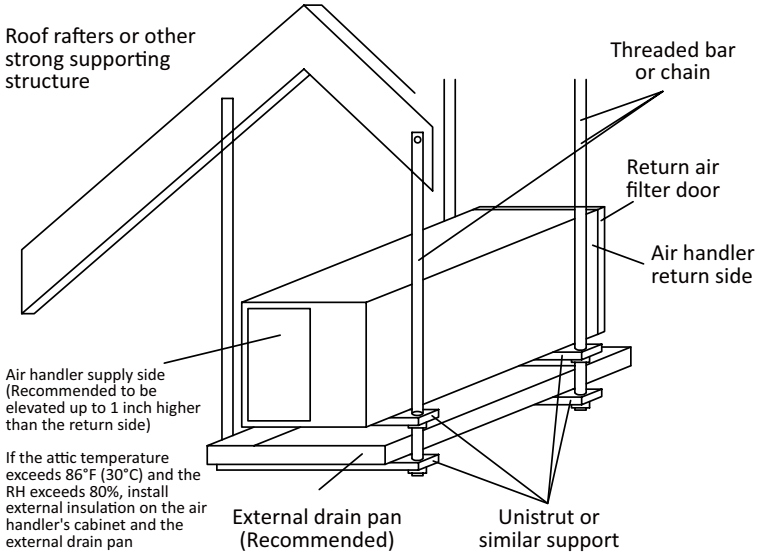


Figure 4.3B - Horizontal Installation (Suspended From Above)

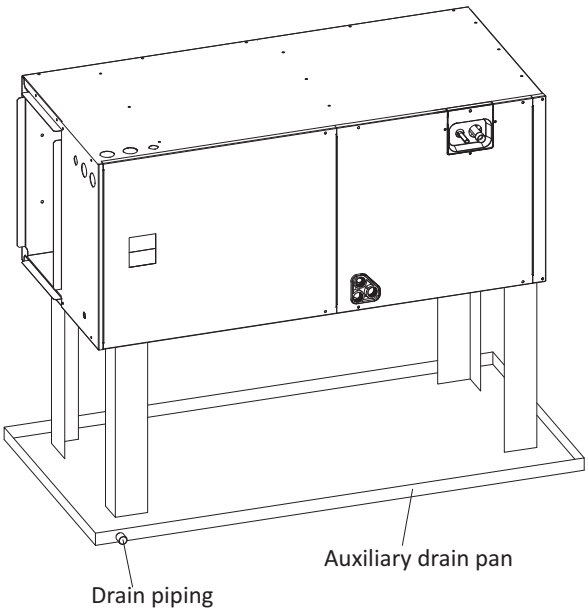


Figure 4.3C - Horizontal Installation (Supported by Floor)

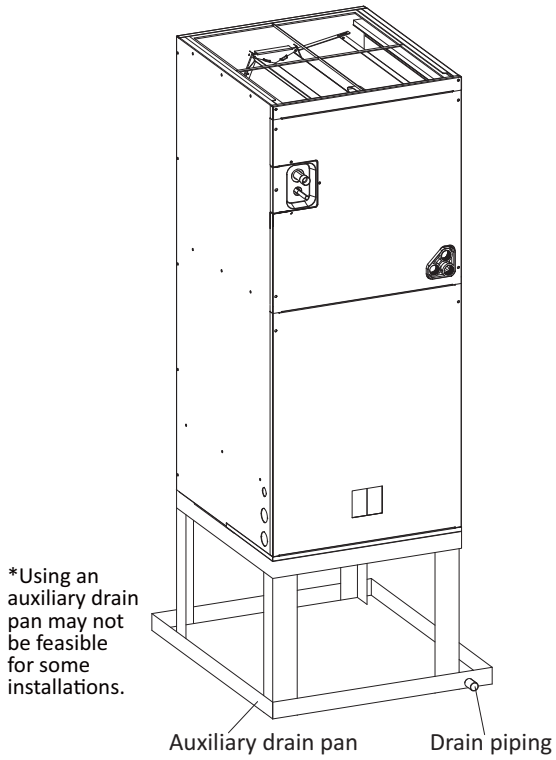


Figure 4.3D - Vertical Downflow Installation

5. Application

5.1 Application Overview

The indoor air handler supports four installation methods to accommodatedifferent site conditions:

- Vertical Up-Flow (Method A) — Factory default setting
- Horizontal Right-Flow (Method B) — Factory default setting
- Horizontal Left-Flow (Method C) — Require coil repositioning and additional conversion steps before installation.
- Vertical Down-Flow (Method D) — Require coil repositioning and additional conversion steps before installation.

Pre-Installation Check

Before installation, confirm that:

- The indoor unit is undamaged.
- The selected installation method matches the duct layout and jobsite requirements.

NOTICE

- The evaporator coil assembly must be repositioned according to the selected airflow direction.
- The water pan must always face upward, regardless of installation method.
  Sensors and wiring must be handled carefully to avoid damage during conversion.
- For horizontal installations, a secondary drain pan (not supplied) is recommended beneath the unit.

The following sections describe the step-by-step procedures required to configure the indoor unit for each airflow application.

5.2 Vertical Upward Airflow (Method A) — Factory Default

The vertical upward airflow configuration is the factory default setting for all models. This configuration is shipped pre-assembled and requires the least amount of modification before installation.

Installation Requirements

- If the return air will be ducted, the return duct must be installed flush with the floor.
- Use a fireproof resilient gasket (⅛ in to ¼ in thick) between the ducts, the cabinet, and the floor to prevent air leakage and vibration.
- Set the air handler directly on the floor over the return-air opening.

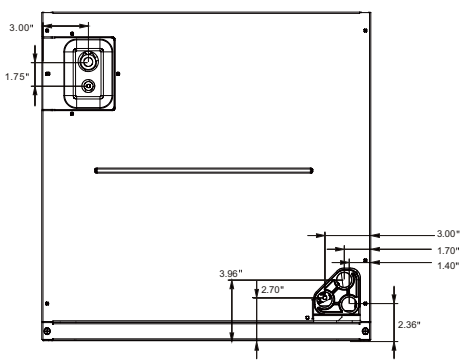


Figure 5.2A - Vertical Upward Airflow Drainage & Coil Dimensions

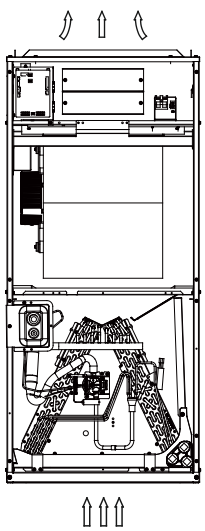


Figure 5.2B- Vertical Upward Airflow Orientation (Method A)

5. Application

NOTICE

- Torque applied to the drainage connection must not exceed 10–15 ft-lbs (follow model-specific guidelines). Excessive force may damage the drain port or cause leaks.
- Drain connections must be lightly tightened—enough to seal, but never overtightened.
- Pipe dimensions, drain locations, and connection clearances for Vertical Upward Airflow are shown in Figure 5.2A.

5.3 Horizontal Right-Flow (Method B) — Factory Default

The Horizontal Right Airflow configuration is the factory default horizontal setting for all models. This configuration is pre-assembled at the factory and does not require coil repositioning for standard installation.

Installation Requirements

- The air outlet is located on the right-hand side of the unit when viewed from the front.
- The unit must be supported and leveled properly to maintain correct condensate drainage.
- When the unit is installed above a ceiling or living space, a field-supplied secondary drain pan is recommended.
- Ensure adequate space on the right side for airflow discharge and service access.

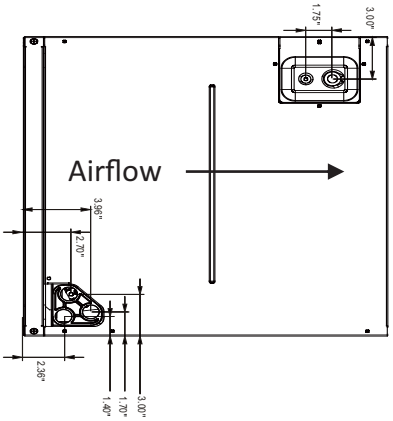


Figure 5.3A - Horizontal Right-Flow Airflow Drainage & Coil Dimensions

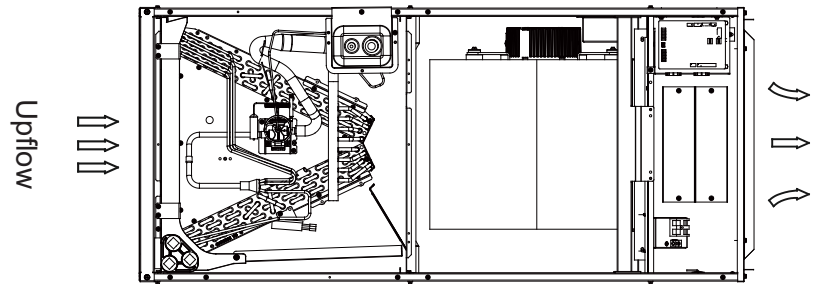


Figure 5.3B- Horizontal Right-Flow Airflow Orientation (Method B)

NOTICE

Drainage & Connection Requirements - Horizontal Right-Flow

- Torque applied to the drainage connection must not exceed 10–15 ft-lbs (follow model-specific guidelines). Excessive force may damage the drain port or cause leaks.
- Drain connections must be lightly tightened—enough to seal, but never overtightened.
- Use a field-supplied auxiliary drain pan when installed above conditioned spaces.
- Pipe dimensions and drain port clearances for Horizontal Right Airflow are shown in Figure 5.3A.

- **Horizontal Right-Flow Orientation Requirements (Corrected)**
- The unit is factory-configured for Horizontal Right-Flow when shipped.
- Ensure the horizontal drain pan is positioned directly under the indoor coil before installation.
- Improper drain pan placement may result in condensate leakage and property damage.

5. Application

5.4 Horizontal Left-Flow (Method C) — Conversion Required

- Horizontal Left-Flow is not factory-configured and requires manual conversion of the coil assembly before installation. This method requires removing the evaporator coil and drain pan, rotating the assembly 180°, and reinstalling it with correct sensor routing and drain alignment.
- Perform the conversion using the procedures in Section 5.6.

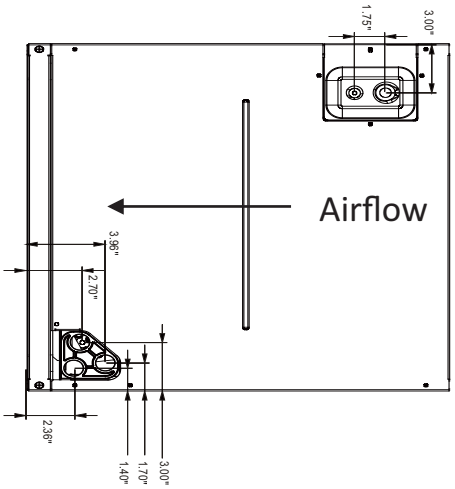


Figure 5.4A - Horizontal Left-Flow Airflow Drainage & Coil Dimensions

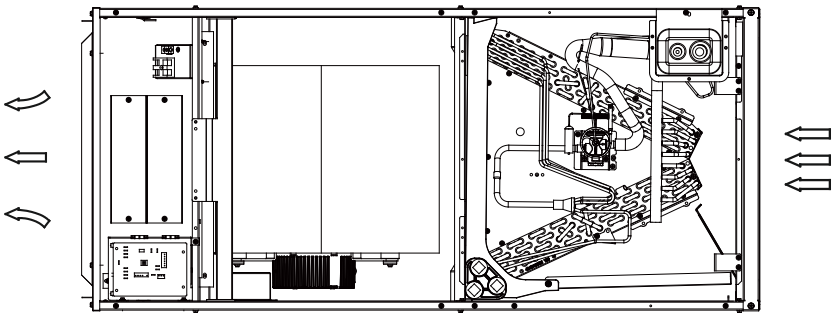


Figure 5.4B- Horizontal Left-Flow Airflow Orientation (Method C)

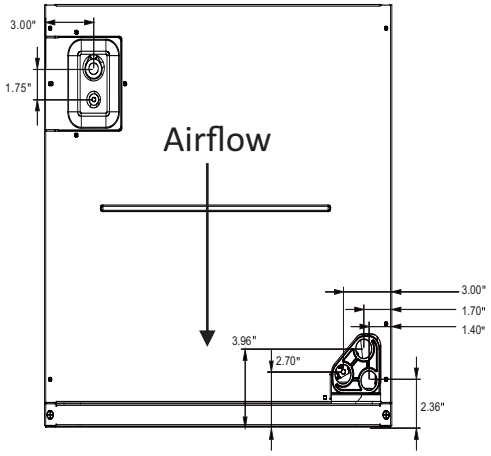


Figure 5.5A - Vertical Down-Flow Airflow Drainage & Coil Dimensions

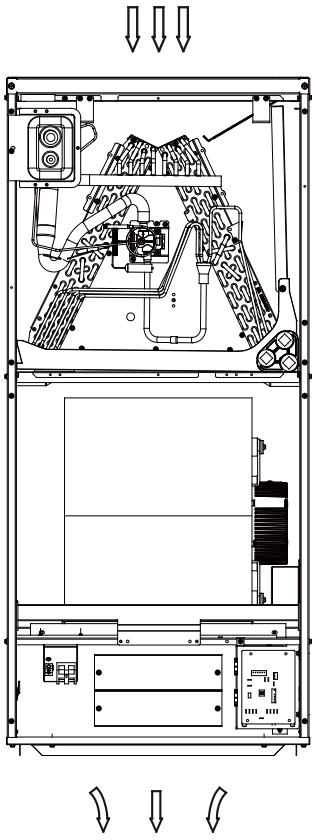


Figure 5.5B- Vertical Down-Flow Airflow Orientation (Method D)

5. Application

NOTICE

- The following applications require completing the full coil-conversion process before installation. Horizontal Left-Flow (Method C) and Vertical Down-Flow (Method D) are not factory-configured and must be manually converted.
- All coil removal, rotation, drain pan alignment, and sensor routing instructions are provided in Section 5.6 — Coil Conversion Procedure.
- Verify that the coil, drain pan, and all sensors (CN17 and CN18) are correctly installed and routed before proceeding with ductwork or electrical connections.
- For Horizontal Left-Flow: After rotation, the horizontal drain pan must be relocated directly beneath the coil to ensure proper condensate collection in the left-flow position. Ensure the horizontal drain pan is positioned directly under the indoor coil before installation.
- Failure to complete the required conversion steps may result in improper airflow, condensate leakage, or equipment damage.

5.6 Coil Conversion Procedure Required - Methods C & D

The following procedure describes the full coil and drain pan conversion process required for both Method C (Horizontal Left-Flow) and Method D (Vertical Down-Flow). This procedure includes removal of cabinet components, disconnection of CN17 and CN18 sensor plugs, reorientation of the coil and drain pan, and correct routing of sensor wiring.

Quick Conversion Steps

These steps provide an overview of the conversion process:

1. Remove the necessary cabinet covers (filter plate, upper cover, evaporator cover plate).
2. Disconnect CN17 (Refrigerant Sensor COM) and CN18 (Temperature Sensor COM).
3. Remove the evaporator coil and drain pan assembly with sensors attached.
4. Rotate the coil and drain pan assembly 180° to match the required airflow direction.
5. Reinstall the coil assembly in the new orientation.
6. Reconnect CN17 and CN18, ensuring proper wire routing through designated grooves.
7. Reassemble all covers and plates, then verify secure installation.

Detailed Conversion Procedure — Sensor Identification & Disassembly

Before beginning the conversion steps, identify the evaporator sensor locations as shown below. Correct identification ensures proper disconnection, routing, and reinstallation.

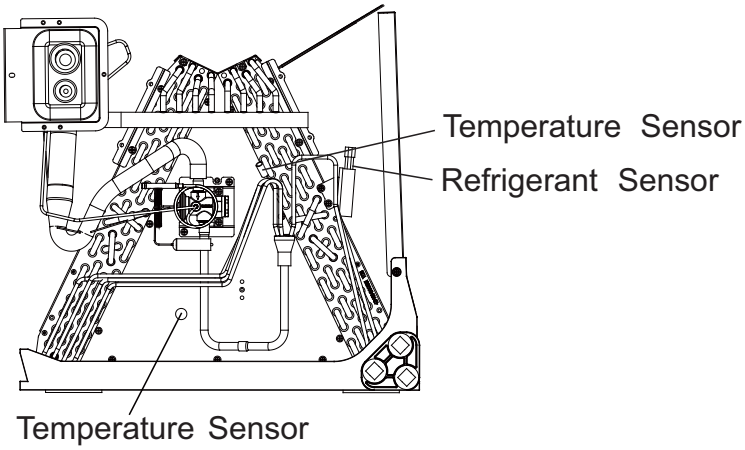


Figure 5.6A — Evaporator Sensor Locations

5. Application

1. Remove the fixed plate of the filter, then remove the filter.

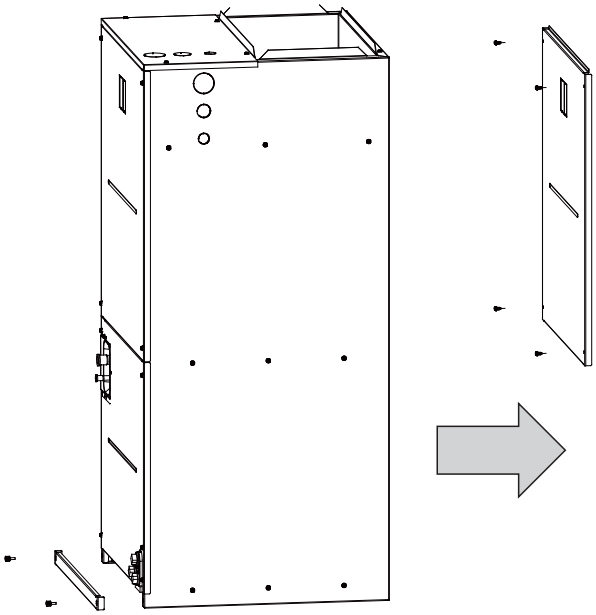


Figure 5.6B – Removal of Filter Plate and Filter

2. Remove the upper cover assembly.

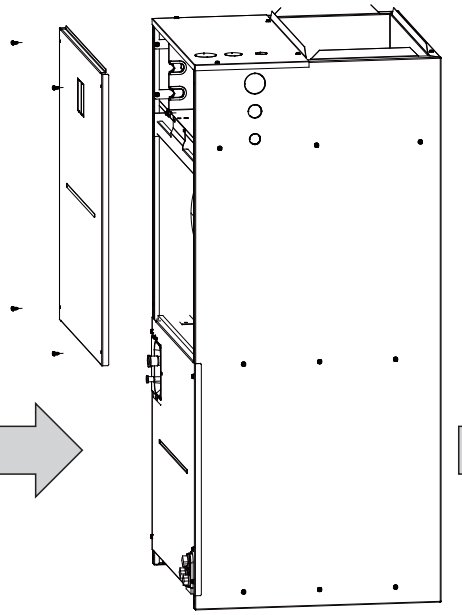


Figure 5.6C – Removal of Upper Cover Assembly

3. Remove the evaporator cover plate.

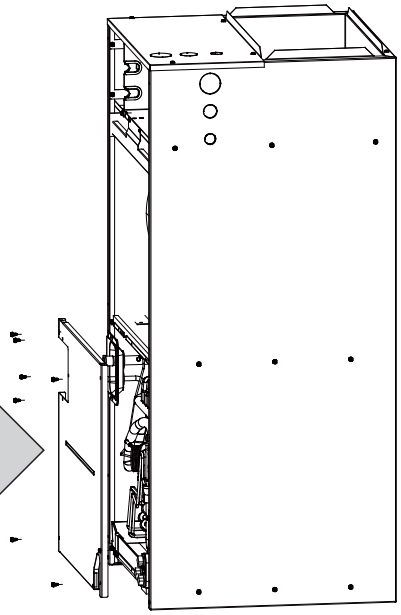


Figure 5.6D – Removal of Evaporator Cover Plat

4. Disconnect the sensor plugs:

- CN17 – Refrigerant Sensor COM
- CN18 – Temperature Sensor COM (T1+T2+T3 bundle)
- Refer to Figure 5.6E for exact plug identification.

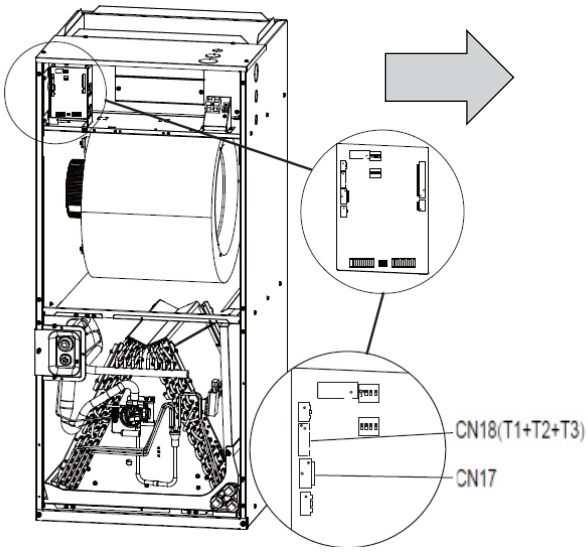


Figure 5.6E – CN17 and CN18 Sensor Plug Locations

5. Remove CN17 and CN18 cable ties.

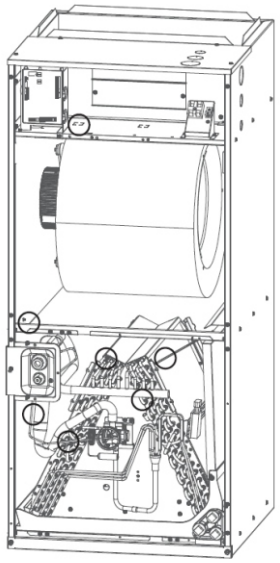


Figure 5.6F – Removal of CN17 and CN18 Cable Ties

6. Remove the evaporator and drain pan assembly, then rotate it 180°.

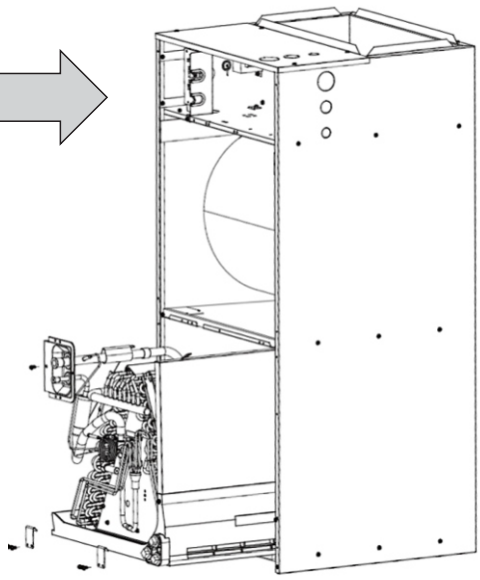


Figure 5.6G – Evaporator and Drain Pan Assembly Removal

7. Reinstall the evaporator assembly in the new orientation.

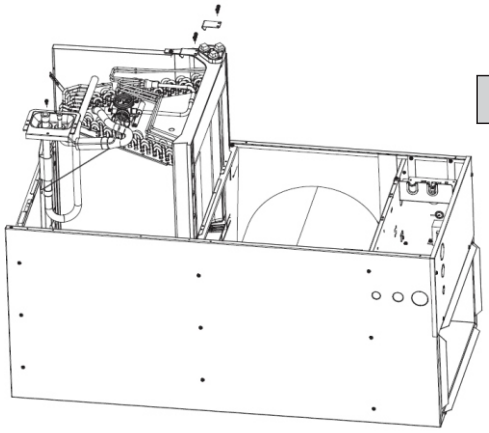


Figure 5.6H– Evaporator Assembly Rotated 180° and Reinstalled

8. Reconnect CN17 and CN18 plugs and tie sensor wires.

- The wire body must pass through the designated wire groove of the water receiving tray and must be secured on the tray hook.

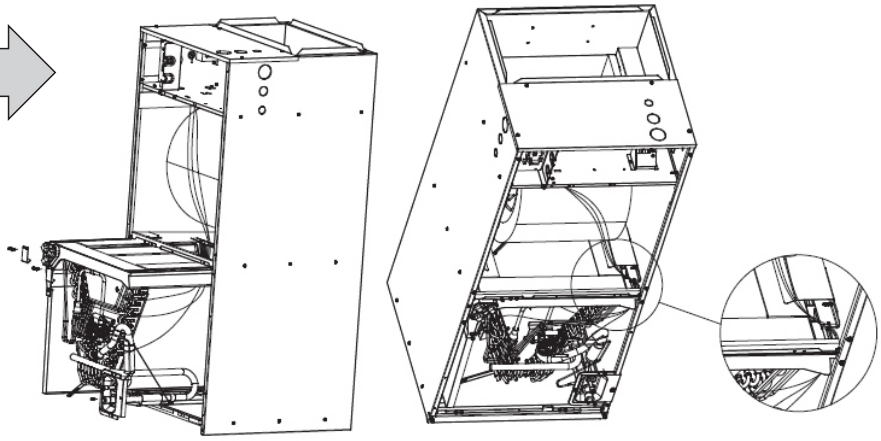


Figure 5.6I — Reconnection of CN17 and CN18 Plugs With Correct Wire Routing Through Tray Groove

9. Reinstall the drain pan fixed plate and auxiliary support plate.

Use calble ties to bind and fix the environmentaltemperature sensitive bag as shown in the figure

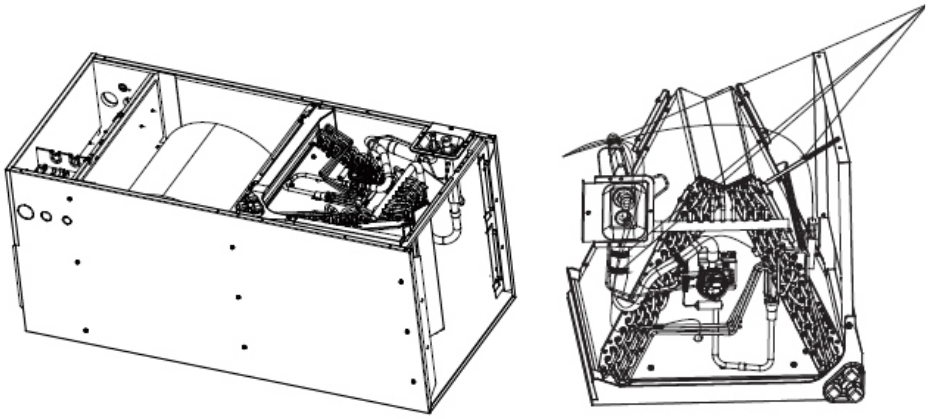


Figure 5.6J — Reinstallation of Drain Pan Fixed Plate and Auxiliary Support Plate

10. Reinstall the evaporator cover plate.

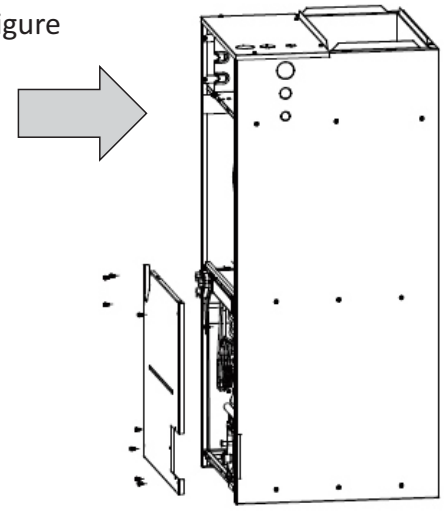


Figure 5.6K — Re-installation of Evaporator Cover Plate

5. Application

11. Reinstall the upper cover assembly.

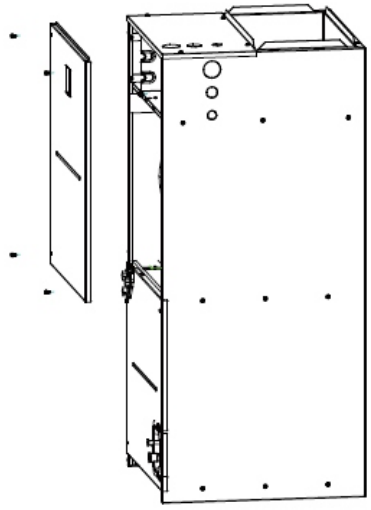


Figure 5.6H– Evaporator Assembly Rotated 180° and Reinstalled

12. Reinstall the filter and filter plate.

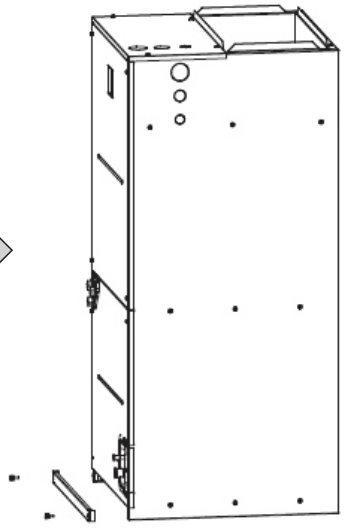


Figure 5.6I — Reconnection of CN17 and CN18 Plugs With Correct Wire Routing Through Tray Groove

13.Connect the wiring according to the wiring diagram.

5.7 Refrigerant Sensor

The refrigerant sensor monitors refrigerant concentration during system operation. If an abnormal condition is detected, the system will respond automatically to ensure safety and equipment protection.

Key Information

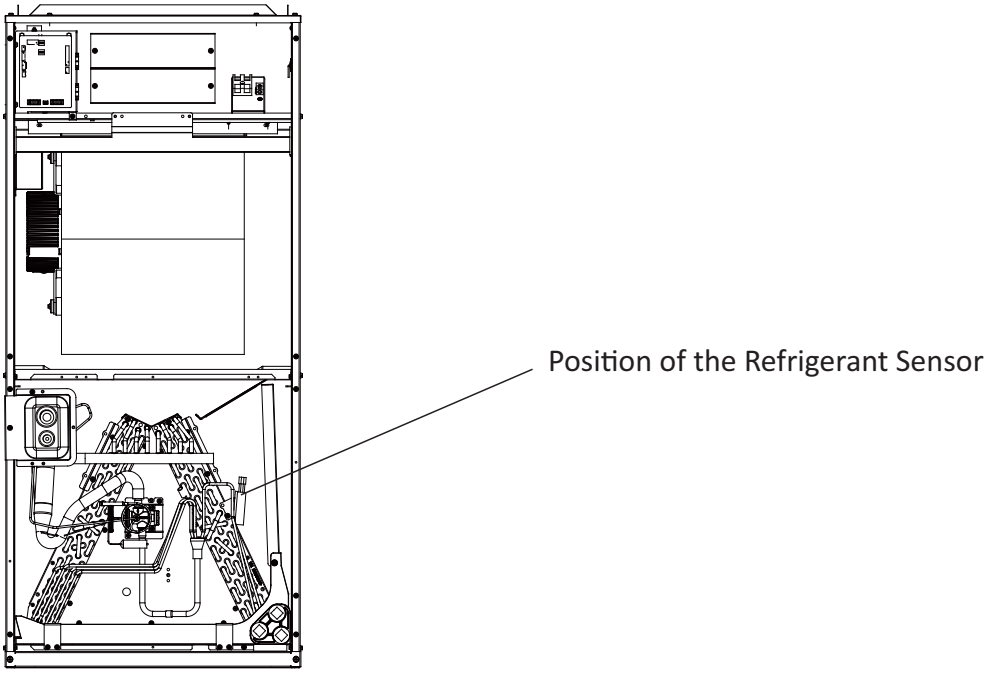
1. The refrigerant sensor must be serviced by a qualified HVAC professional.Only the manufacturer-specified replacement sensor may be used.
2. The design life of the refrigerant sensor is 15 years. Replace the sensor within this service life as part of regular professional maintenance.
3. During operation, the sensor automatically monitors refrigerant concentration.
   If refrigerant concentration reaches the alarm threshold, the system will:
   - Start circulating airflow, and
   - Stop the compressor to prevent unsafe operation.
4. The refrigerant sensor alarm signals are shown below:

Table 5.7 - Refrigerant Sensor Alarm Indications

Condition	24V communication	485 communication
Refrigerant Leak Protection	The red light is steady on	Display "Fd"
The communication of the refrigerant sensor is abnormal	The red light blinks once and turns off once	Display "Hd"

5. The installation location of the refrigerant sensor is shown in Figure 5.7 (sensor location may vary slightly depending on cabinet model).

Figure 5.7 — Position of the Refrigerant Sensor



NOTICE

Sensor & Drain Routing Requirements

- The water receiving tray must remain facing upward after rotation.
- CN17 and CN18 wires must follow the manufacturer-specified routing path through the wire groove and hook.
  Incorrect routing may cause water overflow or sensor malfunction.
- All cable ties must be replaced exactly as shown in the diagrams.

5.7 Installation in an Unconditioned Space

- When the unit is installed in an unconditioned space (such as an attic, crawl space, or garage), unused coil guide rails must be removed to reduce condensation on the exterior surface of the air handler.
- The air handler contains two pairs of coil guide rails used for upward and downward airflow applications. Remove the two unused guide rails by unscrewing the six mounting screws on both sides of the cabinet.
- This prevents surface sweating and maintains proper installation performance.

6. Ductwork

6.1 Installation of the Duct

Dimensions of the Supply Air Outlet / Return Air Inlet

Field ductwork must comply with NFPA 90A, NFPA 90B, and all applicable local codes.

⚠ WARNING

This symbol indicates that ignoring the related instructions **may cause death or serious injury.**

- Do not, under any circumstances, connect return ductwork to any other heat-producing device such as a fireplace insert, stove, or similar appliance.
- Unauthorized use of such devices may result in fire, carbon monoxide poisoning, explosion, personal injury, or property damage.
- Sheet-metal ductwork installed in unconditioned spaces must be insulated and covered with a vapor barrier.
- Fibrous ductwork must follow SMACNA Construction Standards and must comply with UL 181 Class I Air Ducts. Always verify local code requirements for insulation and ducting.

Duct System Requirements

- The duct system must be designed within the allowable external static pressure range of the unit.
- Ensure the system airflow is adequate and all return ducts, grilles, filters, and accessories are accounted for in total static pressure.
- The supply plenum attaches to the 3/4” duct flanges provided with the unit.
- Secure all supply and return ducts to the unit flanges with appropriate fasteners and seal all joints to prevent air leakage.

ⓘ NOTICE

Sensor & Drain Routing Requirements

- If an elbow is added close to the unit, its dimensions must not be smaller than the unit’s supply-duct flange.
- The front flange on the return duct must not be screwed into the area where the electrical wiring is located. Drills or sharp screws may damage insulation or wiring inside the unit.

Return Air Method

Connect the return-air duct to the return inlet of the indoor unit so the blower can draw air evenly through the system.
The distance between the indoor unit and return duct must follow the spacing illustrated in the figures provided.

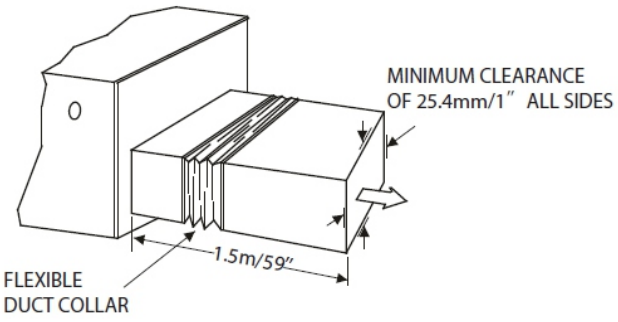


Figure 6.1A — Horizontal Return-Air Installation

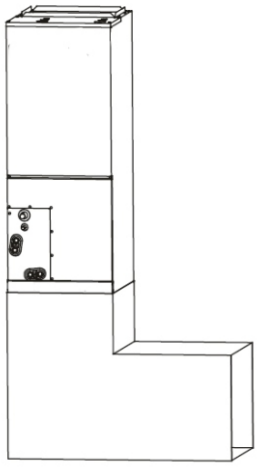


Figure 6.1B — Vertical Upflow Return-Air Installation

6. Ductwork

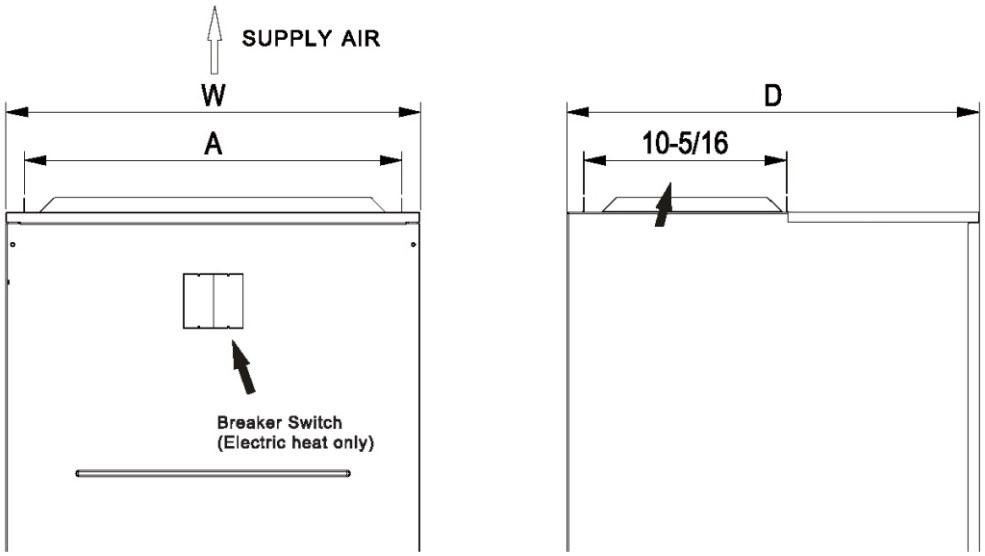


Figure 6.1C. Indoor Unit Supply-Air & Return-Air Duct Dimensions (Front & Left-Side Views)

Supply Air Outlet Dimensions
The supply-air outlet must be fabricated according to the unit's measured dimensions as illustrated in Figure 6C — Indoor Unit Supply-Air & Return-Air Duct Dimensions (Front & Left-Side Views).

- A — Supply-air opening width
- 10-5/16" — Supply-air opening depth

Return Air Inlet Dimensions
The return-air duct must be fabricated to match the return-air inlet dimensions shown in Figure 6C:

- D — Return-air duct width
- W — Return-air duct height

Support Bracket (If Required)
For vertical installations or cases where additional duct support is needed:

- Fabricate a support bracket with a recommended width of 20 mm (0.79 in.).
- The bracket must fully support the return duct collar and maintain proper alignment with the unit.

Quick Installation Steps for Supply-Air Duct Fabrication & Connection
Step 1 — Measure the Supply-Air Outlet
Measure the width and depth of the supply-air opening on the indoor unit to determine the required duct dimensions.These values correspond to A (width) and 10-5/16" (depth) shown in Figure 6C.

Step 2 — Fabricate the Supply-Air Duct (
Based on the measured dimensions, fabricate the duct using four sheet-metal panels:

Panel Types

- Front Panel — bent/formed joining edges
- Back Panel — bent/formed joining edges
- Left Side Panel — flat panel (no bends)
- Right Side Panel — flat panel (no bends)

6. Ductwork

Assembly Sequence

1. Install the Back Panel first (panel with bent edges).
2. Slide Left Side Panel (flat) into the back panel's bent edge.
3. Slide Right Side Panel (flat) into the other bent edge.
4. Install the Front Panel last — its bent edges lock both side panels into place.
5. Secure all joints with screws, nails, or rivets.
6. Seal seams using foil tape or UL-rated sealant to prevent air leakage.

Ensure all panels are cut to match the measurements taken in Step 1.Fasten the duct panels together using approved sheet-metal screws or a nail gun to create a rigid rectangular supply-air duct.

Step 3 — Install the Supply-Air Duct to the Unit

Position the completed supply-air duct onto the unit's supply opening.

- Align the duct with the factory supply-air flange
- Secure using appropriate fasteners
- Seal all seams and joints to prevent air leakage
- Install insulation around the duct as required by code

Step 4 — Seal the Duct Connection

Apply approved duct tape, mastic, or insulation wrap to:

- Seal the connection between the duct and the unit
- Ensure an airtight and R-value compliant installation
- Prevent condensation or air leakage

7. Refrigerant Line Brazing

CAUTION

- Do not install the connecting piping until both the indoor and outdoor units have been properly installed.
- Insulate both the gas and liquid lines to prevent condensation (water leakage).
- Be extremely careful not to damage, dent, or deform the tubing while cutting, flaring, or handling. Any deformation will significantly reduce the unit's heating and cooling efficiency.

7.1 Cutting The Refrigerant lines

When preparing refrigerant pipes,take extra care to cut and flare them properly.This will ensure efficient operation and minimize the need for future maintenance.

1. Use the piping kit accessory or the pipes purchased locally.
2. Measure the distance between the indoor and the outdoor unit.
3. Cut the pipes a little longer than measured distance.

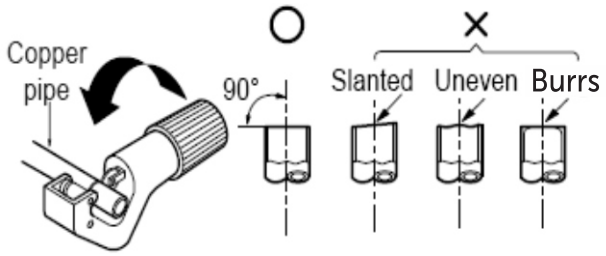


Figure 7.1 - Proper Cutting of Refrigerant Pipes

7.2 Remove Burrs

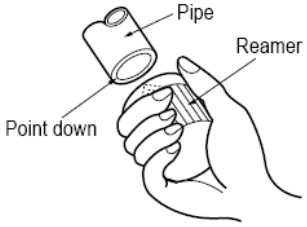


Figure 7.2 - Removing Burrs From the Refrigerant Pipe

Burrs can affect the air-tight seal of refrigerant piping connection. They must be completely removed.

1. Completely remove all burrs from the cut cross-section of the pipe/tube.
2. Hold the end of the copper tube/pipe pointing downward while removing burrs to prevent debris from falling into the tubing.

7.3 Connection of The Refrigerant Pipes – Indoor to Outdoor

- This section explains how to properly connect the gas pipe and liquid pipe between the indoor unit and the outdoor unit.
- Before the refrigerant pipe connection is completed, keep the coil sealed. Refer to the Installation, Operation, and Maintenance manuals of the outdoor Unit for detailed information on the refrigerant line size, duct installation, and refrigerant charging amounts.
- All brazing, nitrogen-purging, and pressure-testing procedures must be performed by qualified HVAC technicians.
- Ensure all piping is clean, properly sized, and free of moisture or contaminants before beginning.

7. Refrigerant Line Brazing

⚠ WARNING

- Brazing operations generate high temperatures and open flame. Keep flammable materials away.
- Use nitrogen during brazing to prevent oxidation inside the pipes.
- Protect all temperature-sensitive components (such as the TXV sensing bulb) from heat damage.

NOTICE

Factory nitrogen charge may escape past rubber plugs during storage. This does not indicate a leaking coil nor warrant a return of the copilot the unit.

Step 1 — Prepare the Indoor Unit Connections

- Remove front panel of the unit
- Remove sealing gaskets from both indoor line-set stubs (gas + liquid).
- Clean the outer surface of both copper lines using emery cloth to ensure a clean brazed joint.

Step 2 — Insert and Align the Line Set

- Insert the gas pipe and liquid pipe into the indoor copper stubs.
- Ensure:
  - Full pipe insertion
  - Proper alignment
  - No stress on tubing

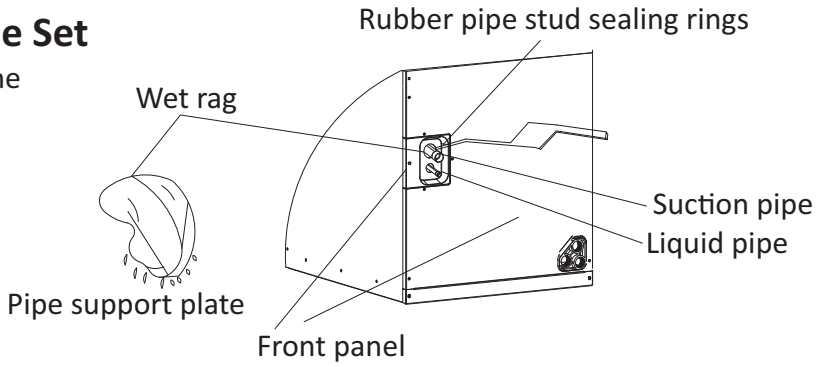


Figure 7.3A - components protection

Step 3 — Protect Sensitive Components

- Do not remove pipe stud metal support plate
- Use a brazing shield in front of the metal pipe support plate to protect the paint and place a wet rag to protect the sealing rings of the pipeline from being damaged by the torch flame.
- Protect and shield the temperature sensing bulb of TXV using a wet cloth or approved heating paste.
- Shield nearby wiring and insulation as necessary.

Step 4 — Nitrogen Purge and Brazing (Indoor Side)

- Begin a low-pressure nitrogen purge through the tubing.
- Maintain nitrogen flow continuously throughout brazing.
- Braze each line separately, starting with the liquid line, then the gas line.
- Allow all joints to cool naturally before stopping nitrogen flow.

Step 5 — Pressure Testing

- Field-made indoor Unit refrigerant joints must be tightness tested.
- After completing the field piping on a split system, you must pressure-test the installed piping with an inert gas, then evacuate (vacuum-test) the system before adding refrigerant. The minimum pressure-test level must be at least the system's low-side design pressure (refer to the unit nameplate for the exact value).

7. Refrigerant Line Brazing

Step 6 —Closing Cabinet and Sealing

- Place the front panel back to the Unit
- Ensure the sealing ring gasket are properly doing the saling
- Cover any exposed portion of the gas/suction line with closed-cell insulation.
- Ensure tight seams to prevent condensation and sweating.

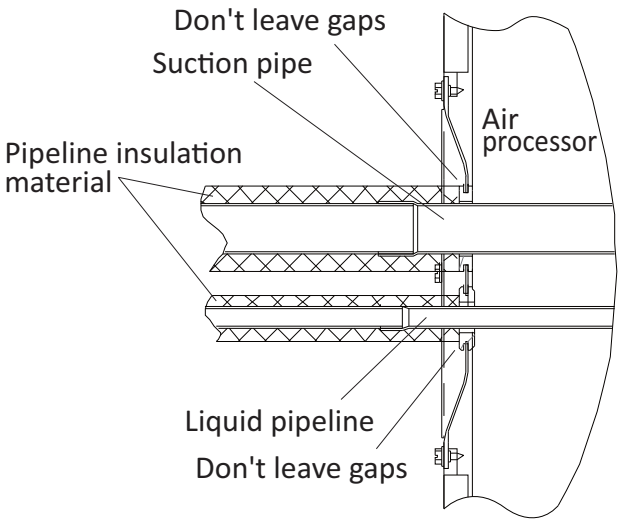


Figure 7.3B - Pipe Insulation and Cabinet Sealing

8. Condensate Drain Connections

Proper drain installation is essential to prevent water leakage, maintain safe operation, and ensure reliable cooling and heating performance. Follow all instructions carefully and verify that all drain ports are correctly connected, sealed, and sloped.

8.1 Components and Drain Port Identification

The indoor unit includes the following condensate management features:

- Two lower drain outlets
  - Pipe ① — Primary Drain
  - Pipe ② — Secondary / Overflow Drain
- One upper drain port (factory-open; must be sealed with the rubber plug)
- Two drain joints (included; used for connecting field-supplied drain piping)
- External drain piping (PVC, elbows, traps, etc.) is field-supplied and not included with the unit.

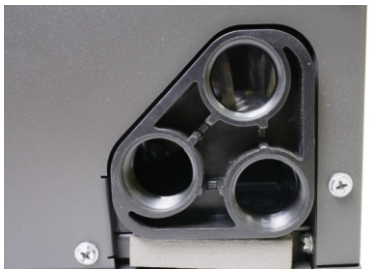


Figure 8.1A — Drain Port Assembly

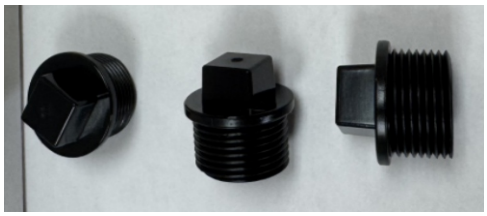


Figure 8.1B — Drain Port Plugs

8.2 Vertical Installations

1. Connect Pipe ① (Primary Drain)
   a. Attach field-supplied drain piping using the provided drain joint.
   b. Ensure proper downward slope of the drain line.
2. Connect Pipe ② (Secondary Drain)
   a. Connect the second drain outlet using the remaining drain joint.
   b. Ensure both outlets are connected to allow proper condensate drainage.
3. Seal the Upper Drain Port
   a. Install the rubber drain plug into the upper port.
   b. The upper port must remain sealed for all installations.
4. Ensure all external drain piping is sloped downward at least ¼ in. per foot (20 mm per meter).
5. Inspect all connections to confirm they are properly sealed.

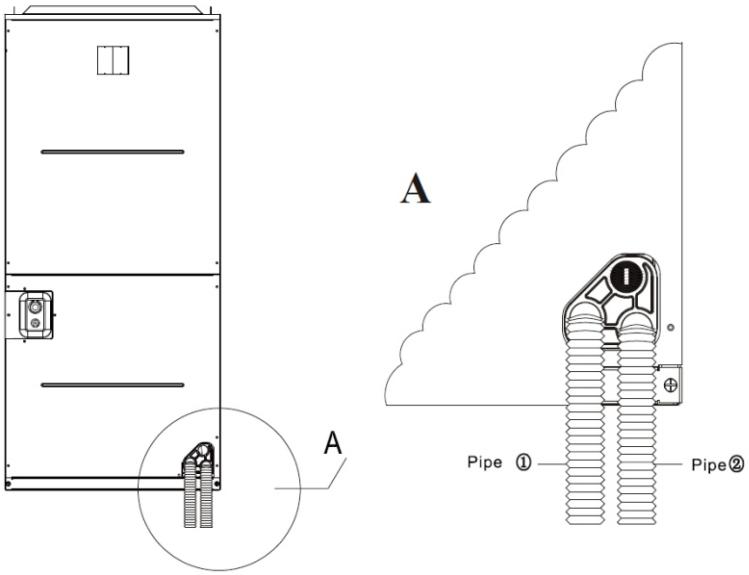


Figure 8.2 - Vertical Drain Connection Example

8. Condensate Drain Connections

8.3 Horizontal Installation

When the unit is installed in a horizontal position (either horizontal right or horizontal left), the two lower drain outlets must be connected as shown in Figure 8.

Installation Steps

1. Connect Pipe ① (Primary Drain)
   - Attach field-supplied drain piping using the provided drain joint.
   - Ensure proper downward slope of the drain line.
2. Connect Pipe ② (Secondary Drain)
   - Connect the second drain outlet using the remaining drain joint.
   - Ensure both outlets are connected to allow proper condensate drainage.
3. Seal the Upper Drain Port
   - Install the rubber drain plug into the upper port.
   - The upper port must remain sealed for all installations.
4. Verify Drain Pan Position
   Ensure the horizontal drain pan is correctly installed beneath the coil.

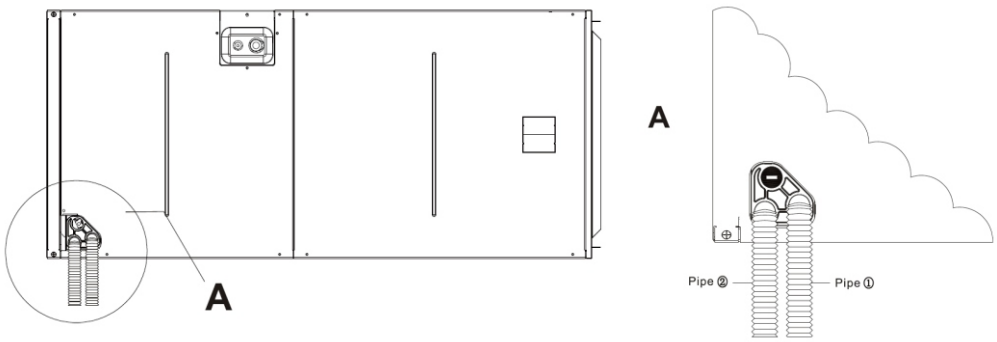


Figure 8.3 - Horizontal Right Drain Connection Example

⚠ WARNING

- Brazing operations generate high temperatures and open flame. Keep flammable materials away.
- Use nitrogen during brazing to prevent oxidation inside the pipes.
- Protect all temperature-sensitive components (such as the TXV sensing bulb) from heat damage.

9.1 Field Wiring Requirements

Proper field wiring is essential for safe and reliable operation of the unit. The illustration below shows the field wiring connection point inside the air handler. Refer to the diagram when routing power and control wiring into the unit.
Minimum wire sizes must follow the ampacity requirements shown in the table below. All supply circuit wiring must be copper conductors with insulation rated for at least 90°C (194°F).

9. Electrical Wiring

⚠ WARNING

- All electrical wiring must be performed by qualified personnel and must comply with applicable national and local electrical codes.
- Refer to the unit nameplate, wiring diagram, and electrical data provided in this manual for all power and control wiring requirements.
- Disconnect all power to the unit before installing or servicing. More than one disconnect switch may be required to de-energize the equipment. Hazardous voltage can cause severe personal injury or death. Ground the condensing unit according to National, State, and Local code requirements.

9.1 Field Wiring Requirements

Proper field wiring is essential for safe and reliable operation of the unit. The illustration below shows the field wiring connection point inside the air handler. Refer to the diagram when routing power and control wiring into the unit.
Minimum wire sizes must follow the ampacity requirements shown in the table below. All supply circuit wiring must be copper conductors with insulation rated for at least 90°C (194°F).

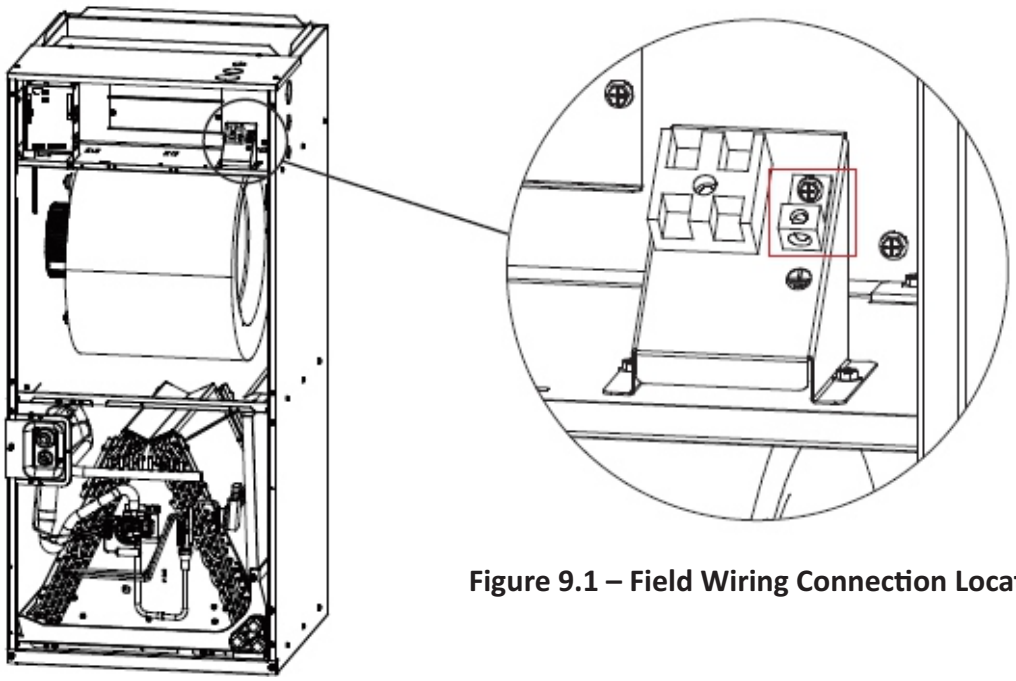


Figure 9.1 – Field Wiring Connection Location

9. Electrical Wiring

Table 9.1 – Minimum Cross-Sectional Area and AWG of Power and Signal Cables

Wiring material ampacities	AWG
4	22
7	20
10	18
13	16
18	14
25	12
30	10
40	8
65	6
70	4

9.2 Power Wiring

It is important that proper electrical power is available for the unit model being installed.

General Requirements

- Install a branch-circuit disconnect of adequate size, located within sight of and easily accessible to the unit.
- When installing an electric heater, equip the device with one or two 30-60 amp circuit breakers.These circuit breakers protect internal wiring and act as disconnecting devices when short circuits occur. The circuit breaker installed in the device does not provide overcurrent protection for the power connection, so its size may be larger than that of the branch circuit protection.
- Supply power wiring must be copper conductors, minimum 167°F (75°C) insulation rating.
- Refer to the Electrical Data table for required minimum circuit ampacity (MCA) and maximum overcurrent protection (MOCP).
- Use HACR-type breakers or fuses as permitted by local code.

NOTICE

- Use the three ⅞ inch, 1-⅜ inch, and 1-¾ inch diameter knock-out holes to connect high-voltage wires to the unit
- Connect the high-voltage L1 & L2 wires to the red and black wires terminal block in the control part of the air handler

9. Electrical Wiring

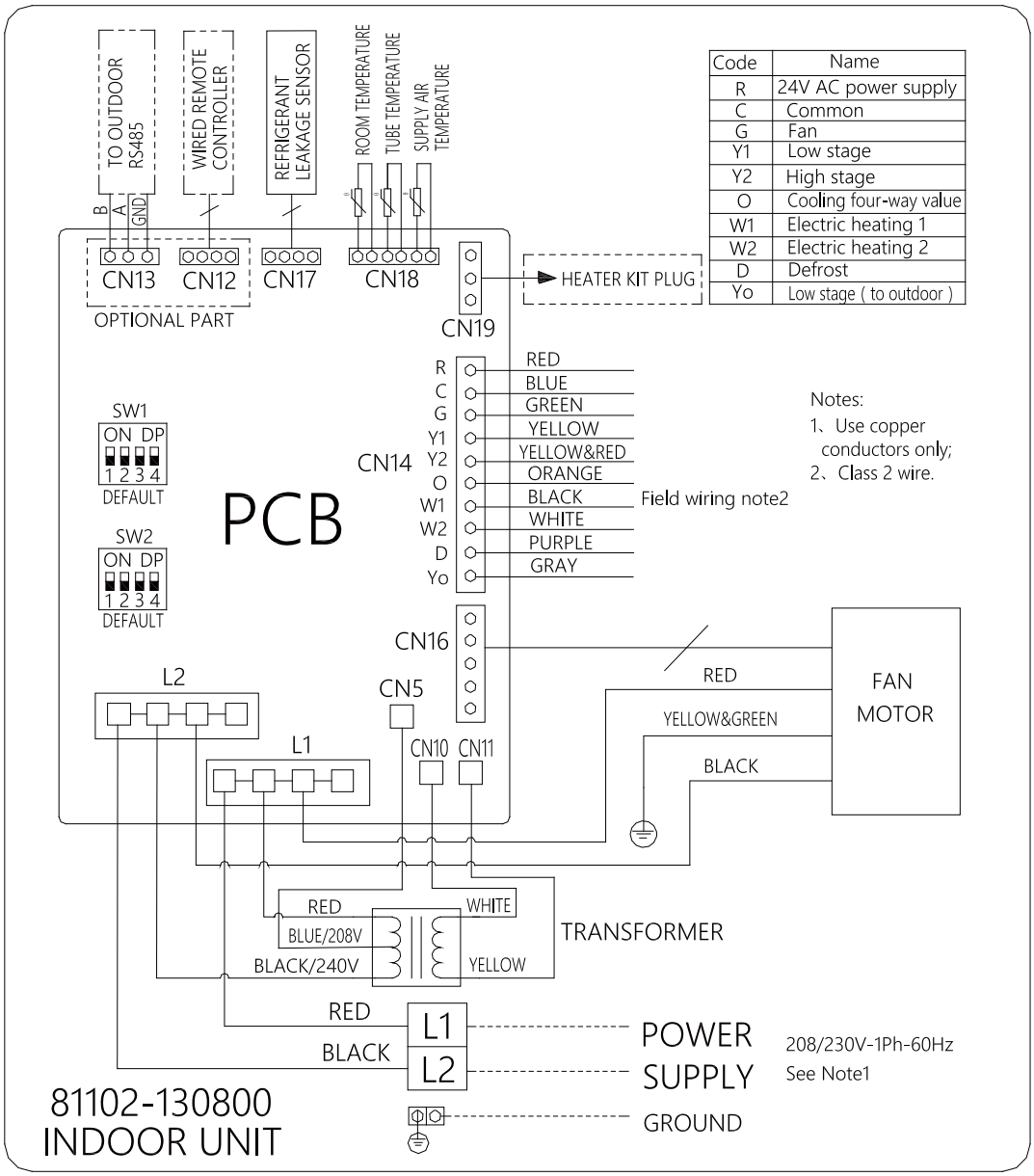


Figure 9.2 — Indoor Unit Wiring Diagram

⚠ WARNING

- The unit must be grounded. Failure to do so may result in electrical shock, personal injury, or death.

- Grounding may be performed using metal conduit when installed according to electrical codes.
- Ground wires may also be attached to the ground lug(s) provided in the unit wiring compartment.
- If multiple power circuits are used (e.g., with electric heat kits), each circuit must be individually grounded to the designated ground lug.

9. Electrical Wiring

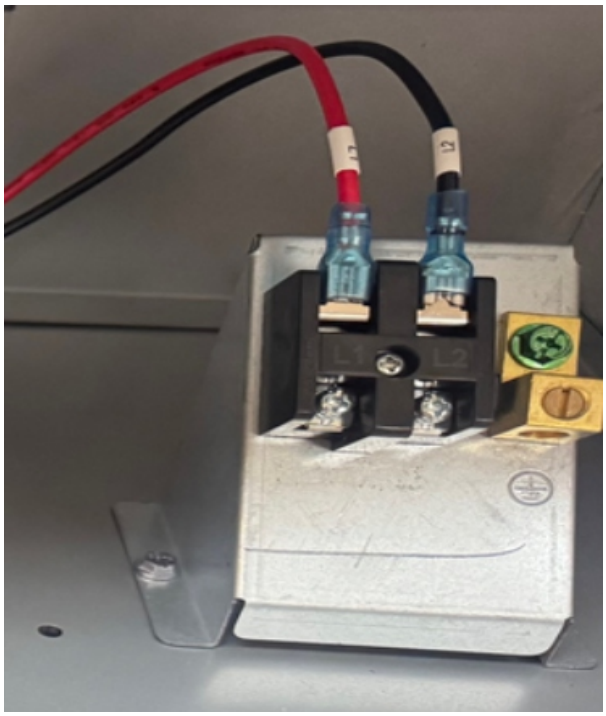


Figure 9.3 - High Voltage Connection Ports

9.4 Control Wiring - Low Voltage

General Requirements

- Do not run the low-voltage control line in the conduit together with the high-voltage line. Keep the
- distance between the two catheters according to local codes.
- Use 18 AWG minimum, color-coded control wiring if the wiring runs less than 100 ft (30.5 m).Use 16 AWG wire for over 100 ft (30.5 m) runs.
- Follow the wiring diagrams located on the back side of the air handler blower access panel.
- Maintain clear separation between low-voltage control wiring and line-voltage wiring.

9.5 Wiring Configuration Overview

Klimaire indoor and outdoor units support two different communication control modes. Selecting the correct wiring configuration is essential and must be based on the thermostat type and system requirements.

The two available communication modes are:

1. RS-485 Digital Communication Mode
2. 24V ON/OFF Control Mode (Factory Default - Standard Thermostat Control)

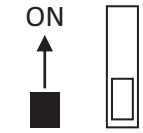
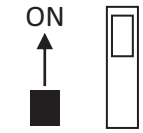
9. Electrical Wiring

How to Choose the Correct Communication Mode
Use the table below to determine which mode applies to your installation:

Table 9.5A — Communication Mode Selection Guide

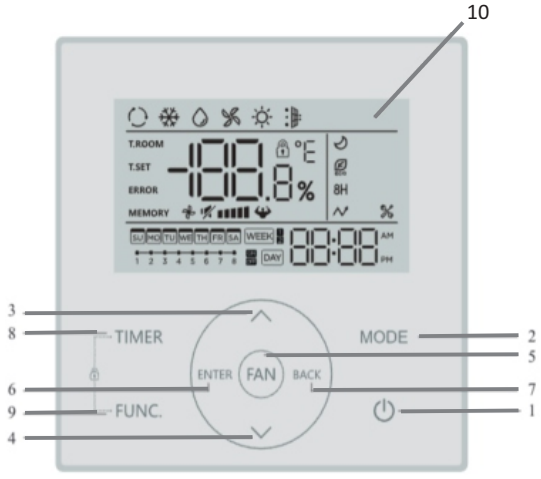
Application	Select Mode	DIP Switches
Using Klimaire Wired Remote Controller	RS-485 Mode	ODU SW1-3 = ON, AHU SW2-1 = ON
Using 24V Standard Thermostat (Default Mode)	24V ON/OFF Mode	AHU SW2-1 = OFF

Table 9.5B - DIP Switch Setting to Select Communication Mode

Dip bit	Dip code	Function description
SW2-1		Factory default; 24V ON/OFF control, using 24V thermostat control unit operation
		RS485 communication control; the need to purchase wire controllers and communication lines from the manufacturer to meet the use of accessories

1. RS-485 Communication Mode (Digital Control)

RS-485 mode is used when installing the Klimaire wired remote controller and allows direct digital communication between the indoor and outdoor units.



1 [ON/OFF] button
2 [MODE] button
3 [UP] button
4 [DOWN] button
5 [FAN SPEEDS button
6 [ENTER] button
7 [BACK] button
8 [TIMER] button
9 [FUNC.] button
10 LCD

Figure 9.5A - RS-485 Communicative Thermostat - Button Definitions

9. Electrical Wiring

Key Points – RS-485 Communication Mode

- RS-485 communication is only available when a Klimaire KOIT outdoor unit is paired with a Klimaire KIDT indoor unit.

- Both indoor and outdoor units must have their DIP switches correctly configured:
  - Outdoor Unit: ODU SW1-3 → ON
  - Indoor Unit (AHU Board): AHU SW2-1 → ON

- This mode uses quick-plug communication wires, including:
  - Wired Controller Wire
  - Indoor/Outdoor Unit Connection Wire

- A thermostat extension cable (30 ft or 50 ft) with quick-plug ends is available if extended communication distance is required.
- RS-485 mode provides digital communication and allows the use of advanced Klimaire accessories such as the wired wall controller.

RS-485 Communication Mode — Required Components & Cable Identification

- **Wired Remote Controller with Wi-FI**

- **Thermostat Cable with Plugs**

- **Outdoor - Indoor RS-485 Communication Cable**

NOTICE

- RS-485 communication wiring is available only when the air handler (indoor unit) and the outdoor unit are both Klimaire-paired compatible systems.
- This wiring method enables data communication between the indoor control board, the wired controller, and the outdoor unit controller.

The following instructions describe how to complete the RS-485 communication wiring between:

- The outdoor unit communication terminal
- The indoor unit controller connection wire
- The wired wall controller
- The required DIP switch settings on both control boards

9. Electrical Wiring

Step 1 — Prepare the Outdoor Unit (ODU) for RS-485 Communication

1. **Remove the protective sleeve** of the outdoor unit to access the communication wiring compartment.

2. **Verify DIP Switch Setting (Outdoor Unit):** Ensure the outdoor unit DIP switch ODU SW1-3 is set to **ON**.

3. Connect the communication wires: Firmly mate the Outdoor Unit Communication Wire (the single communication wire coming from inside the outdoor unit) to the Indoor/Outdoor Unit Connection Wire until the connectors click securely.

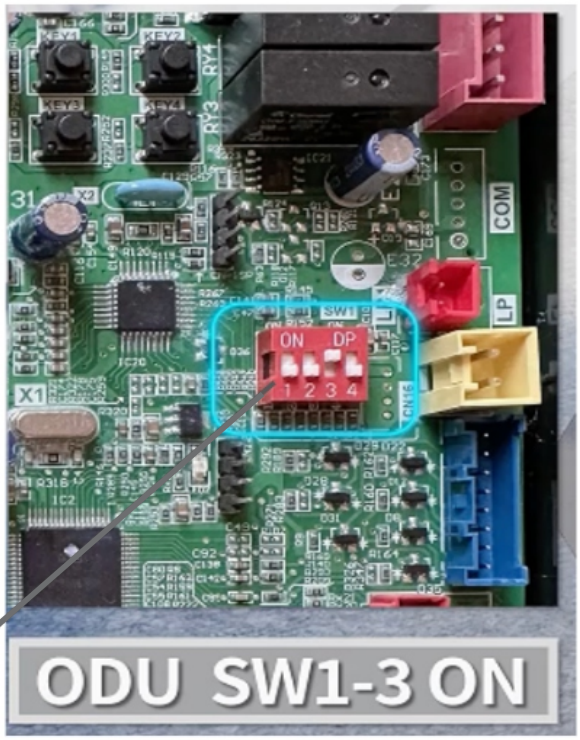


FIGURE 9.5B - ODU SW1-3 ON

Step 2 — Connect RS-485 Communication at the Indoor Unit (AHU)

1. Remove the protective cover of the indoor unit's wire controller compartment to access the internal communication wiring.

2. Route the communication wires through the knockout: Pass the Wired Controller Wire and the Indoor/Outdoor Unit Connection Wire (RS-485), through the designated knockout opening to ensure proper wire management before connecting.

3. Verify DIP Switch Setting (Indoor Unit – AHU): Ensure DIP switch AHU SW2-1 is set to ON.
   - This enables RS-485 communication mode between the indoor and outdoor units.

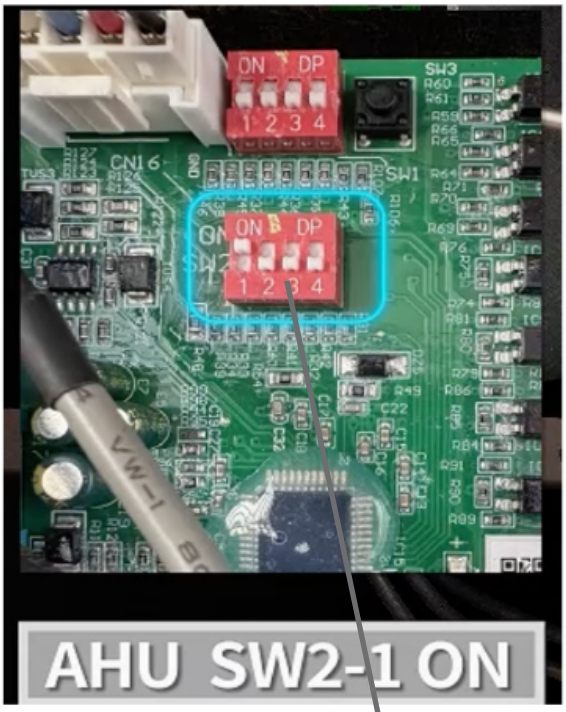


FIGURE 9.5C
AHU SW2-1 ON
Indoor Unit

4. Easy Connections

1. RS-485 Cable (Black Plugs)

- Connect the RS-485 cable **black female plug** into the indoor unit's **black male plug.**
- Connect the RS-485 cable **black female plug** into the outdoor unit's **black male plug.**

2. Thermostat Cable with Plugs (Red Plugs)

- Connect the **red female** plug of the thermostat cable into the thermostat's **red male** plug.
- Connect the opposite **red male** plug into the indoor unit's **red female** plug.

9. Electrical Wiring

Typical Installation Diagram for the Klimaire Wired Remote Controller

Connect the wire from the master control board of the indoor unit to a connecting cable. Then connect the other side of the connecting cable to the wired control.

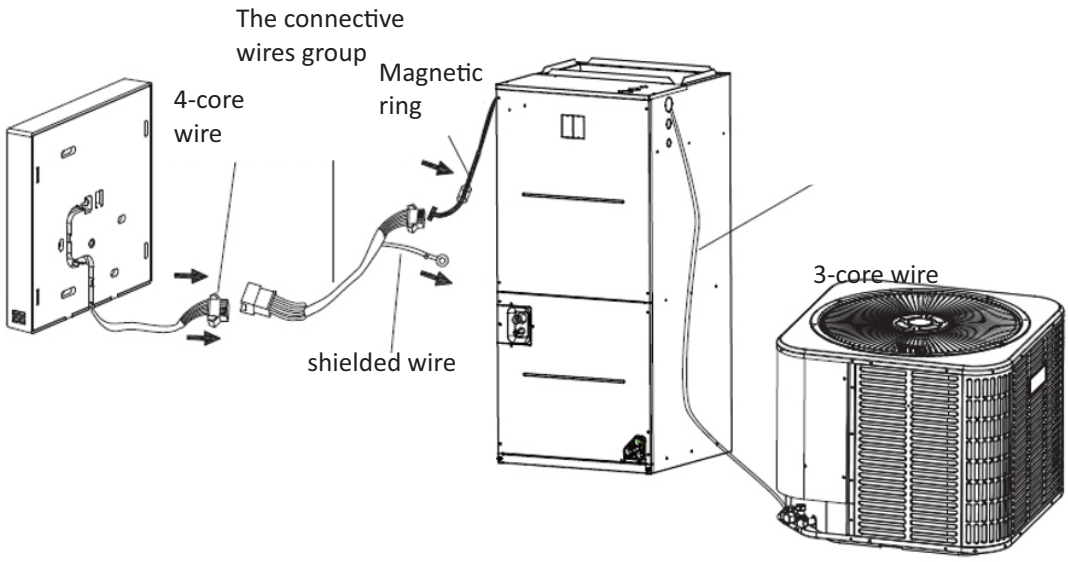


Figure 9.5D - Typical Installation Diagram for the Klimaire Wired Remote Controller

NOTICE

- For more details, refer to the Wired Remote Controller Owner's Manual.

2. 24V ON/OFF Control Mode (Standard Thermostat Control)

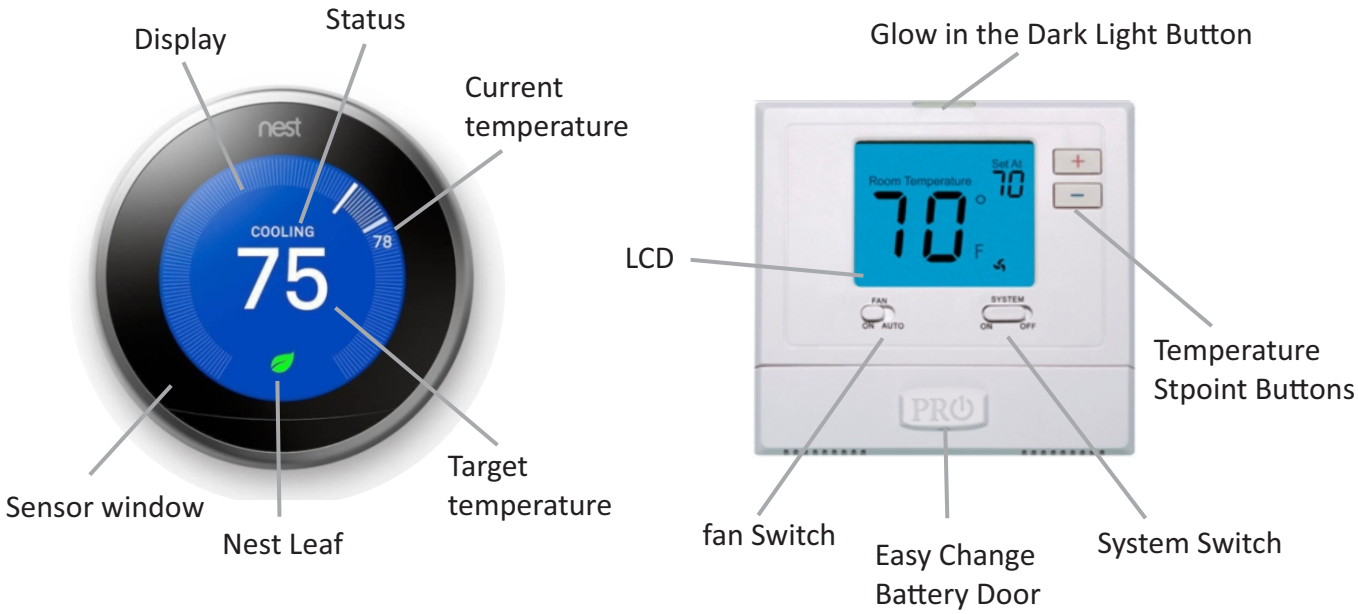


Figure 9.5E- 24-Volt Typical Communicative Thermostats

9. Electrical Wiring

24V mode is used when operating the system through a traditional 24V thermostat rather than a Klimaire wired controller.
In this mode, the indoor unit responds to simple ON/OFF signals from the thermostat to control heating, cooling, and fan operation.

How 24V Mode Works

- The thermostat sends low-voltage ON/OFF commands to the indoor unit.
- No digital communication wiring (RS-485) is used.
- DIP switch **AHU SW2-1 must be set to OFF** to enable 24V thermostat control.
- This mode is compatible with many standard thermostats, including smart thermostats such as Nest, Honeywell, and other conventional 24V systems.

Wiring Notes 24V Mode Thermostat

- Ensure the power supply is consistent with the nameplate rating of the unit.
- All wiring, grounding, and power connections must comply with local electrical codes.
- Low-voltage wiring must be color-coded and use No. 18 AWG conductor.
- Single-stage electric auxiliary heating requires a 2H thermostat.
- Two-stage electric auxiliary heating requires a 3H thermostat.
- W1: First stage of electric emergency heat (indoor unit).
- W2: Second stage of electric emergency heat (indoor unit).

9. Electrical Wiring

24V communication Thermostat / Control Wiring

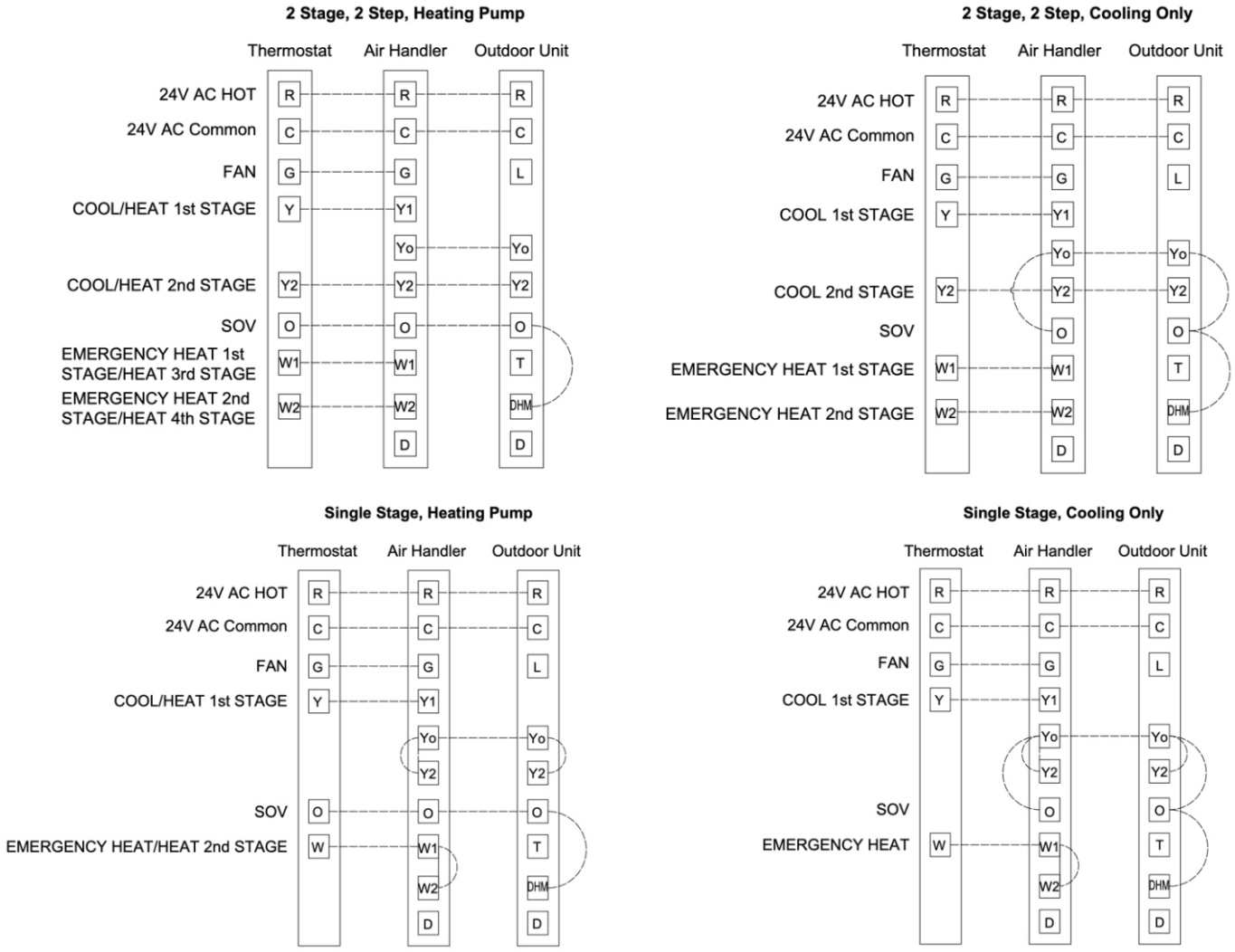


Figure 9.4D — Control Wiring Connections

Note : When auxiliary or electric heat is engaged, the indoor fan automatically operates in high stage.

Table 9.4 - Terminal Designations

Unit Terminal	Terminal defination
R	24VAC power supply for thermostat from secondary transformer
C	Common wire
G	Fan motor relay
Y1	Compressor stage 1, low load-output control
Y2	Compressor stage 2, high load-output control
O	Cooling four-way valve
W1	Heating stage 1, electrical heater low load-output control
W2	Heating stage 2, electrical heater high load-output control
D	Outdoor Compressor
Yo	Defrost signal (receiving the outdoor unit defrost signal)

9. Electrical Wiring

NOTICE

- Some thermostats may require the W2/AUX terminal for heat-pump auxiliary heat.
- For single-stage thermostats with only one Y/Y1 terminal, connect both Y1 and Y2 wires together and land them on the Y/Y1 terminal.
- If using 24V communication mode between the indoor and outdoor units, the system must be wired exactly as shown in the wiring section, and the correct DIP-switch configuration must be selected accordingly. Refer to Section 13.1-Table 13.1 .

9.5 Electrical Data

Table 9.5 — Air Handler Electrical Specifications-No Heat Kit Installed

When no heater kit is installed, size the feeder wire to match circuit breaker rating.

Air Handler Model	Voltage-Phase-Hz	Power Supply Wiring Gauge	Motor HP	Fan speed	MCA (A)	MOP (A)
KIDT24H2-41X	208/230/240 ~ 1Ph-60Hz	14AWG	1/2	7	5.0	15
KIDT36H2-41X			1/2		5.0	
KIDT48H2-41X			3/4		7.0	
KIDT60H2-41X			3/4		7.0	

MCA - Minimum Circuit Ampacity
MOP- maximum Overcurrent Protection

10. Electric Heat Kits

Table 10.1A— Electric Heat Kit Electrical Data

Kit Model	Air Handlers Model	Electric Heat (kW)	MIN. Circuit Ampacity			MAX. Fuse or Breaker (HACR) Ampacity		
			208V	230 V	240 V	208 V	230 V	240 V
KATT05KEH	KIDT24H2-41X	5	21	23	24	25	30	30
KATT10KEH		10	42	46	48	50	60	60
KATT05KEH	KIDT36H2-41X	5	21	23	24	25	30	30
KATT10KEH		10	42	46	48	50	60	60
KATT15KEH		5+10	21+42	23+46	24+48	25+50	30+60	30+60
KATT05KEH	KIDT48H2-41X	5	21	23	24	25	30	30
KATT10KEH		10	42	46	48	50	60	60
KATT15KEH		5+10	21+42	23+46	24+48	25+50	30+60	30+60
KATT20KEH		10+10	42+42	46+46	48+48	50+50	60+60	60+60
HATT05KEH	KIDT60H2-41X	5	21	23	24	25	30	30
KATT10KEH		10	42	46	48	50	60	60
KATT15KEH		5+10	21+42	23+46	24+48	25+50	30+60	30+60
KATT20KEH		10+10	42+42	46+46	48+48	50+50	60+60	60+60

NOTICE

- MCA and Max Fuse Ampacity values include the motor amps.
- Electric heater kits are suitable for air handler multiple-position installation.
- ● Indicates “available”; × indicates “unavailable.”
- All electrical work must be performed by qualified personnel.
- The KATT**KEH series is designed and approved for installation in the IV 18 or TOP AHU.
- Check the KATT**KEH label to confirm the correct size based on room load and lower ambient
- temperature.
  Inspect all heating elements and verify that all heater element wires are secure.
  Contact your local distributor immediately if any damage is observed.

WARNING

- Disconnect all external power supplies before performing installation or servicing. Turn off the accessory heater power switch if applicable. Failure to do so may cause serious injury.
- KATT**KEH must be properly grounded and wired using copper supply conductors. Follow all national electric codes and local regulations.
- When installing in an enclosed area such as a garage, heater elements must have a minimum clearance of 18 in. from the floor to ensure proper ventilation.

10. Electric Heat Kits

10.1 Available Electric Auxiliary Heater

When the unit is installed with an electric auxiliary heater, the fan speed selection must meet the required static pressure values shown in the table below.
Shaded (gray) areas represent fan speed and static pressure combinations that are not allowed when using electric auxiliary heating.

Table 10.3 — Available Electric Auxiliary Heater

Air Handler Model	Motor Speed/CFM	Available electric auxiliary heater									
		External Static Pressure -Inches W.C.[Psi]									
		0	0.1	0.16	0.2	0.3	0.4	0.5	0.6	0.7	0.8
		[0]	[.003]	[.005]	[.007]	[.010]	[.014]	[.018]	[.021]	[.025]	[.028]
KIDT24H2-41X	Tap (7)	1173	1130	1086	1065	1021	956	909	838	791	720
	Tap (6)	1139	1095	1050	1028	983	916	867	795	747	675
	Tap (5)	1105	1059	1013	990	944	875	826	752	703	629
	Tap (4)	1072	1024	977	953	906	835	785	709	659	583
	Tap (3)	1038	989	940	916	868	795	743	666	615	538
	Tap (2)	1004	954	904	879	829	754	702	623	571	492
	Tap (1)	970	919	868	842	791	714	661	580	527	446
KIDT36H2-41X	Tap (7)	1539	1510	1481	1467	1438	1395	1360	1306	1271	1218
	Tap (6)	1440	1407	1374	1358	1325	1276	1237	1179	1140	1082
	Tap (5)	1340	1304	1267	1248	1211	1156	1114	1052	1010	947
	Tap (4)	1241	1200	1159	1139	1098	1036	992	924	879	812
	Tap (3)	1173	1130	1086	1065	1021	956	909	838	791	720
	Tap (2)	1105	1059	1013	990	944	875	826	752	703	629
	Tap (1)	1038	989	940	916	868	795	743	666	615	538
KIDT48H2-41X	Tap (7)	1871	1836	1801	1784	1749	1697	1654	1589	1545	1481
	Tap (6)	1779	1746	1713	1696	1663	1613	1572	1510	1469	1408
	Tap (5)	1687	1655	1624	1608	1577	1529	1490	1432	1393	1335
	Tap (4)	1502	1474	1446	1432	1404	1362	1327	1275	1241	1188
	Tap (3)	1410	1377	1345	1329	1296	1248	1210	1154	1116	1060
	Tap (2)	1317	1281	1244	1225	1189	1133	1093	1032	992	931
	Tap (1)	1225	1184	1143	1122	1081	1019	976	911	867	802
KIDT60H2-41X	Tap (7)	2056	2017	1979	1960	1922	1864	1817	1745	1698	1627
	Tap (6)	1871	1836	1801	1784	1749	1697	1654	1589	1545	1481
	Tap (5)	1687	1655	1624	1608	1577	1529	1490	1432	1393	1335
	Tap (4)	1502	1474	1446	1432	1404	1362	1327	1275	1241	1188
	Tap (3)	1410	1377	1345	1329	1296	1248	1210	1154	1116	1060
	Tap (2)	1317	1281	1244	1225	1189	1133	1093	1032	992	931
	Tap (1)	1225	1184	1143	1122	1081	1019	976	911	867	802

10. Electric Heat Kits

10.4 Installation Instructions — Electric Heater Kits (KATT**KEH Series)

The KATT**KEH electric heater kits are designed for installation in compatible Klimaire air handlers. Before beginning installation, thoroughly read this section and follow all safety warnings.

STEP 1 — Remove the Blower Access Panel

1. Turn OFF all electrical power to the air handler.
2. Locate and remove the four screws securing the blower access panel.
3. Carefully remove the panel and set it aside.

Figure 10.4A - Blower Access Panel Screw Locations

10.4 Installation Instructions — Electric Heater Kits (KATT**KEH Series)

STEP 2 — Remove the Cover Plate

1. Inside the opening, locate the metal cover plate blocking the heater-kit opening.
2. Remove the screws securing this cover plate.
3. Slide the cover plate out of the cabinet.

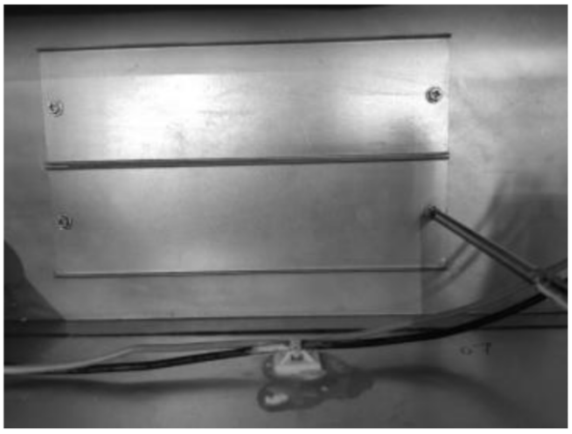
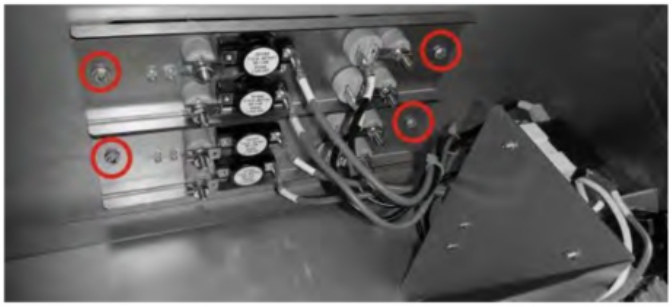
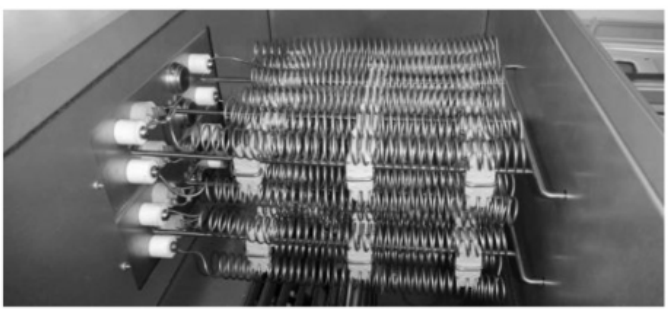


Figure 10.4B - Removal of Factory Cover Plate





10. Electric Heat Kits

STEP 3 — Install the Electric Heater Kit

1. Slide the heater kit into the mounting slot inside the air handler, ensuring the assembly is fully seated.
2. Secure the heater element plate using the screws removed in Step 2.
   Reinstall all screws in their original locations to ensure proper support and grounding.

3. Verify the correct orientation of the heater elements before final tightening:
   - The thermostat must always be positioned on the left-hand side of the heater assembly.
   - The fuse must always be positioned on the right-hand side.
   - When installing multi-element kits:
     - Ensure the UPPER and LOWER heater elements are inserted in the correct slots as shown in the diagrams for each model (5kW, 10kW, 15kW, 20kW).

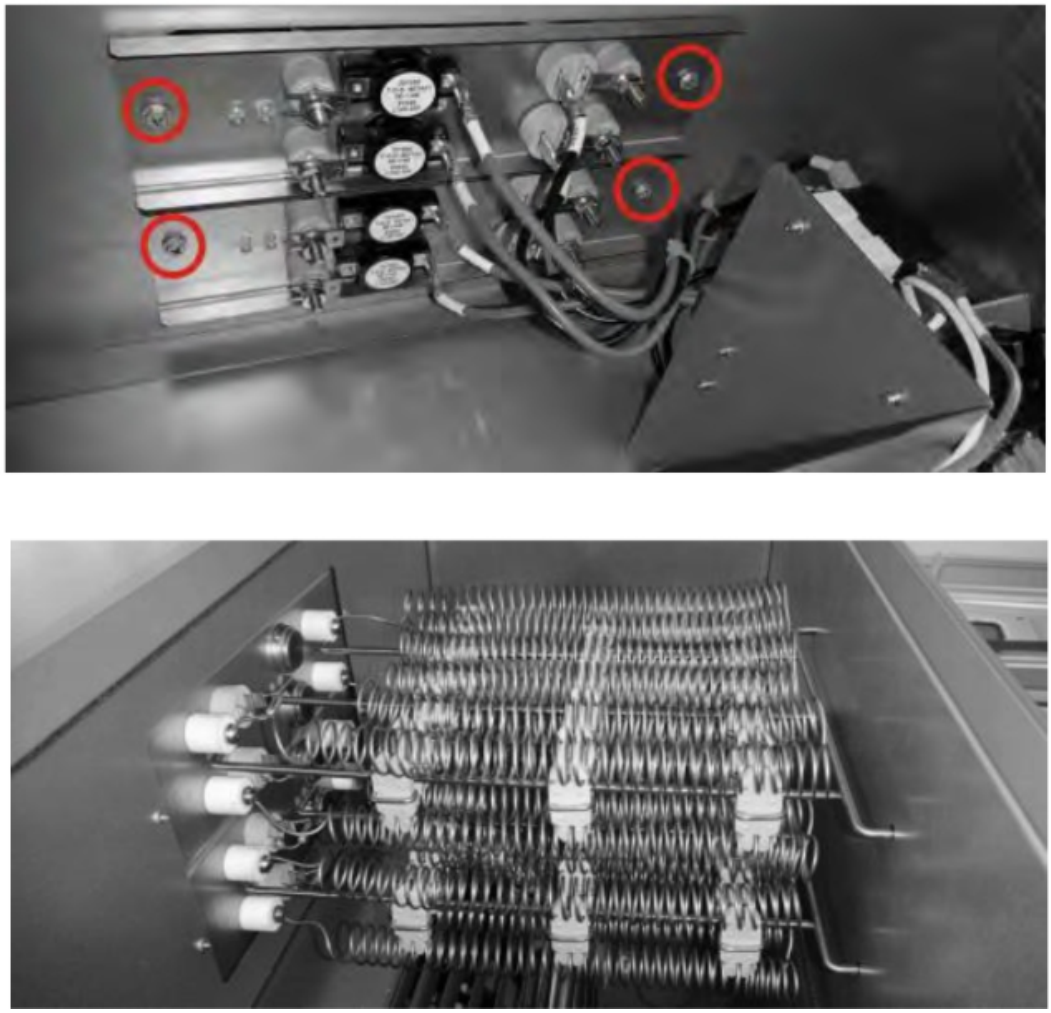
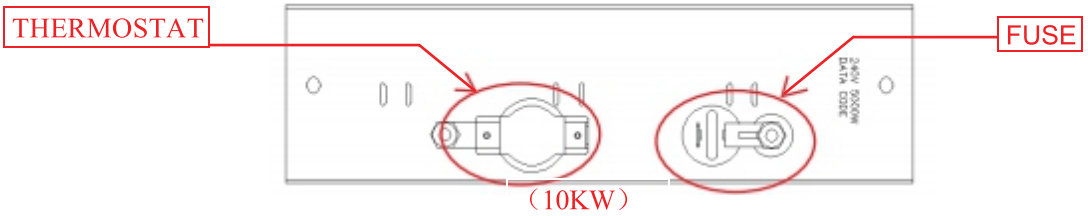


Figure 10.4C - Securing the Heater Element Plate

10. Electric Heat Kits

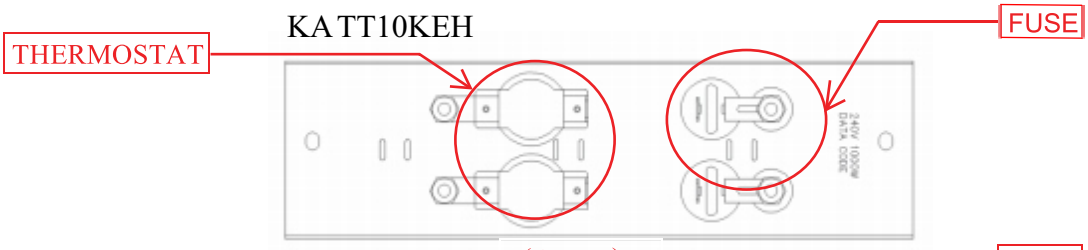
（5KW）

KATT05KEH



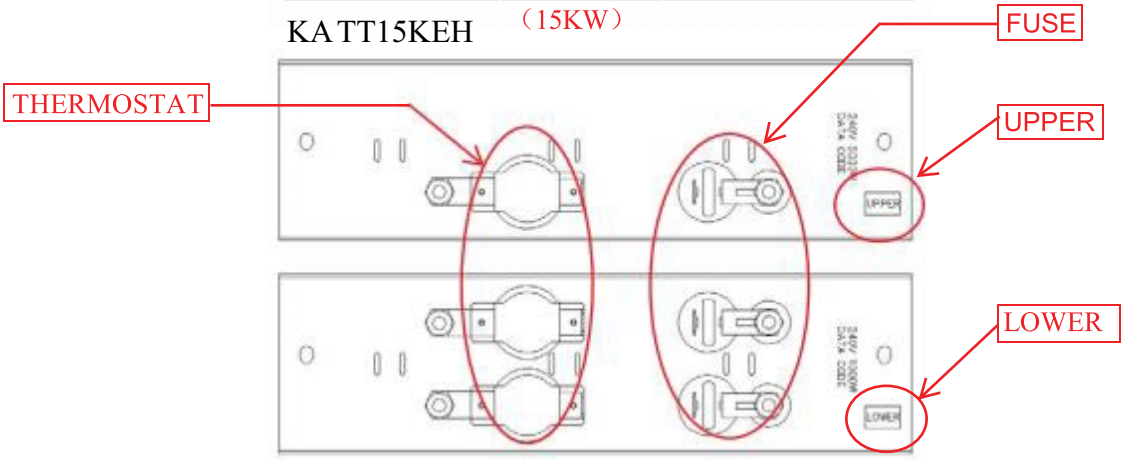
（10KW）

KATT10KEH



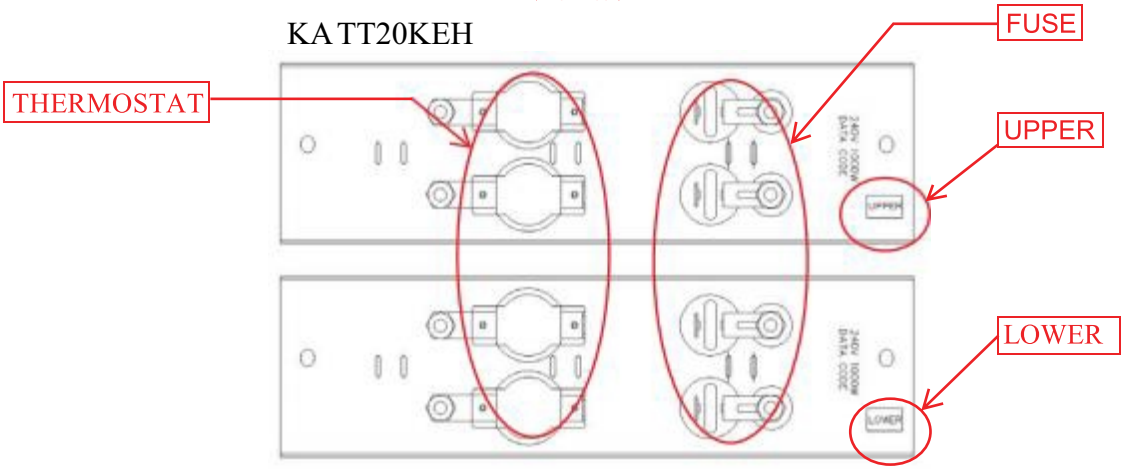
（15KW）

KATT15KEH



（20KW）

KATT20KEH



10. Electric Heat Kits

STEP 5 — Install Circuit Breaker

- Install the circuit breaker assembly onto the mounting rail.
- Break out the appropriate area of the plastic circuit-breaker cover located on the air handler's access panel.
- Connect the heater kit harness to the 3-pin connector on the indoor control board (as shown).
- Verify all breaker mounting screws are properly tightened.

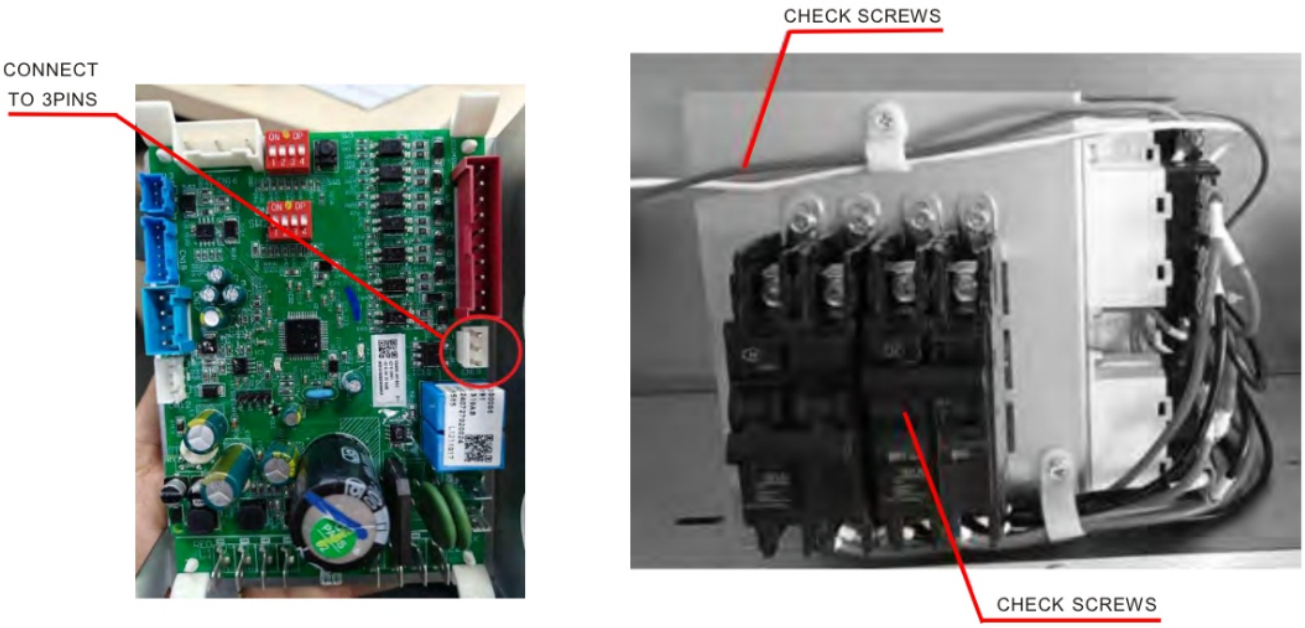
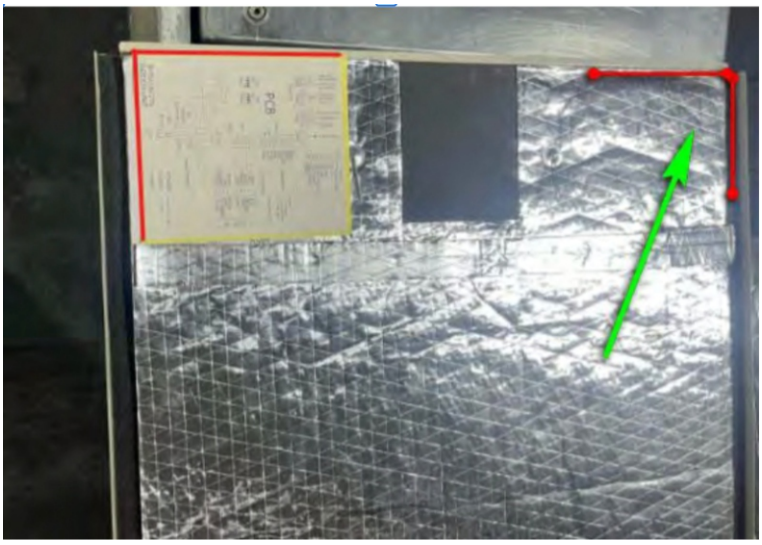


Figure 10.4E- Circuit Breaker Installation & 3-Pin Board Connection

STEP 6 — Apply Circuit Diagram Labels

Apply the electric-heater circuit-diagram label to the designated area inside the air handler compartment (area shown in the figure).
Ensure the label is fully adhered and clearly visible for future service.



10. Electric Heat Kits

⚠ WARNING

FIRE, ELECTRICAL SHOCK, HAZARD

- After connecting all wires, check all screws on the breaker and ensure every screw is properly tightened.
- Failure to do so may result in breaker malfunction, fire, death, personal injury, or property damage.

ⓘ NOTICE

- When the indoor control board receives a W1/W2 signal, the electric heater will energize and the
- indoor blower will turn on.
- When the W1/W2 signal is off, the indoor blower will be turned off.
- The blower motor runs when “C” is energized, and turns off when “C” is de-energized.

10.5 Electric Heater Kit Wiring Diagrams

Use the following wiring diagrams for correct electrical installation of Klimaire Electric Heat Kits (KATT**KEH series).
Figures 10.5A through 10.5D correspond to each heater kit capacity.

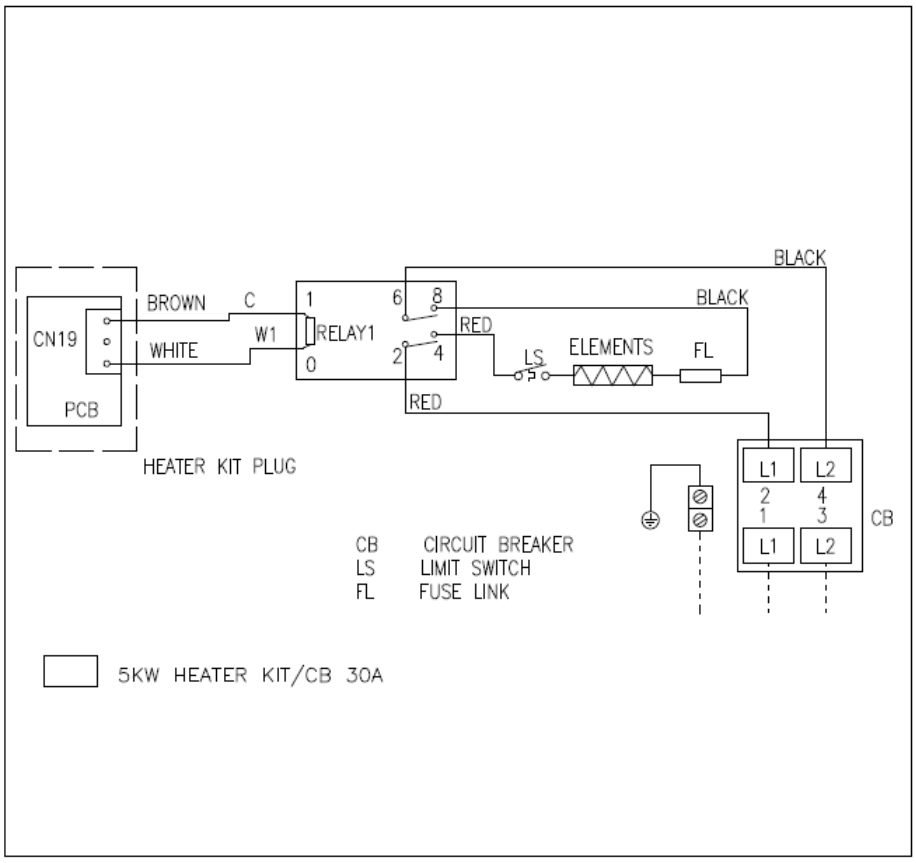


Figure 10.5A — Wiring Diagram for 5 kW Electric Heat

10. Electric Heat Kits

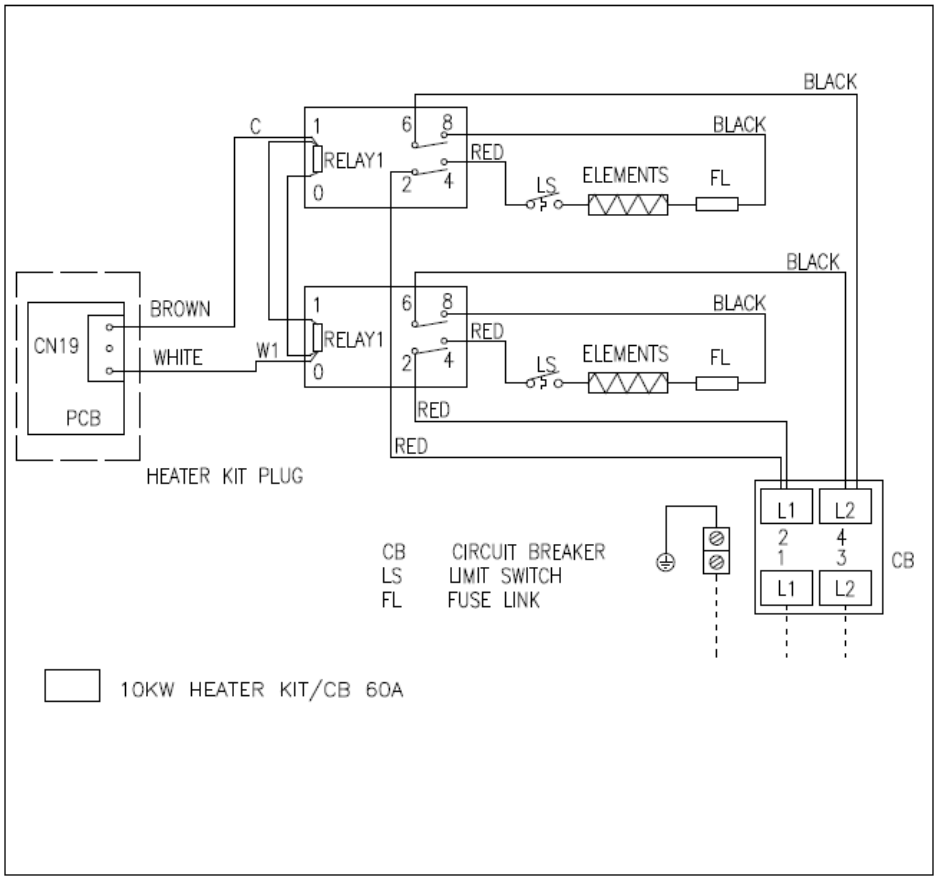


Figure 10.5B — Wiring Diagram for 10 kW Electric Heat

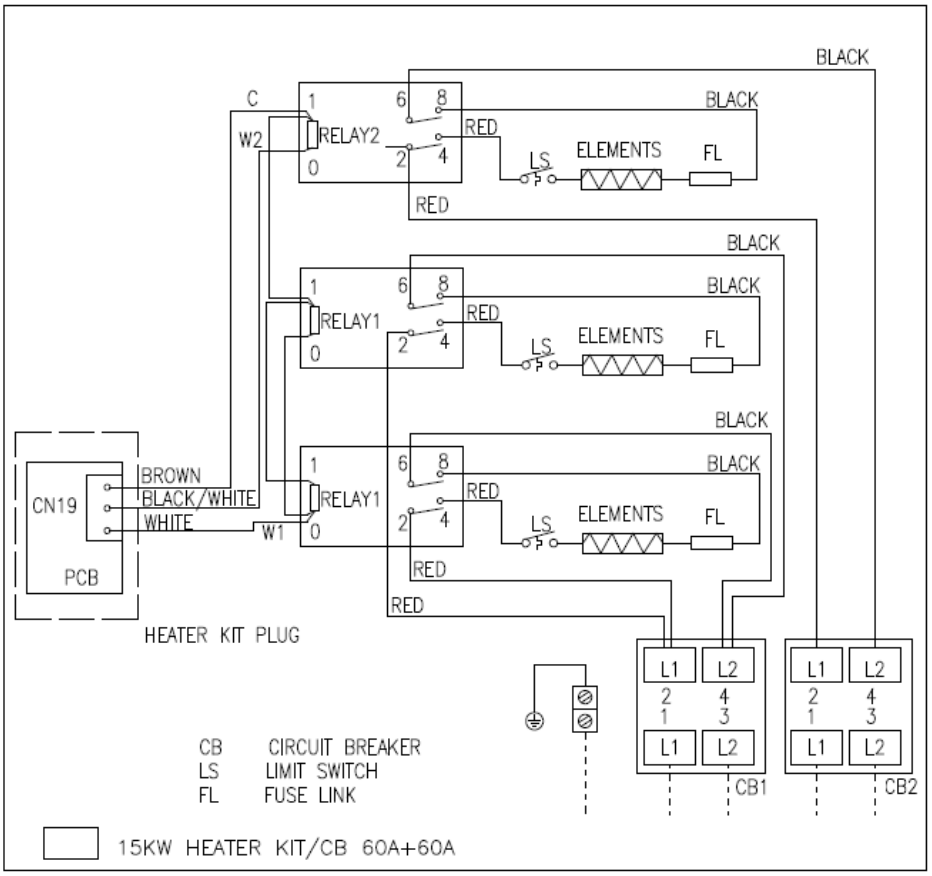


Figure 10.5C — Wiring Diagram for 15 kW Electric Heat

10. Electric Heat Kits

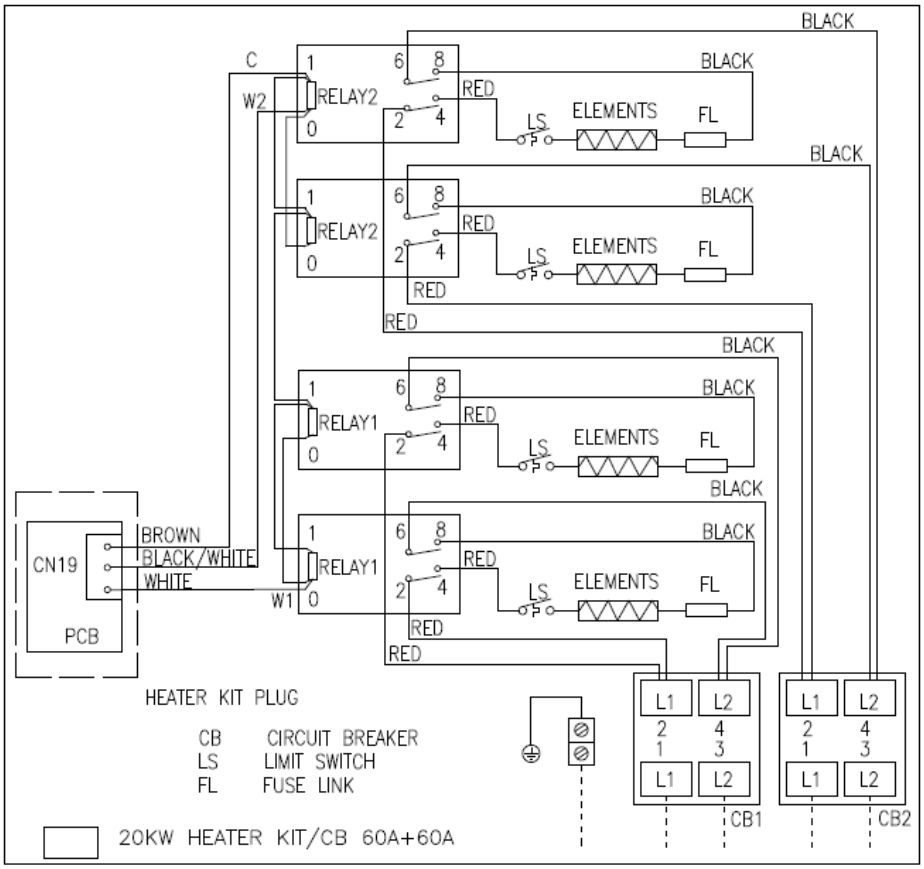


Figure 10.5D — Wiring Diagram for 20 kW Electric Heat

11. Airflow Performance

11. AIRFLOW PERFORMANCE

Airflow performance data is based on cooling performance with a coil and no filter in place. Check the table for appropriate unit size selection. External static pressure should stay within the minimum and maximum limits shown in the table to ensure proper airflow.

Table 11.1 – Airflow Performance Data

Model	Motor Speed		SCFM External Static Pressure-Inches W.C.]								
			0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
KIDT24H2-41X	Super grade	SCFM	1173	1130	1065	1021	956	909	838	791	720
	Top grade	SCFM	1139	1095	1028	983	916	867	795	747	675
	Mid and high grade	SCFM	1105	1059	990	944	875	826	752	703	629
	Mid-range	SCFM	1072	1024	953	906	835	785	709	695	583
	Mid and low grade	SCFM	1038	989	916	868	795	743	666	615	538
	Low grade	SCFM	1004	954	879	829	754	702	623	571	492
	Mute tone	SCFM	970	919	842	791	714	661	580	527	446
KIDT36H2-41X	Super grade	SCFM	1539	1510	1467	1438	1395	1360	1306	1271	1218
	Top grade	SCFM	1440	1407	1358	1325	1276	1237	1179	1140	1082
	Mid and high grade	SCFM	1340	1304	1248	1211	1156	1114	1052	1010	947
	Mid-range	SCFM	1241	1200	1139	1098	1036	992	924	879	812
	Mid and low grade	SCFM	1173	1130	1065	1021	956	909	838	791	720
	Low grade	SCFM	1105	1059	990	944	875	826	752	703	629
	Mute tone	SCFM	1038	989	916	868	795	743	666	615	538
KIDT48H2-41X	Super grade	SCFM	1871	1836	1784	1749	1697	1654	1589	1545	1481
	Top grade	SCFM	1779	1746	1696	1663	1613	1572	1510	1469	1408
	Mid and high grade	SCFM	1687	1655	1608	1577	1529	1490	1432	1393	1335
	Mid-range	SCFM	1502	1474	1432	1404	1362	1327	1275	1241	1188
	Mid and low grade	SCFM	1410	1377	1329	1296	1248	1210	1154	1116	1060
	Low grade	SCFM	1317	1281	1225	1189	1133	1093	1032	992	932
	Mute tone	SCFM	1225	1184	1122	1181	1019	976	911	867	802
KIDT60H2-41X	Super grade	SCFM	2056	2017	1960	1922	1864	1817	1745	1698	1627
	Top grade	SCFM	1871	1836	1784	1749	1697	1654	1589	1545	1481
	Mid and high grade	SCFM	1687	1655	1608	1577	1529	1490	1432	1393	1335
	Mid-range	SCFM	1502	1474	1432	1404	1362	1327	1275	1241	1188
	Mid and low grade	SCFM	1410	1377	1329	1296	1248	1210	1154	1116	1060
	Low grade	SCFM	1317	1281	1225	1189	1133	1093	1032	992	931
	Mute tone	SCFM	1225	1184	1122	1081	1019	976	911	867	802

Shaded boxes represent airflow outside the required 300-450cfm/ton at full load.

11. Airflow Performance

NOTICE

- Airflow Notes and System Requirements
- Airflow is based upon cooling performance at 230V with no electric heat and no filter in place.
- Airflow at 208V is approximately the same because the multi-tap ECM motor is a constant torque motor; torque does not drop off at the speeds at which the motor operates.
- The air distribution system greatly affects airflow; use only industry-recognized duct design procedures.
- Heat pump systems require 300–450 CFM per ton of cooling.
- Poor duct design or workmanship can significantly reduce system performance.
- Air supply diffusers must be properly sized and placed to deliver conditioned air to the perimeter of the space.
- Return air grilles must be sized appropriately to avoid noise and drafts.
- Installers should balance the system to ensure quiet and comfortable airflow throughout the home.
- Air velocity meters or airflow hoods may be used to measure CFM.

12. Air Filter (Not Factory Installed)

12.1 Filter General Information

Proper filtration is essential for maintaining correct airflow and protecting the internal components of the system. The air filter is not included with the unit and must be field-supplied.

- The air filter must be selected based on a maximum recommended air velocity of 300 ft/min, or the airflow characteristics specified by the filter manufacturer.
- Insufficient airflow can reduce system efficiency and increase wear on internal components such as the blower motor, electric heat elements, evaporator coil, and compressor.
- The filter must be positioned so that the marked airflow direction matches the return air path. Correct placement is important for maintaining proper system performance.
- For systems equipped with return-air filter grilles, ensure the filter is installed securely in the grille.
- For installations without return-air filter grilles, multiple filters may be required at each return air opening to maintain adequate airflow.
- When using high-efficiency filters or electronic filtration systems, verify they do not create excessive airflow restriction. Higher filtration density increases pressure drop and may reduce overall system performance.
- Ensure the selected filter type and size are appropriate for the system and do not exceed the allowable airflow resistance for the installation.

⚠ WARNING

- Do not double-filter the return air system.
- Do not install filters in the supply air duct. This will alter system performance and reduce airflow.

NOTICE

Risk of Fire

- Do not operate the system without a filter. Dust and airborne particles may accumulate inside the duct and air outlet. When exposed to heated components of the air-handling unit, this residue may burn and stain walls, ceilings, curtains, carpets, or other household items.
- Certain household activities (such as burning candles, oil lamps, or using igniters) may also increase soot accumulation on the filter.

Installation Hazard

- Improper installation or service may create a condition that can result in personal injury or property damage.
- Incorrect adjustment, alteration, or use of non-approved parts may lead to unsafe operation. Follow the procedures in this manual.
- For additional assistance, contact a qualified installer or service agency.

12. Air Filter (Not Factory Installed)

12.2 Filter Dimensions

Table 12.2 – Filter Size Specifications

Model	Filter Size (in.)	W (in.)	D (in.)	H (in.)	Return Width “A” (in.)	Return Length “B” (in.)
KIDT24H2-41X KIDT36H2-41X	18 x 20	19-3/4	21	1	16	13-7/8
KIDT48H2-41X KIDT60H2-41X	22 x 20	23-1/4	21	1	16	15-1/4

NOTICE

- Refer to the label on the filter cover to confirm the correct filter size.
- The product is not equipped with a filter from the factory.

12.3 Filter Installation, Removal, and Cleaning

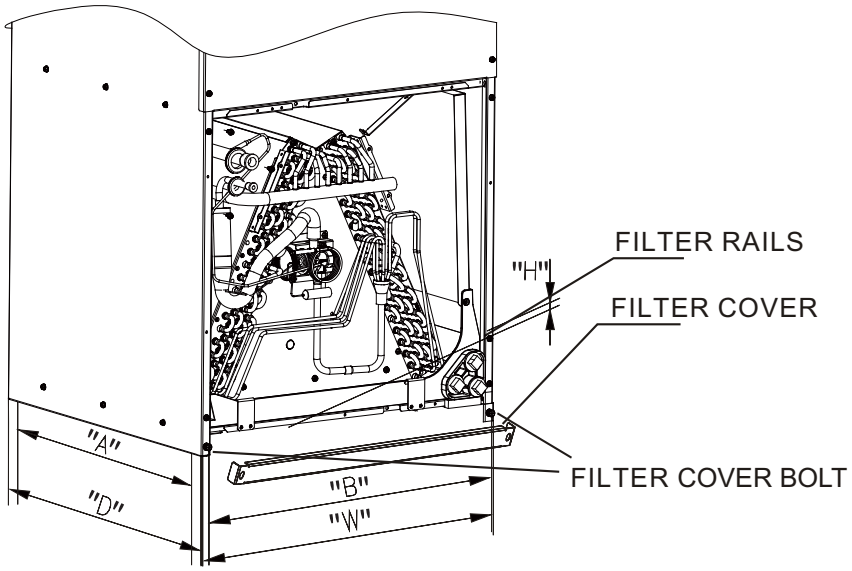


Figure 12.3 – Filter Installation Location

NOTICE

- The air filter is not included with the unit and must be field-supplied.
- When installing the indoor unit, ensure the filter is positioned and installed as shown in Figure 12.3, regardless of the installation method.

12. Air Filter (Not Factory Installed)

Installation

1. Remove the filter cover bolts and take off the filter cover.
2. Slide the filter into the filter rails, ensuring the airflow arrow on the filter matches the direction of the return air path.
3. Align the filter cover with the cabinet and reinstall the filter cover bolts securely.

Removal

1. Remove the filter cover bolts and pull the filter cover outward.
2. Hold the edge of the filter and slide it out from the filter rails.

Cleaning or Replacement

- If using a washable filter, clean it according to the manufacturer's specifications and allow it to dry completely before reinstalling.
- If using a disposable filter, replace it with a new filter of the correct size.
- Ensure the replacement filter does not exceed allowable airflow resistance and that the airflow arrow is oriented correctly during installation.

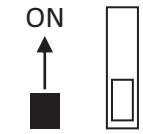
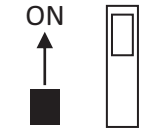
13. Internal Function Dip Switch Description

This section describes the internal DIP switch functions used to configure communication mode, fan speed behavior, anti-cold air operation, lower outlet air control, cold air prevention, and factory-set switch positions. **Only qualified technicians should adjust DIP switch settings.**

13.1 Communication Function DIP Switch (SW2-1)

According to installation requirements, the unit can operate using 24V ON/OFF control or RS485 communication control. Select the appropriate mode by adjusting DIP switch SW2-1.

Table 13.1 — Communication Function DIP Switch Settings (SW2-1)

Dip bit	Dip code	Function description
SW2-1		Factory default; 24V ON/OFF control, using 24V thermostat control unit operation (off position)
		RS485 communication control; the need to purchase wire controllers and communication lines from the manufacturer to meet the use of accessories (on position)

13.2 Wind Gear Adjustment DIP Switch (SW1)

The SW1 DIP switches adjust the indoor unit's wind-gear (fan-speed) behavior when the system operates in digital control mode.

STEP 1

When SW1-1 is set to Digital (factory default), the unit operates using preset wind-gear levels:

- High Speed: 5th level
- Low Speed: 2nd level

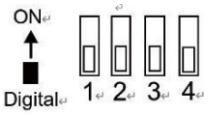
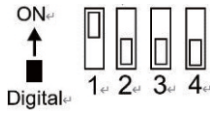
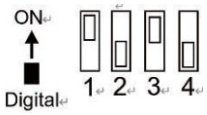
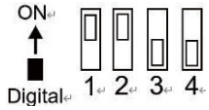
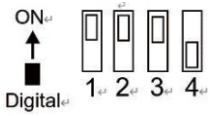
To manually customize wind-gear levels, change SW1-1 to the ON position.

STEP 2

Set SW1-1 to ON. Then adjust SW1-2 and SW1-3 to select one of the five available wind-gear combinations listed in Table 13.2.

13. Internal Function Dip Switch Description

Table 13.2 — DIP-Switch Settings for Fan Speed Levels

Combination	SW1 setting	Low speed	High speed
1(Default)		Mid and high grade	Super grade
2		Mid-range	Super grade
3		Mid and low grade	Top grade
4		Low grade	Mid-range
5		Mute tone	Mid-range

Note: The DIP switch of SW1 takes effect only when SW2-1 is on the digital end. When the SW2-1 dip switch is ON, the wind gear is directly controlled and adjusted by the wire controller.

13.3 Anti-Cold Air DIP Switch (SW1-4)

In 24V ON/OFF control mode, DIP switch SW1-4 is used to enable or disable the anti-cold air protection function.

Function Overview

1. **Default Setting (Digital Position): Anti-Cold Protection Enabled**
   When SW1-4 is in the Digital position (factory default), the anti-cold air protection is active.
   - At the beginning of heating operation, the indoor unit will temporarily run at a lower fan speed. This prevents cold air from being discharged into the room until the coil temperature rises.
   - After the coil reaches the appropriate temperature, the fan speed automatically adjusts based on the thermostat's control signal.

2. **Operation During Defrost**
   The unit determines the defrosting status of the outdoor unit using the terminal D signal.

   - When the outdoor unit enters defrost mode, the indoor fan stops to prevent cold air from entering the room.
   - After defrosting is complete, the unit resumes normal fan operation and adjusts the fan speed according to the thermostat-controlled wind gear.

13. Internal Function Dip Switch Description

3. Electric Heat Mode Behavior

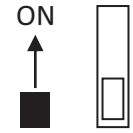
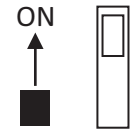
- In electric heat operation mode, the unit will adjust fan operation based on the thermostat command only.
- The anti-cold air function does not activate during electric heat mode.

4. Anti-Cold Air Function OFF (SW1-4 set to ON)

Switching SW1-4 to the ON position disables the anti-cold air protection.

- The indoor fan will operate normally according to the thermostat's wind-gear command.
- No anti-cold protection will be applied during startup or defrost.

Table 13.3 - DIP Switch Settings – Anti-Cold Air Function (SW1-4)

Dip bit	Dip code	Function description
SW2-1		Factory default; 24V ON/OFF control, using 24V thermostat control unit operation (off position)
		RS485 communication control; the need to purchase wire controllers and communication lines from the manufacturer to meet the use of accessories (on position)

Note: The DIP switch of SW1 takes effect only when SW2-1 is on the digital end. When the SW2-1 dip switch is located at the ON end, the unit is intelligently controlled and the cold air protection function is always effective.

13.4 Lower Outlet Air Gear Control DIP Switch (SW2-2)

The SW2-2 DIP switch controls the maximum air-gear output when the unit is installed with a bottom air discharge.

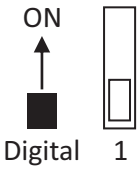
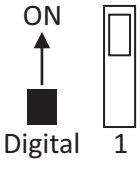
When SW2-2 is set to ON, the system automatically limits the upper air-gear output to prevent condensate from being blown into the air duct due to excessive air volume.

Function Overview

- This DIP switch is factory-set to Digital position prior to delivery.
- Set SW2-2 to ON only when the installation uses the bottom air outlet discharge.
- When ON, the system automatically limits the maximum air-gear level to protect against condensate carryover.
- When OFF, the unit operates normally for installations using top discharge or left/right horizontal discharge.

13. Internal Function Dip Switch Description

Table 13.4 DIP Switch Settings (SW2-2)

Dip bit	Dip code	Function description
SW2-2		The installation form of the unit is dialed to this position when the upper air is discharged or the left and right horizontal air is discharged
		The installation form of the unit is dialed to this position when the air is discharged

13.5 Cold Air Prevention DIP Switch (SW2-3)

In 24V ON/OFF control mode, the SW2-3 DIP switch is used to enable or disable the exhaust-air temperature control function.

Function Overview

Default Operation (Digital Position):

When SW2-3 is set to the Digital position, the exhaust air temperature control function is active.

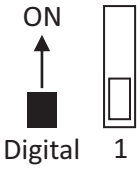
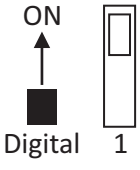
- During heat-pump operation, if the air temperature after the heat exchanger is detected to be too high, the system will prevent the electric auxiliary heat from starting, protecting the unit from overheating.

When Set to ON:

Setting SW2-3 to the ON position disables the exhaust-air temperature control function.

- In this state, electric heating is controlled only by the thermostat, not by the heat-pump outlet air temperature.
- This setting is used if a higher discharge-air temperature is required by the installation.

Table 13.5 — DIP Switch Settings (SW2-3)

Dip bit	Dip code	Function description
SW2-3		The exhaust air temperature control function takes effect
		The exhaust air temperature control function fails

Note: In emergency heating mode, when the external unit of the heat pump is not running, the electric heating runs according to the control of the temperature controller, and is not affected by the outlet air temperature of the heat pump.

13. Internal Function Dip Switch Description

13.6 SW2-4 Factory-Set DIP Switch (Do Not Adjust)

The SW2-4 DIP switch is factory-set in the Digital position and must not be changed.

Function Overview

- SW2-4 remains at the factory default and is not intended for field adjustment.
- Adjusting this switch may affect internal system logic and can result in improper operation.

14. Fault Indication

- The indoor unit uses LED indicators to communicate operating status and system faults.
- Blinking Definition: LED on for 200 ms, then off for 200 ms = one blink (beat).
- This fault display applies only in 24V ON/OFF communication mode.
- In RS485 communication mode, fault codes are shown on the wired controller instead.

14.1 LED Fault Indicator Definitions

Table 14.1 — LED Status and Fault Indication

LED light color	LED light status	Failure
Green light	Turn off	Standby mode
Green light	stay lit	In operation
Green light	beat 1	Anti-cold air running (blink once, off for 1s)
Green light	beat 2	Electric auxiliary hot running (blink twice, off for 1s)
Green light	beat 3	Commodity inspection status (blink 3 times, off for 1s)
Green light	beat 3	Self-check status (blink 4 times, off for 1s)
Red light	Turn off	trouble-free
Red light	stay lit	Refrigerant leak protection
Red light	beat 1	The communication of the refrigerant sensor is abnormal (blink once, and then off for 1s).
Red light	beat 2	Internal fan fault (Blinking twice, off for 1s)
Red light	beat 3	Internal coil temperature sensing packet fault (blink 3 times, off for 1s)
Red light	beat 4	The supply air temperature sensing packet is faulty (blinks four times, and then disappears for 1s).
Red light	beat 5	EEPROM fault (blink 5 times, off for 1s)
Red light	beat 6	Indoor/Outdoor 485 Communication failure (blinking six times, off for 1s)
Red light	beat 7	Controller 485 Communication failure (blinking 7 times, off for 1s)

CAUTION

If any of the following abnormal conditions occur, turn OFF the power supply immediately and contact qualified service personnel:

- The operation light continues flashing rapidly after restart.
- The unit repeatedly trips breakers or blows fuses.
- Water or foreign objects enter the indoor unit.
- The indoor unit is leaking.
- Any other abnormal or unsafe condition occurs.

15. Troubleshooting

CAUTION

If any of the following abnormal conditions occur, turn OFF the power supply immediately and contact qualified service personnel:

- The operation light continues flashing rapidly after restart.
- The unit repeatedly trips breakers or blows fuses.
- Water or foreign objects enter the indoor unit.
- The indoor unit is leaking.
- Any other abnormal or unsafe condition occurs.

15.1 Common Problems

The following conditions are not malfunctions and do not normally require repair.

15.1 — Common Operating Conditions and Explanations

Problem	Possible Cause
Abnormal noises of outdoor unit	The unit will make different sounds based on its current operating mode.
Both the indoor and outdoor units make noises	The air conditioner may hum during operation. This is a normal phenomenon, which is caused by refrigerant gas flowing through the indoor and outdoor units.
	When the air conditioner is turned on, and just stopped or sted, a hiss defromay be heard. This noise is normal and is caused by refrigerant gas stopping or turning.
Unit does not turn on when pressing ON/ OFF button	The unit has a 3-minute protection feature that prevents the unit from overloading. The unit cannot be restarted within three minutes of being turned off.
	Cooling and Heating Models: If the Operation light and PRE-DEF (Pre-heating/ Defrost) indicators are lit up, the outdoor temperature is too cold and the unit's anti-cold wind is activated in order to defrost the unit.
The unit changes from COOL mode to FAN mode	The unit changes its setting to prevent frost from forming on the unit. Once the temperature increases, the unit will start operating again.
	The set temperature has been reached, at which point the unit turns off the compressor. The unit will resume operating when the temperature fluctuates again.
Both the indoor and outdoor units emit white mist	When the unit restarts in HEAT mode after defrosting, white mist may be emitted due to moisture generated from the defrosting process.
Dust is emitted from either the indoor or outdoor unit	The unit may accumulate dust during extended periods of non- use, which will be emitted when the unit is turned on. This can be mitigated by covering the unit during long periods of inactivity.
The unit emits a bad odor	The unit may absorb odors from the environment (such as furniture, cooking, cigarettes, etc.) which will be emitted during operations.
	The unit filters have become moldy and should be cleaned.
The fan of the outdoor unit does not operate	During operation, the fan speed is controlled to optimize product operation.

15. Troubleshooting

15.2 Troubleshooting Advice

The following troubleshooting information is intended to assist in identifying common issues. Many conditions require evaluation and repair by a qualified service technician. Do NOT attempt any internal repairs yourself.

Table 15.2 — Troubleshooting Guide: Problems, Causes, and Solutions

Problem	Possible Cause	Solution
The unit is not working	Power failure	Wait for the power to be restored
	The power switch is off	Turn on the power
	The fuse is burned out	Replace the fuse
	The unit's 3-minute protection has been activated	Wait three minutes after restarting the unit
Poor cooling performance	Temperature setting may be higher than the ambient room temperature	Lower the temperature setting
	The heat exchanger on the indoor or outdoor unit is dirty	Clean the affected heat exchanger
	The air filter is dirty	Remove the filter and clean it according to instructions
	The air inlet or outlet of either unit is blocked	Turn the unit off, remove the obstruction and turn it back on
	Doors and windows are open	Make sure that all doors and windows are closed while operating the unit
	Excessive heat is generated by sunlight	Close windows and curtains during periods of high heat or bright sunshine
	Low refrigerant due to leak or long-term use	Check for leaks, re-seal if necessary and top off refrigerant
The unit starts and stops frequently	There's too much or too little refrigerant in the system	Check for leaks and recharge the system with refrigerant
	There is air, incompressible gas or foreign material in the refrigeration system.	Evacuate and recharge the system with refrigerant
	System circuit is blocked	Determine which circuit is blocked and replace the malfunctioning piece of equipment
	The compressor is broken	Replace the compressor
	The voltage is too high or too low	Install a monostatic to regulate the voltage
Poor heating performance	The outdoor temperature is lower than 44.5°F	Check for leaks and recharge the system with refrigerant
	Cold air is entering through doors and windows	Make sure that all doors and windows are closed during use
	Low refrigerant due to leak or long-term use	Check for leaks, re-seal if necessary and top off refrigerant

16. Maintenance

Regular maintenance ensures safe operation, optimal performance, and long service life of the system. All maintenance should be performed by qualified personnel.

⚠ WARNING

Qualified Personnel Required

- Only trained and qualified maintenance personnel may perform cleaning or service on the indoor unit.

❗ CAUTION

Electric Shock

- Before performing any cleaning or maintenance, turn OFF the unit and disconnect the main power supply.

Sharp Edges

- When removing or handling filters or panels, avoid contact with metal edges.
- Sharp parts may cause cuts or injuries.

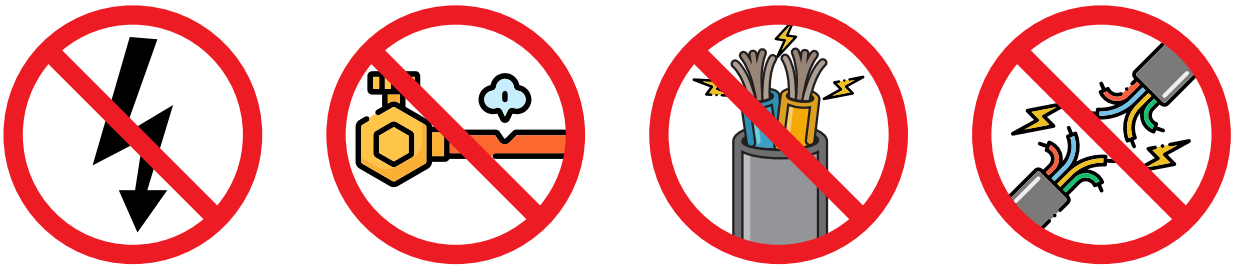
ℹ NOTICE

Cleaning Materials

- Do not use chemicals, benzene, paint thinner, polishing powder, or chemically treated cloths to clean the unit.
- These substances may damage the surfaces or components.
- Do not operate the unit without a filter installed.

16.1 Pre-Season Inspection & Maintenance

Perform the following before the start of each heating or cooling season to maintain system reliability:



Pre-Season Checklist

- Turn off the unit and disconnect power before inspection.
- Check all electrical wiring connections on the indoor unit for looseness, corrosion, or damage.
- Inspect the air filter; clean or replace as needed.
- Check the indoor coil for dust buildup; clean carefully if necessary.
- Ensure the air inlet and outlet are unobstructed and free from debris.
- Inspect the indoor drain pan and drain pipe to ensure proper drainage — remove clogs or buildup.
- Check for signs of mold, mildew, or unpleasant odors; clean and disinfect the filter and housing.

16. Maintenance

16.2 Routine Maintenance Tasks

These tasks should be performed regularly (every 3–6 months, depending on usage and environment):

Indoor Unit

- Clean or replace the air filter.
- Inspect and clean the impeller housing and indoor fan motor.
- Clean the indoor heat-exchange coil with low-pressure air or a soft brush (do not bend fins).
- Check the drain pan and drain pipe for blockages; ensure proper drainage.
- Verify the condensate pump (if equipped) operates correctly.
- Inspect wiring terminals and tighten as needed.
- Confirm the indoor fan rotates smoothly without abnormal noise or vibration.

16.3 Annual Professional Maintenance

A licensed HVAC technician should perform the following once per year:

- Check the system's operating pressures (if accessible through the outdoor system).
- Inspect the indoor fan motor current and control board condition.
- Verify communication wiring between indoor and outdoor units.
- Confirm accurate readings from indoor unit sensors (room temp, coil temp, pipe temp).
- Perform a complete refrigerant leak check for the system.
- Clean and tighten all indoor electrical connections.
- Inspect and clean the indoor coil more thoroughly if buildup is present.

16.4 After Maintenance

After completing indoor maintenance:

- Restore power to the system.
- Perform a full cooling and heating test (if applicable).
- Verify that no error codes appear on the indoor display or thermostat.
- Confirm normal fan operation and airflow.
- Ensure the drain system (pan + pipe + pump) is draining properly.
- Check that airflow is unobstructed and the filter is properly installed.

17. Disposal Guidelines

Disposal Guidelines

This appliance contains refrigerant, oil, and other potentially hazardous materials. When disposing the appliance, local and federal regulations require special handling, collection, and treatment. Do NOT dispose of this product as household waste or unsorted municipal waste.

⚠ WARNING

⚠ **Remove all refrigerant and oil prior to disposal as required by EPA and local regulations.**
This must be performed by licensed HVAC personnel.

Proper Disposal Methods

When disposing the appliance, follow one of the approved options:

- Dispose of the appliance at a designated municipal electronic waste collection facility.
- When purchasing a new appliance, the retailer may take back the old unit free of charge (varies by region).
- The manufacturer or distributor may accept the old unit for proper disposal.
- Sell or transfer the appliance to a certified scrap-metal or recycling center authorized to handle refrigerant-bearing equipment.

ⓘ NOTICE

Cleaning Materials

Improper disposal of this appliance—such as abandoning it outdoors, dumping it in forests, or placing it in general waste bins—poses serious environmental and health risks.
Hazardous refrigerants and oils may:

- contaminate groundwater,
- enter the food chain,
- or release harmful gases into the atmosphere.

Always follow proper disposal protocols.

18. Installer Reference

System Notes

KLIMAIRE™

Mark of Superior Quality

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Website: www.klimaire.com

Klimaire parts and supplies are available online at: www.klimaire.com

Scan the QR code
to visit our Help Center
for installation guides,
manuals, videos and more.

SCAN ME!

The design, features, and specifications of this product are subject to change without prior notice as part of Klimaire's ongoing commitment to innovation and product improvement. For the most up-to-date technical information, installation guidance, and certified performance data, consult your authorized Klimaire distributor or visit our Help Center. Always refer to the unit's nameplate and accompanying documentation for model-specific requirements.