

# Installer's Guide

## 20 SEER Vertical Air Handler 24,000 Btu/h to 60,000 Btu/h

### HP Indoor Units

4MXA2024A10NUA

4MXA2036A10NUA

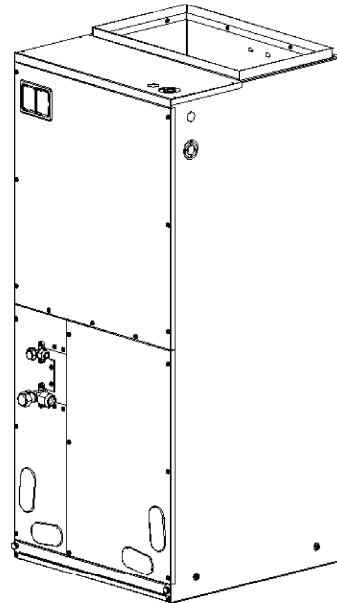
4MXA2048A10NUA

4MXA2060A10NUA

### HP Outdoor Units

4TXD2036A10NUA

4TXD2060A10NUA



### **▲ SAFETY WARNING**

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

# SAFETY PRECAUTIONS

**Important:** This document contains service information. This is customer property and is to remain with this unit. Please return to service information pack upon completion of work.

**Important:** These instructions do not cover all variations in systems nor provide for every possible contingency to be met in connection with the installation. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to your installing dealer or local distributor.

## ⚠ WARNING

### ELECTRICAL SHOCK HAZARD!

Failure to follow this warning could result in personal injury or death. Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.

## ⚠ WARNING

### GROUNDING REQUIRED!

The unit must be permanently grounded. Failure to do so can lead to electrical shock causing personal injury or death.

## ⚠ WARNING

### ELECTRICAL POWER SUPPLY!

This product is factory shipped for use with a 208/230V-1Ph-60Hz electrical power supply. This air handler must not be reconfigured to operate with any other power supply.

## ⚠ WARNING

### WARNING!

This product can expose you to chemicals including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## ⚠ WARNING

### SAFETY HAZARD!

The material of plenum and ductwork must meet the standard NFPA 90B. The supply air plenum or duct must have a solid sheet metal bottom piece directly after the air handler unit with no openings, registers or flexible air ducts located in it. The first 6 inches of supply air plenum and ductwork must be constructed of sheet metal as required by NFPA 90B. Metal plenum or duct may be connected to the non-combustible floor base for downflow. Exposing combustible non-metal material to the supply opening of a downflow unit can cause a fire resulting in property damage, personal injury or death. If flexible supply air ducts are used they may be located only in the side walls of the rectangular plenum, a minimum of 6 inches from the solid bottom.

## ⚠ WARNING

### HIGH SYSTEM PRESSURE!

Due to high system pressure and electrical shock in potential, installation and service work can be dangerous. Only trained and qualified persons are permitted to install or service this equipment. Observe all warnings contained in this manual and labels/tags attached to the equipment.

## ⚠ WARNING

### ELECTRICAL GROUNDING!

The unit must have an uninterrupted, unbroken electric grounding to minimize the possibility of personal injury if an electric fault occurs. The electric grounding circuit may consist of an appropriate sized power cord which connected with the grounding piece located in the unit control box and also connecting to the building electric service panel. Other methods of grounding are permitted if performed in accordance with the "National Electric Code" (NEC)/ "American National Standards Institute" (ANSI)/ "National Fire Protection Association" (NFPA) 70 and local/state codes. In Canada, electric grounding conforms to the Canadian electric code CSA c22.1. Failure to observe this warning can result in electrical shock that can cause personal injury.

**⚠ WARNING****INSTALLATION WARNING!**

This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for above special places, please adopt special air conditioner with anti-corrosive or anti-explosion function.

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. The following steps shall be followed to avoid equipment damage, personal injury or death.

- Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product.
- Refer to the individual instructions packaged with the kits or accessories when installing.
- Follow all safety codes.
- Wear safety glasses, protective clothing, and work gloves.
- Use quenching cloth for brazing operations.
- Have fire extinguisher available.
- Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit.
- Consult local building codes and National Electrical Code (NEC) for special requirements.

**⚠ DANGER****CARBON MONOXIDE POISONING HAZARD!**

Special warning for installation of furnaces or air handling units in enclosed areas, such as garages, utility rooms or parking areas. Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate ventilation directly to outside. This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emission can be (re)circulated throughout the building if the furnace or air handler is operating in any mode. CO can cause serious illness including permanent brain damage or death.

**Important:** All phases of this installation must conform to NATIONAL, STATE AND LOCAL CODES. If it is required for additional information, please contact your local distributor.

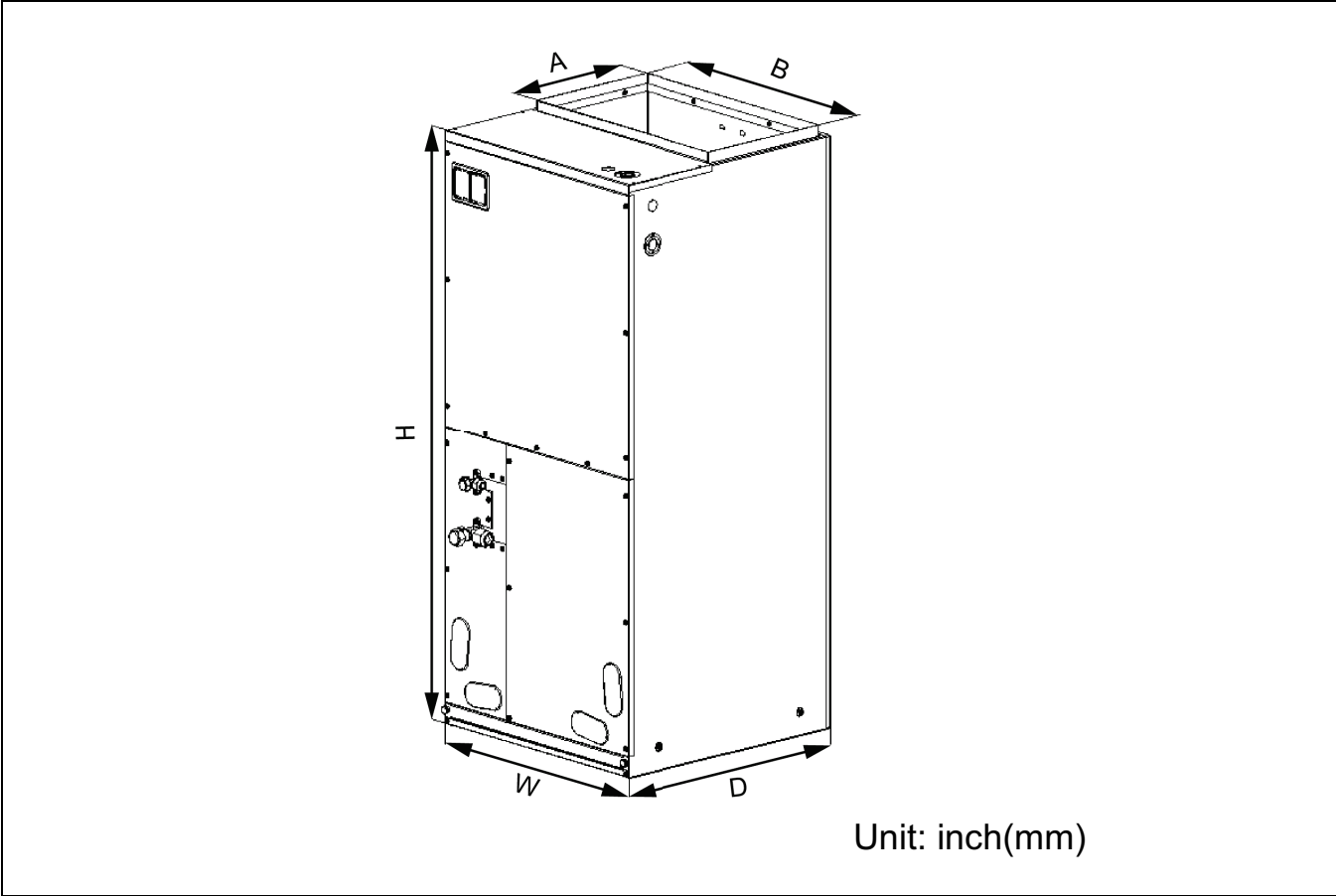
**Note:** The United States Environmental Protection Agency ("EPA") has issued various regulations regarding the introduction and disposal of refrigerants introduced into this unit. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. These regulations may vary due to the passage of laws. A certified technician must perform the installation and service of this product. Should questions arise, contact your local EPA office.

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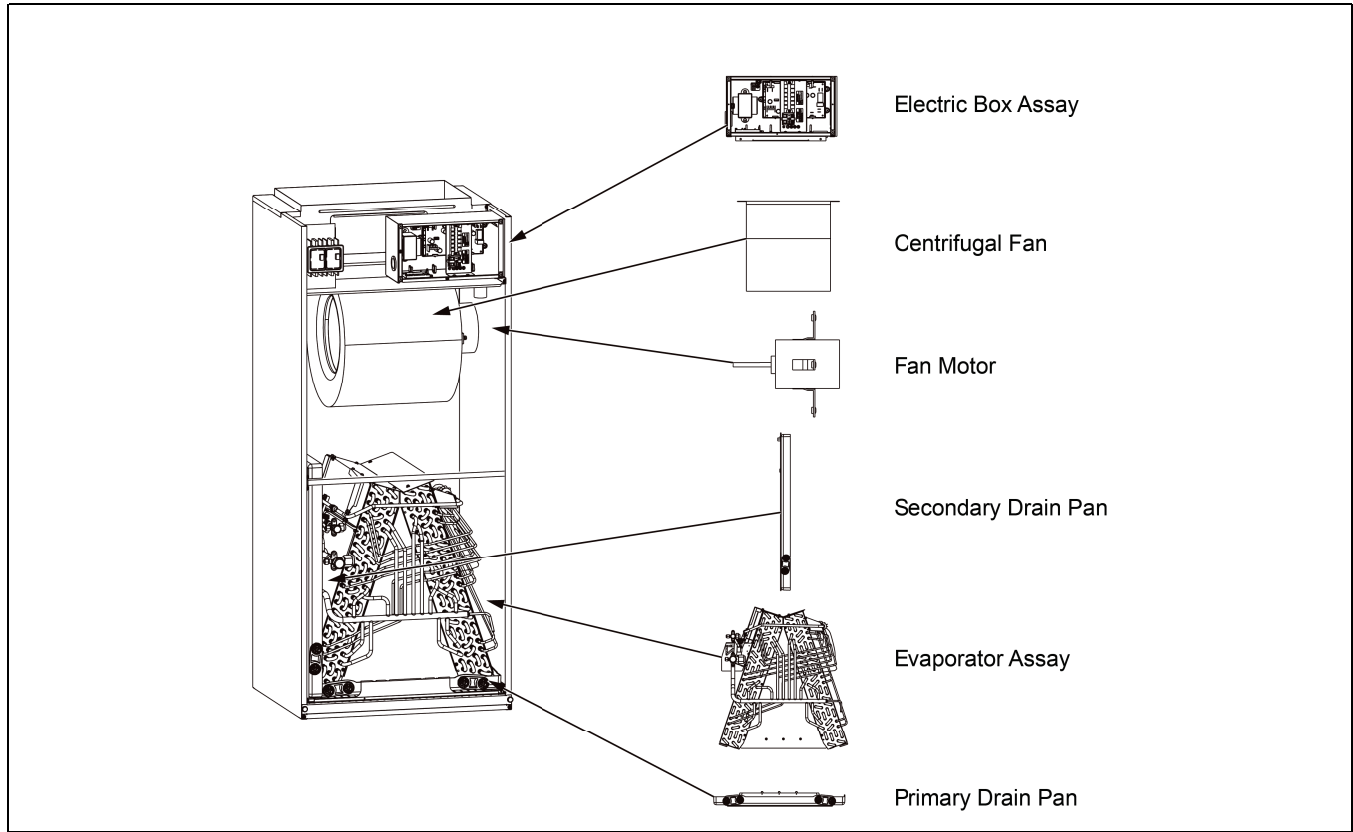
# Product Introduction

## Product Dimensions



Model	Dimension				
	W	D	H	A	B
4MXA2024A10NUA 4MXA2036A10NUA	21-1/4(540)	21-1/4(540)	48-1/4(1224)	11-5/8(295)	20(508)
4MXA2048A10NUA 4MXA2060A10NUA	24-3/4(630)	21-1/4(540)	57(1448)	11-5/8(295)	20(508)

## Main Components



## General Information

Model	Cooling Capacity(ton)	Optional Electric Heater (kW)
4MXA2024A10NUA	2.0	5/8/10
4MXA2036A10NUA	3.0	5/8/10
4MXA2048A10NUA	4.0	10/15/20
4MXA2060A10NUA	5.0	10/15/20

Model	Motor @ 230V ~, 60Hz	
	HP	FLA
4MXA2024A10NUA 4MXA2036A10NUA	1/2	2.1
4MXA2048A10NUA 4MXA2060A10NUA	1	3.2

Model	Filter Size - inch (mm)
4MXA2024A10NUA 4MXA2036A10NUA	19.29 x 20.31 x 0.59 (490 x 516 x 15)
4MXA2048A10NUA 4MXA2060A10NUA	20.67 x 20.31 x 0.59 (525 x 516 x 15)

**Notes:**

- Based upon W/nominal tonnage, dry coil and filter should be installed.
- Use 0.96 as approximate SCFM correction factor for wet coil.

## Dip Switch Configuration

Set the indoor fan speed through the eight dip switches of the indoor main control board. The higher the level, the higher the speed of the indoor unit fan. Below are the operation instructions:

1. Complete the dip switch settings before applying power to the unit.
2. After the unit is shut down or stopped at the

temperature setpoint, the indoor unit will delay for a few minutes and then shut down.

During installation and checkout, pay attention to whether the temperature controller has set the fan delay and shutdown time. If the temperature controller has been set, the actual delay and shutdown time of the fan is equal to the temperature controller setting time plus the fan delay time of the indoor unit.

Model	Level	Heat (SA2)				Cool (SA1)			
<b>4MXA2024A10NUA</b>	Level 1	1	0	0	0	0	0	0	0
	Level 2	1	0	0	1	0	0	0	0
	Level 3	1	0	1	0	0	0	0	0
	Level 4-Default	1	0	1	1	0	0	0	0
	Level 5	1	1	0	0	0	0	0	0
	Level 6	1	1	0	1	0	0	0	0
	Level 7	1	1	1	0	0	0	0	0
	Level 8	1	1	1	1	0	0	0	0
<b>4MXA2036A10NUA</b>	Level 1	0	0	0	0	0	0	0	0
	Level 2	0	0	0	1	0	0	0	0
	Level 3	0	0	1	0	0	0	0	0
	Level 4-Default	0	0	1	1	0	0	0	0
	Level 5	0	1	0	0	0	0	0	0
	Level 6	0	1	0	1	0	0	0	0
	Level 7	0	1	1	0	0	0	0	0
	Level 8	0	1	1	1	0	0	0	0
<b>4MXA2048A10NUA</b>	Level 1	1	0	0	0	0	0	0	0
	Level 2	1	0	0	1	0	0	0	0
	Level 3	1	0	1	0	0	0	0	0
	Level 4-Default	1	0	1	1	0	0	0	0
	Level 5	1	1	0	0	0	0	0	0
	Level 6	1	1	0	1	0	0	0	0
	Level 7	1	1	1	0	0	0	0	0
	Level 8	1	1	1	1	0	0	0	0
<b>4MXA2060A10NUA</b>	Level 1	0	0	0	0	0	0	0	0
	Level 2	0	0	0	1	0	0	0	0
	Level 3	0	0	1	0	0	0	0	0
	Level 4-Default	0	0	1	1	0	0	0	0
	Level 5	0	1	0	0	0	0	0	0
	Level 6	0	1	0	1	0	0	0	0
	Level 7	0	1	1	0	0	0	0	0
	Level 8	0	1	1	1	0	0	0	0

**Note:** 0 means dip switch to 'on', 1 means dip switch to number.

## Fan Performance Data

External static pressure should stay within the minimum and maximum limits shown in the table

below in order to ensure proper operation of both cooling, heating, and electric heating operation.

Model	4MXA2024A10NUA											
Level	Static Pressure (inches W.C.)											
	0	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Speed 1(CFM)	1030	900	840	—	—	—	—	—	—	—	—	—
Speed 2(CFM)	1080	960	900	840	—	—	—	—	—	—	—	—
Speed 3(CFM)	1220	1120	1060	990	850	—	—	—	—	—	—	—
Speed 4(CFM)	1390	1290	1240	1180	1070	960	—	—	—	—	—	—
Speed 5(CFM)	1580	1490	1440	1390	1290	1180	1090	970	830	—	—	—
Speed 6(CFM)	1720	1640	1600	1550	1450	1360	1250	1130	960	—	—	—
Speed 7(CFM)	1800	1730	1680	1630	1550	1460	1370	1270	1150	970	830	—
Speed 8(CFM)	1850	1820	1790	1740	1660	1580	1500	1410	1340	1200	1080	930

Model	4MXA2036A10NUA											
Level	Static Pressure (inches W.C.)											
	0	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Speed 1(CFM)	1150	1050	950	880	-	-	-	-	-	-	-	-
Speed 2(CFM)	1200	1100	1000	940	850	-	-	-	-	-	-	-
Speed 3(CFM)	1380	1260	1200	1100	950	-	-	-	-	-	-	-
Speed 4(CFM)	1550	1460	1390	1310	1160	1010	830	-	-	-	-	-
Speed 5(CFM)	1710	1650	1600	1560	1480	1400	1310	1210	1080	930	-	-
Speed 6(CFM)	1840	1800	1750	1710	1640	1590	1500	1420	1330	1220	1100	960
Speed 7(CFM)	1870	1830	1810	1800	1760	1690	1620	1520	1440	1350	1250	1150
Speed 8(CFM)	1900	1860	1840	1830	1790	1720	1660	1600	1540	1440	1320	1220



Model	4MXA2048A10NUA											
Level	Static Pressure (inches W.C.)											
	0	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Speed 1(CFM)	1640	1500	1450	1350	-	-	-	-	-	-	-	-
Speed 2(CFM)	1680	1560	1500	1380	1300	-	-	-	-	-	-	-
Speed 3(CFM)	1810	1690	1620	1550	1380	-	-	-	-	-	-	-
Speed 4(CFM)	1930	1830	1770	1710	1580	1430	1280	-	-	-	-	-
Speed 5(CFM)	2200	2110	2040	1980	1860	1720	1620	1490	1380	-	-	-
Speed 6(CFM)	2240	2190	2145	2100	2010	1870	1750	1615	1500	1380	-	-
Speed 7(CFM)	2280	2240	2200	2180	2130	2080	2000	1880	1750	1600	1420	-
Speed 8(CFM)	2300	2260	2220	2190	2140	2090	2040	1980	1930	1800	1700	1550

Model	4MXA2060A10NUA											
Level	Static Pressure (inches W.C.)											
	0	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Speed 1(CFM)	1660	1540	1470	1400	-	-	-	-	-	-	-	-
Speed 2(CFM)	1850	1720	1650	1600	1400	-	-	-	-	-	-	-
Speed 3(CFM)	1920	1800	1730	1650	1480	1315	-	-	-	-	-	-
Speed 4(CFM)	2110	2000	1950	1860	1760	1640	1490	1325	-	-	-	-
Speed 5(CFM)	2250	2200	2190	2140	2040	1930	1800	1670	1520	1370	-	-
Speed 6(CFM)	2260	2220	2200	2170	2090	2010	1910	1760	1650	1550	1430	1380
Speed 7(CFM)	2300	2260	2230	2200	2150	2115	2050	1990	1920	1840	1750	1660
Speed 8(CFM)	2320	2280	2250	2230	2190	2140	2080	2040	2000	1950	1920	1890

**Note:** Please refer to above table for fan speed selection, and '-' is not allowed to be used.

# Pre-Installation Instructions

## Checking Product Received

After receiving the product, please check if there is any damage caused by transportation. Shipping damage is the responsibility of the carrier. Verify the model number, specifications and accessories are correct prior to installation.

## Before Installation

Carefully read all instructions for the installation prior to installing product. Make sure each step or procedure is understood and any special considerations are taken into account before starting installation. Assemble all tools, hardware and supplies needed to complete the installation. Some items may need to be purchased locally. Make sure everything needed to install the product is on hand before starting.

## Codes & Regulations

This product is designed and manufactured to comply with national codes. It is installer's responsibilities to install the product in accordance with such codes and/or any prevailing local codes/regulations. The manufacturer assumes no responsibilities for equipment installed in violation of any codes or regulations.

## Replacement Parts

When reporting shortages or damages, or ordering repair parts, give the complete product model and serial numbers as stamped on the product. Replacement parts for this product are available through your contractor or local distributor.

# Installation

## Unit Inspection

Upon delivery, inspect the unit for damage. Any damage must be reported immediately to the carrier. Do not install such an equipment damaged by freight which determines the integrity and safety of the unit. Please check the equipment model number to ensure the unit is appropriately sized for the condensing unit.

If an incorrect unit is supplied, it must not be installed and it is to be returned to the supplier. The manufacturer assumes no responsibility for the installation of incorrectly delivered units. The evaporator coil contains high-pressure inert gas for holding charge.

## Location

**⚠ WARNING**

**INDOOR INSTALLATION ONLY!**

This air handler is designed for indoor installation only. Do not install it outdoors.

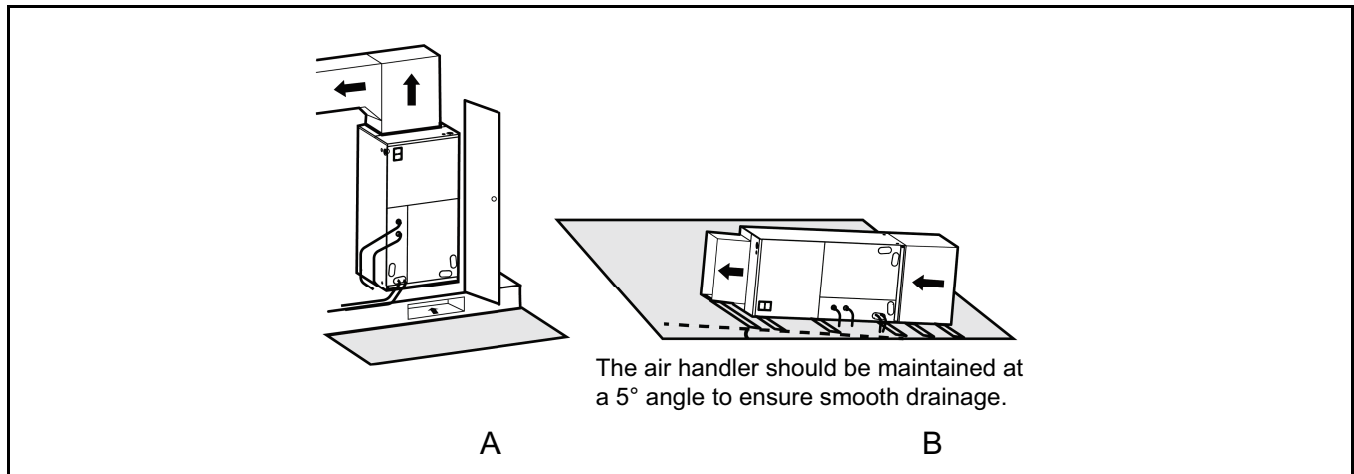
When installing the air handler, take consideration to minimize the length of refrigerant tubing as much as possible. Do not install the air handler in a location either above or below the condenser that violates the

instructions provided with the condenser. Service clearance is to take precedence. Allow a minimum of 24" in front of the unit for service clearance. When installing in an area directly over a finished ceiling (such as an attic), an emergency drain pan is required directly under the unit. See local and state codes for requirements. When installing this unit in an area that may become wet, elevate the unit with a sturdy, non-porous material. In installations that may lead to physical damage (i.e. a garage) it is advised to install a protective barrier to prevent such damage.

This air handler is designed for a complete supply and return ductwork system. Do not operate this product without all ductwork attached.

Based upon the actual conditions, if air handler is installed as Fig. A, the air handler should be concealed in a specific room or space and make sure the air handler is not accessible to the general public.

Based upon the actual conditions, if air handler is installed as Fig. B, make sure that there is enough space for care and maintenance and the height between the air handler and ground is above 98.4 in (2500 mm). And the air handler is not accessible to the general public. The air handler should be maintained at a 5° angle to ensure smooth drainage.



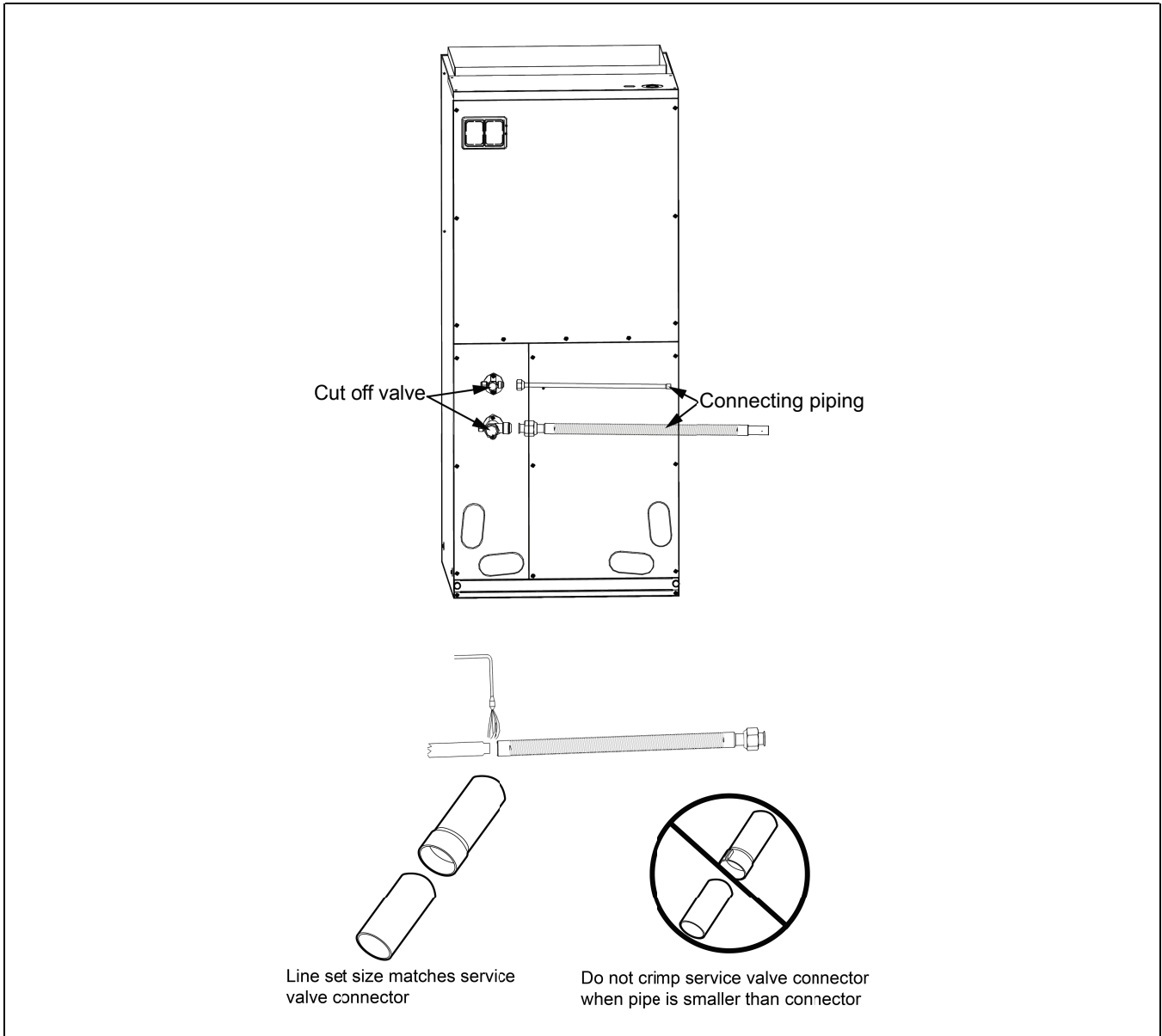
## Piping Connections

Model	External Diameter inch (mm)	
	Gas Pipe	Liquid Pipe
4MXA2024A10NUA	Φ 3/4 (19)	Φ 3/8 (9.5)
4MXA2036A10NUA		
4MXA2048A10NUA		
4MXA2060A10NUA		

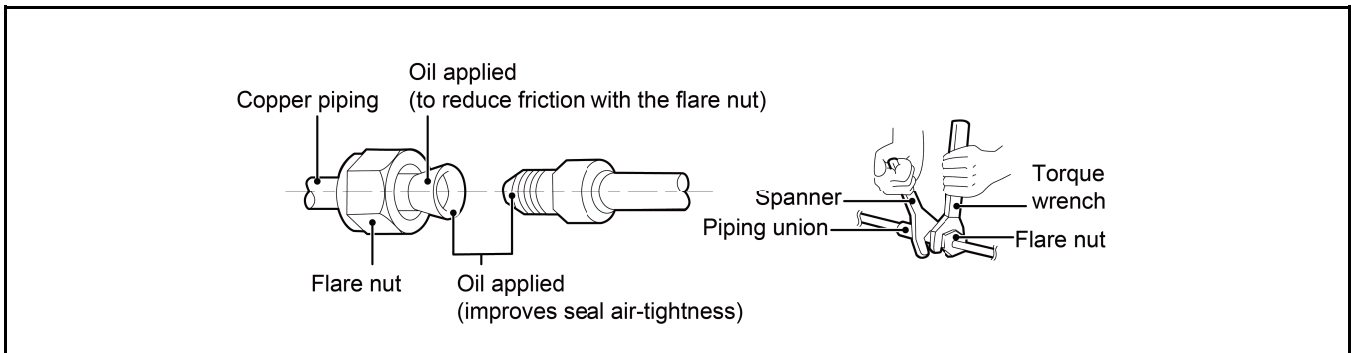
# Installation

## Piping Preparation

**Solder Connection:** All cut ends are to be round, burr free, and cleaned. Failure to follow this practice increases the chances for refrigerant leakage.



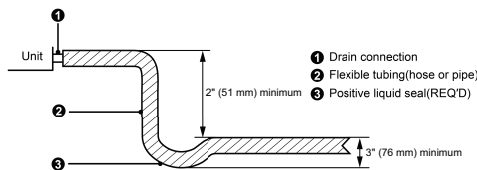
## Screw Connection



Pipe Diameter inch (mm)	Tightening Torque ft-lb (N-m)
Φ1/4 (6.35)	11.06 - 22.13 (15 - 30)
Φ3/8 (9.53)	25.82 - 29.5 (35 - 40)
Φ1/2 (12.7)	33.19 - 36.88 (45 - 50)
Φ5/8 (15.88)	44.25 - 47.94 (60 - 65)
Φ3/4 (19.05)	51.63 - 55.32 (70 - 75)
Φ7/8 (22.23)	59 - 62.69 (80 - 85)

## Condensate Removal

1. Condensate drain pipe should be connected into special drain system for air conditioner.
2. The drain pan has primary and secondary drain connection. Condensate removal is performed by attaching a 3/4" PVC pipe to the evaporator coil pan and terminated in accordance with local or state Plumbing/HVAC codes. The installation must include a "P" style trap that is located closely to the evaporator coil. Do not over-tighten the drain connection in order to prevent possible damage to the evaporator drain pan. See the following figure for details of a typical condensate line "P" trap.



ductwork, grills, special filters, accessories, etc. are accounted for in total resistance. See fan performance data in this manual.

- Do not operate the unit without all ductwork completed.
- Do not operate this product without all ductwork attached.
- Inadequate ductwork that restricts airflow can result in improper performance and compressor or heater failure. Ductwork is to be constructed in a manner that limits restrictions and maintains suitable air velocity. Ductwork is to be sealed to the unit in a manner that will prevent leakage.
- **Return ductwork:** Do not terminate the return ductwork in an area that can introduce toxic or objectionable fumes/odors into the ductwork. The return ductwork is to be introduced into the air handler bottom (up flow configuration).
- **Return Air Filters:** Each installation must include a return air filter. This filtering may be performed at the air handler or externally such as a return air filter grille.

## Ductwork

This air handler is designed for a complete supply and return ductwork system.

**⚠ WARNING**

**SAFETY HAZARD!**

Field ductwork must meet the National Fire Protection Association NFPA 90A, NFPA 90B and any applicable local ordinance. Sheet metal ductwork run in unconditioned spaces must be insulated and covered with a vapor barrier. Fibrous ductwork may be used if constructed and installed in accordance with SMACNA Construction Standard on Fibrous Glass Ducts. Ductwork must comply with National Fire Protection Association as tested by U/L Standard 181 for Class I Air Ducts. Check local codes for requirements on ductwork and insulation.

- Duct system must be designed within the range of external static pressure the unit is designed to operate against. It is important that the system airflow be adequate. Make sure supply and return

## Electrical Installation

### Requirement and Notice on Electrical Installation

The electrical installation for the air handler should observe the following requirements:

1. The electrical installation must be conducted by trained personnel and done according to the National Electric Code in addition to local rules and regulations. The electric circuit must be equipped with a circuit breaker with sufficient capacity.
2. The unit's operating power must be within the nominal range stated in the installation manual. Use a dedicated power circuit for the air handler. Do not draw power from another power circuit.
3. The air handler circuit should be at least 5 feet (1.5 m) away from any flammable surface.
4. Connect wiring by referring to the circuit diagram labeled on the unit and securely tighten.

# Installation

## Electrical Parameters

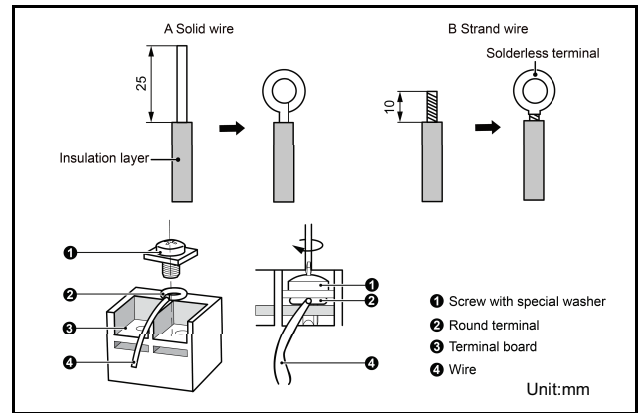
Model	Power Supply	Minimum Circuit Ampacity (A)	Maximum Overcurrent Protection (A)
4MXA2024A10NUA 4MXA2036A10NUA	208/230V-1Ph-60Hz	4	15
4MXA2048A10NUA 4MXA2060A10NUA		8	

### Notes:

1. Fuse is located on the main board.
2. Circuit breaker and power wiring specifications listed in the above table are determined based on the maximum power input of the units.
3. Specifications of circuit breaker are based on a working condition where the working temperature is 104° F (40° C). If working condition changes, please adjust the specifications according to national standards.
4. It is recommended to use AWG 18 wiring for the thermostat. The wiring length is not to exceed 98 feet (30 m).

## Connection of Power Wiring and Thermostat Wires

1. For solid wires (as shown below):
  - a. Use wire cutters to cut off the wire end and then peel away about 1 in (25 mm) of the insulation layer.
  - b. Use a screwdriver to unscrew the terminal screw on the terminal board.
  - c. Use nippers to bend the solid wire into a ring that fits the terminal screw.
  - d. Form a proper ring and then put it on the terminal board. Use a screwdriver to tighten up the terminal screw.
2. For strand wires (as shown below):
  - a. Use wire cutters to cut off the wire end and then peel away about 3/8 in (10 mm) of the insulation layer.
  - b. Use a screwdriver to unscrew the terminal screw on the terminal board.
  - c. Use a round terminal fastener or clamp to fix the round terminal firmly on the peeled wire end.
  - d. Locate the round terminal conduit. Use a screwdriver to replace it and tighten up the terminal screw (as shown below).



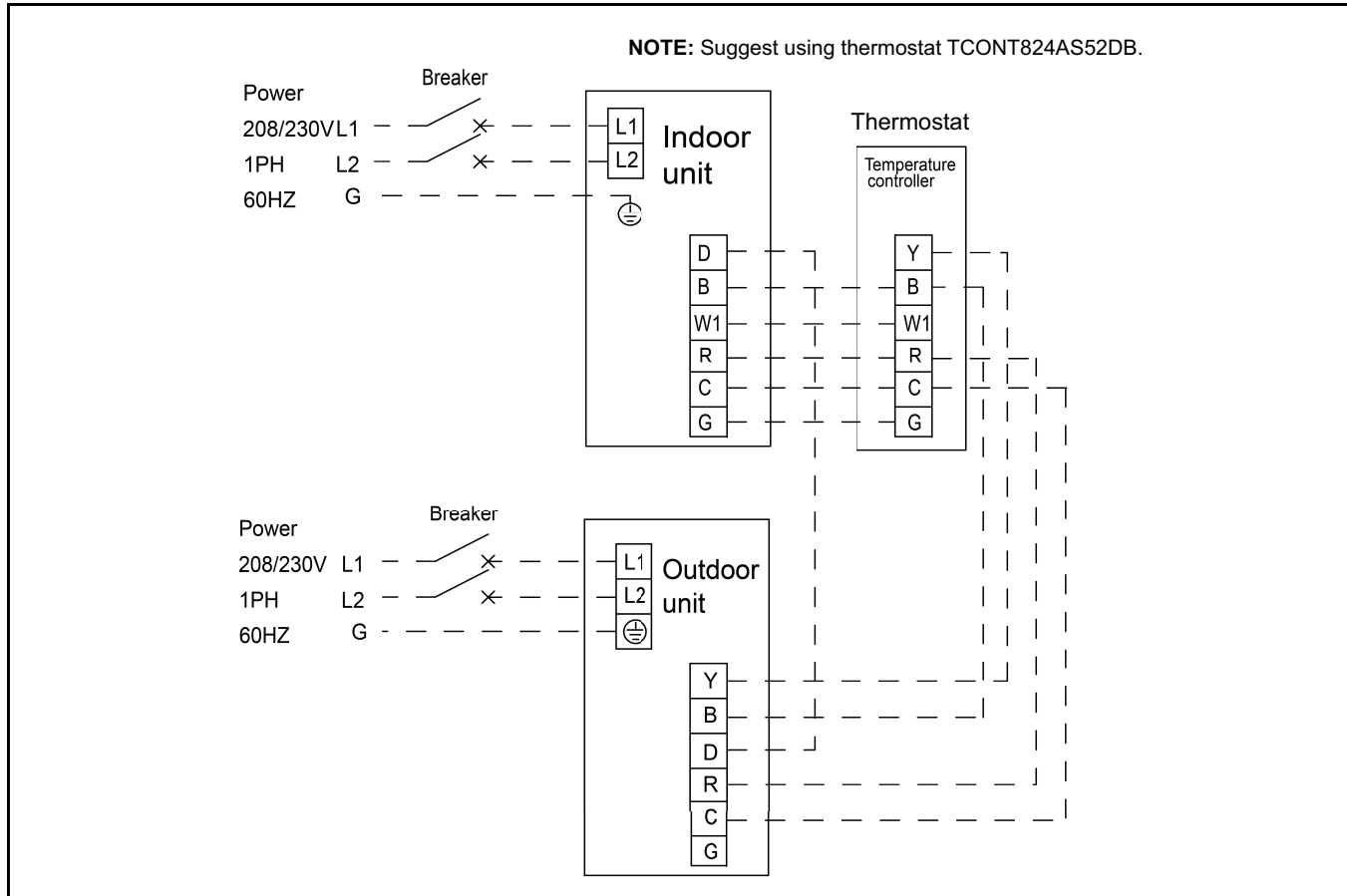
## ⚠ WARNING

### Electrical and Fire Hazard!

**Failure to follow this Warning could result in property damage, serious personal injury, or death.**

- Before working, check whether the indoor unit and thermostat are powered on.
- Match the terminal numbers and wire colors with the colors indicated in the indoor unit. Wrong wire connection may burn the electrical components.
- Connect the wires firmly to the wiring box. Incomplete installation may lead to fire hazard.
- Ground wire should be connected.

**Table 1. Wires of Indoor Unit (Only for air handler without electric heater)**



**Notes:**

- *Y means Compressor control signal for the outdoor unit;*  
*B which is energized under the heating mode means 4-way valve control signal;*  
*D means defrosting signal;*  
*R means 24V AC power supply;*  
*C means 24V common;*  
*G means indoor unit fan signal for the indoor unit;*  
*W1 means heater control signal.*
- *For cooling only unit, there is no need to connect the B and D terminals.*
- *When outdoor defrosts, D of outdoor unit will send 24V signal.*

**⚠ WARNING**

**WIRING INFORMATION!**

- High and low voltage wires should be routed through different openings of the electric box cover.
- Use screws to tighten up the thermostat wires and power wiring of unit on the terminal board. Wrong connection may lead to fire hazard.
- Ground the unit through connecting the ground wire.
- The units should comply with applicable local and national rules and regulations on power consumption.
- When connecting the power wiring, make sure the phase sequence of the power supply matches with the corresponding terminals, otherwise the compressor will get reversed and operate abnormally.

## Electric Heater

The air handlers listed in this manual do not have factory installed electric heat. Electric heat is available as an accessory. Please refer to installation instructions provided with heater kit for the correct installation procedure.

**Important:** *The electrical characteristics of the air handler, the electric heater kit, and the supply power should be identical. This air handler does not have factory installed electric heater. Electric heater is available as an accessory. If installing this option, the only heater kits that can be used are the series as indicated below.*

### **⚠ WARNING**

#### **WARNING!**

**Insure that the fan is running during electric heat operation. Also make sure that the electric heat is turned off before the fan turns off to avoid an unsafe condition.**

#### Electric Heater Kits Available

Description	Ref. air handler use(ton)
5kW heat strip	2.0/3.0
8kW heat strip	2.0/3.0
10kW heat strip	2.0/3.0/4.0/5.0
15kW heat strip	4.0/5.0
20kW heat strip	4.0/5.0



# Installation Check and Trial Run

## Checking Items after Installation

Items to be checked	Problems might happen due to improper installation	Check
Check if the unit has been installed correctly.	The unit might vibrate or emit noise.	
Check if the unit has passed the leakage test.	May cause cooling (heating) capacity loss.	
Check if the unit has been insulated properly.	It may cause condensation.	
Check if the condensate drains freely.	It may cause water damage from condensate.	
Check if the power voltage matches the nameplate.	Electrical damage to components may occur.	
Check if the wiring has been installed correctly.	Electrical damage to components may occur.	
Check if the unit has been grounded properly.	Electrical damage to components may occur.	
Check if the wiring is the correct wire gage.	Electrical damage to components may occur.	
Check if there is any obstruction blocking the air inlet/outlet.	Cooling (heating) capacity will be affected.	
Make sure that supply and return ducts are properly connected.	Air leakage, vibration and noise may result if not connected properly.	

## Trial Run

### Preparation for Trial Run

1. Never power on the unit until all the installation work has been done.
2. All the control circuit and wiring has been connected correctly and is secure. Valves on the gas and liquid line should be completely open.
3. Check if the unit appearance and piping system has been damaged during installation.
4. Check if the terminals are loose and the phases are correct.

### Trial Run

1. Trial run should be done by trained personnel only after above items have been checked.
2. Power on the unit.
3. Check that the unit operates as expected.

# Common Malfunction and Corrective Action

If the unit doesn't run normally, check the following items:

Phenomenon	Reason	Treatment
The unit can not be started.	The unit isn't connected to power.	Connect with power supply.
	Low voltage.	Check if circuit voltage is within nameplate voltage.
	Fuse broken or breaker trips off.	Replace fuse or connect breaker.
The unit operates but stops immediately.	Air inlet/outlet of indoor unit is blocked.	Remove obstruction.
Abnormal cooling or heating.	Air inlet/outlet of indoor unit is blocked.	Remove obstruction.
	Inappropriate temperature setting.	Adjust setting at thermostat.
	Filter is blocked by dirt.	Clean or replace the filter.

**Note:** If reasons are still unclear after checking above items, please contact authorized service center for assistance.

Following circumstances are not malfunction:

"Malfunction"	Reason
Unit doesn't run.	Unit won't start immediately after it shuts down.
	When power is initially turned on.
Indoor unit still runs after thermostat is satisfied.	Indoor unit fan continues to run after thermostat is satisfied.

There are LED indicators on the main board of the indoor unit, which are used to display the operating status and malfunction information of the unit.

LED indicator	Color	Function
Power Indicator	Red	Indoor unit main board is powered on, Power Indicator is on.
Running Indicator	Green	After detecting the indoor fan run signal, the running indicator light is on, when there is no indoor fan signal, the running indicator light is off. When detecting a system failure, the running indicator light flashes.

Different running indicator flashing light means different system failure.

Malfunction	Running Indicator status	Remark
Indoor Jumper cap failure	Light out 3 seconds then flashes once	Flashing means light on 0.5 seconds and then off 0.5 seconds.
Indoor fan failure	Light out 3 seconds then flashes twice	
Indoor tube temperature sensor failure	Light out 3 seconds then flashes four times	
Indoor air outlet temperature sensor failure	Light out 3 seconds then flashes six times	

# Maintenance

This product is designed for dependable service; however, periodic maintenance should be scheduled and conducted by trained professional service personnel. This service should be conducted at least annually, and should include testing and inspection of electrical and refrigerant components.

1. The system air filter(s) should be inspected, cleaned or replaced at least monthly.
2. Make certain that the access panels are replaced and secured properly before placing the unit back in operation.
3. The heat transfer surface should be cleaned.
4. The blower motor is permanently lubricated for normal operating conditions.

# After-Sales Service

In the event you have problems with the unit or require service, please contact your local installing / servicing dealer.

## Drain Pipe

Regularly check to see if the drain pipe is clogged in order to ensure drain condensate doesn't overflow and cause water damage.

## Parts Replacement

Purchase parts from the installing or servicing dealer if necessary.

**Note:** *During leakage testing, never mix oxygen, ethyne (acetylene) or other dangerous gases into the refrigeration circuit. Nitrogen should be used for leakage testing.*

## About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit [www.trane.com](http://www.trane.com) or [www.americanstandardair.com](http://www.americanstandardair.com).



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