



**RESIDENTIAL**  
TRANQUILITY® (SA) PREMIER AIR HANDLER

# **INSTALLATION, OPERATION & MAINTENANCE MANUAL**

Part#: 97B0174N01 | Created: December 3, 2024

Models: SA 024-060  
60Hz – R-454B



Models:  
SA  
024-060

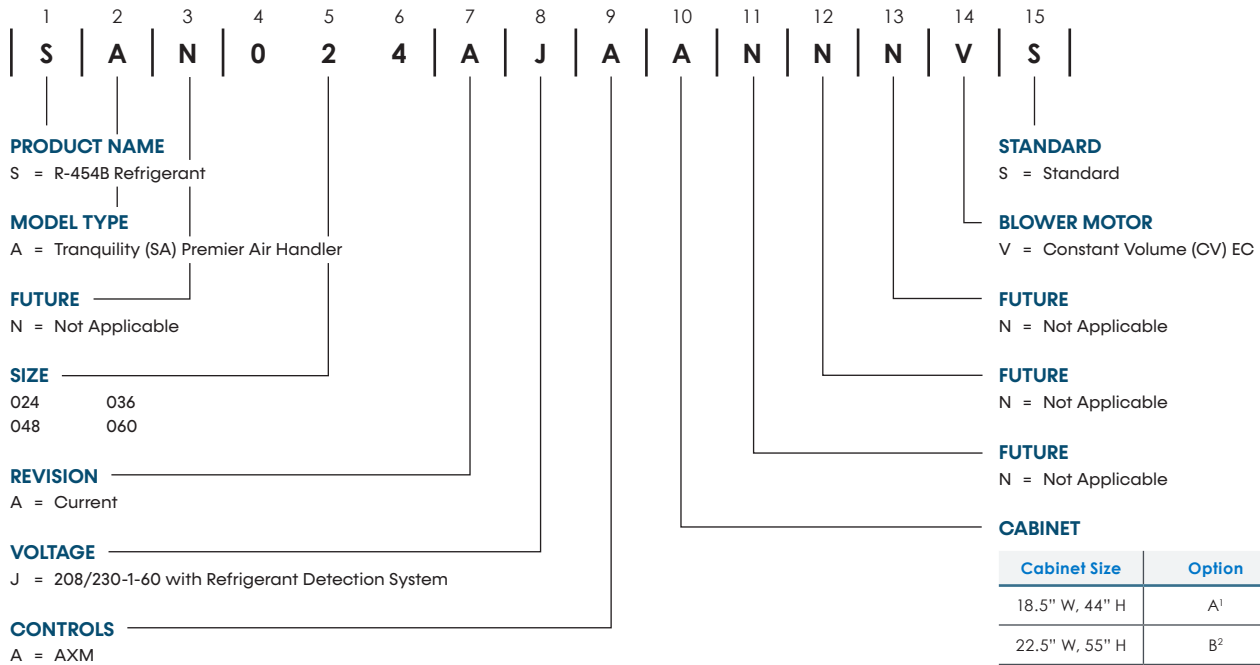
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# Model Nomenclature



- NOTES:**
1. Available with size 024
  2. Available with sizes 036 and 048
  3. Available with size 060

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## Attentions, Cautions, and Warnings

### SAFETY

Warnings, cautions, and notices appear throughout this manual. Read these items carefully before attempting any installation, service, or troubleshooting of the equipment.


**DANGER:** Indicates an immediate hazardous situation, which if not avoided will result in death or serious injury. DANGER labels on unit access panels must be observed.

**WARNING:** Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.

**CAUTION:** Indicates a potentially hazardous situation or an unsafe practice, which if not avoided could result in minor or moderate injury or product or property damage.

**NOTICE:** Notification of installation, operation, or maintenance information, which is important, but which is not hazard-related.

**WARNING**



Disconnect power supply(ies) before servicing. Refer servicing to qualified service personnel. Electric shock hazard. May result in injury or death!

**WARNING**

To avoid the release of refrigerant into the atmosphere, the refrigerant circuit of this unit must be serviced only by technicians who meet local, state, and federal proficiency requirements.

**WARNING**

The installation of water-source heat pumps and all associated components, parts, and accessories which make up the installation shall be in accordance with the regulations of ALL authorities having jurisdiction and MUST conform to all applicable codes. It is the responsibility of the installing contractor to determine and comply with ALL applicable codes and regulations.

**WARNING**

The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).

**WARNING**

If unit connected via an air duct system to one or more rooms with R-454B is installed in a room with an area less than  $A_{min}$  or has an Effective Dispersal Volume less than minimum, that room shall be without continuously operating open flames or other POTENTIAL IGNITION SOURCES. A flame-producing device may be installed in the same space if the device is provided with an effective flame arrest.

**WARNING**

All refrigerant discharged from this unit must be recovered WITHOUT EXCEPTION. Technicians must follow industry accepted guidelines and all local, state, and federal statutes for the recovery and disposal of refrigerants. If a compressor is removed from this unit, refrigerant circuit oil will remain in the compressor. To avoid leakage of compressor oil, refrigerant lines of the compressor must be sealed after it is removed.

**WARNING**

This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

**WARNING**

An unventilated area where the appliance using FLAMMABLE REFRIGERANTS is installed shall be so constructed that should any refrigerant leak, it will not stagnate so as to create a fire or explosion hazard.

**WARNING**

Auxiliary devices which may be a POTENTIAL IGNITION SOURCE shall not be installed in the duct work. Examples of such POTENTIAL IGNITION SOURCES are hot surfaces with a temperature exceeding 1,292°F (700°C)

**WARNING**

An unventilated area where a water source heat pump is installed and surpasses a R-454B refrigerant charge of 62 oz (1.76 kg), shall be without continuously operating open flames (for example an operating gas appliance) or other POTENTIAL IGNITION SOURCES (for example, an operating electric heater, hot surfaces).

**WARNING**

Only auxiliary electric heaters approved by ClimateMaster shall be installed in connecting ductwork. The installation of any other auxiliary devices is beyond ClimateMaster's responsibility.

**WARNING**

For mechanical ventilation, the lower edge of the air extraction opening where air is exhausted from the room shall not be more than 3.94 inches (100 mm) above the floor. The location where the mechanical ventilation air extracted from the space is discharged shall be separated by a sufficient distance, but not less than 9.84 feet (3 m), from mechanical ventilation air intake openings, to prevent recirculation to the space.

**WARNING**

Children being supervised are NOT to play with the appliance.

**WARNING**

Do not pierce or burn.

**WARNING**

Be aware that refrigerants may not contain odor.

## Attentions, Cautions, and Warnings

### CAUTION

DO NOT store or install units in corrosive environments or in locations subject to temperature or humidity extremes (e.g., attics, garages, rooftops, etc.). Corrosive conditions and high temperature or humidity can significantly reduce performance, reliability, and service life. Always move and store units in an upright position. Tilting units on their sides will cause equipment damage.

### CAUTION

CUT HAZARD - Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing heat pumps.

### CAUTION

To avoid equipment damage, DO NOT use these units as a source of heating or cooling during the construction process. The mechanical components and filters can quickly become clogged with construction dirt and debris, which may cause system damage and void product warranty.

### CAUTION

All three phase scroll compressors must have direction of rotation verified at startup. Verification is achieved by checking compressor Amp draw. Amp draw will be substantially lower compared to nameplate values. Additionally, reverse rotation results in an elevated sound level compared to correct rotation. Reverse rotation will result in compressor internal overload trip within several minutes. Verify compressor type before proceeding.

### CAUTION

Maximum allowed inlet water temperature 150°F for HWG applications.

### NOTICE

Servicing shall be performed only as recommended by the manufacturer.

### NOTICE

REFRIGERANT SENSORS for REFRIGERANT DETECTION SYSTEMS shall only be replaced with sensors specified by the appliance manufacturer.

### NOTICE

An unconditioned attic is not considered natural ventilation.

### NOTICE

This unit is equipped with electrically powered safety measures. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

### NOTICE

For installation only in locations not accessible to the general public.

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## General Information

### INSPECTION

Upon receipt of the equipment, carefully check the shipment against the bill of lading. Make sure all units have been received. Inspect the packaging of each unit, and inspect each unit for damage. Ensure that the carrier makes proper notation of any shortages or damage on all copies of the freight bill and completes a common carrier inspection report. Concealed damage not discovered during unloading must be reported to the carrier within 15 days of receipt of shipment. If not filed within 15 days, the freight company can deny the claim without recourse.

**NOTE: It is the responsibility of the purchaser to file all necessary claims with the carrier. Notify your equipment supplier of all damage within 15 days of shipment.**

### STORAGE

Equipment should be stored in its original packaging in a clean, dry area. Store units in an upright position at all times. You may stack vertical configurations a maximum of two units high and horizontal configurations a maximum of three units high.

### UNIT PROTECTION

Cover units on the job site with either the original packaging or an equivalent protective covering. Cap the open ends of pipes stored on the job site. In areas where painting, plastering, and/or spraying has not been completed, all due precautions must be taken to avoid physical damage to the units and contamination by foreign material. Physical damage and contamination may prevent proper startup and may result in costly equipment cleanup.

Examine all pipes, fittings, and valves before installing any of the system components. Remove any dirt or debris found in or on these components.

### PRE-INSTALLATION

Installation, Operation, and Maintenance instructions are provided with each unit. Horizontal equipment is designed for installation above false ceiling or in a ceiling plenum. Other unit configurations are typically installed in a mechanical room. The installation site chosen should include adequate service clearance around the unit. Before unit startup, read all manuals and become familiar with the unit and its operation. Thoroughly check the system before operation.

### PREPARE UNITS FOR INSTALLATION AS FOLLOWS:

1. Compare the electrical data on the unit nameplate with ordering and shipping information to verify that the correct unit has been shipped.
2. Keep the cabinet covered with the original packaging until installation is complete and all plastering, painting, etc. is finished.
3. Verify refrigerant tubing is free of kinks or dents and that it does not touch other unit components.
4. Inspect all electrical connections. Connections must be clean and tight at the terminals.
5. Remove any blower support packaging (water-to-air units only).
6. Some airflow patterns are field convertible (horizontal units only). Locate the airflow conversion section of this IOM.
7. Locate and verify any hot water generator (HWG), hanger, or other accessory kit located in the compressor section or blower section.

### CHECKS TO THE AREA

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

## General Information

### Work Procedure

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

### 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.

### Checking for presence of refrigerant

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

### Presence of fire Extinguisher

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO<sub>2</sub> fire extinguisher adjacent to the charging area.

### No ignition sources

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

### Ventilated area

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

### Checks to the Refrigeration Equipment

The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

- The actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed;
- The ventilation machinery and outlets are operating adequately and are not obstructed;
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
- Refrigerant piping or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

### Checks to Electrical Devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- Capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- That no live electrical components and wiring are exposed while charging, recovering, or purging the system;
- That there is continuity of earth bonding.

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## General Information

### REPAIR TO INTRINSICALLY SAFE COMPONENTS

Intrinsically safe components must be replaced.

#### CABLING

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

### REQUIRED AREA FOR INSTALLATION

The minimum room area of the space ( $A_{min}$ ) or a minimum room area of conditioned space ( $TA_{min}$ ) shall be corrected for unit's location altitude by multiplying  $A_{min}$  or  $TA_{min}$  by the applicable altitude adjustment factor (AF) for building ground-level altitude ( $H_{alt}$ ) in feet or meters, as shown in Table 1.

**NOTE:**

- You can use Imperial or Metric measurements to calculate  $A_{min}$  or  $TA_{min}$ .
- The maximum allowable altitude of installation for this product is 6,561 ft (2,000 m).

**Table 1: Altitude Adjustment**

H <sub>alt</sub> ft (m)	AF
0 (0)	1.00
656 (200)	1.00
1,312 (400)	1.00
1,968 (600)	1.00
2,624 (800)	1.02
3,280 (1,000)	1.05
3,937 (1,200)	1.07
4,593 (1,400)	1.10
5,249 (1,600)	1.12
5,905 (1,800)	1.15
6,561 (2,000)	1.18

### AIR HANDLER DESCRIPTION

ClimateMaster Tranquility® Premier Air Handlers are designed for use with Tranquility indoor/outdoor split units and are available for vertical upflow or downflow, and horizontal-left or horizontal-right airflow.

- The AXM board allows 4-wire connection with communicating split (SJ/SP) and the iGate 2 Communicating (AWC) Thermostat. Airflow and accessories can be configured on the thermostat in plain English.
- Air coils are constructed of aluminum fins bonded to internally grooved aluminum tubing.
- Air coils are tested at the factory with an extensive refrigerant leak check.
- Air coils have sweat refrigerant connections.
- Ideally suited for new installations or add on air conditioning.
- Feature two sets of 3/4-inch FPT condensate drain connections for ease of connection.
- Air handlers are AHRI certified for system application with ClimateMaster indoor and outdoor split units.
- Condensate drain pan is constructed of high grade, heat resistant, corrosion-free thermal set material.
- Unique drain pan design maximizes application flexibility and condensate removal.

### REPLACEMENT PARTS

Any replacement part must be the same as or an approved alternate to the original part supplied. The manufacturer is not be responsible for replacement parts not designed to physically fit or operate within the design parameters the for which the original parts were selected. When ordering replacement parts, it is necessary to order by part number and include the complete model number and serial number from the coil rating plate. See the parts list for unit component part numbers. Parts are available through the local distributor.



## Minimum Installation Area

### MINIMUM INSTALLATION AREA

#### Minimum area where a blower-equipped unit must be installed, and mechanical/natural ventilation is not required

Model	Charge (oz)	Minimum Installation Area ft <sup>2</sup> (m <sup>2</sup> ) [A <sub>min</sub> ]			
		Floor	Window	Wall	Ceiling
SJ/SP024	60	290 (26.9)	115 (10.7)	66 (6.1)	54 (5.0)
SJ/SP036	96	743 (69.0)	231 (21.5)	105 (9.6)	87 (8.1)
SJ/SP048	106	906 (84.2)	282 (26.2)	117 (10.9)	96 (8.9)
SJ/SP060	136	1,492 (138.6)	464 (43.1)	153 (14.2)	123 (11.4)

A <sub>min</sub>	=	Minimum area where unit is installed where ventilation is not required.
h <sub>inst</sub> (floor)	=	0.0 ft (0.0 m)
h <sub>inst</sub> (window)	=	3.3 ft (1.0 m)
h <sub>inst</sub> (wall)	=	5.9 ft (1.8 m)
h <sub>inst</sub> (ceiling)	=	7.2 ft (2.2 m)

#### Minimum CFM of unit that has a blower needed for mitigation mode.

Model	Charge (oz)	Minimum CFM [Q <sub>min</sub> ]
SJ/SP024	60	101.45
SJ/SP036	96	162.4
SJ/SP048	106	179.3
SJ/SP060	136	230.0

Q <sub>min</sub>	=	Minimum CFM provided by unit
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#### Minimum area and CFM requirements for the conditioned space

Model	Charge (oz)	Conditioned Area	
		TA <sub>min</sub> ft <sup>2</sup> (m <sup>2</sup> )	Q <sub>min</sub> (ft <sup>2</sup> /min)
SJ/SP024	60	101.5 (9.4)	3.07
SJ/SP036	96	162.4 (15.1)	4.92
SJ/SP048	106	179.3 (16.7)	5.43
SJ/SP060	136	230.0 (21.4)	6.97

TA <sub>min</sub>	=	Minimum conditioned area for venting leaked refrigerant
Q <sub>min</sub>	=	Minimum ventilation flow rate for conditioned space if space is less than TA <sub>min</sub>

#### Minimum area of opening for natural ventilation

Model	Charge (oz)	A <sub>nv</sub> in <sup>2</sup> (m <sup>2</sup> )
SJ/SP024	60	104.0 (0.07)
SJ/SP036	96	131.6 (0.02)
SJ/SP048	106	138.3 (0.90)
SJ/SP060	136	156.6 (0.10)

A <sub>nv</sub>	=	Minimum natural ventilation area opening to the outdoors
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When the openings for connected rooms or natural ventilation are required, the following conditions shall be applied:

- The area of any openings above 11.8 inches (300 mm) from the floor shall not be considered in determining compliance with Anv<sub>min</sub>.
- At least 50% of the required opening area Anv<sub>min</sub> shall be below 7.8 inches (200 mm) from the floor.
- The bottom of the lowest openings shall not be higher than the point of release when the unit is installed and not more than 3.9 inches (100 mm) from the floor.
- Openings are permanent openings which cannot be closed.
  - For openings extending to the floor, the height shall not be less than 0.78 inch (20 mm) above the surface of the floor covering.
- A second higher opening shall be provided. The total size of the second opening shall not be less than 50% of minimum opening area for Anv<sub>min</sub> and shall be at least 3.3 ft (1.5 m) above the floor.

## Refrigerant System Servicing

### REFRIGERANT SYSTEM

Verify that air- and water-flow rates are at proper levels before servicing the refrigerant circuit. To maintain sealed-circuit integrity, do not install service gauges unless unit operation appears abnormal. Reference the operating charts for pressures and temperatures.

#### Removal and Evacuation

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

- Safely remove refrigerant following local and national regulations
- Evacuate
- Purge the circuit with Nitrogen
- Evacuate
- Continuously flush or purge with Nitrogen when using flame to open circuit
- Open the circuit.

The refrigerant charge shall be recovered into the correct recovery cylinders as venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerant purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for FLAMMABLE REFRIGERANT). This process shall be repeated until no refrigerant remains in the system (optional for FLAMMABLE REFRIGERANT). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

#### Charging Procedures

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

- Ensure that contamination of different refrigerants does not occur when using charging equipment.
- Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions to ensure charging with liquid refrigerant.
- Ensure that the REFRIGERATION SYSTEM is grounded prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already):
  - For packaged units, the data plate will dictate the charge level.
  - For split systems, write the charge level on the data plate.
- Extreme care shall be taken not to overfill the REFRIGERATION SYSTEM.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

#### Leak Detection

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

The following leak detection methods are deemed acceptable for all refrigerant systems.

A2L-Compliant electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.

## Refrigerant System Servicing

Leak-detection equipment shall be set at a percentage of the lower flammability limit of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed.

Leak-detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

### NOTE:

Examples of leak detection fluids are:

- Bubble method
- Fluorescent method agents

If a leak is suspected, all naked flames shall be removed/extinguished.

If a refrigerant leak that requires brazing is identified, all of the refrigerant shall be recovered from the system, or isolated (by means of shut-off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to Removal and Evacuation section.

## DECOMMISSIONING

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

1. Become familiar with the equipment and its operation.
2. Isolate system electrically.

3. Before attempting the procedure, ensure that:
  - Mechanical-handling equipment is available, if required, for handling refrigerant cylinders.
  - All personal protective equipment is available and being used correctly.
  - The recovery process is supervised at all times by a competent person.
  - Recovery equipment and cylinders conform to the appropriate standards.
4. Pump down refrigerant system, if possible.
5. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
6. Make sure that cylinder is situated on the scales before recovery takes place.
7. Start the recovery machine and operate in accordance with instructions.
8. Do not overfill cylinders (no more than 80% volume liquid charge).
9. Do not exceed the maximum working pressure of the cylinder, even temporarily.
10. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
11. Recovered refrigerant shall not be charged into another REFRIGERATING SYSTEM unless it has been cleaned and checked.

**Labeling** - Upon decommissioning, equipment shall be labeled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed.

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## Refrigerant System Servicing

### RECOVERY

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted.

In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

## Physical Data

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### Tranquility SA Physical Data

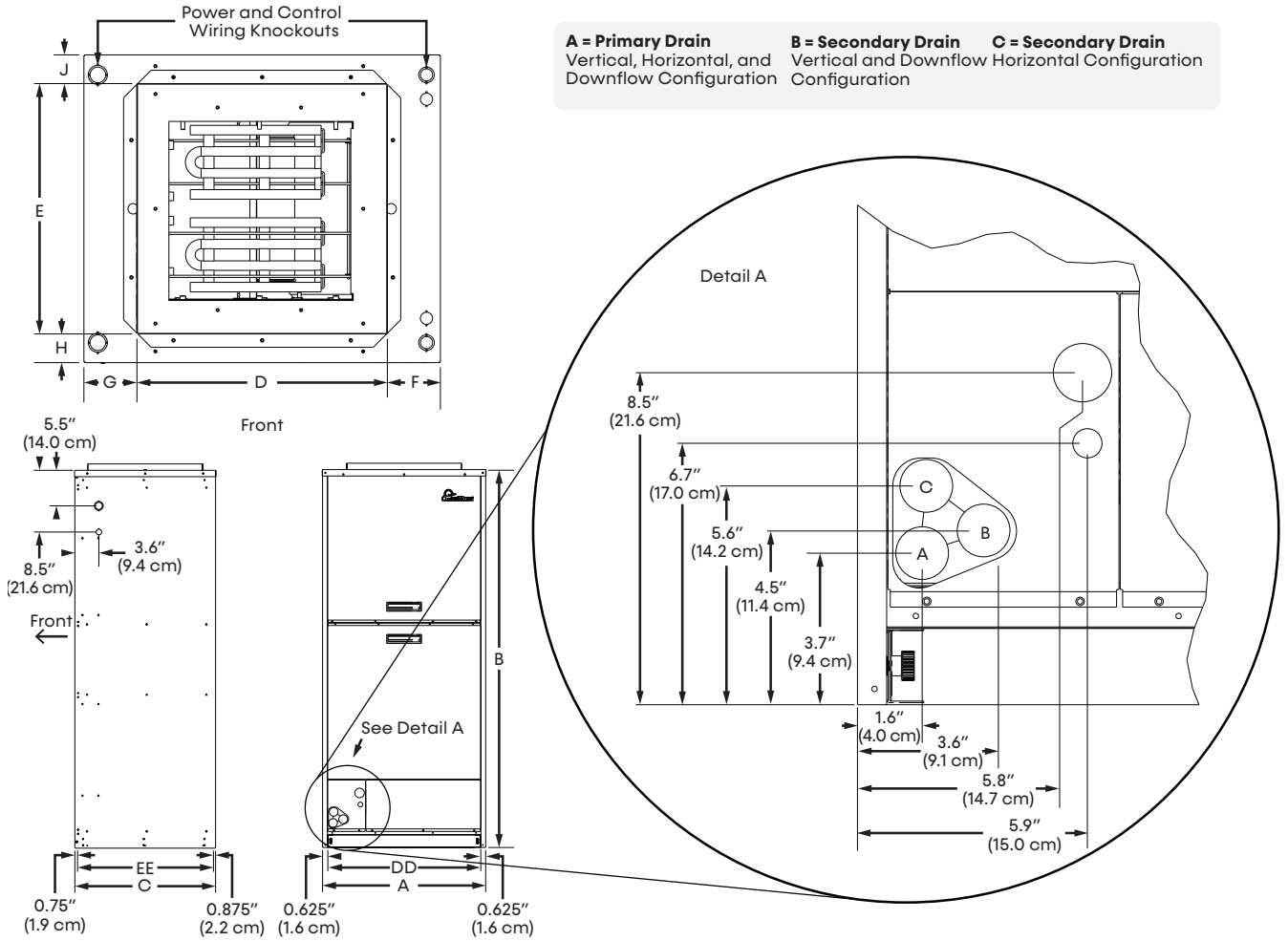
Model	024	036	048	060
<b>Water Connection Size</b>				
Liquid I.D. (in.)	3/8	3/8	3/8	3/8
Suction I.D. (in.)	3/4	7/8	7/8	7/8
Refrigerant Leak Detection System	R <sup>1</sup>	R <sup>1</sup>	R <sup>1</sup>	R <sup>1</sup>
Number of Sensors	1	1	1	1
<b>Fan Motor - CV EC</b>				
Filter Standard 1" Throwaway	16 x 20	20 x 20		20 x 24
Weight - Operating lbs.	80	173	180	198
Weight - Packaged lbs.	96	198	218	236

1. The RDS is factory installed on all Tranquility SA sizes.

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# Tranquility SA Dimensional Data

Cabinet Size	Overall Cabinet			Supply Air Opening		Return Air Opening		F	G	H	J	
	A Width	B Height	C Depth	D Width	E Depth	DD Width	EE Depth					
A - Cabinet	in.	18.5	44.0	22.0	14.0	14.0	17.3	20.4	2.3	2.3	4.1	4.1
	cm.	47.0	111.8	55.9	35.6	35.5	43.9	51.8	5.8	5.8	10.3	10.3
B - Cabinet	in.	22.0	55.0	22.0	18.0	18.0	20.8	20.4	2.1	2.1	2.1	2.1
	cm.	55.9	139.7	55.9	45.7	45.7	52.8	51.8	5.2	5.2	5.2	5.2
C - Cabinet	in.	25.5	59.0	22.0	18.0	18.0	24.3	20.4	3.8	3.8	2.1	2.1
	cm.	64.8	149.9	55.9	45.7	45.7	61.7	51.8	9.9	9.9	5.2	5.2



The SA Air Handler(s) are designed for upflow, horizontal, and downflow applications. The coils have a dry-nitrogen holding charge and are equipped with brazing-stub refrigerant connections for easy installation. All models come equipped with a factory-installed TXV.

#### Installers should use the following guidance:

- Where precise forming of refrigerant lines is required, a tubing bender is recommended for copper tubing. One should avoid sharp bends and contact of the refrigerant lines with metal surfaces.
- Refrigerant lines should be protected where they pass through the raw edges of holes.
- The air handler must be level or slightly pitched toward drain for proper condensate drainage.
- Seal the openings into the cabinet to reduce risk of condensate blow off from the coil.

## AIR HANDLER INSTALLATION

### Charging the System

#### WARNING

Electric furnaces may be connected to more than one supply circuit.

SA Premier Air Handlers are designed to match SJ/SP Premier Split Series units. For charging procedures, refer to the Compressor Section IOM.

### Upflow Installation

1. Position the unit on a plenum box or other suitable foundation. Provide a minimum height for proper unrestricted airflow based on the CFM requirement for each unit size.
2. If a return air duct is connected to the air handler, it must be the same dimensions as shown in the outline drawing in Figure 1.

3. The plenum box and unit should be isolated from the foundation using a suitable isolating material.
4. Openings where field wiring enters the cabinet must be completely sealed. The location of power entry is shown on the outline drawing.
5. After ductwork connections are made, seal airtight and per local codes.

### Downflow Installation

1. Position the unit on a plenum box or other suitable foundation. Provide a minimum height for proper unrestricted airflow based on the CFM requirement for each unit size.
2. If a return air duct is connected to the air handler, it must be the same dimensions as shown in the outline drawing in Figure 1.
3. The plenum box and unit should be isolated from the foundation using a suitable isolating material.
4. Openings where field wiring enters the cabinet must be completely sealed. The location of power entry is shown on the outline drawing.
5. After ductwork connections are made, seal airtight and per local codes.
6. Place the unit with the blower side down and replace the coil on the coil-channel supports with the drain connections at the bottom. The unit is now in downflow position with front access.  
  
Position the ECM wire harness connection at the 4- to 8-o'clock position to prevent condensation from entering motor controller.
7. If a return duct is connected to the air handler, it must be the same dimensions as the return opening.
8. After ductwork connections are made, seal airtight and per local codes.

## Installation

### Horizontal Right Installation

For horizontal installations where access to the factory-provided air filter is limited, it is recommended to remove the factory filter and use a properly sized remote filter grille/box to maintain maximum efficiency and for customer ease of filter maintenance. Unit airflow should not exceed the rated velocity of the air filter that is used.

**NOTE: To convert the unit to horizontal right, front access, slide the coil out on the coil channel supports and rotate the complete coil 180 degrees.**

**Insert the coil into the cabinet on the opposite side coil channel supports. The unit is now horizontal right with front access. Rotate the blower motor as needed so that wiring connections are at the 4- to 8-o'clock position. This prevents any condensation present on the wiring from entering the motor.**

1. If the unit is suspended, it must be supported from the bottom near both ends as well as the middle to prevent sagging. The service access must remain unobstructed. If the unit is supported along the length of the front and back with rails, the air handler only needs to be suspended at both ends. See Figure 2. If the unit is not suspended it must be supported as mentioned above and isolated carefully to prevent sound transmission. Vibration isolators (purchased locally) must be placed under the unit.
2. It is always recommended that an auxiliary drain pan be installed under a horizontal air handler to prevent possible damage to ceilings (see Figure 2).
3. Isolate the auxiliary drain pan from the unit or from the structure.
4. Connect the auxiliary drain line to a separate drain line and terminate according to national and local codes (no trap is needed in this line).
5. If a return duct is connected to the air handler, it must be the same dimensions as the return opening shown in the outline drawing on Figure 1.
6. Openings where field wiring enters the cabinet must be completely sealed.
7. After ductwork connections are made, seal airtight and per local codes.

### Horizontal Left Installation

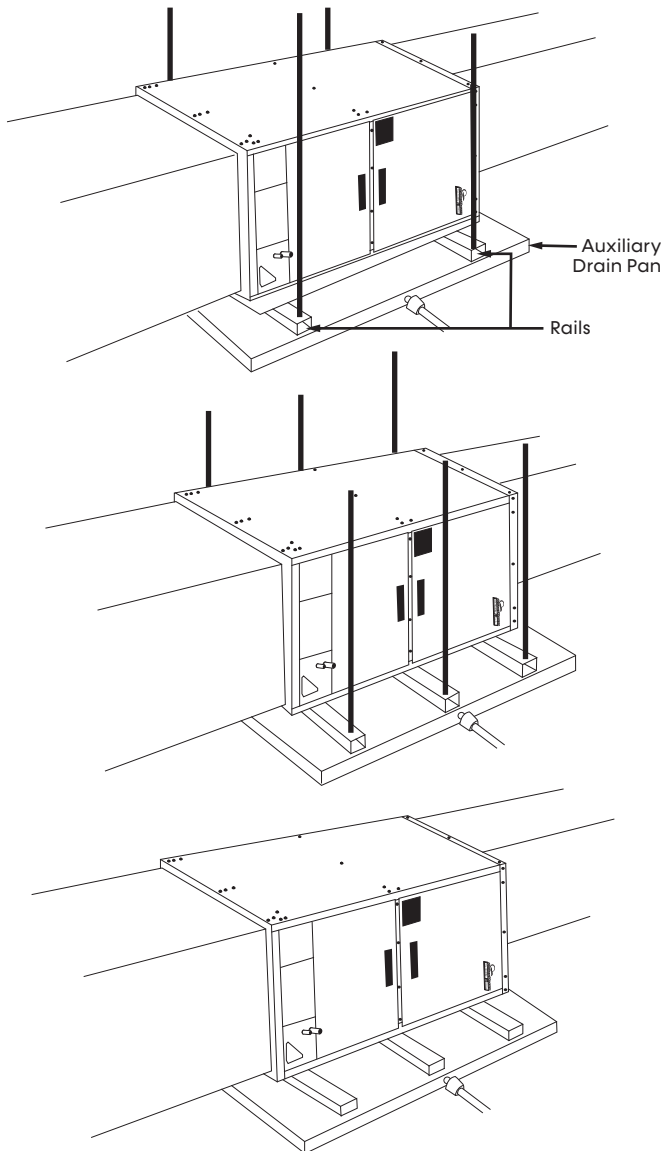
For horizontal installations where access to the factory-provided air filter is limited it is recommended to remove the factory filter and use a properly sized remote filter grille/box to maintain maximum efficiency and for customer ease of filter maintenance. Unit airflow should not exceed the rated velocity of the air filter that is used.

**NOTE: The unit is shipped from the factory in the upflow or horizontal-left configuration. Unit conversion is not required. Rotate the blower motor as needed so that wiring connections are at the 4- to 8-o'clock position. This prevents any condensation present on the wiring from entering the motor.**

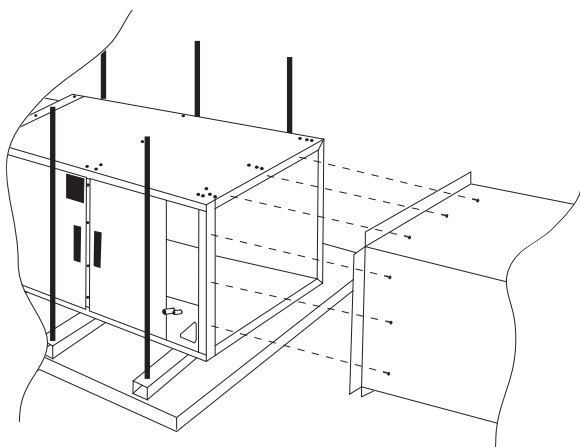
1. If the unit is suspended, it must be supported from the bottom near both ends as well as the middle to prevent sagging. The service access must remain unobstructed. If the unit is supported along the length of the front and back, the air handler only needs to be suspended at both ends. See Figure 2.
2. If the unit is not suspended it must be supported as mentioned above and isolated carefully to prevent sound transmission. Vibration isolators (purchased locally) must be placed under the unit.
3. It is always recommended that an auxiliary drain pan be installed under a horizontal air handler (See Figure 2) to prevent possible damage to ceilings.
4. Isolate the auxiliary drain pan from the unit or from the structure.
5. Connect the auxiliary drain line to a separate drain line (no trap is needed in this line) and terminate according to national and local codes.
6. If a return duct is connected to the air handler, it must be the same dimensions as the return opening shown in the outline drawing on Figure 1.
7. Openings where field wiring enters the cabinet must be completely sealed. Location of power entry is shown on the outline drawing.
8. After ductwork connections are made, seal airtight and per local codes.



**Figure 1: Mounting Installation Options**



**Figure 2: Flange Attachment**



## Duct Connections

The supply- and return-air ducts should be connected to the unit with flame-retardant duct connectors.

## NOTES:

- **No sheetmetal screws may be used to attach return ductwork on the side.**
- **Any duct-board return connection can be made to the sides of the unit using tape or mastic.**

## Applications

Use the SA Air Handler in upflow, downflow, horizontal-right, and horizontal-left applications. For horizontal applications, installation of an auxiliary/secondary drain pan is always recommended to prevent possible damage to ceilings.

### **CAUTION**

For horizontal applications, the horizontal drain pan must be located under the indoor coil. Failure to place the pan under the coil can result in property damage.

## SA 1-inch to 2-inch Filter Rack Conversion

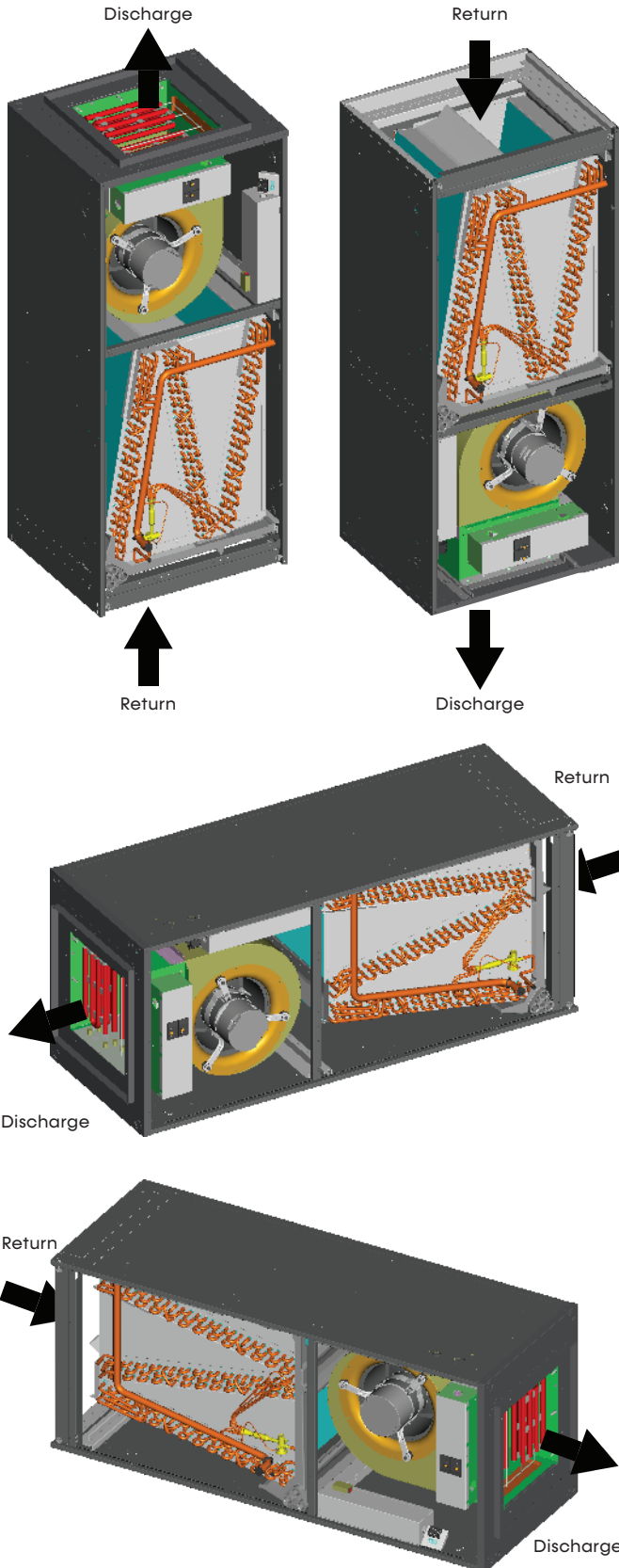
The unit is shipped with a 1-inch filter rack from the factory. The conversion process assumes that the unit is in upflow configuration.

1. Place unit on a flat surface. Remove the two knurled thumb knobs that secure the filter rack door at the bottom of the unit.
2. Remove three screws that secure the lower filter tracks on each side of the unit.
3. Lift and rotate the filter tracks upside down and reinstall filter tracks and screws back.
4. Replace the filter-rack door and the two knurled thumb knobs.

Models:  
SA  
024-060

# Installation

**Figure 3: Air Handler Orientation**



**CAUTION**

R-454B systems operate at higher pressures than R-22/ HFC-410A systems. Be certain that service equipment (gauges, tools, etc.) is rated for HFC-410A. Some R-22/ HFC-410A service equipment may not be acceptable.

**CAUTION**

Installation of a factory supplied liquid line bi-directional filter drier is required. Never install a suction line filter in the liquid line.

**Line Set Installation**

Figure 7 illustrates a typical installations of an air handler or cased coil matched to an indoor compressor section. Table 2 shows typical line set diameters at various lengths. Line set lengths should be kept to a minimum and should always be installed with care to avoid kinking. Line sets are limited to 60 feet (18 m) in length (one way). Line sets over 60 feet void the equipment warranty. If the line set is kinked or distorted, and it cannot be formed back into its original shape, the damaged portion of the line should be replaced. A restricted line set will effect the performance of the system.

**NOTES:**

- All brazing should be performed using nitrogen circulating at 2-3 psi (13.8-20.7 kPa) to prevent oxidation inside the tubing. All linesets should be insulated with a minimum of ½-inch thick (13 mm) closed-cell insulation. All insulation tubing should be sealed using a UV-resistant paint or covering to prevent deterioration from sunlight.
- See the SJ/SP IOM for refrigerant charge information.
- When passing refrigerant lines through a wall, seal opening with silicon-based caulk. Avoid direct contact with water pipes, duct work, floor joists, wall studs, floors or other structural components that could transmit compressor vibration. Do not suspend refrigerant tubing from joists with rigid straps. Do not attach line set to the wall. When necessary, use hanger straps with isolation sleeves to minimize transmission of line set vibration to the structure.

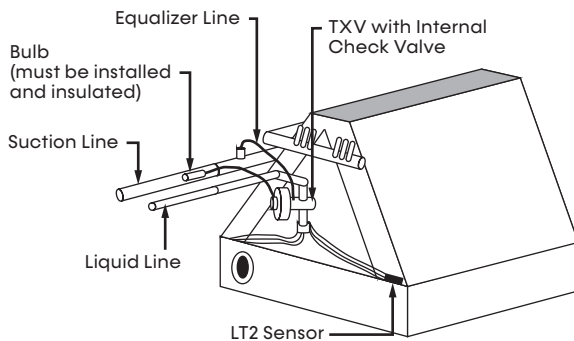
# Installation

Models:  
SA  
024-060

## Installing the Indoor Coil and Lineset

Figure 4 shows the installation of the line set and TXV bulb to a typical indoor coil. Braze the copper line set to the coil. Nitrogen should be circulated through the system at 2-3 psi (13.8-20.7 kPa) to prevent oxidation inside the refrigerant tubing. Use a low-silver phosphor copper braze alloy on all brazed connections.

**Figure 4: Air Coil Connection**



## Sensing Bulb

### NOTICE

The TXV sensing bulb should be located on a horizontal section of copper suction line, just outside of coil box. The copper sensing bulb must never be placed on any aluminum tube as this will result in galvanic corrosion and eventual failure of the aluminum tube.

### NOTICE

Do not perform any brazing with the TXV attached to any line. After brazing operations have been completed, clamp the TXV bulb securely on the suction line at the 10 to 2 o'clock position with the strap provided. Insulate the bulb and line with pressure sensitive tape.

### NOTICE

Always protect TXV from heat when brazing.

## Air Coil

To obtain maximum performance of a newly manufactured air coil, it should be cleaned before startup. A 10% solution of dishwasher detergent and water is recommended for both sides of the coil. A thorough water rinse should follow.

## Evacuation and Charging the Unit

**LEAK TESTING** - The refrigeration line set must be pressurized and checked for leaks before evacuating and charging the unit. To pressurize the line set, attach refrigerant gauges to the service ports and add an inert gas (nitrogen or dry carbon dioxide) until pressure reaches 60-90 psig [413-620 kPa]. Never use oxygen or acetylene to pressure test. Use a quality bubble solution to detect leaks on all connections made in the field. Check the service valve ports and stem for leaks. If a leak is found, repair it and repeat the above steps. For safety reasons do not pressurize system above 150 psig [1034 kPa]. System is now ready for evacuation and charging.

## Condensate Drain Tubing

Consult local codes or ordinances for specific requirements.

### NOTICE

When making drain fitting connections to the drain pan, use a thin layer of water thread sealant paste, silicone, or water thread sealant tape and install hand tight.

### NOTICE

When making drain fitting connections to drain pan, do not overtighten. Overtightening fittings can split pipe connections on the drain pan.

**Table 2: Line Set Diameters and Charge Information**

Model	†Factory Charge (oz) [kg]	Basic Charge (oz) [kg]¹	20 Feet [6 meters]		40 Feet [12 meters]		60 Feet [18 meters]²	
			Liquid	Suction	Liquid	Suction	Liquid	Suction
SJ/SP024	96 [2.72]	81 [2.30]	3/8"	3/4"	3/8"	3/4"	3/8"	3/4"
SJ/SP036	104 [2.95]	89 [2.52]	3/8"	7/8"	3/8"	7/8"	3/8"	7/8"
SJ/SP048	126 [3.75]	111 [3.15]	3/8"	7/8"	3/8"	7/8"	3/8"	7/8"
SJ/SP060	192 [5.44]	162 [4.59]	1/2"	7/8"	1/2"	7/8"	1/2"	7/8"

**Notes:**

- Basic charge includes only the amount required for the condensing unit and the evaporating coil.
- 60 feet is the maximum line set length.

- An additional amount of refrigerant should be added allowing 0.6 oz per ft. for 3/8" [0.6g per cm] and 1.2 oz per ft. for 1/2" [1.1g per cm] of line set used.
- † Factory charge is preset for 25 feet [7.6 meters] line set.

Models:  
SA  
024-060

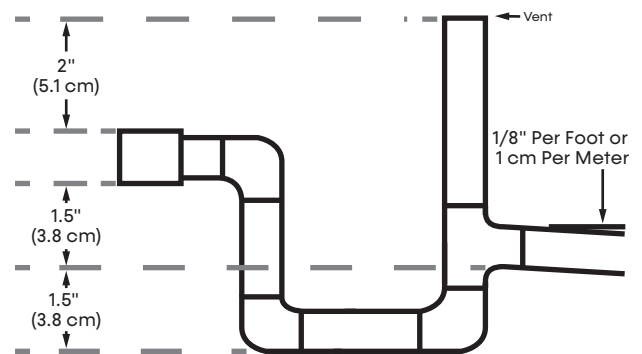
## Installation

- Install drain lines so they do not block service access to front of the unit. Minimum clearance of 24 inches (61 cm) is required for filter, coil, or blower removal and service access.
- Ensure unit is level or pitched slightly toward the primary drain connection so that water drains completely from the pan (see Figure 6).
- Do not reduce the drain line size less than connection size provided on the condensate drain pan.
- All drain lines must be pitched downward away from the unit a minimum of 1/8-inch per foot (11 mm per m) of line to ensure proper drainage.
- Do not connect condensate drain line to a closed or open sewer pipe. Run condensate to an open drain or outdoors.
- The drain line should be insulated where necessary to prevent sweating and damage due to condensate forming on the outside surface of the line.
- Plan for disconnecting and cleaning the primary drain line. Install a condensate trap at each unit with the top of the trap positioned below the unit's condensate drain connection as shown in Figure 5. Design the depth of the trap (water-seal) based upon the amount of ESP capability of the blower (where 2-inches (51 mm) of ESP capability requires 2-inches (51 mm) of trap depth). As a general rule, 1½-inch (38 mm) trap depth is the minimum.
- Always vent the condensate line when dirt or air can collect in the line or a long horizontal drain line is required. Also vent when large units are working against higher external static pressure than other units connected to the same condensate main since this may cause poor drainage for all units on the line. **WHEN A VENT IS INSTALLED IN THE DRAIN LINE, IT MUST BE LOCATED AFTER THE TRAP IN THE DIRECTION OF THE CONDENSATE FLOW.**
- The auxiliary drain line should be run to a place where it is noticeable if it becomes operational. Warn occupants that a problem exists if water begins running from the auxiliary drain line.

- Plug the unused drain connection with the plugs provided in the parts bag, using a thin layer of water thread-sealant paste, silicone, or water thread sealant tape to form a water tight seal.
- Test the condensate drain pan and drain line after installation is complete. Pour enough water into drain pan to fill drain trap and line. Check to ensure drain pan is draining completely, no leaks are found in drain-line fittings, and water is draining from the termination of the primary drain line.

### DO NOT OPERATE THE UNIT WITHOUT CONDENSATE DRAIN TRAP.

Figure 5: Horizontal Condensate Connection



### CAUTION

CAUTION! It is recommended that an auxiliary/secondary drain pan be installed under units containing evaporator coils that are located in any area of a structure where damage to the building or building contents may occur as a result of an overflow of the coil drain pan or a stoppage in the primary condensate drain piping.

Connect the auxiliary drain line to a separate drain line and terminate according to local codes (no trap is needed in this line).

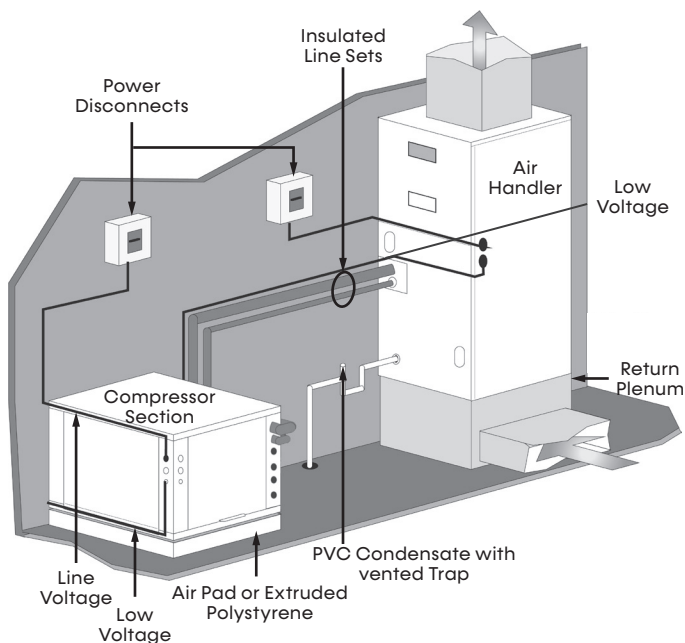
### NOTES:

- **DO NOT use a torch or flame near the plastic drain pan coupling.**
- **DO NOT tighten the drain pipe excessively. Support the condensate piping and traps outside the unit to prevent strain on the drain connection.**

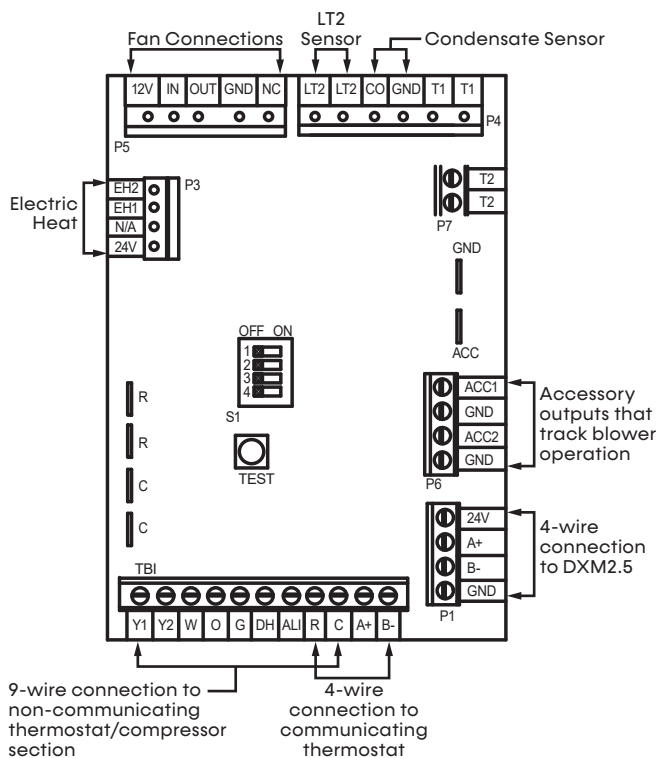
# Installation

Models:  
SA  
024-060

**Figure 6: Typical Split/Air Handler Installation**



**Figure 7: AXM Connections**



### AXM Communicating Controls

The Tranquility Premier Air Handler is equipped with a AXM Communicating Controls to allow communication with the communicating compressor section (SJ/SP) and AWC Thermostat.

The AXM allows a 4-wire connection with DXM2.5 Advanced Communicating Controls and AWC Thermostat. It can also be connected to a non-communicating thermostat and compressor section using up to 9-wires (plus additional if functionality requires). Please see Thermostat section for more details.

When a non-communicating thermostat will be used to control the system, an AWC Thermostat must be connected so that proper system communications and operation are maintained. The AWC Thermostat may be installed at an inconspicuous location near the air handler and wired to the TB1 terminal strip of the AXM. The AWC Thermostat should be set to the OFF mode.

### Low Air Temperature Sensor Installation

SA Premier Air Handlers are shipped with LT2 (Low Air Temperature) sensor installed in the air handler and connected to the AXM. No additional action required (**do not clip the VIO wires**).

### Test Button

The test button puts the AXM into test mode, which bypasses the soft-start ramping profile and the blower immediately ramps up to the nominal target speed.

Models:  
SA  
024-060

## Installation

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### FIELD-SELECTABLE INPUTS

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#### DIP Switches

**NOTE: In the following field configuration options, DIP switches should only be moved when power is removed from the DXM2.5 to ensure proper operation.**

**DIP #2 – Dehumidification Mode:** Provides selection of normal or Dehumidification Fan Mode. In Dehumidification Mode, the fan speed will be adjusted for Cooling. In Normal Mode, the fan speed will be normal during Cooling.

On = Dehumidification Mode. Off = Normal Fan Mode.

The other DIP switches are not used.

#### ACCESSORY CONNECTION/ CONFIGURATION

The AXM includes two accessory outputs, which track blower operation.

DXM2.5 Advanced Communicating Controls, contained in the SJ and SP compressor section, contains additional configurable accessory outputs. See the DXM2.5 AOM for more details.

## Electrical Data

Models:  
SA  
024-060

**Table 3: SA Standard**

Model	Voltage Code	Rated Voltage	Voltage Min/Max	Fan Motor FLA	Total Unit FLA	Min Circ Amp	Max Fuse/HACR (calc)	Max Fuse/HACR
SA024	J	208/230-1-60	187/252	4.20	4.20	5.3	9.5	15
SA036	J	208/230-1-60	187/252	5.90	5.90	7.4	13.3	15
SA048	J	208/230-1-60	187/252	5.90	5.90	7.4	13.3	15
SA060	J	208/230-1-60	187/252	7.50	7.50	9.4	16.9	15

Models:  
SA  
024-060

## Electrical: Power Wiring

### WARNING

Electrical shock hazard - Lock unit disconnect switch in open position before servicing unit. Failure to follow this warning could result in property damage, personal injury, or death.

### ELECTRICAL

**Line Voltage** - All field-installed wiring, including electrical ground, must comply with NFPA 70: National Electrical Code (NEC), CSA C22.1: Canadian Electrical Code (CE Code), as well as applicable local codes. Refer to the unit electrical data for fuse sizes. Consult wiring diagram for field connections that must be made by the installing (or electrical) contractor. All final electrical connections must be made with a length of flexible conduit to minimize vibration and sound transmission to the building

### DISCONNECT

Field-installed disconnect switches connected to supply terminals must have contact separation for **all poles** providing full disconnection. Manufacturer-installed disconnect (optional) provides all-pole disconnection from the supply mains.

### GENERAL LINE-VOLTAGE WIRING

Ensure the available power is the same voltage and phase shown on the unit serial plate. Line- and low-voltage wiring must be done in accordance with local codes or the National Electric Code, whichever is applicable.

### POWER CONNECTION

Line-voltage connection is made by connecting the incoming line-voltage wires to the “L” side of the contactor as shown in the unit wiring diagram. Consult electrical data tables for correct fuse size.

### TRANSFORMER

All 208/230V units are factory wired for 230V operation. The transformer may be switched to the 208V tap as illustrated on the wiring diagram by switching the 208V and 230V wires at the contactor terminal.

- SA Air Handlers are shipped from the factory wired for 230V. The units may be wired for 208 or 115V. Follow instructions on the unit wiring diagram located on blower housing and in the Service Facts document included with the unit.
- The selection of wire and fuse sizes should be made according to the Minimum Branch Circuit Ampacity and the Maximum Overcurrent Device listed on the unit nameplate.
- Field wiring diagrams for electric heaters and unit accessories are shipped with the accessory.
- Wiring must conform to national and local codes.
- Ground unit per local codes with good safety procedures.

**NOTE: If the air handler is used with or without a heater, the electrical entry hole as well as any other cabinet penetrations must be sealed air-tight.**



## Electrical: Power Wiring

### WIRING INSTRUCTIONS FOR 115V CONVERSION FROM 230V

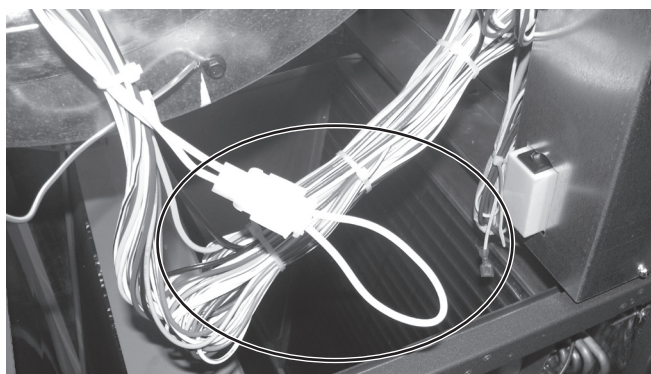
1. Disconnect all power to the unit.
2. Disconnect Transformer primary orange wire from power block T2 and insulate open end of wire. Connect the white lead from transformer primary wire to power-block terminal T2.  
**NOTE: L2 is used as Neutral.**
3. Remove plug in ECM power-wiring harness (Figure 8) and Install 2-pin jumper plug provided in control box (Figure 9).

**NOTE: When supplementary heaters are installed, inspect to insure that all packaging material is removed.**

**Figure 8: Remove Harness Plug**



**Figure 9: Install 2-Pin Jumper Plug**



**NOTE: For 115V power only. Damage will occur to motor with 230V power supply if 115V jumper is used.**

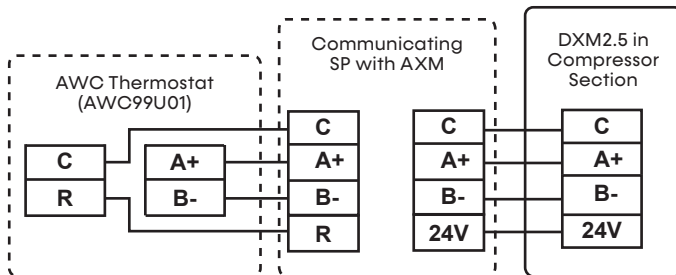
Models:  
SA  
024-060

## Electrical: Low Voltage Wiring

### THERMOSTAT INSTALLATION

The thermostat should be located on an interior wall in a larger room, away from supply duct drafts. DO NOT locate the thermostat in areas subject to sunlight, drafts, or on external walls. The wire access hole behind the thermostat may need to be sealed to prevent erroneous temperature measurement. Position the thermostat back plate against the wall so that it appears level and so the thermostat wires protrude through the middle of the back plate. Mark the position of the back-plate mounting holes and drill holes with a 3/16-inch (5 mm) bit. Install supplied anchors and secure plate to the wall. Thermostat wire must be 18-AWG wire. Wire the appropriate thermostat as shown in Figures 9 and 10 to the low-voltage terminal strip on the ECM control board. Most heat-pump thermostats are compatible with ClimateMaster units, provided they have the appropriate number of heating and cooling stages.

**Figure 10: 4-Wire Connection to AWC Thermostat, AXM Communicating Controls and Tranquility Splits**

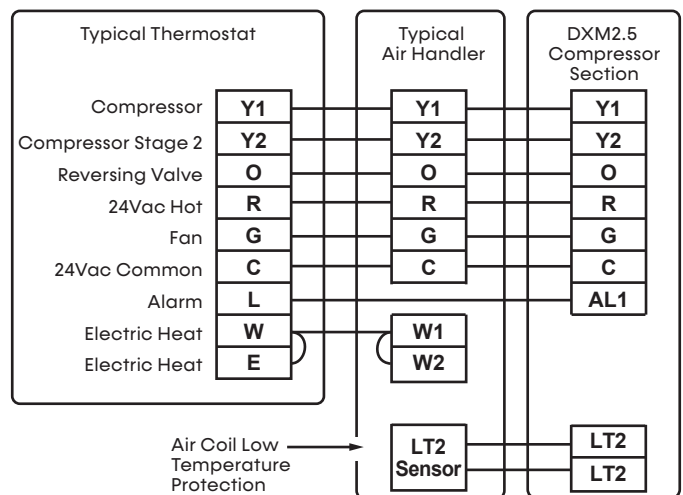


**Thermostat connections:**

- **C** = 24V Common for Control Circuit
- **R** = 24V Supply for Control Circuit
- **A+** = Communications (Positive)
- **B-** = Communications (Negative)

When a non-communicating thermostat is used to control the system, an AWC Thermostat must be connected so that proper system communications and operation are maintained. The AWC Thermostat may be installed at an inconspicuous location near the air handler and wired to the TB1 terminal strip of the AXM. The AWC Thermostat should be set to the OFF mode.

**Figure 11: Connection to non-Communicating Thermostat and Non-communicating Air Handler/Furnace**



**NOTE: Air coil low-temperature protection is not active if LT2 sensor is not installed or installed incorrectly.**

**NOTICE**

Violet jumper from FP to FP on Terminal block 2 in compressor section must be removed when unit is installed with SA Air Handlers or when FP2 sensor is field installed on existing air handler.

See equipment wiring diagram for more details.

## Blower Performance Data

**Table 10: SA Digital Standard Unit**

Model	Max ESP (in. wg)	Fan Motor (hp)	Range	Cooling Mode		Dehumid Mode		Heating Mode		Fan Only Mode	Aux/ Emerg Mode
				Stg 2	Stg 1	Stg 2	Stg 1	Stg 2	Stg 1		
SA024	1.0	1/2	Default	700	525	550	425	750	600	350	850
			Maximum	1,000	800	800	600	1,000	850	1,000	1,000
			Minimum	600	450	550	400	600	450	300	700
SA036	0.9	1/2	Default	1,050	800	850	650	1,100	850	550	1,350
			Maximum	1,500	1,100	1,200	900	1,500	1,100	1,500	1,500
			Minimum	900	600	825	550	900	600	450	1,350
SA048	1.0	1	Default	1,400	1,050	1,100	850	1,500	1,150	700	1,500
			Maximum	2,000	1,500	1,600	1,200	2,000	1,500	2,000	2,000
			Minimum	1,200	900	1,100	825	1,200	900	600	1,350
SA060	0.7	1	Default	1,750	1,300	1,400	1,050	1,875	1,450	875	1,875
			Maximum	2,300	1,900	2,000	1,500	2,300	1,900	2,300	2,300
			Minimum	1,500	1,100	1,375	1,000	1,500	1,100	750	1,500

Notes:

- Airflow in CFM with wet coil and clean air filter.
- Airflow is controlled within 5% up to the Max ESP shown with wet coil.
- The maximum allowable altitude of installation for this product is 6,561 ft (2,000 m).

Models:  
SA  
024-060

## Wiring Diagram

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# WD Placeholder

## Unit and System Checkout

### WARNING

Electrical shock hazard - Lock unit disconnect switch in open position before servicing unit. Failure to follow this warning could result in property damage, personal injury, or death.

### SYSTEM CHECKOUT

After installation has been completed, it is recommended that the air handler be checked against the following checklist:

#### CHECKOUT PROCEDURE

- Power:** Make sure power is "OFF" at power disconnect switch.
- Field Wiring:** Check all field wiring for tight connections. See that grounding of unit is in accord with code
- Unit Suspension:** Make sure unit suspension (if used) is secure and that there are no tools or loose debris in, around or on top of the unit.
- Ducts:** Check all duct outlets; they must be open and unrestricted.
- Drain Lines:** Check drain lines and ensure all joints are tight.
- Drain Pan:** Make sure that the unit drain pan and secondary drain pan (if applicable) and drain outlets are clear of any debris that may cause obstruction.
- Power Supply:** Check power supply for correct requirements per unit nameplate.
- Filters:** Check filters for proper size. Inform owner of proper procedure for removal and reinstallation.
- Operation:** Energize the system and carefully observe its operation; make any necessary adjustment.
- Procedure:** Instruct owner/user on the proper operating procedure and leave the Installation, Operation, Maintenance Instruction manual with the equipment.

Models:  
SA  
024-060

## Maintenance

### MAINTENANCE

#### Filters

Filters must be clean to obtain maximum performance. Filters should be inspected every month under normal operating conditions and be replaced when necessary. Units should never be operated without a filter.

Washable, high-efficiency, electrostatic filters, when dirty, can exhibit a very high pressure drop for the fan motor resulting in poor performance. It is especially important to provide consistent washing of these filters (in the opposite direction of the normal air flow) once per month using a high-pressure wash.

**NOTE: Do not operate the system without a filter in place.**

#### Condensate Drain

In areas where airborne bacteria may produce a “slimy” substance in the drain pan, it may be necessary to treat the drain pan chemically with an algacide approximately every three months to minimize the problem. The condensate pan may also need to be cleaned periodically to insure indoor air quality. The condensate drain can pick up lint and dirt, especially with dirty filters. Inspect the drain twice a year to avoid the possibility of plugging and eventual overflow.

**NOTE: Do not use caustic household drain cleaners or bleach in the condensate pan or near the indoor coil. Drain cleaners quickly damage the indoor coil.**

#### Air Coil

The air coil must be cleaned to obtain maximum performance. Check once a year under normal operating conditions and, if dirty, brush or vacuum clean. Care must be taken not to damage the aluminum fins while cleaning. CAUTION: Fin edges are sharp.

#### Fan Motors

All residential units have permanently lubricated fan motors. Further lubrication is not recommended. Conduct annual amperage check to insure amp draw is no more than 10% greater than indicated on serial data plate.

#### Compressor

Conduct annual amperage checks to insure that amp draw is no more than 10% greater than indicated on the serial plate data.

# Warranty (U.S. and Canada)

## CLIMATE MASTER, INC. LIMITED EXPRESS WARRANTY/ LIMITATION OF REMEDIES AND LIABILITY



It is expressly understood that unless a statement is specifically identified as a warranty, statements made by Climate Master, Inc., a Delaware corporation, ("CM") or its representatives, relating to CM's products, whether oral, written or contained in any sales literature, catalog or any other agreement, are not express warranties and do not form a part of the basis of the bargain, but are merely CM's opinion or commendation of CM's products.

**EXCEPT AS SPECIFICALLY SET FORTH HEREIN, THERE IS NO EXPRESS WARRANTY AS TO ANY OF CM'S PRODUCTS. CM MAKES NO WARRANTY AGAINST LATENT DEFECTS. CM MAKES NO WARRANTY OF MERCHANTABILITY OF THE GOODS OR OF THE FITNESS OF THE GOODS FOR ANY PARTICULAR PURPOSE.**

### GRANT OF LIMITED EXPRESS WARRANTY

CM warrants CM products purchased and retained in the United States of America and Canada to be free from defects in material and workmanship under normal use and maintenance as follows: (1) All complete air conditioning, heating and/or heat pump units built or sold by CM for twelve (12) months from date of unit start up or eighteen (18) months from date of shipment (from factory), whichever comes first; (2) Repair and replacement parts, which are not supplied under warranty, for ninety (90) days from date of shipment (from factory). All parts must be returned to CM's factory in Oklahoma City, Oklahoma, freight prepaid, no later than sixty (60) days after the date of the failure of the part; if CM determines the part to be defective and within CM's Limited Express Warranty, CM shall, when such part has been either replaced or repaired, return such a factory recognized dealer, contractor or service organization, F.O.B. CM's factory, Oklahoma City, Oklahoma, freight prepaid. The warranty on any parts repaired or replaced under warranty expires at the end of the original warranty period.

This warranty does not cover or apply to: (1) Air filters, fuses, refrigerant, fluids, oil; (2) Products relocated after initial installation; (3) Any portion or component of any system that is not supplied by CM, regardless of the cause of the failure of such portion or component; (4) Products on which the unit identification tags or labels have been removed or defaced; (5) Products on which payment to CM is or has been in default; (6) Products which have defects or damage which result from improper installation, wiring, electrical imbalance characteristics or maintenance; or are caused by accident, misuse or abuse, fire, flood, alteration or misapplication of the product; (7) Products which have defects or damage which result from a contaminated or corrosive air or liquid supply, operation at abnormal temperatures, or unauthorized opening of refrigerant circuit; (8) Mold, fungus or bacteria damages; (9) Products subjected to corrosion or abrasion; (10) Products manufactured or supplied by others; (11) Products which have been subjected to misuse, negligence or accidents; (12) Products which have been operated in a manner contrary to CM's printed instructions; or (13) Products which have defects, damage or insufficient performance as a result of insufficient or incorrect system design or the improper application of CM's products.

CM is not responsible for: (1) The costs of any fluids, refrigerant or other system components, or associated labor to repair or replace the same, which is incurred as a result of a defective part covered by CM's Limited Express Warranty; (2) The costs of labor, refrigerant, materials or service incurred in removal of the defective part, or in obtaining and replacing the new or repaired part; or, (3) Transportation costs of the defective part from the installation site to CM or of the return of any part not covered by CM's Limited Express Warranty.

**Limitation:** This Limited Express Warranty is given in lieu of all other warranties. If, notwithstanding the disclaimers contained herein, it is determined that other warranties exist, any such warranties, including without limitation any express warranties or any implied warranties of fitness for particular purpose and merchantability, shall be limited to the duration of the Limited Express Warranty.

### LIMITATION OF REMEDIES

In the event of a breach of the Limited Express Warranty, CM will only be obligated at CM's option to repair the failed part or unit or to furnish a new or rebuilt part or unit in exchange for the part or unit which has failed. If after written notice to CM's factory in Oklahoma City, Oklahoma of each defect, malfunction or other failure and a reasonable number of attempts by CM to correct the defect, malfunction or other failure and the remedy fails of its essential purpose, CM shall refund the purchase price paid to CM in exchange for the return of the sold goods(s). Said refund shall be the maximum liability of CM. **THIS REMEDY IS THE SOLE AND EXCLUSIVE REMEDY OF THE BUYER OR THEIR PURCHASER AGAINST CM FOR BREACH OF CONTRACT, FOR THE BREACH OF ANY WARRANTY OR FOR CM'S NEGLIGENCE OR IN STRICT LIABILITY.**

### LIMITATION OF LIABILITY

CM shall have no liability for any damages if CM's performance is delayed for any reason or is prevented to any extent by any event such as, but not limited to: any war, civil unrest, government restrictions or restraints, strikes or work stoppages, fire, flood, accident, shortages of transportation, fuel, material, or labor, acts of God or any other reason beyond the sole control of CM. **CM EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGE IN CONTRACT, FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, OR IN TORT, WHETHER FOR CM'S NEGLIGENCE OR AS STRICT LIABILITY.**

### OBTAINING WARRANTY PERFORMANCE

Normally, the contractor or service organization who installed the products will provide warranty performance for the owner. Should the installer be unavailable, contact any CM recognized dealer, contractor or service organization. If assistance is required in obtaining warranty performance, write or call:

Climate Master, Inc. • Customer Service • 7300 S.W. 44th Street • Oklahoma City, Oklahoma 73179 (405) 745-6000

NOTE: Some states or Canadian provinces do not allow limitations on how long an implied warranty lasts, or the limitation or exclusions of consequential or incidental damages, so the foregoing exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and from Canadian province to Canadian province.

Please refer to the CM Installation, Operation and Maintenance Manual for operating and maintenance instructions.

Rev.: 11/09



Models:  
SA  
024-060

# Warranty (International)

## CLIMATE MASTER, INC. LIMITED EXPRESS WARRANTY /LIMITATION OF REMEDIES AND LIABILITY (FOR INTERNATIONAL CLASS PRODUCTS)



Disclaimer: It is expressly understood that unless a statement is specifically identified as a warranty, statements made by Climate Master, Inc., a Delaware corporation, U.S.A. ("CM") or its representatives, relating to CM's products, whether oral, written or contained in any sales literature, catalog, this or any other agreement or other materials, are not express warranties and do not form a part of the basis of the bargain, but are merely CM's opinion or commendation of CM's products. **EXCEPT AS SPECIFICALLY SET FORTH HEREIN AND TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, CM MAKES NO WARRANTY AS TO ANY OF CM'S PRODUCTS, AND CM MAKES NO WARRANTY AGAINST LATENT DEFECTS OR ANY WARRANTY OF MERCHANTABILITY OF THE GOODS OR OF THE FITNESS OF THE GOODS FOR ANY PARTICULAR PURPOSE.**

**GRANT OF LIMITED EXPRESS WARRANTY**  
CM warrants CM products purchased and installed outside the United States of America ("U.S.A.") and Canada to be free from material defects in materials and workmanship under normal use and maintenance as follows: (1) All complete air conditioning, heating or heat pump units built or sold by CM for twelve (12) months from date of unit start-up or eighteen (18) months from date of shipment (from CM's factory), whichever comes first; and, (2) Repair and replacement parts, which are not supplied under warranty, for ninety (90) days from date of shipment (from factory).

Warranty parts shall be furnished by CM if ordered through an authorized sales representative of CM ("Representative") within sixty (60) days after the failure of the part. If CM determines that a parts order qualifies for replacement under CM's warranty, such parts shall be shipped (freight prepaid to the ultimate user, as requested by Representative). All duties, taxes and other fees shall be paid by the ultimate user through the Representative.

If requested by CM, all defective parts shall be returned to CM's factory in Oklahoma City, Oklahoma, U.S.A., freight and duty prepaid, not later than sixty (60) days after the date of the request. If the defective part is not timely returned or if CM determines the part to not be defective or otherwise not to qualify under CM's Limited Express Warranty, CM shall invoice Customer the costs for the parts furnished, including freight. The warranty on any part repaired or replaced under warranty expires at the end of the original warranty period.

This warranty does not cover and does not apply to: (1) Air filters, fuses, refrigerant, fluids, oil; (2) Products released after initial installation; (3) Any portion or component of any system that is not supplied by CM, regardless of the cause of the failure of such portion or component; (4) Products on which the unit identification tags or labels have been removed or defaced; (5) Products on which payment by Customer to CM or its distributors or Representatives, or the Customer's seller is in default; (6) Products which have defects or damage which result from improper installation, wiring, electrical imbalance characteristics or maintenance; or from parts or components manufactured by others; or are caused by accident, misuse, negligence, abuse, fire, flood, lightning, alteration or misapplication of the product; (7) Products which have defects or damage which result from contaminated or corrosive air or liquid supply, operation at abnormal temperatures or flow rates, or unauthorized opening of the refrigerant circuit; (8) Mold, fungus or bacteria damages; (9) Products subjected to corrosion or abrasion; (10) Products, parts or components manufactured or supplied by others; (11) Products which have been subjected to misuse, negligence or accidents; (12) Products which have been operated in a manner contrary to CM's printed instructions; (13) Products which have defects, damage or insufficient performance as a result of insufficient or incorrect system design or the improper application, installation, or use of CM's products; or (14) Electricity or fuel costs, or any increases or unrealized savings in same, for any reason.

CM is not responsible for: (1) The cost of any fluids, refrigerant or other system components, or the associated labor to repair or replace the same, which is incurred as a result of a defective part covered by CM's Limited Express Warranty; (2) The cost of labor, refrigerant, materials or service incurred in diagnosis and removal of the defective part, or in obtaining and replacing the new or repaired part; (3) Transportation costs of the defective part from the installation site to CM or of the return of any part not covered by CM's Limited Express Warranty; or (4) The costs of normal maintenance.

Limitation: This Limited Express Warranty is given in lieu of all other warranties. If, notwithstanding the disclaimers contained herein, it is determined by a court or other qualified judicial body that other warranties exist, any such warranty, including without limitation any express warranty or any implied warranty of fitness for particular purpose and merchantability, shall be limited to the duration of the Limited Express Warranty. This Limited Express Warranty does not exclude any warranty that is mandatory and that may not be excluded under applicable imperative law.

**LIMITATION OF REMEDIES**  
In the event of a breach of this Limited Express Warranty, or any warranty that is mandatory under applicable imperative law, CM will only be obligated at CM's option to either repair the failed part or unit or to furnish a new or rebuilt part or unit in exchange for the part or unit which has failed. If after written notice to CM's factory in Oklahoma City, Oklahoma, U.S.A. of each defect, malfunction or other failure and a reasonable number of attempts by CM to correct the defect, malfunction or other failure and the remedy fails of its essential purpose, CM shall refund the purchase price paid to CM in exchange for the return of the sold good(s). Said refund shall be the maximum liability of CM. **TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THIS REMEDY IS THE SOLE AND EXCLUSIVE REMEDY OF THE CUSTOMER AGAINST CM FOR BREACH OF CONTRACT, FOR THE BREACH OF ANY WARRANTY OR FOR CM'S NEGLIGENCE OR IN STRICT LIABILITY.**

**LIMITATION OF LIABILITY**  
CM shall have no liability for any damages if CM's performance is delayed for any reason or is prevented by any event such as, but not limited to: any war, civil unrest, government restrictions or restraints, strikes, or work stoppages, fire, flood, accident, allocation, shortages of transportation, fuel, materials, or labor; acts of God or any other reason beyond the sole control of CM. **TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW AND SUBJECT TO THE NEXT SENTENCE, CM EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR LOSS OF PROFITS, LOSS OF BUSINESS OR GOODWILL, CONSEQUENTIAL, INCIDENTAL, SPECIAL, LIQUIDATED, OR PUNITIVE DAMAGE IN CONTRACT, FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, OR IN TORT, WHETHER FOR CM'S NEGLIGENCE OR AS STRICT LIABILITY.** Nothing in this Agreement is intended to exclude CM's liability for death, personal injury or fraud.

**OBTAINING WARRANTY PERFORMANCE**  
Normally, the contractor or service organization who installed the products will provide warranty performance for the owner. Should the installer be unavailable, contact any CM recognized Representative. If assistance is required in obtaining warranty performance, write or call:

Climate Master, Inc. • Customer Service • 7300 S.W. 44th Street • Oklahoma City, Oklahoma, U.S.A. 73179 • (405) 745-6000 • FAX (405) 745-6068

NOTE: Some countries do not allow limitations on how long an implied warranty lasts, or the limitation or exclusions of consequential or incidental damages, so the foregoing exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.

Please refer to the CM Installation, Operation and Maintenance Manual for operating and maintenance instructions.



Created: 10/09



**Notes**

Models:  
SA  
024-060

Models:  
SA  
024-060

## Notes

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Models:  
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Models:  
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024-060

## Revision History

Date	Section	Description
12/03/24	Created	



A NIBE GROUP MEMBER

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Phone: 800.299.9747  
[www.climatemaster.com](http://www.climatemaster.com)



ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 800-299-9747 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products. The latest version of this document is available at [www.climatemaster.com](http://www.climatemaster.com).

Engineered and assembled in the USA.

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