

# INSTALLATION INSTRUCTIONS

## PACKAGE AIR CONDITIONERS

RSNM/RSPM SERIES — (2.0 - 5.0 TONS)

FEATURING EARTH-FRIENDLY R-410A REFRIGERANT:



**RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!**

### **⚠ WARNING**

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED, LICENSED SERVICE PERSONNEL FOR PROPER INSTALLATION, ADJUSTMENT AND OPERATION OF THIS UNIT. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION OR OPERATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN IMPROPER INSTALLATION, ADJUSTMENT, SERVICE OR MAINTENANCE POSSIBLY RESULTING IN FIRE, ELECTRICAL SHOCK, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



**ISO 9001:2000**  
Certificate Number: 30164

**DO NOT DESTROY THIS MANUAL**

**PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN**

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► Installation instructions are updated on a regular basis. This is done as product changes occur or if new information becomes available. In this publication, an arrow (►) denotes changes from the previous edition or additional new material.

## I. SAFETY INFORMATION

### **WARNING**

PROPOSITION 65: THIS APPLIANCE CONTAINS FIBERGLASS INSULATION. RESPIRABLE PARTICLES OF FIBERGLASS ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

### **WARNING**

THE MANUFACTURER'S WARRANTY DOES NOT COVER ANY DAMAGE OR DEFECT TO THE AIR CONDITIONER CAUSED BY THE ATTACHMENT OR USE OF ANY COMPONENTS, ACCESSORIES OR DEVICES (OTHER THAN THOSE AUTHORIZED BY THE MANUFACTURER) INTO, ONTO OR IN CONJUNCTION WITH THE AIR CONDITIONER. YOU SHOULD BE AWARE THAT THE USE OF UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES MAY ADVERSELY AFFECT THE OPERATION OF THE AIR CONDITIONER AND MAY ALSO ENDANGER LIFE AND PROPERTY. THE MANUFACTURER DISCLAIMS ANY RESPONSIBILITY FOR SUCH LOSS OR INJURY RESULTING FROM THE USE OF SUCH UNAUTHORIZED COMPONENTS, ACCESSORIES OR DEVICES.

### **WARNING**

DISCONNECT ALL POWER TO THE UNIT BEFORE STARTING MAINTENANCE. FAILURE TO DO SO CAN RESULT IN SEVERE ELECTRICAL SHOCK OR DEATH.

### **WARNING**

UNITS ARE NOT DESIGN CERTIFIED TO BE INSTALLED INSIDE THE STRUCTURE. DOING SO CAN CAUSE INADEQUATE UNIT PERFORMANCE AS WELL AS PROPERTY DAMAGE AND CARBON MONOXIDE POISONING RESULTING IN PERSONAL INJURY OR DEATH.

### **WARNING**

DO NOT, UNDER ANY CIRCUMSTANCES, CONNECT RETURN DUCTWORK TO ANY OTHER HEAT PRODUCING DEVICE SUCH AS A FIREPLACE INSERT, STOVE, ETC. UNAUTHORIZED USE OF SUCH DEVICES MAY RESULT IN FIRE, CARBON MONOXIDE POISONING, EXPLOSION, PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

### **WARNING**

THE UNIT MUST BE PERMANENTLY GROUNDED. A GROUNDING LUG IS PROVIDED IN THE ELECTRIC HEAT KIT FOR A GROUND WIRE. FAILURE TO GROUND THIS UNIT CAN RESULT IN FIRE OR ELECTRICAL SHOCK CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

### **WARNING**

ONLY ELECTRIC HEATER KITS SUPPLIED BY THIS MANUFACTURER AS DESCRIBED IN THIS PUBLICATION HAVE BEEN DESIGNED, TESTED, AND EVALUATED BY A NATIONALLY RECOGNIZED SAFETY TESTING AGENCY FOR USE WITH THIS UNIT. USE OF ANY OTHER MANUFACTURED ELECTRIC HEATERS INSTALLED WITHIN THIS UNIT MAY CAUSE HAZARDOUS CONDITIONS RESULTING IN PROPERTY DAMAGE, FIRE, BODILY INJURY OR DEATH.

### **WARNING**

DISCONNECT MAIN ELECTRICAL POWER TO THE UNIT BEFORE ATTEMPTING TO CHANGE BLOWER SPEEDS. FAILURE TO DO SO MAY RESULT IN ELECTRICAL SHOCK OR SEVERE PERSONAL INJURY OR DEATH.

### **CAUTION**

R-410A systems operate at higher pressures than R-22 systems. Do not use R-22 service equipment or components on R-410A equipment.

## WARNING

**IMPORTANT: ALL MANUFACTURER PRODUCTS MEET CURRENT FEDERAL OSHA GUIDELINES FOR SAFETY. CALIFORNIA PROPOSITION 65 WARNINGS ARE REQUIRED FOR CERTAIN PRODUCTS, WHICH ARE NOT COVERED BY THE OSHA STANDARDS.**

**CALIFORNIA'S PROPOSITION 65 REQUIRES WARNINGS FOR PRODUCTS SOLD IN CALIFORNIA THAT CONTAIN, OR PRODUCE, ANY OF OVER 600 LISTED CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR BIRTH DEFECTS SUCH AS FIBERGLASS INSULATION, LEAD IN BRASS, AND COMBUSTION PRODUCTS FROM NATURAL GAS.**

**ALL "NEW EQUIPMENT" SHIPPED FOR SALE IN CALIFORNIA WILL HAVE LABELS STATING THAT THE PRODUCT CONTAINS AND/OR PRODUCES PROPOSITION 65 CHEMICALS. ALTHOUGH WE HAVE NOT CHANGED OUR PROCESSES, HAVING THE SAME LABEL ON ALL OUR PRODUCTS FACILITATES MANUFACTURING AND SHIPPING. WE CANNOT ALWAYS KNOW "WHEN, OR IF" PRODUCTS WILL BE SOLD IN THE CALIFORNIA MARKET.**

**YOU MAY RECEIVE INQUIRIES FROM CUSTOMERS ABOUT CHEMICALS FOUND IN, OR PRODUCED BY, SOME OF OUR HEATING AND AIR-CONDITIONING EQUIPMENT, OR FOUND IN NATURAL GAS USED WITH SOME OF OUR PRODUCTS. LISTED BELOW ARE THOSE CHEMICALS AND SUBSTANCES COMMONLY ASSOCIATED WITH SIMILAR EQUIPMENT IN OUR INDUSTRY AND OTHER MANUFACTURERS.**

- GLASS WOOL (FIBERGLASS) INSULATION
- CARBON MONOXIDE (CO)
- FORMALDEHYDE
- BENZENE

**MORE DETAILS ARE AVAILABLE AT THE WEBSITES FOR OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION), AT [WWW.OSHA.GOV](http://WWW.OSHA.GOV) AND THE STATE OF CALIFORNIA'S OEHHA (OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT), AT [WWW.OEHHA.ORG](http://WWW.OEHHA.ORG). CONSUMER EDUCATION IS IMPORTANT SINCE THE CHEMICALS AND SUBSTANCES ON THE LIST ARE FOUND IN OUR DAILY LIVES. MOST CONSUMERS ARE AWARE THAT PRODUCTS PRESENT SAFETY AND HEALTH RISKS, WHEN IMPROPERLY USED, HANDLED AND MAINTAINED.**

## II. INTRODUCTION

This booklet contains the installation and operating instructions for your self-contained air conditioner. There are a few precautions that should be taken to derive maximum satisfaction from it. Improper installation can result in unsatisfactory operation or dangerous conditions.

Read this booklet and any instructions packaged with separate equipment required to make up the system prior to installation. Give this booklet to the owner and explain its provisions. The owner should retain this booklet for future reference.

## III. CHECKING PRODUCT RECEIVED

Upon receiving the unit, inspect it for any damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company. Check the unit model number, electrical characteristics, and accessories to determine if they are correct.

## IV. EQUIPMENT PROTECTION FROM THE ENVIRONMENT

The metal parts of this unit may be subject to rust or deterioration in adverse environmental conditions. This oxidation could shorten the equipment's useful life. Salt spray, fog or mist in seacoast areas, sulphur or chlorine from lawn watering systems, and various chemical contaminants from industries such as paper mills and petroleum refineries are especially corrosive.

**If the unit is to be installed in an area where contaminants are likely to be a problem, special attention should be given to the equipment location and exposure.**

1. Avoid having lawn sprinkler heads spray directly on the unit cabinet.
2. In coastal areas, locate the unit on the side of the building away from the waterfront.
3. Shielding provided by a fence or shrubs may give some protection.
4. Elevating the unit off its slab or base enough to allow air circulation will help avoid holding water against the basepan.

**Regular maintenance will reduce the buildup of contaminants and help to protect the unit's finish.**

## WARNING

**DISCONNECT ALL POWER TO THE UNIT BEFORE STARTING MAINTENANCE. FAILURE TO DO SO CAN RESULT IN SEVERE ELECTRICAL SHOCK OR DEATH.**

1. Frequent washing of the cabinet, fan blade and coil with fresh water will remove most of the salt or other contaminants that build up on the unit.
2. Regular cleaning and waxing of the cabinet with an automobile polish will provide some protection.
3. A liquid cleaner may be used several times a year to remove matter that will not wash off with water.

Several different types of protective coatings are offered in some areas. These coatings may provide some benefit, but the effectiveness of such coating materials cannot be verified by the equipment manufacturer.

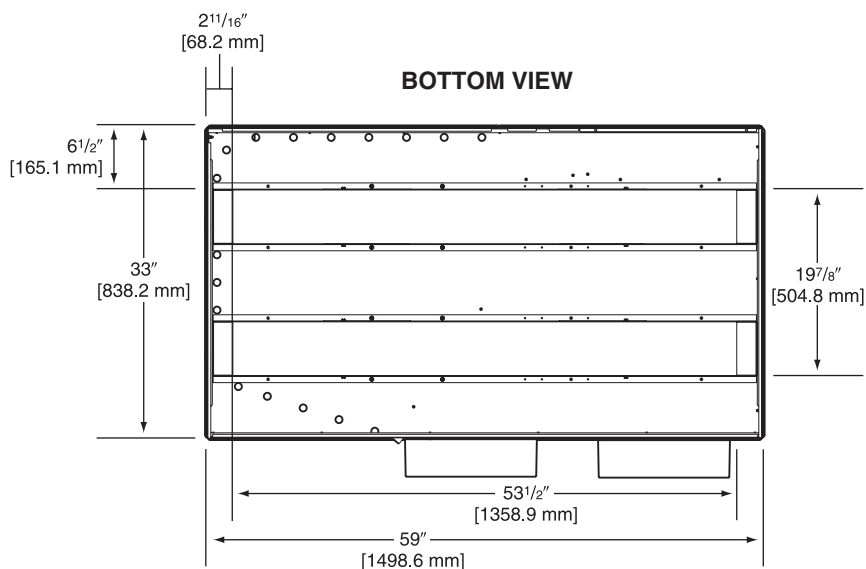
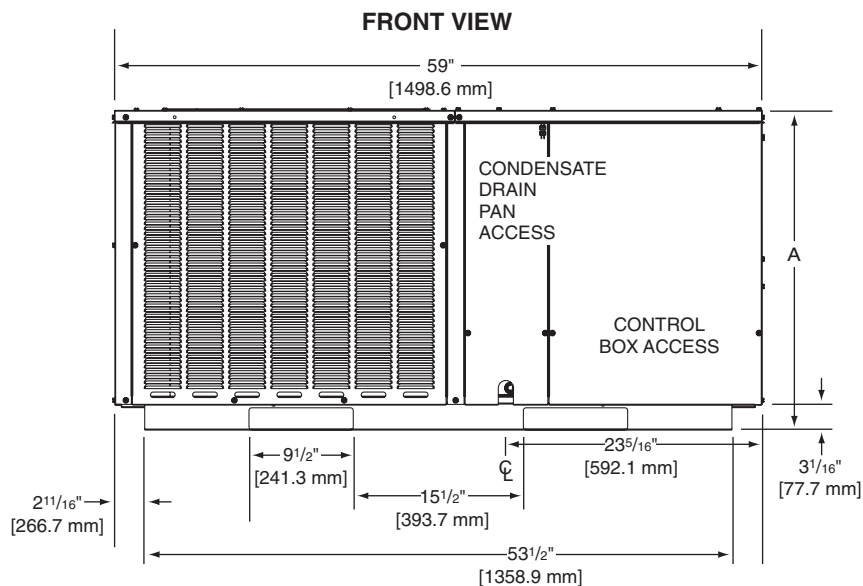
**The best protection is frequent cleaning, maintenance and minimal exposure to contaminants.**

## V. SPECIFICATIONS

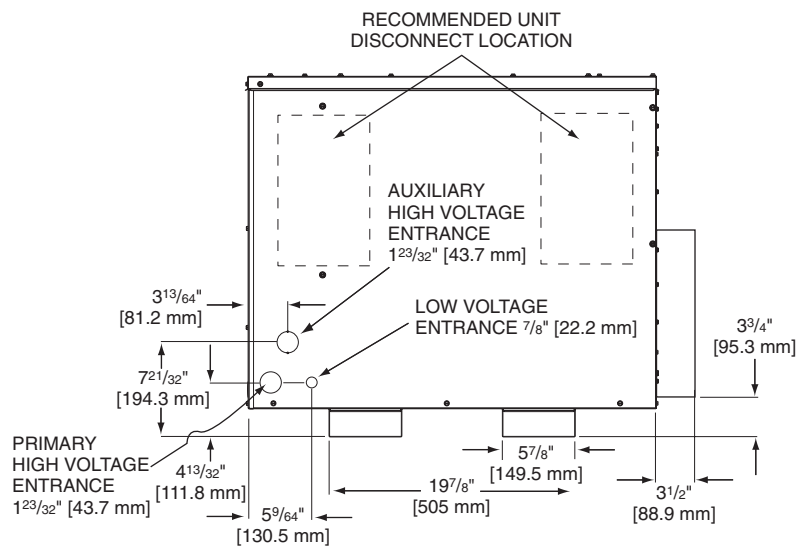
Suitable for use in mobile homes, manufactured housing, and conventionally constructed residential and commercial buildings where horizontally-ducted systems are preferred.

**FIGURE 1**  
UNIT DIMENSIONS AND ACCESS LOCATIONS

Model	Height "A"
024, 030, 036, 042	29 1/8"
048, 060	37 1/8"

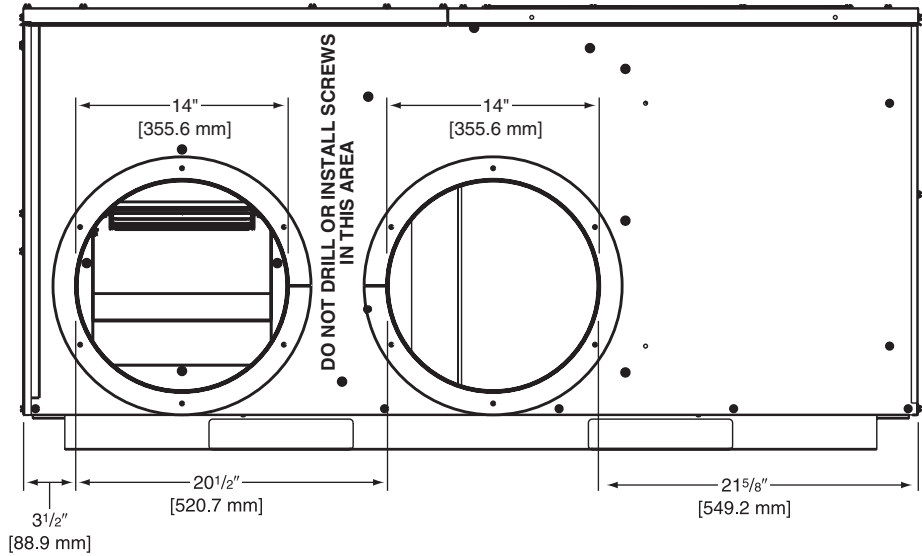


### ELECTRICAL CONNECTIONS

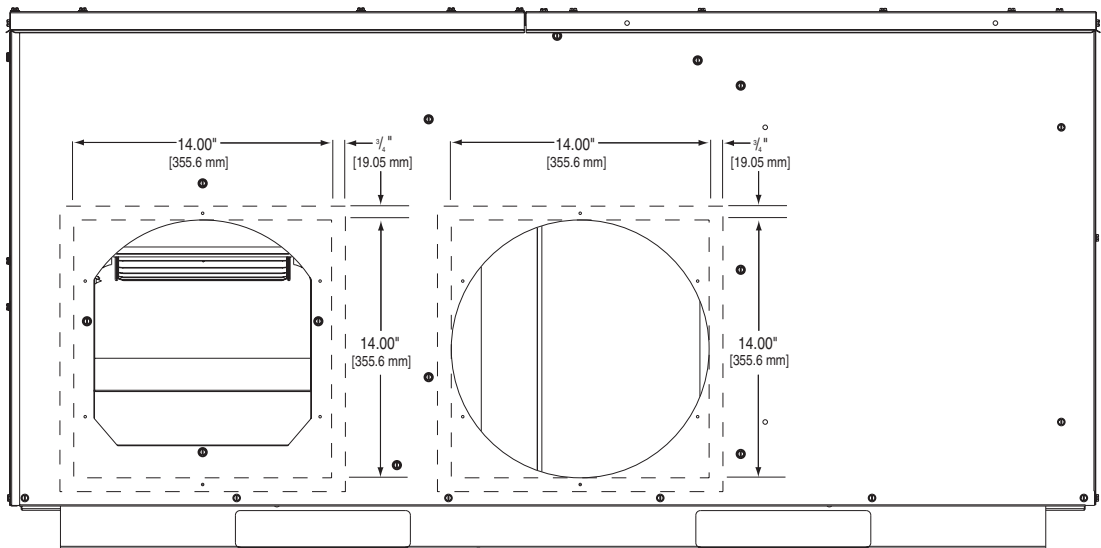


DUCT CONNECTIONS

REAR VIEW  
ROUND DUCT CONNECTIONS



SQUARE DUCT CONNECTIONS



IMPORTANT: DO NOT SCREW OR DRILL OUTSIDE THE DESIGNATED AREAS.



## WARNING

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## A. GENERAL

The Packaged Air Conditioner is available without heat or with 5, 7, 10, 15, or 20 kW electric heat. Cooling capacities of 2, 2½, 3, 3½, 4 and 5 nominal tons of cooling are available.

The units are weatherized for mounting outside of the building.

The information on the rating plate is in compliance with the FTC and DOE rating for single phase units.

## B. MAJOR COMPONENTS

The unit includes a hermetically-sealed refrigerating system (consisting of a compressor, condenser coil, evaporator coil with refrigerant metering device), a circulation air blower, a condenser fan, and all necessary internal electrical wiring. The cooling system of these units is factory-evacuated, charged and performance tested. Refrigerant amount and type are indicated on rating plate.

## C. R-410A REFRIGERANT

All units are factory charged with R-410A refrigerant.

### 1. Specification of R-410A:

**Application:** R-410A is not a drop-in replacement for R-22; equipment designs must accommodate its higher pressures. It cannot be retrofitted into R-22 units.

**Pressure:** The pressure of R-410A is approximately 60% (1.6 times) greater than R-22. Recovery and recycle equipment, pumps, hoses and the like need to have design pressure ratings appropriate for R-410A. *Manifold sets need to range up to 800 psig high-side and 250 psig low-side with a 550 psig low-side retard. Hoses need to have a service pressure rating of 800 psig. Recovery cylinders need to have a 400 psig service pressure rating. DOT 4BA400 or DOT BW400.*

**Combustibility:** At pressures above 1 atmosphere, mixture of R-410A and air can become combustible. R-410A and air should never be mixed in tanks or supply lines, or be allowed to accumulate in storage tanks. Leak checking should never be done with a mixture of R-410A and air. Leak checking can be performed safely with nitrogen or a mixture of R-410A and nitrogen.

### 2. Quick Reference Guide For R-410A

- R-410A refrigerant operates at approximately 60% higher pressure (1.6 times) than R-22. Ensure that servicing equipment is designed to operate with R-410A.
- R-410A refrigerant cylinders are pink.
- R-410A, as with other HFC's is only compatible with POE oils.
- Vacuum pumps will not remove moisture from POE oil.
- R-410A systems are to be charged with liquid refrigerants. Prior to March 1999, R-410A refrigerant cylinders had a dip tube. These cylinders should be kept upright for equipment charging. Post March 1999 cylinders do not have a dip tube and should be inverted to ensure liquid charging of the equipment.
- Do not install a suction line filter drier in the liquid line.
- A liquid line filter drier is standard on every unit.
- Desiccant (drying agent) must be compatible for POE oils and R-410A.

### 3. Evaporator Coil / TXV

The thermostatic expansion valve is specifically designed to operate with R-410A. **DO NOT use an R-22 TXV. The existing evaporator must be replaced with the factory specified TXV evaporator specifically designed for R-410A.**

### 4. Tools Required For Installing & Servicing R-410A Models

Manifold Sets:

- Up to 800 PSIG High side
- Up to 250 PSIG Low Side
- 550 PSIG Low Side Retard

Manifold Hoses:

- Service Pressure Rating of 800 PSIG

Recovery Cylinders:

- 400 PSIG Pressure Rating
- Dept. of Transportation 4BA400 or BW400

**⚠ CAUTION**

R-410A systems operate at higher pressures than R-22 systems. Do not use R-22 service equipment or components on R-410A equipment.

## VI. INSTALLATION

### A. GENERAL

#### 1. PRE-INSTALLATION CHECK-POINTS

Before attempting any installation, the following points should be carefully considered:

- Structural strength of supporting members.  
(rooftop installation)
- Clearances and provision for servicing.
- Power supply and wiring.
- Air duct connections.
- Drain facilities and connections.
- Location for minimum noise.

#### 2. LOCATION

These units are designed for outdoor installations. They can be mounted on a slab or rooftop. They are not to be installed within any part of a structure such as an attic, crawl space, closet, or any other place where condenser air flow is restricted or other than outdoor ambient conditions prevail. Since the application of the units is of the outdoor type, it is important to consult your local code authorities at the time the first installation is made.

### B. OUTSIDE SLAB INSTALLATION

(Typical outdoor slab installations are shown in Figure 2.)

- Select a location where external water drainage cannot collect around the unit.
- Provide a level concrete slab extending 3" beyond all four sides of the unit. The slab should be sufficient above grade to prevent ground water from entering the unit.

**IMPORTANT:** To prevent transmission of noise or vibration, slab should not be connected to building structure.

- The location of the unit should be such as to provide proper access for inspection and servicing.
- Locate unit where operating sounds will not disturb owner or neighbors.
- Locate unit so roof runoff water does not pour directly on the unit. Provide gutter or other shielding at roof level. Do not locate unit in an area where excessive snow drifting may occur or accumulate.

### C. CLEARANCES

The following minimum clearances must be observed for proper unit performance and serviceability.

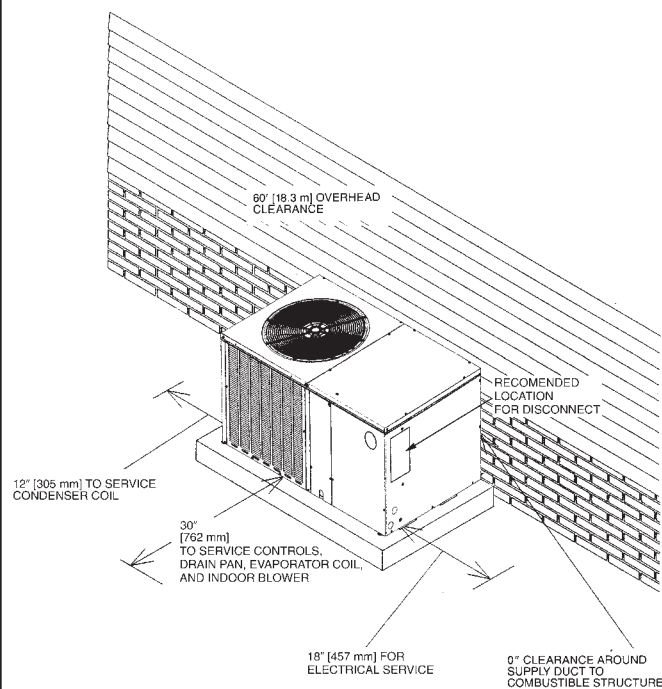
- Provide 30" minimum clearance at the front and 18" on the right side of the unit for service access. Provide 12" minimum clearance on the left side of the unit for air inlet.
- Provide 60" minimum clearance between top of unit and maximum 3 foot overhang.
- Unit is design certified for application on combustible flooring with 0" minimum clearance.
- See Figure 2 for illustration of minimum installation-service clearances.

### D. ROOFTOP INSTALLATION

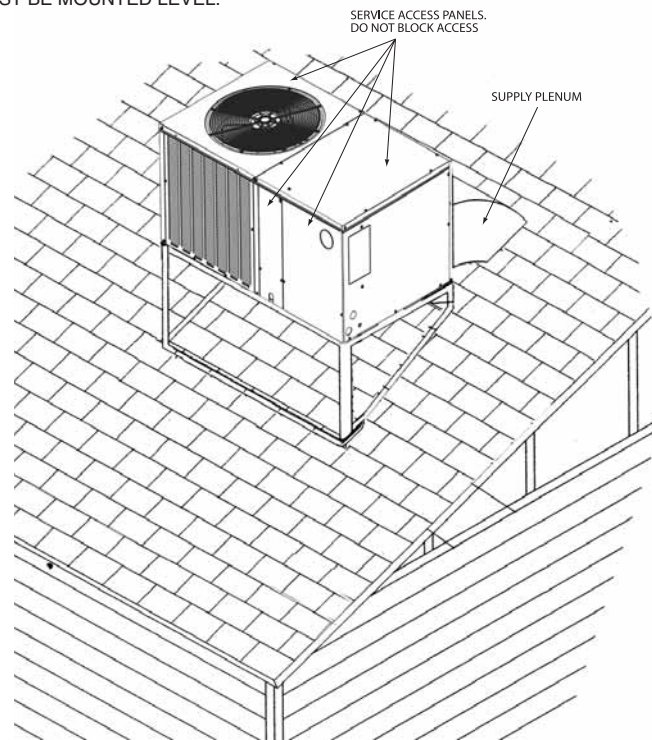
- Before locating the unit on the roof, make sure that the strength of the roof and beams is adequate at that point to support the weight involved. (See specification sheet for weight of unit.) This is very important and user's responsibility.
- The unit should be placed on a solid and level platform of adequate strength.



**FIGURE 2**  
**PACKAGE AIR CONDITIONER**  
 OUTSIDE SLAB INSTALLATION, BASEMENT OR  
 CRAWL SPACE DISTRIBUTION SYSTEM



**FIGURE 3**  
**PACKAGE AIR CONDITIONER**  
 PITCHED ROOFTOP INSTALLATION, ATTIC  
 OR DROP CEILING DISTRIBUTING SYSTEM.  
 MUST BE MOUNTED LEVEL.



3. The location of the unit on the roof should be such as to provide proper access for inspection and servicing (Figure 3).

**IMPORTANT:** If unit will not be put into service immediately, cover supply and return openings to prevent excessive condensation.

## VII. DUCTWORK

Ductwork should be fabricated by the installing contractor in accordance with local codes and NFPA90A. Industry manuals may be used as a guide when sizing and designing the duct system - contact Air Conditioning Contractors of America, 1513 16th St. N.W., Washington, D.C. 20036.

### **⚠ WARNING**

**DO NOT, UNDER ANY CIRCUMSTANCES, CONNECT RETURN DUCTWORK TO ANY OTHER HEAT PRODUCING DEVICE SUCH AS A FIREPLACE INSERT, STOVE, ETC. UNAUTHORIZED USE OF SUCH DEVICES MAY RESULT IN FIRE, CARBON MONOXIDE POISONING, EXPLOSION, PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.**

Place the unit as close to the space to be air conditioned as possible allowing clearance dimensions as indicated. Run ducts as directly as possible to supply and return outlets. Use of non-flammable waterproof flexible connectors on both supply and return connections at the unit to reduce noise transmission is recommended.

It is preferable to install the unit on the roof of the structure if the registers or diffusers are located on the wall or in the ceiling. Consider a slab installation when the registers are low on a wall or in the floor.

On ductwork exposed to outside air conditions of temperature and humidity, use a minimum of 2" of insulation and a vapor barrier. Distribution system in attic, furred space or crawl space should be insulated with at least 2" of insulation with vapor barrier. One-half to 1" thickness of insulation is usually sufficient for ductwork inside the air conditioned space.

Provide balancing dampers for each branch duct in the supply system. Properly support the ductwork from the structure.

When installing ductwork use noncombustible flexible connectors between ductwork and unit to reduce noise and vibration transmission into the ductwork.

## VIII. FILTERS

Filters are not provided with this unit. They must be supplied and installed in the return air duct by the installer. A field installed filter grille is recommended for easy and convenient access to the filters for periodic inspection and cleaning. Filters must have adequate face area for the rated air quantity of the unit. See General Database for recommended filter size.

## IX. CONDENSATE DRAIN

The indoor coil condensate drain ends with a PVC stub. A trap is provided in for proper condensate drainage and to prevent debris from being drawn into the unit. Do not connect drain to closed sewer line. It is not recommended that a PVC cement or other permanent installation be used so that the drain line and/or drain pan can be easily cleaned in the future. The drain trap is located in the control box during shipping. To install, slide clear plastic tube over drain pan connection. The white PVC trap can be oriented as required by installation.

**FIGURE 4**

### REMOVABLE CONDENSATE DRAIN PAN AND REMOVAL PROCEDURE

A small side panel grants access to a removable, sloped drain pan (A), which helps to ensure indoor air quality (IAQ) throughout the life of the unit. A drain trap (B) assembly is provided for convenience.



## X. ELECTRICAL WIRING

Field wiring must comply with the National Electrical Code\* and applicable local codes.

\*C.E.C. in Canada

### A. POWER WIRING

1. It is important that proper electrical power is available at the unit. Voltage should not vary more than 10% from that stamped on the unit rating plate. On three phase units, phases must be balanced within 3%.
2. Install a branch circuit disconnect within sight of the unit and of adequate size to handle the starting current. (See Heater Kit Tables.)
3. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size can be determined from the National Electrical Code or Canadian Electrical Code or nameplate or from Heater Kit Tables.
4. This unit supports both single and dual point electrical connection for unit and electric heat accessory.
5. Power wiring must be run in grounded rain-tight conduit.

## WARNING

**TURN OFF ELECTRIC POWER AT THE FUSE BOX OR SERVICE PANEL BEFORE MAKING ANY ELECTRICAL CONNECTIONS.**

**ALSO, THE GROUND CONNECTION MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS. FAILURE TO DO SO CAN RESULT IN ELECTRICAL SHOCK, SEVERE PERSONAL INJURY OR DEATH.**

## B. POWER WIRING AND ELECTRIC HEATER KIT INSTRUCTIONS

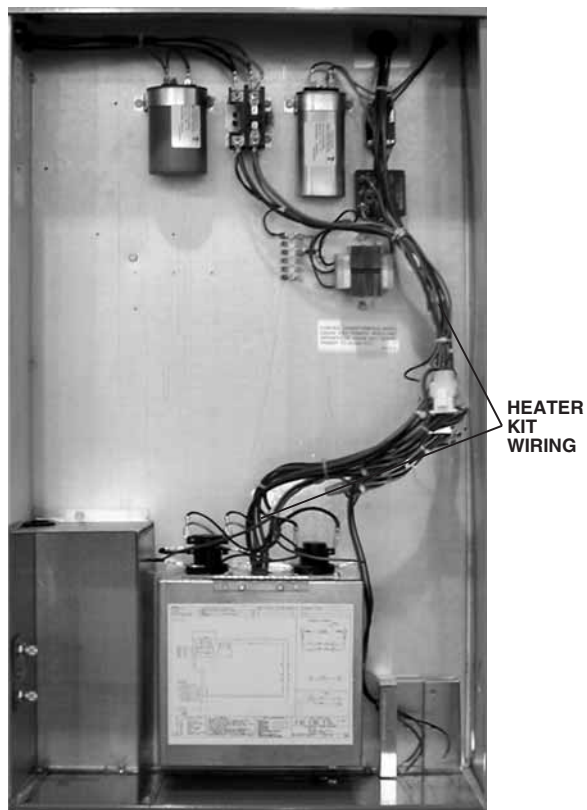
1. Turn off power to unit.
2. Remove control box access panel.
3. Remove unit indoor section top cover.
4. Remove wire notch cover from control bulkhead and discard. Retain screw.
5. Remove heater element cover plate from blower outlet opening and discard. Retain screws.
6. Mount heater fuse block assembly in location indicated with the three included screws.
7. Route wire harness assembly through wire notch in control bulkhead and mount element assembly in blower outlet opening with screws previously retained.
8. Center wire routing plate over notch in blower bulkhead and secure with screw previously retained.
9. Route and tie wiring as shown in Figure 5. Wiring must not contact moving parts or uninsulated electrical connections.
10. Replace unit indoor top cover.
11. Connect power and control wiring as indicated below:
  - a. **Single-point wiring:** Connect high voltage field power leads to heater kit fuse block and connect included unit power pigtailed from heater kit fuse block to unit contactor L1 and L3 connections. Connect ground lead to ground lug on heater kit fuse block.
  - b. **Dual-circuit wiring:** Remove unit power pigtailed from heater kit fuse block and discard. Connect one set of high voltage field power circuit leads to the heater kit fuse block and connect ground lead to ground lug on heater kit fuse block.  
Connect the second set of high voltage field power leads to L1 and L3 on the unit contactor. Connect ground lead to ground lug on control box bulkhead.
  - c. Connect heater kit control plug to receptacle in control box.
12. Replace control box access panel.
13. Restore power to unit and verify proper unit and heater kit operation.

## C. CONTROL WIRING (Class II)

1. Do not run low voltage wiring in conduit with power wiring.
2. Control wiring is routed through the 7/8" hole corner adjacent to the control box. See Electrical Connections, Figure 1. Use a minimum #18 AWG thermostat wire. For wire lengths exceeding 50', use #16 AWG thermostat wire. The low voltage wires are connected to the unit pigtailed which are supplied with the unit in the low voltage connection box located within the unit control box. See Figure 5.
3. Figure 6 shows representative low voltage connection diagrams. Read your thermostat installation instructions for any special requirements for your specific thermostat.

**NOTE** — Units installed in Canada require that an outdoor thermostat (30,000 min. cycles of endurance) be installed and be wired with C.E.C. Class I wiring.

**FIGURE 5**  
**HEATER KIT INSTALLATION**



#### **D. INTERNAL WIRING**

1. A diagram of the internal wiring of this unit is located on the electrical control box cover. If any of the original wire as supplied with the appliance must be replaced, the wire gauge and insulation must be the same as original wiring.

#### **E. GROUNDING**

##### **⚠ WARNING**

**THE UNIT MUST BE PERMANENTLY GROUNDED. A GROUNDING LUG IS PROVIDED. FAILURE TO GROUND THIS UNIT CAN RESULT IN FIRE OR ELECTRICAL SHOCK CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.**

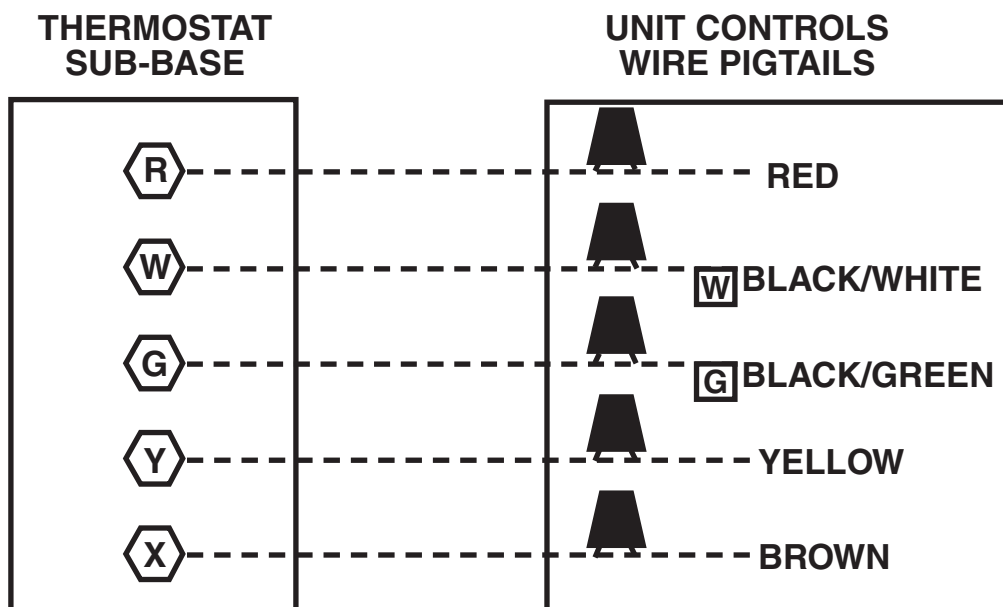
#### **F. THERMOSTAT**

Mount the thermostat on an inside wall about five feet above the floor in a location where it will not be affected by unconditioned air, sun, or drafts from open doors or other sources. READ installation instructions in air conditioner thermostat package CAREFULLY because each has some different wiring requirements.

## **XI. INDOOR AIR FLOW DATA**

All 208/230 volt units are equipped with multi-speed indoor blower motors. Each unit is shipped factory wired for the proper speed at a normal external static. See Airflow Performance Table for blower performance.

**FIGURE 6**  
VOLTAGE CONNECTIONS DIAGRAMS – STANDARD CONTROL WIRING



## XII. PRE-START CHECK

1. Is unit properly located and level?
2. Is ductwork insulated, weatherproofed, with proper spacing to combustible materials?
3. Is air free to travel to and from outdoor coil? (See Figure 1.)
4. Is the wiring correct, tight, and according to unit wiring diagram?
5. Is unit grounded?
6. Are field supplied air filters in place and clean?
7. Do the outdoor fan and indoor blower turn freely without rubbing, and are they tight on the motor shafts?

## XIII. STARTUP

1. Turn thermostat to "OFF," turn "on" power supply at disconnect switch.
2. Turn temperature setting as high as it will go.
3. Turn fan switch to "ON."
4. Indoor blower should run. Be sure it is running in the right direction.
5. Turn fan switch to "AUTO." Turn system switch to "COOL" and turn temperature setting below room temperature. Unit should run in cooling mode.
6. Is outdoor fan operating correctly in the right direction?
7. Is compressor running correctly.
8. Turn thermostat system switch to "HEAT." Unit should stop. Wait 5 minutes, then raise temperature setting to above room temperature. After about 30 to 50 seconds auxiliary heaters, if installed, should come on.
9. Check the refrigerant charge using the instructions located on control box cover. Replace service port caps. Service port cores are for system access only and will leak if not tightly capped.
10. Turn thermostat system switch to proper mode "HEAT" or "COOL" and set thermostat to proper temperature setting. Record the following after the unit has run some time.
  - A. Operating Mode \_\_\_\_\_
  - B. Discharge Pressure (High) \_\_\_\_\_ PSIG
  - C. Vapor Pressure at Compressor (Low) \_\_\_\_\_ PSIG
  - D. Vapor Line Temperature at Compressor \_\_\_\_\_ °F.
  - E. Indoor Dry Bulb \_\_\_\_\_ °F.
  - F. Indoor Wet Bulb \_\_\_\_\_ °F.
  - G. Outdoor Dry Bulb \_\_\_\_\_ °F.
  - H. Outdoor Wet Bulb \_\_\_\_\_ °F.
  - I. Voltage at Contactor \_\_\_\_\_ Volts

J. Current at Contactor \_\_\_\_\_ Amps  
K. Model Number \_\_\_\_\_  
L. Serial Number \_\_\_\_\_  
M. Location \_\_\_\_\_  
N. Owner \_\_\_\_\_  
O. Date \_\_\_\_\_

11. Adjust discharge air grilles and balance system.
12. Check ducts for condensation and air leaks.
13. Check unit for tubing and sheet metal rattles.
14. Instruct the owner on operation and maintenance.
15. Leave "USE AND CARE" instructions with owner.

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## XIV. OPERATION

Most single phase units are not equipped with start relay or start capacitor. It is important that such systems be off for a minimum of 5 minutes before restarting to allow equalization of pressures. Do not move the thermostat to cycle unit without waiting five minutes. To do so may cause the compressor to stop on an automatic open overload device or blow a fuse. Poor electrical service can cause nuisance tripping in overloads or blow fuses.

**IMPORTANT:** *The compressor has an internal overload protector. Under some conditions, it can take up to 2 hours for this overload to reset. Make sure overload has had time to reset before condemning the compressor.*

These units are equipped with a time delay control (TDC1). The control allows the blower to operate for 45 to 90 seconds after the thermostat is satisfied.

### A. CONTROL SYSTEM OPERATION

1. In the cooling mode, the thermostat will, on a call for cooling, energize the compressor contactor and the indoor blower relay. The indoor blower can be operated continuously by setting the thermostat fan switch at the "ON" position.
2. In the heating mode, the first heat stage of the thermostat will energize one or more supplementary resistance heaters. If required or considered desirable, the resistance heat may also be controlled by outdoor thermostats.



# XV. GENERAL DATA - RSNM

## NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RSNM- Series	A024JK	A030JK	A036CK	A036JK
<b>Cooling Performance<sup>1</sup></b>				Continued ->
Gross Cooling Capacity Btu [kW]	24,800 [7.27]	30,000 [8.79]	37,200 [10.9]	37,200 [10.9]
EER/SEER <sup>2</sup>	11.3/13	11.5/13	11.3/13	11.3/13
Nominal CFM/ARI Rated CFM [L/s]	800/800 [378/378]	1000/1000 [472/472]	1200/1200 [566/566]	1200/1200 [566/566]
ARI Net Cooling Capacity Btu [kW]	23,800 [6.97]	28,800 [8.44]	35,800 [10.49]	35,800 [10.49]
Net Sensible Capacity Btu [kW]	18,400 [5.39]	22,200 [6.5]	27,300 [8]	27,300 [8]
Net Latent Capacity Btu [kW]	5,400 [1.58]	6,600 [1.93]	8,500 [2.49]	8,500 [2.49]
Net System Power kW	2.1	2.5	3.17	3.17
<b>Compressor</b>				
No./Type	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll
<b>Outdoor Sound Rating (dB)<sup>3</sup></b>	76	76	76	76
<b>Outdoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	10.44 [0.97]	12.64 [1.17]	12.65 [1.18]	12.65 [1.18]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	4.33 [0.4]	4.33 [0.4]	4.33 [0.4]	4.33 [0.4]
Rows / FPI [FPcm]	2 / 15 [6]	2 / 15 [6]	2 / 15 [6]	2 / 15 [6]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm] <sup>4</sup>	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan - Type</b>	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	3400 [1604]	3400 [1604]	3400 [1604]	3400 [1604]
No. Motors/HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP
Motor RPM	875	875	875	875
<b>Indoor Fan - Type</b>	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/10x9 [254x228.6]	1/10x9 [254x228.6]	1/10x9 [254x228.6]	1/10x9 [254x228.6]
Drive Type/No. Speeds	Direct/2	Direct/2	Direct/2	Direct/2
No. Motors	1	1	1	1
Motor HP	1/4	1/3	1/2	1/2
Motor RPM	1033	1080	1050	1050
Motor Frame Size	48	48	48	48
<b>Filter - Type</b>	Field Supplied	Field Supplied	Field Supplied	Field Supplied
Furnished	No	No	No	No
(NO.) Size Recommended in. [mm x mm x mm]	(1)1x20x16 [25x508x406]	(1)1x20x20 [25x508x508]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
<b>Refrigerant Charge Oz. [g] (R-410A)</b>	70 [1984]	78 [2211]	78 [2211]	78 [2211]
<b>Weights</b>				
Net Weight lbs. [kg]	304 [138]	306 [139]	309 [140]	309 [140]
Ship Weight lbs. [kg]	328 [149]	330 [150]	333 [151]	333 [151]

### NOTES:

1. Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on ARI Standard 210/240 or 360.
2. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
3. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
4. Standard 3/4" PVC P-Trap provided.

[ ] Designates Metric Conversions



# GENERAL DATA - RSNM

## NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RSNM- Series	A042CK	A042JK	A048CK	A048JK
<b>Cooling Performance<sup>1</sup></b>				Continued ->
Gross Cooling Capacity Btu [kW]	43,000 [12.6]	43,000 [12.6]	48,000 [14.06]	48,000 [14.06]
EER/SEER <sup>2</sup>	11.1/13	11.1/13	11.3/13	11.3/13
Nominal CFM/ARI Rated CFM [L/s]	1400/1400 [661/661]	1400/1400 [661/661]	1600/1550 [755/731]	1600/1550 [755/731]
ARI Net Cooling Capacity Btu [kW]	41,500 [12.16]	41,500 [12.16]	46,000 [13.48]	46,000 [13.48]
Net Sensible Capacity Btu [kW]	31,500 [9.23]	31,500 [9.23]	35,500 [10.4]	35,500 [10.4]
Net Latent Capacity Btu [kW]	10,000 [2.93]	10,000 [2.93]	10,500 [3.08]	10,500 [3.08]
Net System Power kW	3.74	3.74	4.07	4.07
<b>Compressor</b>				
No./Type	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll
<b>Outdoor Sound Rating (dB)<sup>3</sup></b>	76	76	78	78
<b>Outdoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	12.65 [1.18]	12.65 [1.18]	16.54 [1.54]	16.54 [1.54]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	5.78 [0.54]	5.78 [0.54]	5.78 [0.54]	5.78 [0.54]
Rows / FPI [FPcm]	3 / 13 [5]	3 / 13 [5]	3 / 13 [5]	3 / 13 [5]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm] <sup>4</sup>	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan - Type</b>	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	3400 [1604]	3400 [1604]	4200 [1982]	4200 [1982]
No. Motors/HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP
Motor RPM	875	875	1075	1075
<b>Indoor Fan - Type</b>	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]
Drive Type/No. Speeds	Direct/2	Direct/2	Direct/2	Direct/2
No. Motors	1	1	1	1
Motor HP	1/2	1/2	3/4	3/4
Motor RPM	1075	1075	1075	1075
Motor Frame Size	48	48	48	48
<b>Filter - Type</b>	Field Supplied	Field Supplied	Field Supplied	Field Supplied
Furnished	No	No	No	No
(NO.) Size Recommended in. [mm x mm x mm]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
<b>Refrigerant Charge Oz. [g] (R-410A)</b>	86 [2438]	86 [2438]	114 [3232]	114 [3232]
<b>Weights</b>				
Net Weight lbs. [kg]	333 [151]	333 [151]	349 [158]	349 [158]
Ship Weight lbs. [kg]	357 [162]	357 [162]	375 [170]	375 [170]

### NOTES:

1. Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on ARI Standard 210/240 or 360.
2. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
3. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
4. Standard 3/4" PVC P-Trap provided.

[ ] Designates Metric Conversions

# GENERAL DATA - RSNM

## NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RSNM- Series	A060CK	A060JK
<b>Cooling Performance<sup>1</sup></b>		
Gross Cooling Capacity Btu [kW]	63,000 [18.46]	63,000 [18.46]
EER/SEER <sup>2</sup>	11.3/13	11.3/13
Nominal CFM/ARI Rated CFM [L/s]	2000/1900 [944/897]	2000/1900 [944/897]
ARI Net Cooling Capacity Btu [kW]	60,000 [17.58]	60,000 [17.58]
Net Sensible Capacity Btu [kW]	45,000 [13.18]	45,000 [13.18]
Net Latent Capacity Btu [kW]	15,000 [4.4]	15,000 [4.4]
Net System Power kW	5.31	5.31
<b>Compressor</b>		
No./Type	1/Copeland Scroll	1/Copeland Scroll
<b>Outdoor Sound Rating (dB)<sup>3</sup></b>		
	78	78
<b>Outdoor Coil - Fin Type</b>		
Tube Type	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	16.54 [1.54]	16.54 [1.54]
	2 / 22 [9]	2 / 22 [9]
<b>Indoor Coil - Fin Type</b>		
Tube Type	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	5.78 [0.54]	5.78 [0.54]
Refrigerant Control	4 / 13 [5]	4 / 13 [5]
TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm] <sup>4</sup>	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan - Type</b>		
No. Used/Diameter in. [mm]	Propeller	Propeller
Drive Type/No. Speeds	1/24 [609.6]	1/24 [609.6]
CFM [L/s]	Direct/1	Direct/1
No. Motors/HP	4000 [1888]	4000 [1888]
Motor RPM	1 at 1/3 HP	1 at 1/3 HP
	1075	1075
<b>Indoor Fan - Type</b>		
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal
Drive Type/No. Speeds	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]
No. Motors	Direct/2	Direct/2
Motor HP	1	1
Motor RPM	3/4	3/4
Motor Frame Size	1075	1075
	48	48
<b>Filter - Type</b>		
Furnished	Field Supplied	Field Supplied
(NO.) Size Recommended in. [mm x mm x mm]	No	No
	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
<b>Refrigerant Charge Oz. [g] (R-410A)</b>		
	178 [5046]	178 [5046]
<b>Weights</b>		
Net Weight lbs. [kg]		
	364 [165]	364 [165]
Ship Weight lbs. [kg]		
	390 [177]	390 [177]

### NOTES:

1. Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on ARI Standard 210/240 or 360.
2. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
3. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
4. Standard 3/4" PVC P-Trap provided.

[ ] Designates Metric Conversions

# GENERAL DATA - RSPM

## NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RSPM- Series	A024JK	A030JK	A036CK	A036JK
<b>Cooling Performance<sup>1</sup></b>				Continued ->
Gross Cooling Capacity Btu [kW]	25,200 [7.38]	30,400 [8.91]	37,600 [11.02]	37,600 [11.02]
EER/SEER <sup>2</sup>	12.4/14	12.25/14	12.2/14	12.2/14
Nominal CFM/ARI Rated CFM [L/s]	800/800 [378/378]	1000/1000 [472/472]	1200/1200 [566/566]	1200/1200 [566/566]
ARI Net Cooling Capacity Btu [kW]	24,200 [7.09]	29,200 [8.56]	36,200 [10.61]	36,200 [10.61]
Net Sensible Capacity Btu [kW]	18,800 [5.51]	23,000 [6.74]	27,700 [8.12]	27,700 [8.12]
Net Latent Capacity Btu [kW]	5,400 [1.58]	6,200 [1.82]	8,500 [2.49]	8,500 [2.49]
Net System Power kW	1.95	2.38	2.97	2.97
<b>Compressor</b>				
No./Type	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll
<b>Outdoor Sound Rating (dB)<sup>3</sup></b>	76	76	76	76
<b>Outdoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	10.44 [0.97]	12.64 [1.17]	12.65 [1.18]	12.65 [1.18]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	4.33 [0.4]	4.33 [0.4]	4.33 [0.4]	4.33 [0.4]
Rows / FPI [FPcm]	2 / 15 [6]	2 / 15 [6]	2 / 15 [6]	2 / 15 [6]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm] <sup>4</sup>	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan - Type</b>	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	3400 [1604]	3400 [1604]	3400 [1604]	3400 [1604]
No. Motors/HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP
Motor RPM	875	875	875	875
<b>Indoor Fan - Type</b>	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/10x9 [254x228.6]	1/10x9 [254x228.6]	1/10x9 [254x228.6]	1/10x9 [254x228.6]
Drive Type/No. Speeds	Direct/2	Direct/2	Direct/2	Direct/2
No. Motors	1	1	1	1
Motor HP	1/4	1/3	1/2	1/2
Motor RPM	1050	1050	1050	1050
Motor Frame Size	48	48	48	48
<b>Filter - Type</b>	Field Supplied	Field Supplied	Field Supplied	Field Supplied
Furnished	No	No	No	No
(NO.) Size Recommended in. [mm x mm x mm]	(1)1x20x16 [25x508x406]	(1)1x20x20 [25x508x508]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
<b>Refrigerant Charge Oz. [g] (R-410A)</b>	70 [1984]	78 [2211]	78 [2211]	78 [2211]
<b>Weights</b>				
Net Weight lbs. [kg]	304 [138]	306 [139]	309 [140]	309 [140]
Ship Weight lbs. [kg]	328 [149]	330 [150]	333 [151]	333 [151]

### NOTES:

1. Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on ARI Standard 210/240 or 360.
2. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
3. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
4. Standard 3/4" PVC P-Trap provided.

[ ] Designates Metric Conversions

# GENERAL DATA - RSPM

## NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RSPM- Series	A042CK	A042JK	A048CK	A048JK
<b>Cooling Performance<sup>1</sup></b>				Continued ->
Gross Cooling Capacity Btu [kW]	43,500 [12.75]	43,500 [12.75]	49,000 [14.36]	49,000 [14.36]
EER/SEER <sup>2</sup>	11.85/14	11.85/14	12.6/14	12.6/14
Nominal CFM/ARI Rated CFM [L/s]	1400/1400 [661/661]	1400/1400 [661/661]	1600/1600 [755/755]	1600/1600 [755/755]
ARI Net Cooling Capacity Btu [kW]	42,000 [12.31]	42,000 [12.31]	47,000 [13.77]	47,000 [13.77]
Net Sensible Capacity Btu [kW]	32,500 [9.52]	32,500 [9.52]	36,400 [10.67]	36,400 [10.67]
Net Latent Capacity Btu [kW]	9,500 [2.78]	9,500 [2.78]	10,600 [3.11]	10,600 [3.11]
Net System Power kW	3.53	3.53	3.61	3.61
<b>Compressor</b>				
No./Type	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll	1/Copeland Scroll
<b>Outdoor Sound Rating (dB)<sup>3</sup></b>	76	76	78	78
<b>Outdoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	12.65 [1.18]	12.65 [1.18]	16.54 [1.54]	16.54 [1.54]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil - Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	5.78 [0.54]	5.78 [0.54]	5.78 [0.54]	5.78 [0.54]
Rows / FPI [FPcm]	3 / 13 [5]	3 / 13 [5]	3 / 13 [5]	3 / 13 [5]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm] <sup>4</sup>	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan - Type</b>	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	3400 [1604]	3400 [1604]	4200 [1982]	4200 [1982]
No. Motors/HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP
Motor RPM	875	875	1075	1075
<b>Indoor Fan - Type</b>	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]
Drive Type/No. Speeds	Direct/2	Direct/2	Direct/2	Direct/2
No. Motors	1	1	1	1
Motor HP	1/2	1/2	3/4	3/4
Motor RPM	1050	1050	1050	1050
Motor Frame Size	48	48	48	48
<b>Filter - Type</b>	Field Supplied	Field Supplied	Field Supplied	Field Supplied
Furnished	No	No	No	No
(NO.) Size Recommended in. [mm x mm x mm]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
<b>Refrigerant Charge Oz. [g] (R-410A)</b>	86 [2438]	86 [2438]	114 [3232]	114 [3232]
<b>Weights</b>				
Net Weight lbs. [kg]	333 [151]	333 [151]	349 [158]	349 [158]
Ship Weight lbs. [kg]	357 [162]	357 [162]	375 [170]	375 [170]

### NOTES:

1. Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on ARI Standard 210/240 or 360.
2. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
3. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
4. Standard 3/4" PVC P-Trap provided.

[ ] Designates Metric Conversions

# GENERAL DATA - RSPM

## NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RSPM- Series	A060CK	A060JK
<b>Cooling Performance<sup>1</sup></b>		
Gross Cooling Capacity Btu [kW]	64,000 [18.75]	64,000 [18.75]
EER/SEER <sup>2</sup>	12.35/14	12.35/14
Nominal CFM/ARI Rated CFM [L/s]	2000/1900 [944/897]	2000/1900 [944/897]
ARI Net Cooling Capacity Btu [kW]	61,000 [17.87]	61,000 [17.87]
Net Sensible Capacity Btu [kW]	45,500 [13.33]	45,500 [13.33]
Net Latent Capacity Btu [kW]	15,500 [4.54]	15,500 [4.54]
Net System Power kW	4.94	4.94
<b>Compressor</b>		
No./Type	1/Copeland Scroll	1/Copeland Scroll
<b>Outdoor Sound Rating (dB)<sup>3</sup></b>		
	78	78
<b>Outdoor Coil - Fin Type</b>		
Tube Type	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	16.54 [1.54]	16.54 [1.54]
	2 / 22 [9]	2 / 22 [9]
<b>Indoor Coil - Fin Type</b>		
Tube Type	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	5.78 [0.54]	5.78 [0.54]
	4 / 13 [5]	4 / 13 [5]
Refrigerant Control	TX Valves	TX Valves
Drain Connection No./Size in. [mm] <sup>4</sup>	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan - Type</b>		
No. Used/Diameter in. [mm]	Propeller	Propeller
Drive Type/No. Speeds	1/24 [609.6]	1/24 [609.6]
CFM [L/s]	Direct/1	Direct/1
No. Motors/HP	4000 [1888]	4000 [1888]
Motor RPM	1 at 1/3 HP	1 at 1/3 HP
	1075	1075
<b>Indoor Fan - Type</b>		
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal
Drive Type/No. Speeds	1/11x9 [279.4x228.6]	1/11x9 [279.4x228.6]
No. Motors	Direct/2	Direct/2
Motor HP	1	1
Motor RPM	3/4	3/4
Motor Frame Size	1050	1050
	48	48
<b>Filter - Type</b>		
Furnished	Field Supplied	Field Supplied
(NO.) Size Recommended in. [mm x mm x mm]	No	No
	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
<b>Refrigerant Charge Oz. [g] (R-410A)</b>		
	178 [5046]	178 [5046]
<b>Weights</b>		
Net Weight lbs. [kg]	364 [165]	364 [165]
Ship Weight lbs. [kg]	390 [177]	390 [177]

### NOTES:

1. Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on ARI Standard 210/240 or 360.
2. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
3. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
4. Standard 3/4" PVC P-Trap provided.

[ ] Designates Metric Conversions

# XVI. MISCELLANEOUS

## ELECTRICAL DATA

ELECTRICAL DATA - RSNM SERIES											
		-A024JK	-A030JK	-A036CK	-A036JK	-A042CK	-A042JK	-A048CK	-A048JK	-A060CK	-A060JK
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	187-253	187-253	187-253	187-253	187-253	187-253	187-253
	Minimum Circuit Ampacity	20/20	21/21	20/20	26/26	22/22	27/27	24/24	32/32	28/28	41/41
	Minimum Overcurrent Protection Device Size	25/25	25/25	25/25	30/30	25/25	35/35	30/30	40/40	35/35	50/50
	Maximum Overcurrent Protection Device Size	30/30	35/35	30/30	40/40	30/30	40/40	35/35	50/50	40/40	60/60
Compressor Motor	No.	1	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	3	1	3	1	3	1	3	1
	HP	2	2.5	3	3	3.5	3.5	4	4	4.5	4.5
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
	Amps (RLA)	13.5/13.5	14.1/14.1	12.8/12.8	17/17	13.5/13.5	17.9/17.9	14.7/14.7	21.2/21.2	16/16	26.4/26.4
	Amps (LRA)	54/54	73/73	95/95	96.7/96.7	88/88	112/112	115/115	115/115	110/110	134/134
Condenser Motor	No.	1	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA)	1.5	1.5	1.5	1.5	1.5	1.5	1.9	1.9	1.9	1.9
	Amps (LRA)	3	3	3	3	3	3	4	4	4	4
Evaporator Fan	No.	1	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1	1	1
	HP	1/4	1/3	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4
	Amps (FLA)	1.5	1.8	2.5	2.5	2.8	2.8	3.2	3.2	5.8	5.8
	Amps (LRA)	2.5	2.6	4.9	4.9	4.3	4.3	4.1	4.1	9	9

## ELECTRICAL DATA - continued

ELECTRICAL DATA - RSPM SERIES											
		-A024JK	-A030JK	-A036CK	-A036JK	-A042CK	-A042JK	-A048CK	-A048JK	-A060CK	-A060JK
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	187-253	187-253	187-253	187-253	187-253	187-253	187-253
	Minimum Circuit Ampacity	23/23	24/24	22/22	27/27	25/25	30/30	27/27	35/35	30/30	43/43
	Minimum Overcurrent Protection Device Size	30/30	30/30	25/25	35/35	30/30	35/35	30/30	40/40	35/35	50/50
	Maximum Overcurrent Protection Device Size	35/35	35/35	30/30	40/40	35/35	45/45	40/40	50/50	45/45	60/60
Compressor Motor	No.	1	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	3	1	3	1	3	1	3	1
	HP	2	2.5	3	3	3.5	3.5	4	4	4.5	4.5
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
	Amps (RLA)	13.5/13.5	14.1/14.1	12.8/12.8	17/17	13.5/13.5	17.9/17.9	14.7/14.7	21.2/21.2	16/16	26.4/26.4
	Amps (LRA)	58.3/58.3	73/73	95/95	96.7/96.7	88/88	112/112	115/115	115/115	110/110	134/134
Condenser Motor	No.	1	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA)	1.5	1.5	1.5	1.5	1.5	1.5	1.9	1.9	1.9	1.9
	Amps (LRA)	3	3	3	3	3	3	4	4	4	4
Evaporator Fan	No.	1	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1	1	1
	HP	1/4	1/3	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4
	Amps (FLA)	4.1	4.1	4.1	4.1	6	6	6	6	7.6	7.6



# AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION – RSNM

208-240 VOLT, SINGLE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Model No. RSNM-	Single Power Supply For Both Unit And Heater Kit							Separate Power Supply For Both Unit And Heater Kit					
	Heater Kit Nominal kW RXQJ-C	No. of Elements	No. of Sequence Steps	Rated Heater kW @ 208-240 V	Heater KBTU/Hr @ 208-240 V	Heater Amp. @ 208 V	Unit Min. Ckt Ampacity @ 208-240 V	Over Current Protective Device Size Min/Max @ 208 V	Heater Kit Min. Ckt. Ampacity	Heater Kit Max. Fuse Size	Heat Pump Min. Ckt. Ampacity 240	Heat Pump Over Current Protective Device Size Min/Max @ 208 V	Heat Pump Over Current Protective Device Size Min/Max @ 240 V
A024J	No Heat	-	-	-	-	-	20/20	25/30	-	-	20/20	25/30	25/30
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	24/27	25/30	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	35/40	35/35	33/38	35/40	-	-	-
A030J	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	46/52	50/50	44/50	45/50	-	-	-
	No Heat	-	-	-	-	-	21/21	25/35	-	-	21/21	25/35	25/35
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	24/28	25/35	22/25	25/25	-	-	-
A036J	07J	1	1	5.4/7.2	18.42/24.56	26/30	35/40	35/35	33/38	35/40	-	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	46/53	50/50	44/50	45/50	-	-	-
	15J	3	2	10.8/14.4	36.85/49.13	52/60	68/78	70/70	65/75	70/80	-	-	-
A042J	No Heat	-	-	-	-	-	26/26	30/40	-	-	26/26	30/40	30/40
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	26/29	30/40	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	36/41	40/40	33/38	35/40	-	-	-
A048J	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	47/54	50/50	44/50	45/50	-	-	-
	15J	3	2	10.8/14.4	36.85/49.13	52/60	69/79	70/70	65/75	70/80	-	-	-
	20J	4	2	14.4/19.2	49.12/65.52	69.33/80	91/104	100/100	87/100	90/100	-	-	-
A060J	No Heat	-	-	-	-	-	32/32	40/50	-	-	32/32	40/50	40/50
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	32/32	35/45	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	37/42	40/45	33/38	35/40	-	-	-
A060J	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	48/54	50/50	44/50	45/50	-	-	-
	15J	3	2	10.8/14.4	36.85/49.13	52/60	69/79	70/70	65/75	70/80	-	-	-
	20J	4	2	14.4/19.2	49.12/65.52	69.33/80	91/104	100/100	87/100	90/100	-	-	-
A060J	No Heat	-	-	-	-	-	41/41	50/60	-	-	0	50/60	50/60
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	41/41	50/60	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	41/45	50/60	33/38	35/40	-	-	-
A060J	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	51/58	60/60	44/50	45/50	-	-	-
	15J	3	2	10.8/14.4	36.85/49.13	52/60	73/83	80/80	65/75	70/80	-	-	-
	20J	4	2	14.4/19.2	49.12/65.52	69.33/80	94/108	100/100	87/100	90/100	-	-	-

# AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION – RSNM

208-240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Model No. RSNM-	Single Power Supply For Both Unit And Heater Kit							Separate Power Supply For Both Unit And Heater Kit					
	Heater Kit Nominal kW RXQJ-C	No. of Elements	No. of Sequence Steps	Rated Heater kW @ 208-240 V	Heater KBTU/Hr @ 208-240 V	Heater Amp. @ 208-240 V	Unit Min. Ckt Ampacity @ 208-240 V	Over Current Protective Device Size Min/Max @ 208 V	Heater Kit Min. Ckt Ampacity	Heater Kit Max. Fuse Size	Heat Pump Min. Ckt. Ampacity 208-240 V	Heat Pump Over Current Protective Device Size Min/Max @ 208 V	240 V
A036C	No Heat	-	-	-	-	-	20/20	25/30	-	-	20/20	25/30	25/30
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	29/32	30/30	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	41/47	45/50	38/44	40/45	-	-	-
A042C	No Heat	-	-	-	-	-	22/22	25/30	-	-	22/22	25/30	25/30
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	29/33	30/30	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	42/47	45/50	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.3	54/62	60/60	50/58	50/60	-	-	-
A048C	No Heat	-	-	-	-	-	24/24	30/35	-	-	24/24	30/35	30/35
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	29/33	30/30	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	42/48	45/50	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.3	54/62	60/60	50/58	50/60	-	-	-
A060C	No Heat	-	-	-	-	-	28/28	35/40	-	-	28/28	35/40	35/40
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	33/37	35/45	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	45/51	45/55	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.3	58/66	60/60	50/58	50/60	-	-	-

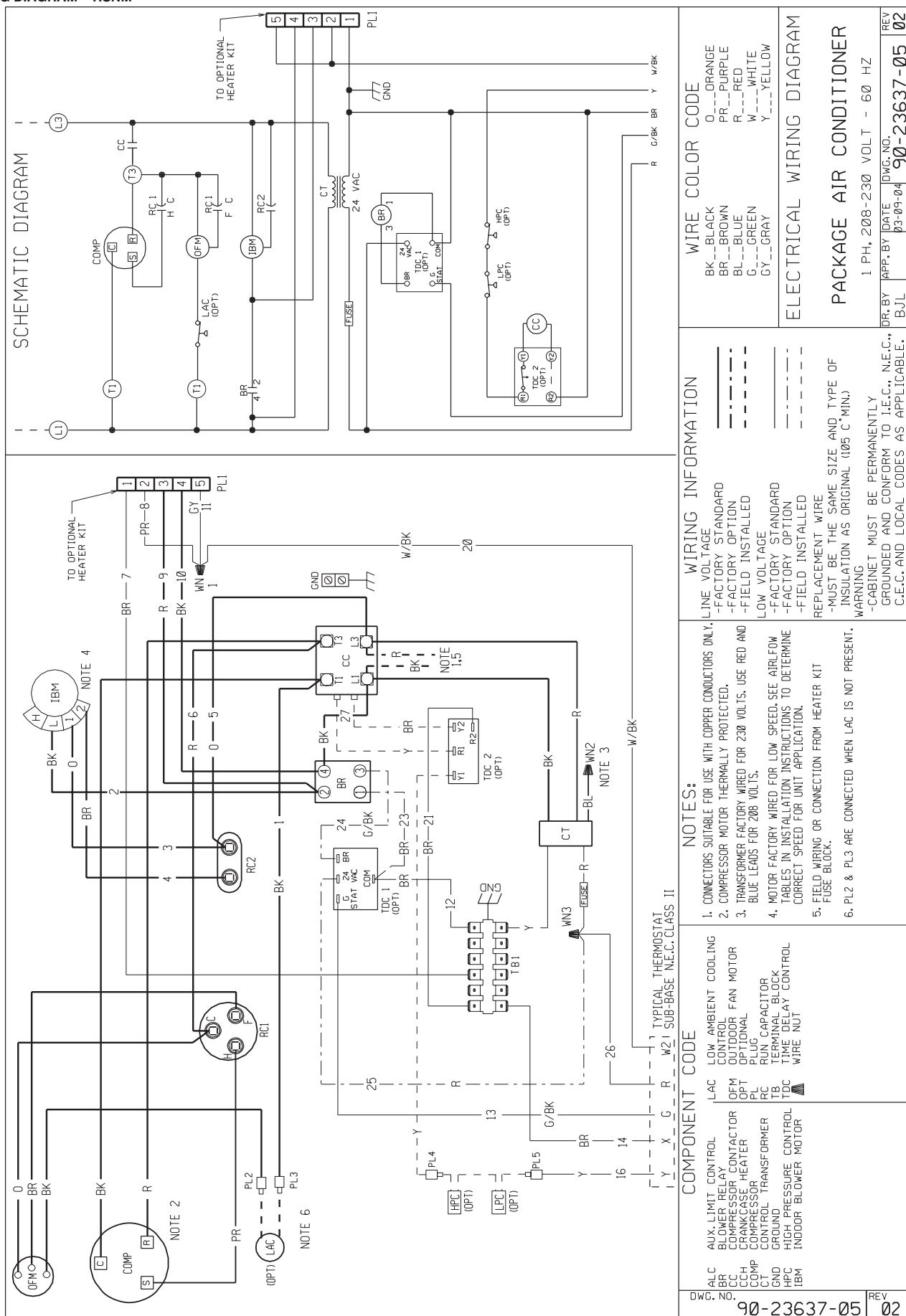
# AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION – RSPM

208-240 VOLT, SINGLE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Model No. RSPM-	Single Power Supply For Both Unit And Heater Kit							Separate Power Supply For Both Unit And Heater Kit					
	Heater Kit Nominal kW RXQJ-C	No. of Elements	No. of Sequence Steps	Rated Heater kW @ 208-240 V	Heater KBTU/Hr @ 208-240 V	Heater Amp. @ 208-240 V	Unit Min. Ckt Ampacity @ 208-240 V	Over Current Protective Device Size Min/Max @ 208 V	Heater Kit Min. Ckt. Ampacity	Heater Kit Max. Fuse Size	Heat Pump Min. Ckt. Ampacity 208-240	Heat Pump Over Current Protective Device Size Min/Max @ 208 V	
A024J	No Heat	-	-	-	-	-	23/23	30/35	-	-	23/23	30/35	30/35
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	27/31	30/35	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	38/43	40/40	33/38	35/40	-	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	49/56	50/50	44/50	45/50	-	-	-
A030J	No Heat	-	-	-	-	-	24/24	30/35	-	-	24/24	30/35	30/35
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	27/31	30/35	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	38/43	40/40	33/38	35/40	-	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	49/56	50/50	44/50	45/50	-	-	-
A036J	No Heat	-	-	-	-	-	27/27	35/40	-	-	27/27	35/40	35/40
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	27/31	35/40	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	38/43	40/40	33/38	35/40	-	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	49/56	50/50	44/50	45/50	-	-	-
A042J	No Heat	-	-	-	-	-	30/30	35/45	-	-	30/30	35/45	35/45
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	30/33	35/45	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	40/45	40/40	33/38	35/40	-	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	51/58	60/60	44/50	45/50	-	-	-
A048J	No Heat	-	-	-	-	-	35/35	40/50	-	-	0	40/50	40/50
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	35/35	35/45	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	40/45	40/40	33/38	35/40	-	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	51/58	60/60	44/50	45/50	-	-	-
A060J	No Heat	-	-	-	-	-	43/43	50/60	-	-	43/43	50/60	50/60
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	43/43	50/60	22/25	25/25	-	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	43/47	50/60	33/38	35/40	-	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.7/40	53/60	60/60	44/50	45/50	-	-	-

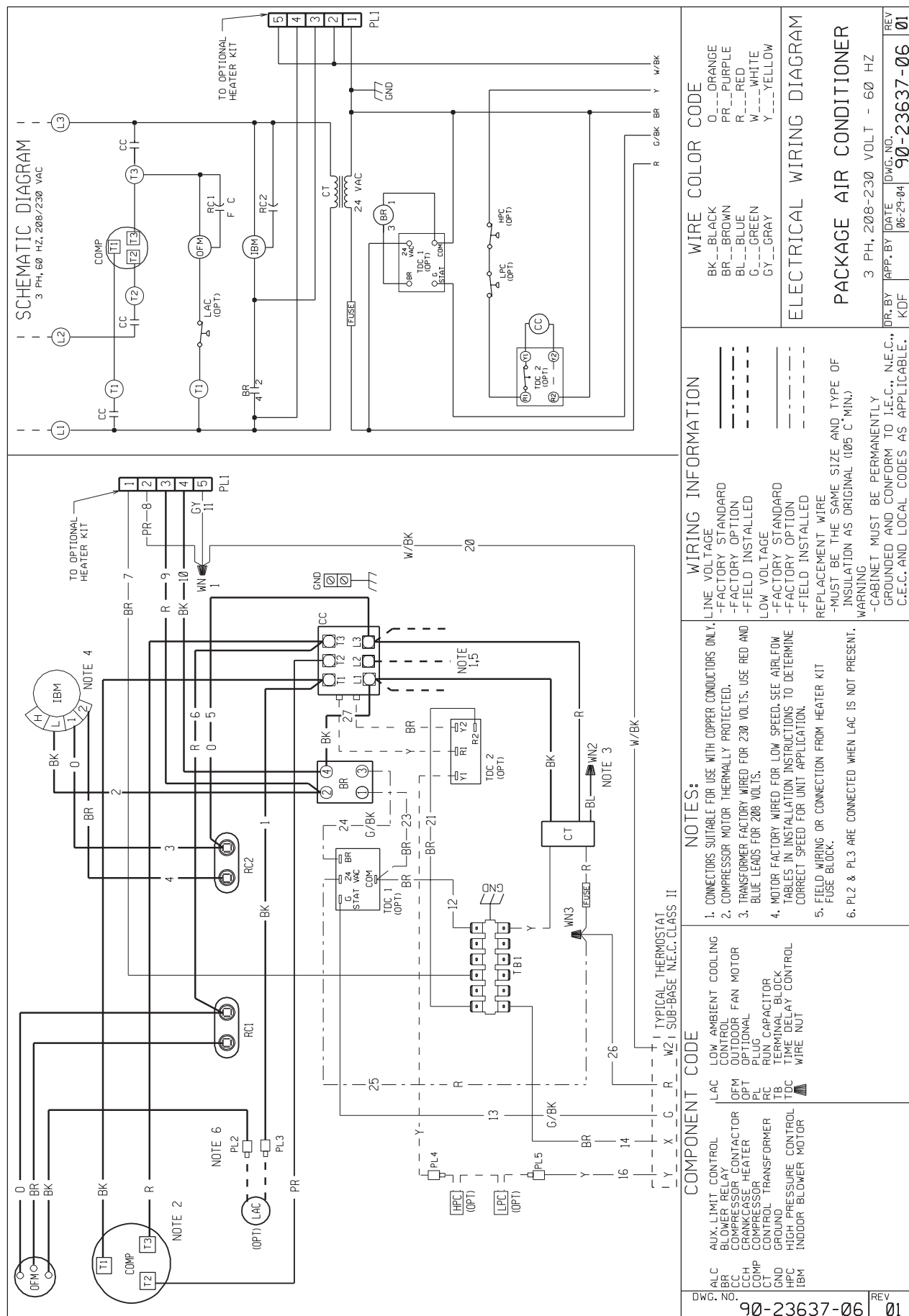
# AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION – RSPM

208-240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Model No. RSPM-	Heater Kit Nominal kW RXQJ-C	No. of Elements	No. of Sequence Steps	Rated Heater kW @ 208-240 V	Heater KBTU/Hr @ 208-240 V	Heater Amp. @ 208-240 V	Unit Min. Ckt Ampacity @ 208-240 V	Over Current Protective Device Size Min/Max @ 208 V	Separate Power Supply For Both Unit And Heater Kit				
									Heater Kit Min. Ckt. Ampacity	Heater Kit Max. Fuse Size	Heat Pump Min. Ckt. Ampacity 208-240	Heat Pump Over Current Protective Device Size Min/Max @ 208 V	240 V
A036C	No Heat	-	-	-	-	-	22/22	25/30	-	-	22/22	25/30	25/30
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	31/34	35/35	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	43/49	45/45	38/44	40/45	-	-	-
A042C	No Heat	-	-	-	-	-	25/25	30/35	-	-	25/25	30/35	30/35
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	33/37	35/35	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	46/51	50/50	38/44	40/45	-	-	-
A048C	20C	4	2	14.4/19.2	49.12/65.52	40/46.3	58/66	60/60	50/58	50/60	-	-	-
	No Heat	-	-	-	-	-	27/27	30/40	-	-	27/27	30/40	30/40
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	33/37	35/35	25/29	25/30	-	-	-
A060C	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	46/51	50/50	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.3	58/66	60/60	50/58	50/60	-	-	-
	No Heat	-	-	-	-	-	30/30	35/45	-	-	30/30	35/45	35/45
A060C	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	35/39	35/35	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30.1/34.7	48/53	50/50	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.3	60/68	60/60	50/58	50/60	-	-	-

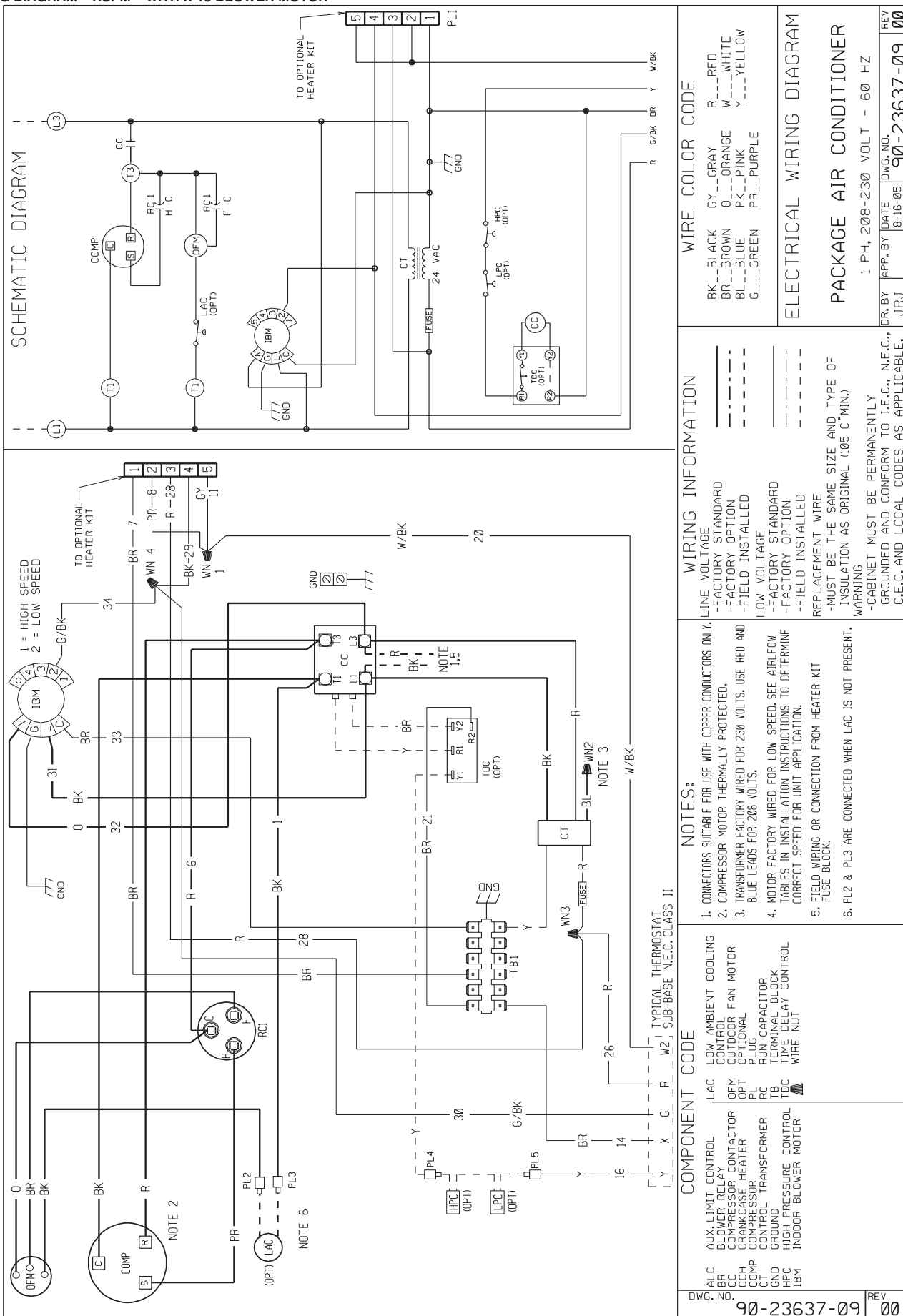
**FIGURE 7**  
**WIRING DIAGRAM – RSNM**



**FIGURE 8**  
**WIRING DIAGRAM – RSNM**

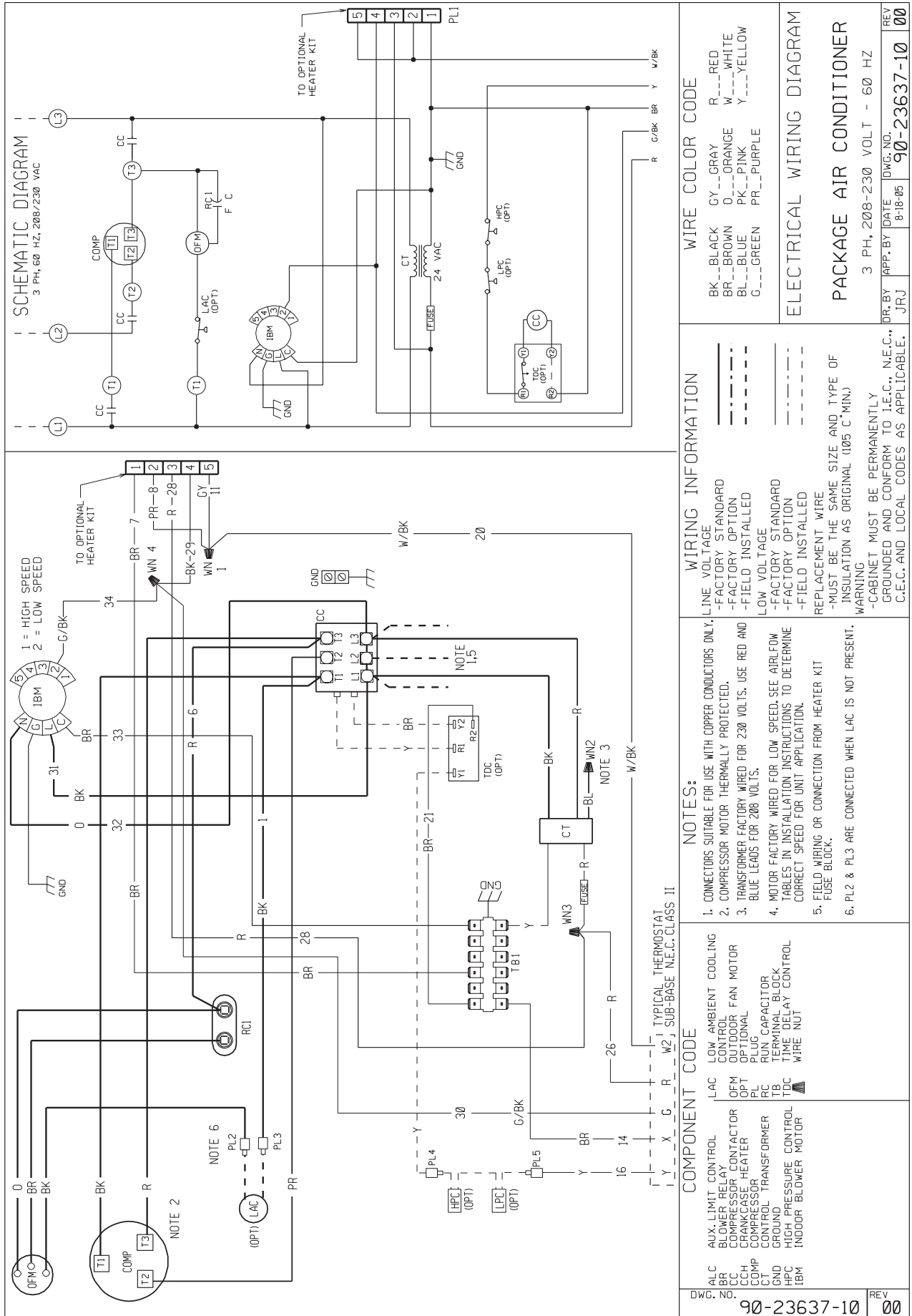


**FIGURE 9**  
**WIRING DIAGRAM – RSPM – WITH X-13 BLOWER MOTOR**



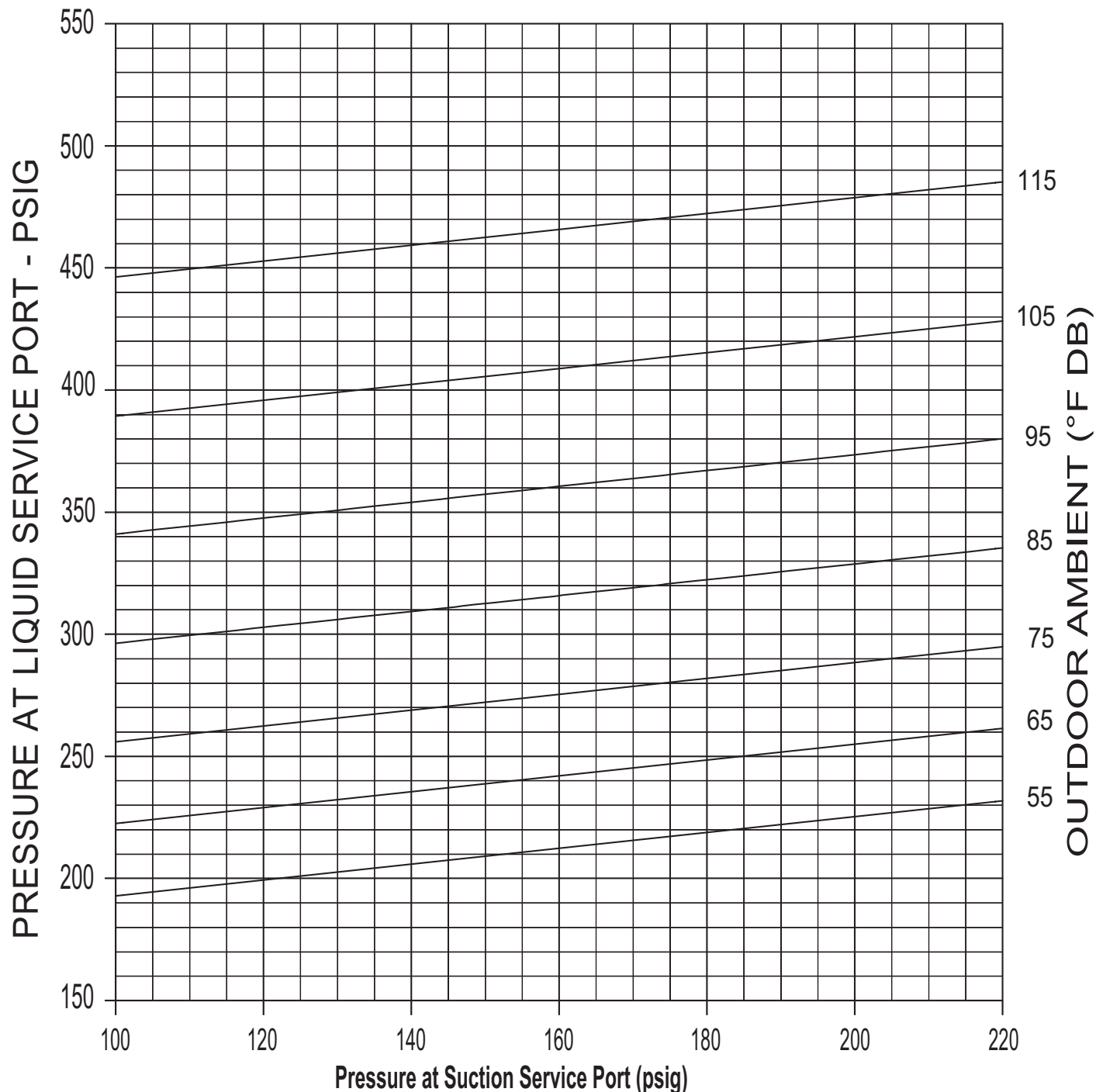


**FIGURE 10**  
**WIRING DIAGRAM – RSPM – WITH X-13 BLOWER MOTOR**



**FIGURE 11**  
2 TON AIR CHARGING CHART

**2 TON COOLING - 13 AND 14 SEER  
SYSTEM CHARGE CHART - REFRIGERANT 410A**



**CAUTION:** BEFORE FINAL REFRIGERANT CHECK, INDOOR RETURN AIR TEMPERATURE SHOULD BE AT COMFORT CONDITIONS FOR MOST ACCURATE RESULTS.

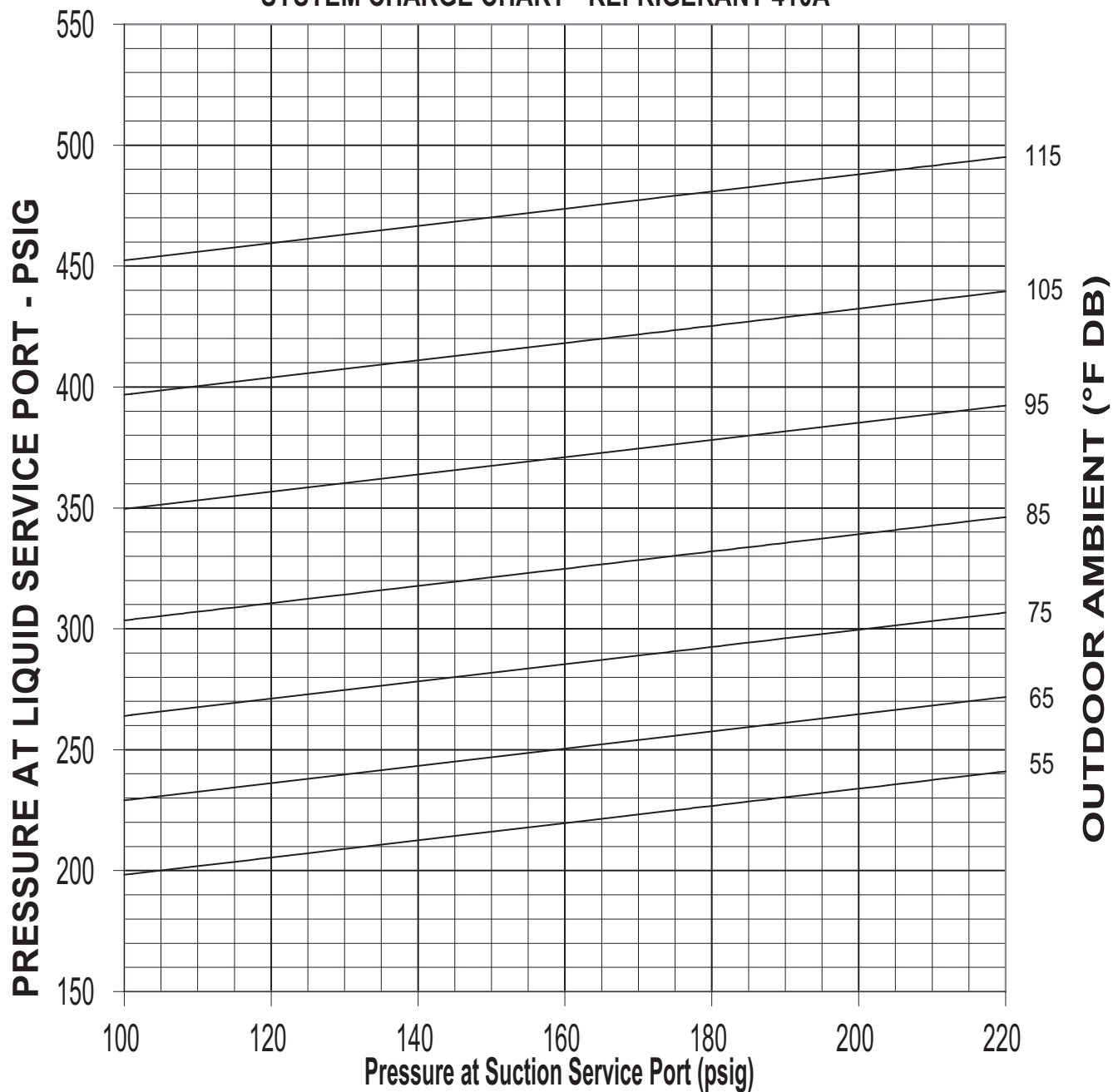
**INSTRUCTIONS:**

1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS ON UNIT.
2. MEASURE AIR TEMPERATURE TO OUTDOOR COIL.
3. PLACE AN "X" ON THE APPROPRIATE CHART WHERE THE SUCTION AND LIQUID PRESSURES CROSS.
4. IF "X" IS BELOW AMBIENT TEMPERATURE LINE, ADD CHARGE AND REPEAT STEP 3.
5. IF "X" IS ABOVE AMBIENT TEMPERATURE LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 3.

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**FIGURE 12**  
2.5 TON AIR CHARGING CHART

**2 1/2 TON COOLING - 13 AND 14 SEER  
SYSTEM CHARGE CHART - REFRIGERANT 410A**



**CAUTION:** BEFORE FINAL REFRIGERANT CHECK, INDOOR RETURN AIR TEMPERATURE SHOULD BE AT COMFORT CONDITIONS FOR MOST ACCURATE RESULTS.

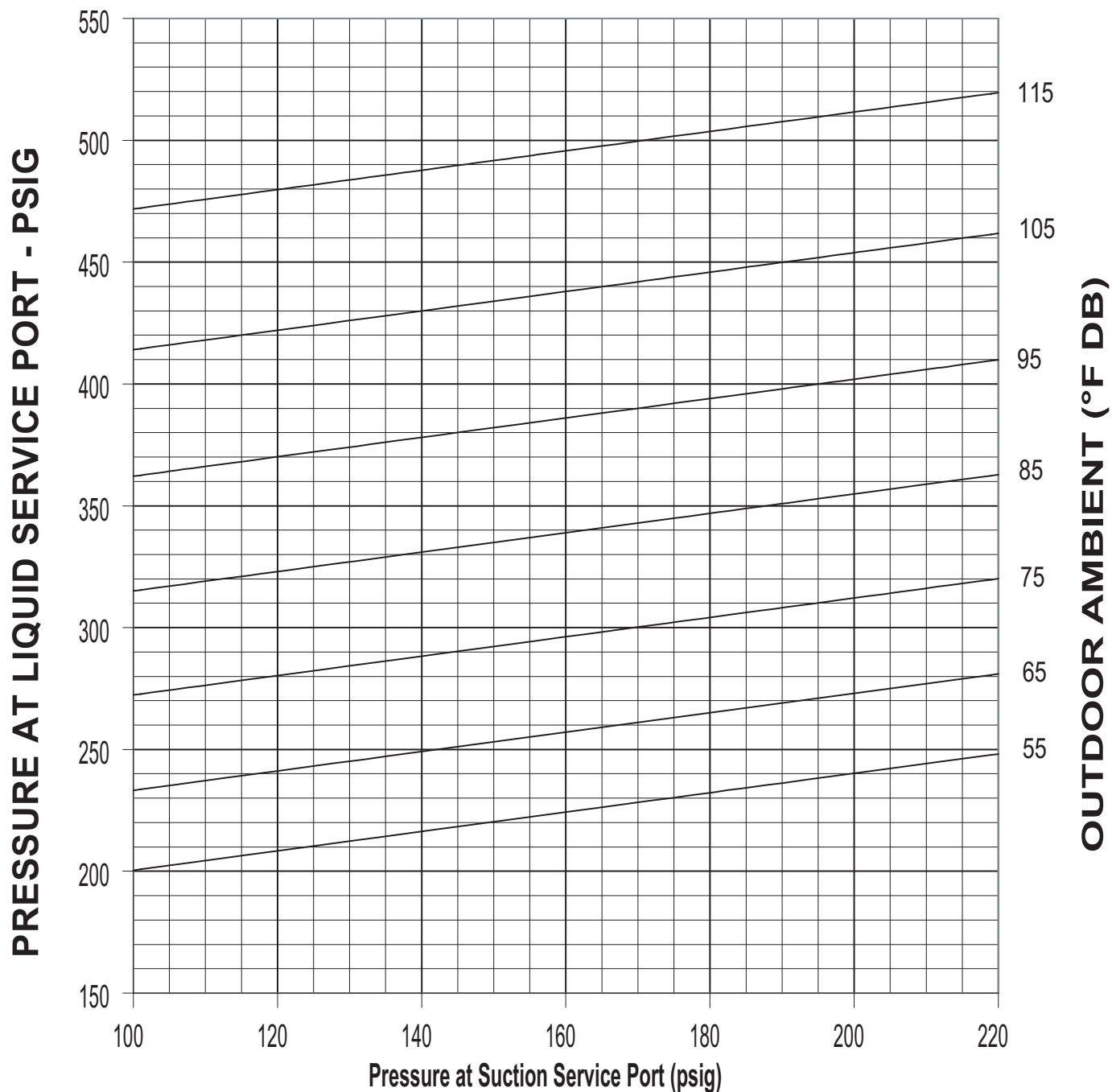
**INSTRUCTIONS:**

1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS ON UNIT.
2. MEASURE AIR TEMPERATURE TO OUTDOOR COIL.
3. PLACE AN "X" ON THE APPROPRIATE CHART WHERE THE SUCTION AND LIQUID PRESSURES CROSS.
4. IF "X" IS BELOW AMBIENT TEMPERATURE LINE, ADD CHARGE AND REPEAT STEP 3.
5. IF "X" IS ABOVE AMBIENT TEMPERATURE LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 3.

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**FIGURE 13**  
3.0 TON CHARGING CHART

### 3 TON COOLING - 13 AND 14 SEER SYSTEM CHARGE CHART - REFRIGERANT 410A



**CAUTION:** BEFORE FINAL REFRIGERANT CHECK, INDOOR RETURN AIR TEMPERATURE SHOULD BE AT COMFORT CONDITIONS FOR MOST ACCURATE RESULTS.

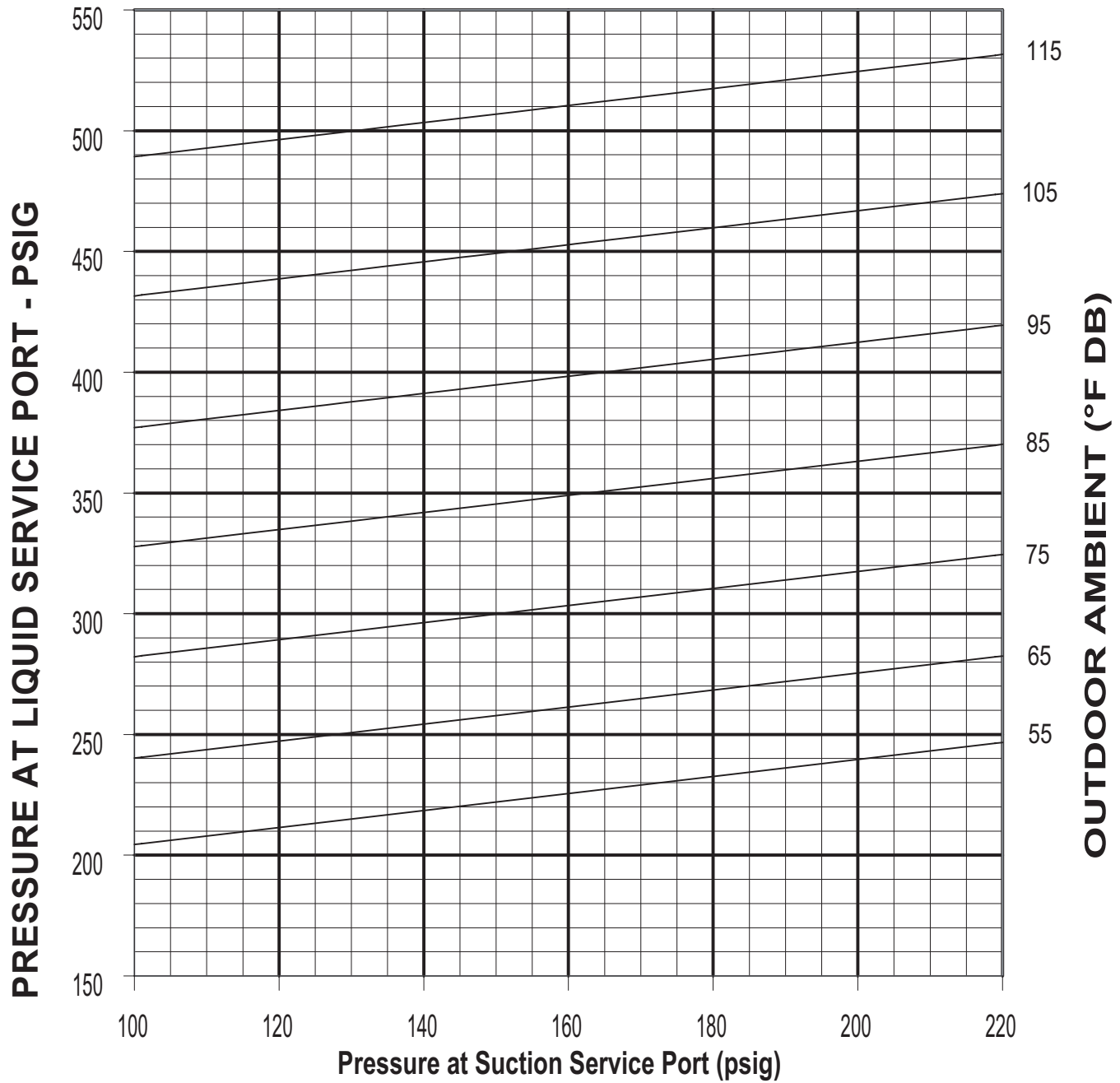
**INSTRUCTIONS:**

1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS ON UNIT.
2. MEASURE AIR TEMPERATURE TO OUTDOOR COIL.
3. PLACE AN "X" ON THE APPROPRIATE CHART WHERE THE SUCTION AND LIQUID PRESSURES CROSS.
4. IF "X" IS BELOW AMBIENT TEMPERATURE LINE, ADD CHARGE AND REPEAT STEP 3.
5. IF "X" IS ABOVE AMBIENT TEMPERATURE LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 3.

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**FIGURE 14**  
3.5 TON CHARGING CHART

**3 1/2 TON COOLING - 13 AND 14 SEER  
SYSTEM CHARGE CHART - REFRIGERANT 410A**



**CAUTION:** BEFORE FINAL REFRIGERANT CHECK, INDOOR RETURN AIR TEMPERATURE SHOULD BE AT COMFORT CONDITIONS FOR MOST ACCURATE RESULTS.

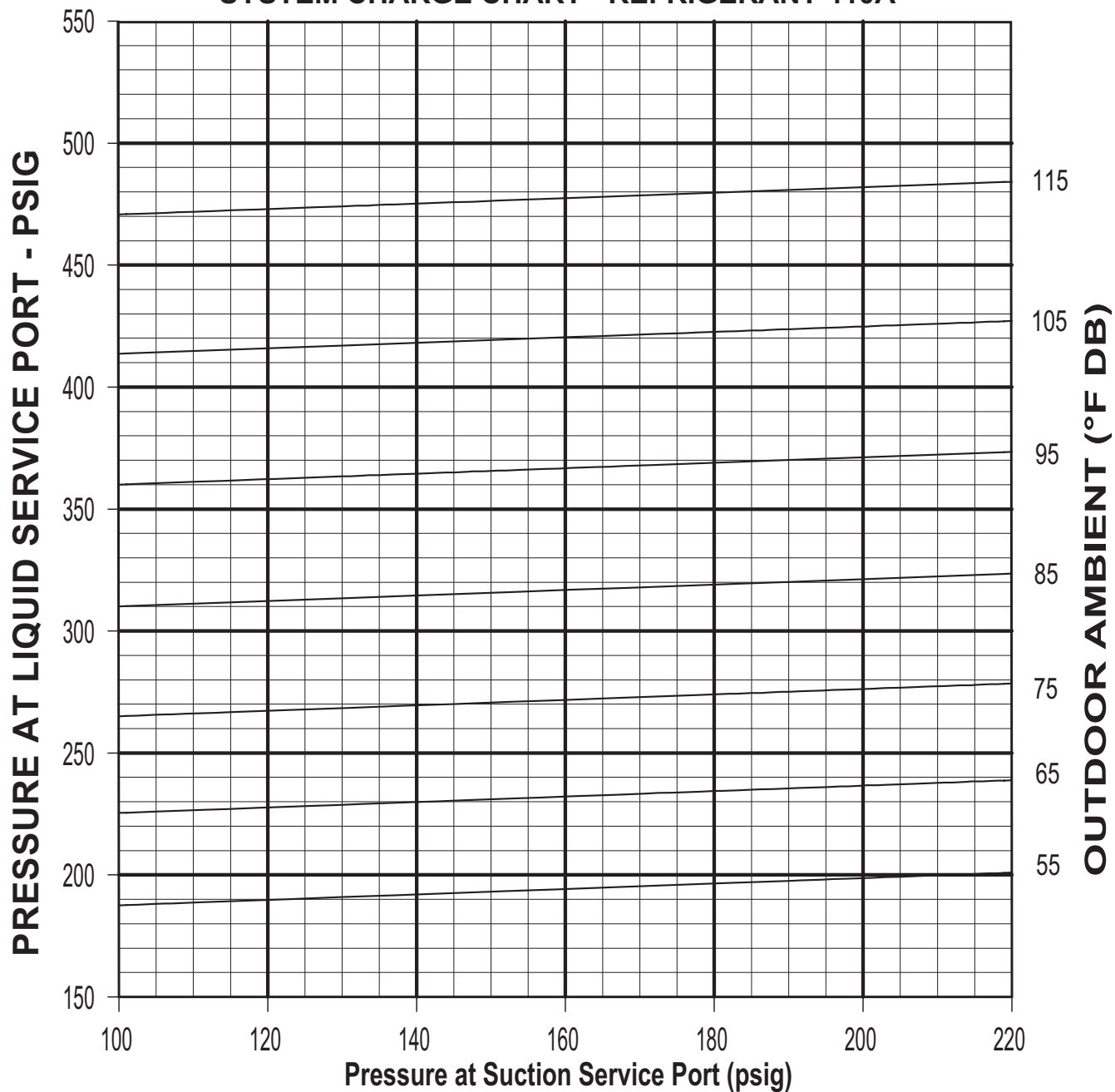
**INSTRUCTIONS:**

1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS ON UNIT.
2. MEASURE AIR TEMPERATURE TO OUTDOOR COIL.
3. PLACE AN "X" ON THE APPROPRIATE CHART WHERE THE SUCTION AND LIQUID PRESSURES CROSS.
4. IF "X" IS BELOW AMBIENT TEMPERATURE LINE, ADD CHARGE AND REPEAT STEP 3.
5. IF "X" IS ABOVE AMBIENT TEMPERATURE LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 3.

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**FIGURE 15**  
4.0 TON CHARGING CHART

**4 TON COOLING - 13 AND 14 SEER  
SYSTEM CHARGE CHART - REFRIGERANT 410A**



**CAUTION:** BEFORE FINAL REFRIGERANT CHECK, INDOOR RETURN AIR TEMPERATURE SHOULD BE AT COMFORT CONDITIONS FOR MOST ACCURATE RESULTS.

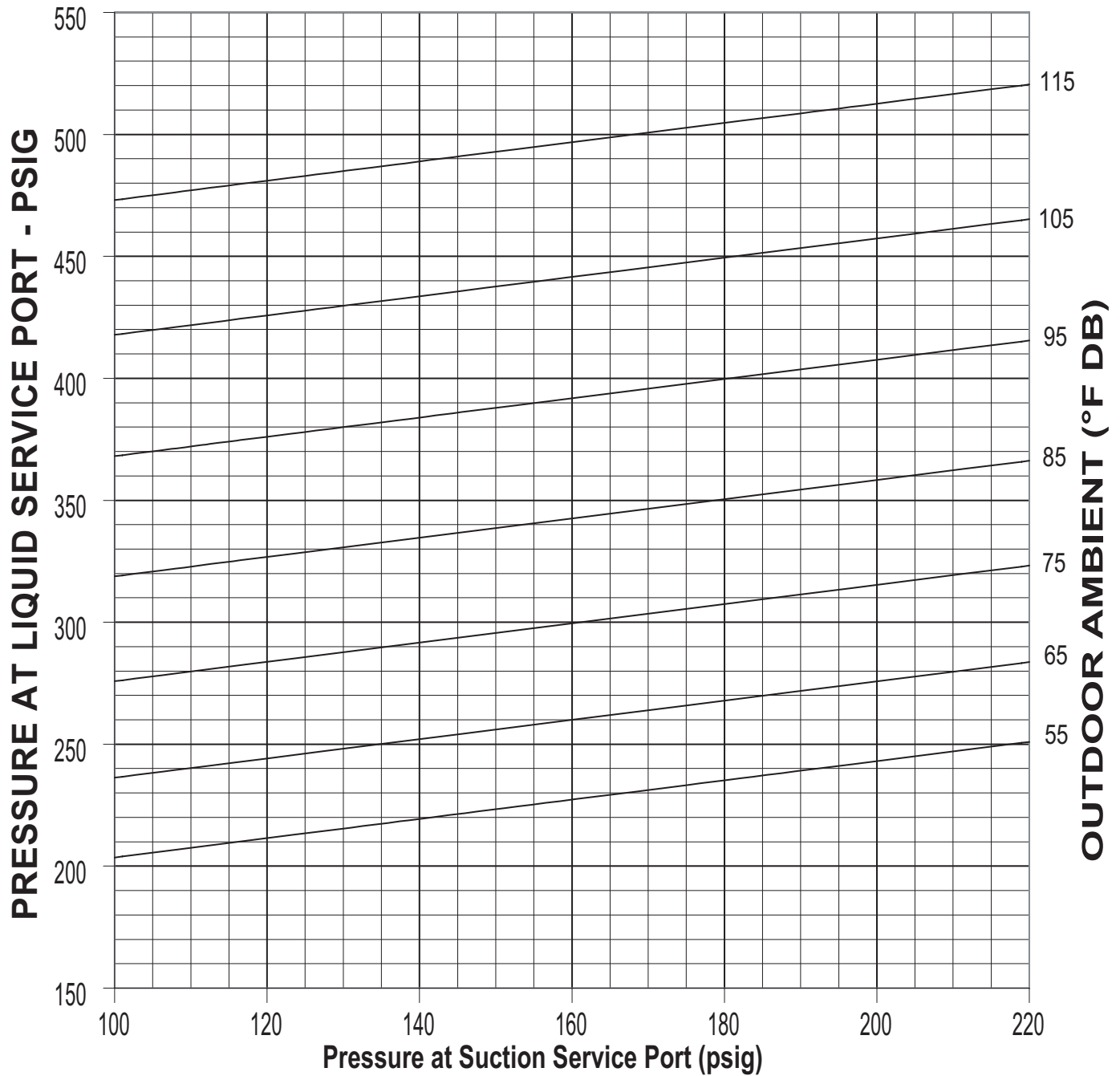
**INSTRUCTIONS:**

1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS ON UNIT.
2. MEASURE AIR TEMPERATURE TO OUTDOOR COIL.
3. PLACE AN "X" ON THE APPROPRIATE CHART WHERE THE SUCTION AND LIQUID PRESSURES CROSS.
4. IF "X" IS BELOW AMBIENT TEMPERATURE LINE, ADD CHARGE AND REPEAT STEP 3.
5. IF "X" IS ABOVE AMBIENT TEMPERATURE LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 3.

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**FIGURE 16**  
**5.0 TON CHARGING CHART**

**5 TON COOLING - 13 AND 14 SEER  
SYSTEM CHARGE CHART - REFRIGERANT 410A**



**CAUTION:** BEFORE FINAL REFRIGERANT CHECK, INDOOR RETURN AIR TEMPERATURE SHOULD BE AT COMFORT CONDITIONS FOR MOST ACCURATE RESULTS.

**INSTRUCTIONS:**

1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS ON UNIT.
2. MEASURE AIR TEMPERATURE TO OUTDOOR COIL.
3. PLACE AN "X" ON THE APPROPRIATE CHART WHERE THE SUCTION AND LIQUID PRESSURES CROSS.
4. IF "X" IS BELOW AMBIENT TEMPERATURE LINE, ADD CHARGE AND REPEAT STEP 3.
5. IF "X" IS ABOVE AMBIENT TEMPERATURE LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 3.

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# TROUBLE SHOOTING CHART

## ⚠ WARNING

**DISCONNECT ALL POWER TO UNIT BEFORE SERVICING. CONTACTOR MAY BREAK ONLY ONE SIDE. FAILURE TO SHUT OFF POWER CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR DEATH.**

SYMPTOM	POSSIBLE CAUSE	REMEDY
Unit will not run	<ul style="list-style-type: none"> <li>Power off or loose electrical connection</li> <li>Thermostat out of calibration-set too high</li> <li>Defective contactor</li> <li>Blown fuses</li> <li>Transformer defective</li> <li>High pressure control open (if provided)</li> <li>Interconnecting low voltage wiring damaged</li> </ul>	<ul style="list-style-type: none"> <li>Check for correct voltage at compressor contactor in control box</li> <li>Reset</li> <li>Check for 24 volts at contactor coil - replace if contacts are open</li> <li>Replace fuses</li> <li>Check wiring-replace transformer</li> <li>Reset-also see high head pressure remedy-The high pressure control opens at 450 PSIG</li> <li>Replace thermostat wiring</li> </ul>
Condenser fan runs, compressor doesn't	<ul style="list-style-type: none"> <li>Run or start capacitor defective (single phase only)</li> <li>Start relay defective (single phase only)</li> <li>Loose connection</li> <li>Compressor stuck, grounded or open motor winding, open internal overload.</li> <li>Low voltage condition</li> <li>Low voltage condition</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>Replace</li> <li>Check for correct voltage at compressor - check &amp; tighten all connections</li> <li>Wait at least 2 hours for overload to reset. If still open, replace the compressor.</li> <li>At compressor terminals, voltage must be within 10% of rating plate volts when unit is operating.</li> <li>Add start kit components</li> </ul>
Insufficient cooling	<ul style="list-style-type: none"> <li>Improperly sized unit</li> <li>Improper airflow</li> <li>Incorrect refrigerant charge</li> <li>Air, non-condensibles or moisture in system</li> <li>Incorrect voltage</li> </ul>	<ul style="list-style-type: none"> <li>Recalculate load</li> <li>Check - should be approximately 400 CFM per ton.</li> <li>Charge per procedure attached to unit service panel</li> <li>Recover refrigerant, evacuate &amp; recharge, add filter drier</li> <li>At compressor terminals, voltage must be within 10% of rating plate volts when unit is operating.</li> </ul>
Compressor short cycles	<ul style="list-style-type: none"> <li>Incorrect voltage</li> <li>Defective overload protector</li> <li>Refrigerant undercharge</li> </ul>	<ul style="list-style-type: none"> <li>At compressor terminals, voltage must be <math>\pm 10\%</math> of nameplate marking when unit is operating.</li> <li>Replace - check for correct voltage</li> <li>Add refrigerant</li> </ul>
Registers sweat	<ul style="list-style-type: none"> <li>Low evaporator airflow</li> </ul>	<ul style="list-style-type: none"> <li>Increase speed of blower or reduce restriction - replace air filter</li> </ul>
High head-low vapor pressures	<ul style="list-style-type: none"> <li>Restriction in liquid line, expansion device or filter drier</li> <li>Flow check piston size too small</li> <li>Incorrect capillary tubes</li> <li>TXV does not open</li> </ul>	<ul style="list-style-type: none"> <li>Remove or replace defective component</li> <li>Change to correct size piston</li> <li>Change coil assembly</li> <li>Replace TXV</li> </ul>
High head-high or normal vapor pressure - Cooling mode	<ul style="list-style-type: none"> <li>Dirty condenser coil</li> <li>Refrigerant overcharge</li> <li>Condenser fan not running</li> <li>Air or non-condensibles in system</li> </ul>	<ul style="list-style-type: none"> <li>Clean coil</li> <li>Correct system charge</li> <li>Repair or replace</li> <li>Recover refrigerant, evacuate &amp; recharge</li> </ul>
High head-high or normal vapor pressure - Heating mode	<ul style="list-style-type: none"> <li>Low air flow - condenser coil</li> <li>Refrigerant overcharge</li> <li>Air or non-condensibles in system</li> <li>Dirty condenser coil</li> </ul>	<ul style="list-style-type: none"> <li>Check filters - correct to speed</li> <li>Correct system charge</li> <li>Recover refrigerant, evacuate &amp; recharge</li> <li>Check filter - clean coil</li> </ul>
Low head-high vapor pressures	<ul style="list-style-type: none"> <li>Flow check piston size too large</li> <li>Defective Compressor valves</li> <li>Incorrect capillary tubes</li> </ul>	<ul style="list-style-type: none"> <li>Change to correct size piston</li> <li>Replace compressor</li> <li>Replace coil assembly</li> </ul>
Low vapor - cool compressor - iced evaporator coil	<ul style="list-style-type: none"> <li>Low evaporator airflow</li> <li>Operating below 65°F outdoors</li> <li>Moisture in system</li> <li>TXV limiting refrigerant flow</li> </ul>	<ul style="list-style-type: none"> <li>Increase speed of blower or reduce restriction - replace air filter</li> <li>Add Low Ambient Kit</li> <li>Recover refrigerant - evacuate &amp; recharge - add filter drier</li> <li>Replace TXV</li> </ul>
High vapor pressure	<ul style="list-style-type: none"> <li>Excessive load</li> <li>Defective compressor</li> </ul>	<ul style="list-style-type: none"> <li>Recheck load calculation</li> <li>Replace</li> </ul>
Fluctuating head & vapor pressures	<ul style="list-style-type: none"> <li>TXV hunting</li> <li>Air or non-condensate in system</li> </ul>	<ul style="list-style-type: none"> <li>Check TXV bulb clamp - check air distribution on coil - replace TXV</li> <li>Recover refrigerant, evacuate &amp; recharge</li> </ul>
Gurgle or pulsing noise at expansion device or liquid line	<ul style="list-style-type: none"> <li>Air or non-condensibles in system</li> </ul>	<ul style="list-style-type: none"> <li>Recover refrigerant, evacuate &amp; recharge</li> </ul>





