

INSTALLATION INSTRUCTIONS

PACKAGE AIR CONDITIONERS

RSNJ SERIES — (2.0 - 5.0 TONS)



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.

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.

II. INTRODUCTION

This booklet contains the installation and operating instructions for your package 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, heating size, 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 direction 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.

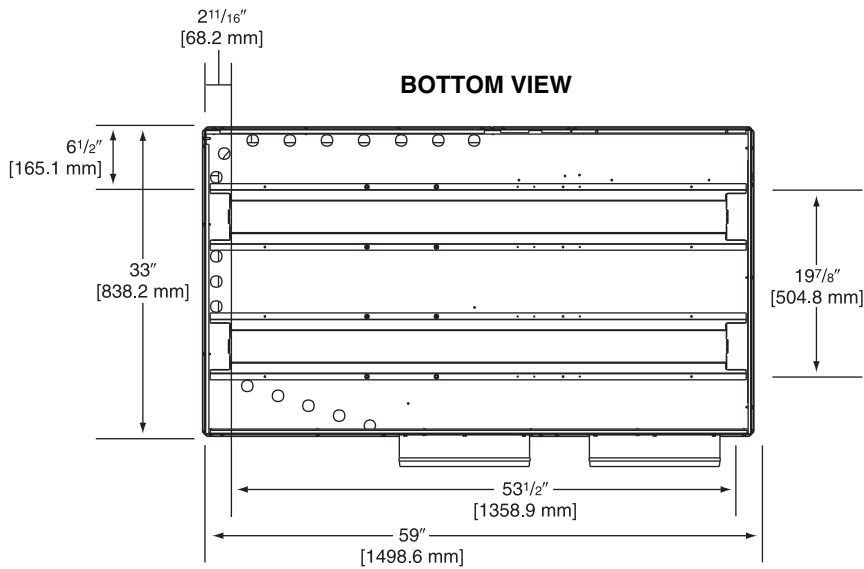
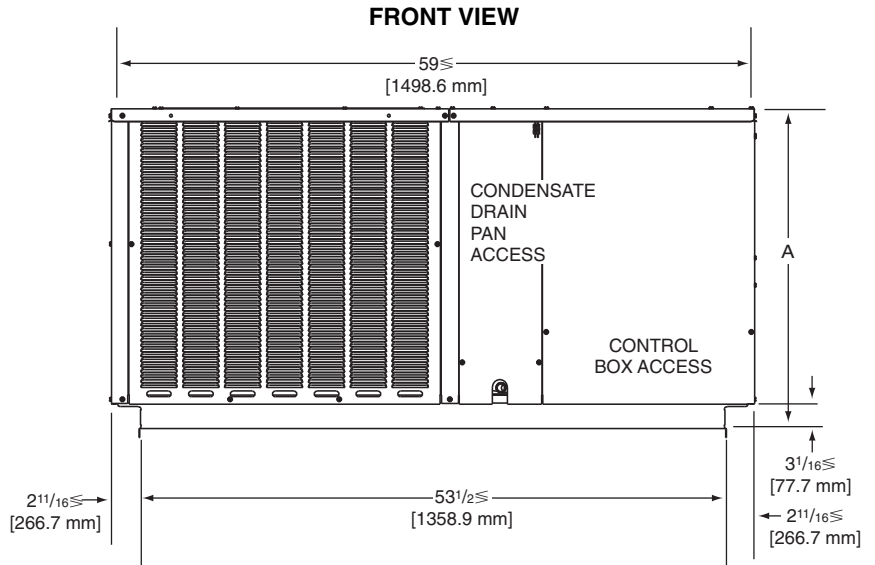
The best protection is frequent cleaning, maintenance and minimal exposure to contaminants.

V. SPECIFICATIONS

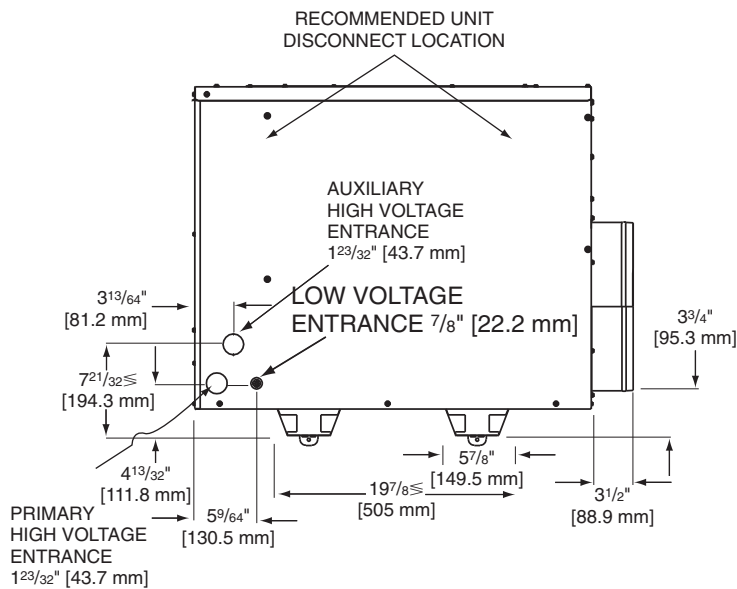
Suitable for use in mobile homes, manufactured housing, and conventionally constructed residential and commercial buildings where horizontally-ducted systems are preferred.

FIGURE 1
UNIT DIMENSIONS AND ACCESS LOCATIONS

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

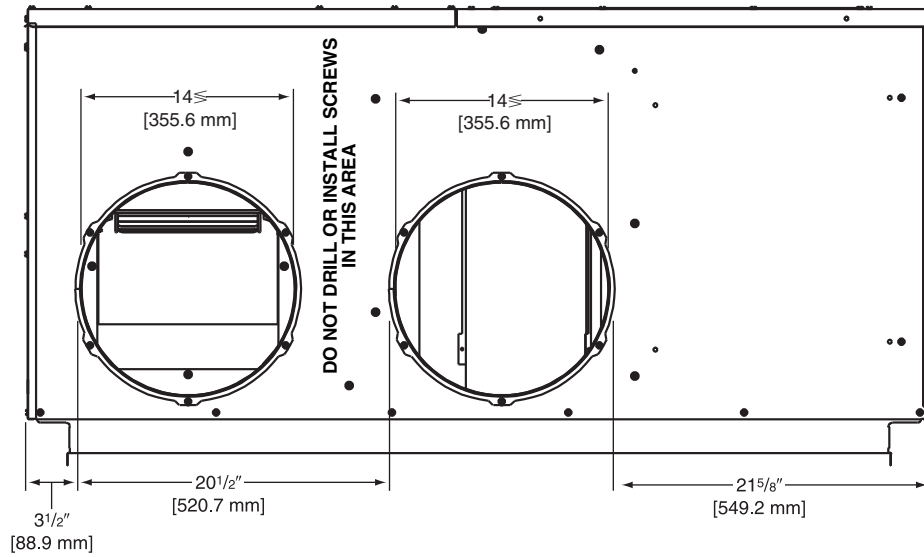


ELECTRICAL CONNECTIONS

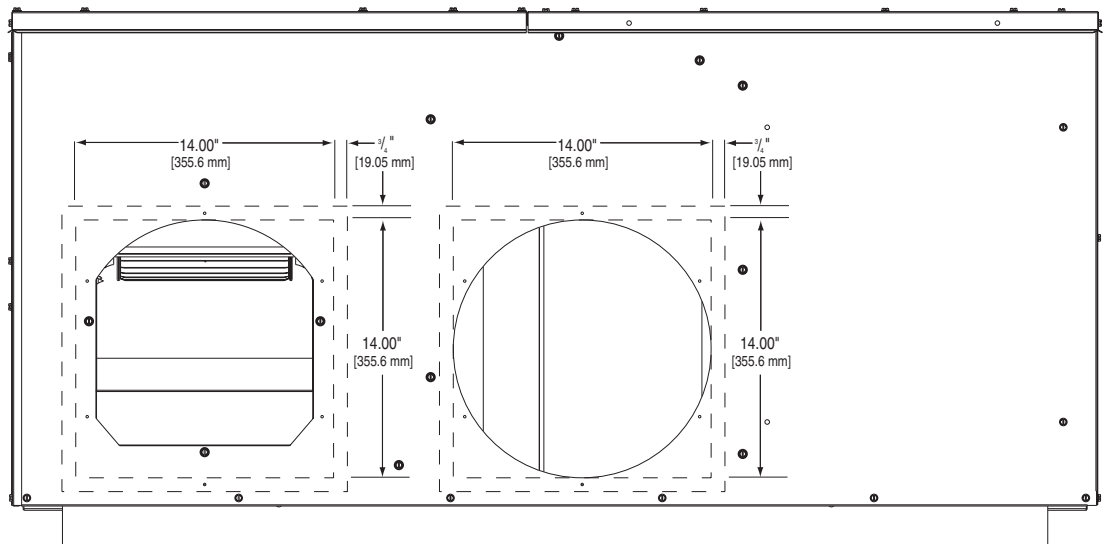


DUCT CONNECTIONS

ROUND DUCT CONNECTIONS



SQUARE DUCT CONNECTIONS



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

VI. INSTALLATION

A. GENERAL

1. PRE-INSTALLATION CHECK-POINTS

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

- a. Structural strength of supporting members.
(rooftop installation)
- b. Clearances and provision for servicing.
- c. Power supply and wiring.
- d. Air duct connections.
- e. Drain facilities and connections.
- f. 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.)

1. Select a location where external water drainage cannot collect around the unit.
2. 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.

3. The location of the unit should be such as to provide proper access for inspection and servicing.
4. Locate unit where operating sounds will not disturb owner or neighbors.
5. 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.
6. It is essential that the unit be elevated above the base pad to allow for condensate drainage and possible refreezing of condensation. Provide a base pad which is slightly pitched away from the structure. Route condensate off base pad to an area which will not become slippery and result in personal injury.

IMPORTANT: Avoid blocking openings in bottom of unit.

7. Where snowfall is anticipated, the height of the unit above the ground level must be considered. Mount unit high enough to be above average area snowfall and to allow for proper condensate drainage.

IMPORTANT: Avoid blocking openings in bottom of unit.

C. CLEARANCES

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

1. 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.
2. Provide 60" minimum clearance from top of unit.
3. Unit is design certified for application on combustible flooring with 0" minimum clearance.
4. See Figure 2 for illustration of minimum installation-service clearances.

D. ROOFTOP INSTALLATION

1. 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.

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

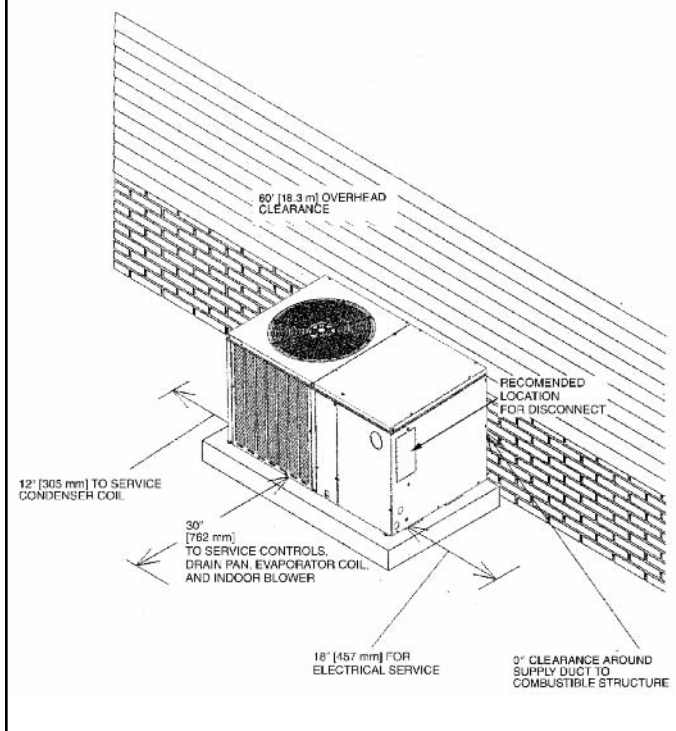
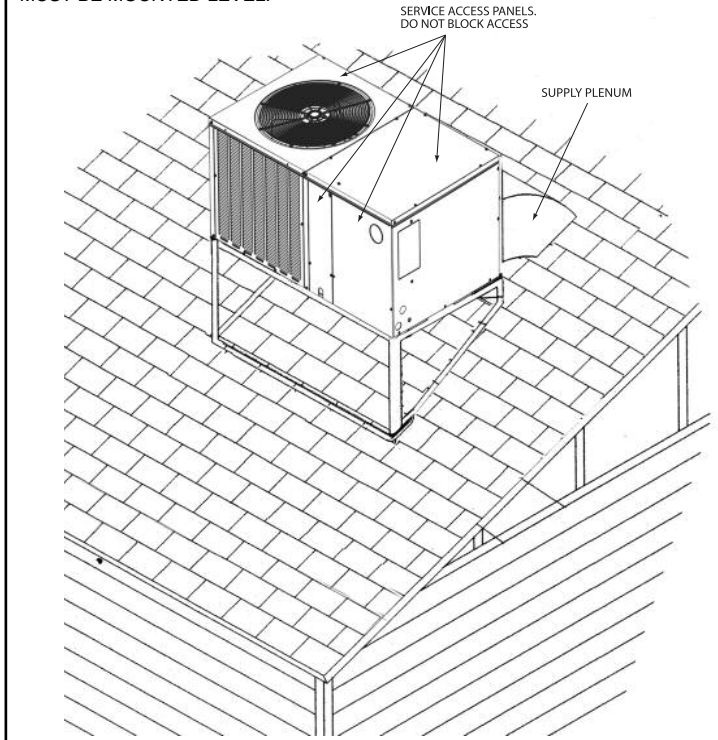


FIGURE 3
PACKAGE AIR CONDITIONER
 PITCHED ROOFTOP INSTALLATION, ATTIC
 OR DROP CEILING DISTRIBUTING SYSTEM.
 MUST BE MOUNTED LEVEL.



2. The unit should be placed on a solid and level platform of adequate strength.

IMPORTANT: Avoid blocking openings in bottom of unit. (See Figure 3). Provision for disposal of outdoor coil defrost water runoff must be provided.

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

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.

VIII. FILTERS

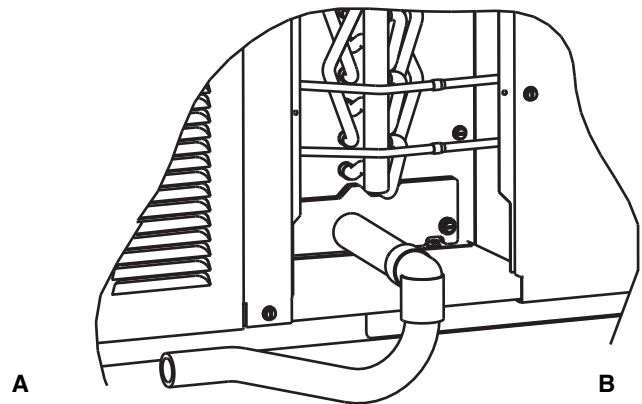
Filters are not provided with this unit. They must be supplied and installed in the return air duct by the installer. A field installed filter grille is recommended for easy and convenient access to the filters for periodic inspection and cleaning. Filters must have adequate face area for the rated air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

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.

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.

B. POWER WIRING AND ELECTRIC HEATER KIT INSTRUCTIONS

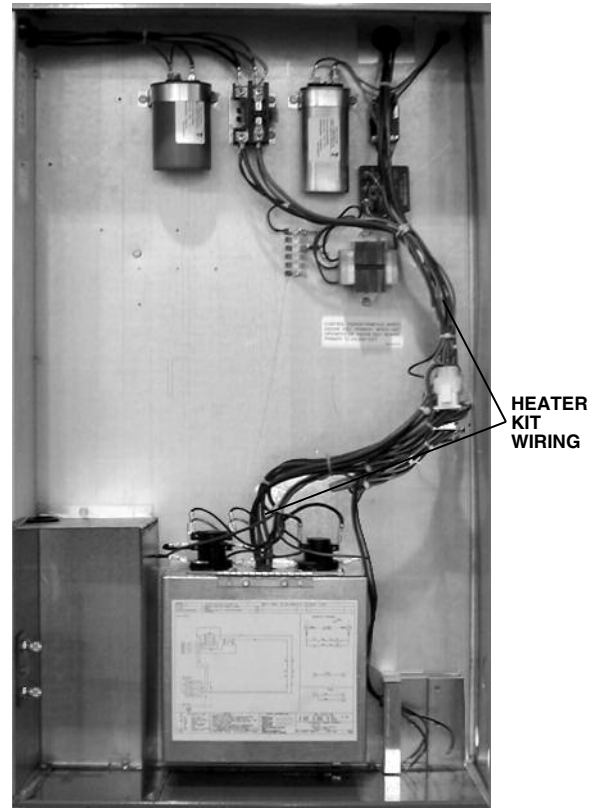
1. Turn off power to unit.
2. Remove control box access panel.
3. Remove unit indoor section top cover.
4. Remove wire notch cover from control bulkhead and discard. Retain screw.
5. Remove heater element cover plate from blower outlet opening and discard. Retain screws.
6. Mount heater fuse block assembly 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.

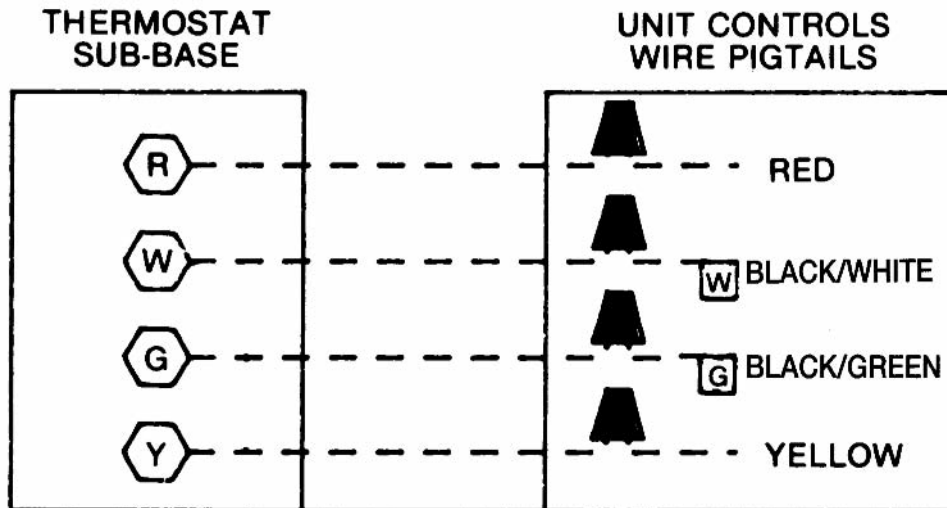
XI. INDOOR AIR FLOW DATA

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.

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?

FIGURE 6
VOLTAGE CONNECTIONS DIAGRAMS – STANDARD CONTROL WIRING



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?
8. Has crankcase heat been on for at least 12 hours?
9. Is unit elevated to allow for outdoor coil condensate drainage during heating operation and defrost?

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.

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.

XV. AUXILIARY HEAT

The amount of auxiliary heat required depends on the heat loss of the structure to be heated and the capacity of the air conditioner. It is good practice to install strip heat to maintain at least 60°F indoor temperatures in case of compressor failure. The auxiliary heat is energized by the first stage of the thermostat. The amount of electric heat that is allowed to come on, as determined by the output of the air conditioner, may be controlled by an outdoor thermostat.

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.

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. In the heating mode, the thermostat will, on a call for heating, energize the indoor blower relay.

XVI. GENERAL DATA - RSNJ

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

Model RSNJ - Series	A024JK	A030JK	A036CK	A036JK
Cooling performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	25,600 [7.5]	30,400 [8.9]	36,000 [10.5]	36,000 [10.5]
EER, SEER ²	11.9/13	11.45/13	11.5/13	11.5/13
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]	24,600 [7.2]	29,200 [8.6]	34,600 [10.1]	34,600 [10.1]
Net Sensible Capacity Btu [kW]	18,400 [5.4]	22,300 [6.5]	27,300 [8]	27,300 [8]
Net Latent Capacity Btu [kW]	6200 [1.8]	6900 [2]	7300 [2.1]	7300 [2.1]
Net System Power kW	2.1	2.6	3	3
Compressor				
No/Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵	76	76	76	76
Outdoor Coil - Fin Type	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]	10.44 [0.97]	12.65 [1.18]	12.65 [1.18]
Rows / FPI [FPcm]	1 / 16 [6]	1 / 16 [6]	1 / 22 [9]	1 / 22 [9]
Indoor Coil - Fin Type	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]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
Outdoor Fan - Type	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	1075	1075	1075	1075
Indoor Fan - Type	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
Filter - Type	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]
Refrigerant Charge Oz. [g]	60 [1701]	58 [1644]	73 [2070]	73 [2070]
Weights				
Net Weight lbs. [kg]	304 [138]	306 [139]	309 [140]	309 [140]
Ship Weight lbs. [kg]	328 [149]	330 [150]	333 [151]	333 [151]

[] Designates Metric Conversions

NOTES:

- 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.
- EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
- Standard 3/4" P-Trap provided.

GENERAL DATA - RSNJ

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

Model RSNJ - Series	A042CK	A042JK	A048CK	A048JK
Cooling performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	42,000 [12.3]	42,000 [12.3]	48,000 [14.1]	48,000 [14.1]
EER, SEER ²	11.3/13	11.3/13	11.4/13	11.4/13
Nominal CFM/ARI Rated CFM [L/s]	1400/1400 [661/661]	1400/1400 [661/661]	1500/1600 [708/755]	1500/1600 [708/755]
ARI Net Cooling Capacity Btu [kW]	40,500 [11.9]	40,500 [11.9]	46,000 [13.5]	46,000 [13.5]
Net Sensible Capacity Btu [kW]	31,100 [9.1]	31,100 [9.1]	35,800 [10.5]	35,800 [10.5]
Net Latent Capacity Btu [kW]	9400 [2.8]	9400 [2.8]	10,200 [3]	10,200 [3]
Net System Power kW	3.6	3.6	4	4
Compressor				
No/Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵	76	76	78	78
Outdoor Coil - Fin Type	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]
Indoor Coil - Fin Type	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]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
Outdoor Fan - Type	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	1075	1075	1075	1075
Indoor Fan - Type	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	3/4	3/4	3/4	3/4
Motor RPM	1075	1075	1075	1075
Motor Frame Size	48	48	48	48
Filter - Type	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]
Refrigerant Charge Oz. [g]	76 [2155]	76 [2155]	102 [2892]	102 [2892]
Weights				
Net Weight lbs. [kg]	333 [151]	333 [151]	349 [158]	349 [158]
Ship Weight lbs. [kg]	357 [162]	357 [162]	375 [170]	375 [170]

[] Designates Metric Conversions

NOTES:

- 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.
- EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
- Standard 3/4" P-Trap provided.

GENERAL DATA - RSNJ

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

Model RSNJ - Series	A060CK	A060JK
Cooling performance¹		
Gross Cooling Capacity Btu [kW]	64,000 [18.8]	64,000 [18.8]
EER, SEER ²	11.2/13	11.2/13
Nominal CFM/ARI Rated CFM [L/s]	2000/1900 [944/897]	2000/1900 [944/897]
ARI Net Cooling Capacity Btu [kW]	61,000 [17.9]	61,000 [17.9]
Net Sensible Capacity Btu [kW]	46,400 [13.6]	46,400 [13.6]
Net Latent Capacity Btu [kW]	14,600 [4.3]	14,600 [4.3]
Net System Power kW	5.5	5.5
Compressor		
No./Type	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵		
	78	78
Outdoor Coil - Fin Type		
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]
Indoor Coil - Fin Type		
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]	1/1 [25.4]	1/1 [25.4]
Outdoor Fan - Type		
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
Indoor Fan - Type		
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
Filter - Type		
Furnished	Field Supplied	Field Supplied
(NO.) Size Recommended in. [mm x mm x mm]	No	No
	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
Refrigerant Charge Oz. [g]		
	173 [4905]	173 [4905]
Weights		
Net Weight lbs. [kg]	364 [165]	364 [165]
Ship Weight lbs. [kg]	390 [177]	390 [177]

[] Designates Metric Conversions

NOTES:

- 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.
- EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures.
- Standard 3/4" P-Trap provided.

XVII. MISCELLANEOUS

ELECTRICAL DATA

Model No. RSNJ-	Compressor Motor							Condenser Motor					
	No.	Volts	Phase	HP ²	RPM	Amps ¹ (RLA)	Amps ¹ (LRA)	No.	Volts	Phase	HP ²	Amps ¹ (RLA)	Amps ¹ (LRA)
A024JK	1	208/230	1	2	3450	10.9/10.9	54/54	1	208/230	1	1/3	1.5	3
A030JK	1	208/230	1	2.5	3450	14.1/14.1	68/68	1	208/230	1	1/3	1.5	3
A036CK	1	208/230	3	3	3450	9.6/9.6	63/63	1	208/230	1	1/3	1.5	3
A036JK	1	208/230	1	3	3450	13.5/13.5	73/73	1	208/230	1	1/3	1.5	3
A042CK	1	208/230	3	3.5	3450	10.3/10.3	77/77	1	208/230	1	1/3	1.5	3
A042JK	1	208/230	1	3.5	3450	16.5/16.5	95/95	1	208/230	1	1/3	1.5	3
A048CK	1	208/230	3	4	3450	12.4/12.4	88/88	1	208/230	1	1/3	1.8	4
A048JK	1	208/230	1	4	3450	17.9/17.9	104/104	1	208/230	1	1/3	1.8	4
A060CK	1	208/230	3	4.5	3450	17.3/17.3	123/123	1	208/230	1	1/3	1.8	4
A060JK	1	208/230	1	4.5	3450	25.3/25.3	141/141	1	208/230	1	1/3	1.8	4

Model No. RSNJ-	Unit Information				Evaporator Fan					
	Unit Operating Voltage Range	Minimum Circuit Ampacity	Minimum Overcurrent Protection Device Size	Maximum Overcurrent Protection Device Size	No.	Volts	Phase	HP	Amps (FLA)	Amps (LRA)
A024JK	187-253	17/17	20/20	25/25	1	208/230	1	1/4	1.5	2.6
A030JK	187-253	21/21	25/25	35/35	1	208/230	1	1/3	1.8	2.6
A036C	187-258	16/16	20/20	25/25	1	208/230	1	1/2	2.5	5
A036JK	187-253	21/21	25/25	30/30	1	208/230	1	1/2	2.5	5
A042CK	187-253	18/18	20/20	25/25	1	208/230	1	1/2	2.8	4.6
A042JK	187-253	25/25	30/30	40/40	1	208/230	1	1/2	2.8	4.6
A048CK	187-253	21/21	25/25	30/30	1	208/230	1	3/4	3.2	4.4
A048JK	187-253	28/28	35/35	45/45	1	208/230	1	3/4	3.2	4.4
A060CK	187-253	30/30	35/35	45/45	1	208/230	1	3/4	5.8	9.6
A060JK	187-253	40/40	50/50	60/60	1	208/230	1	3/4	5.8	9.6

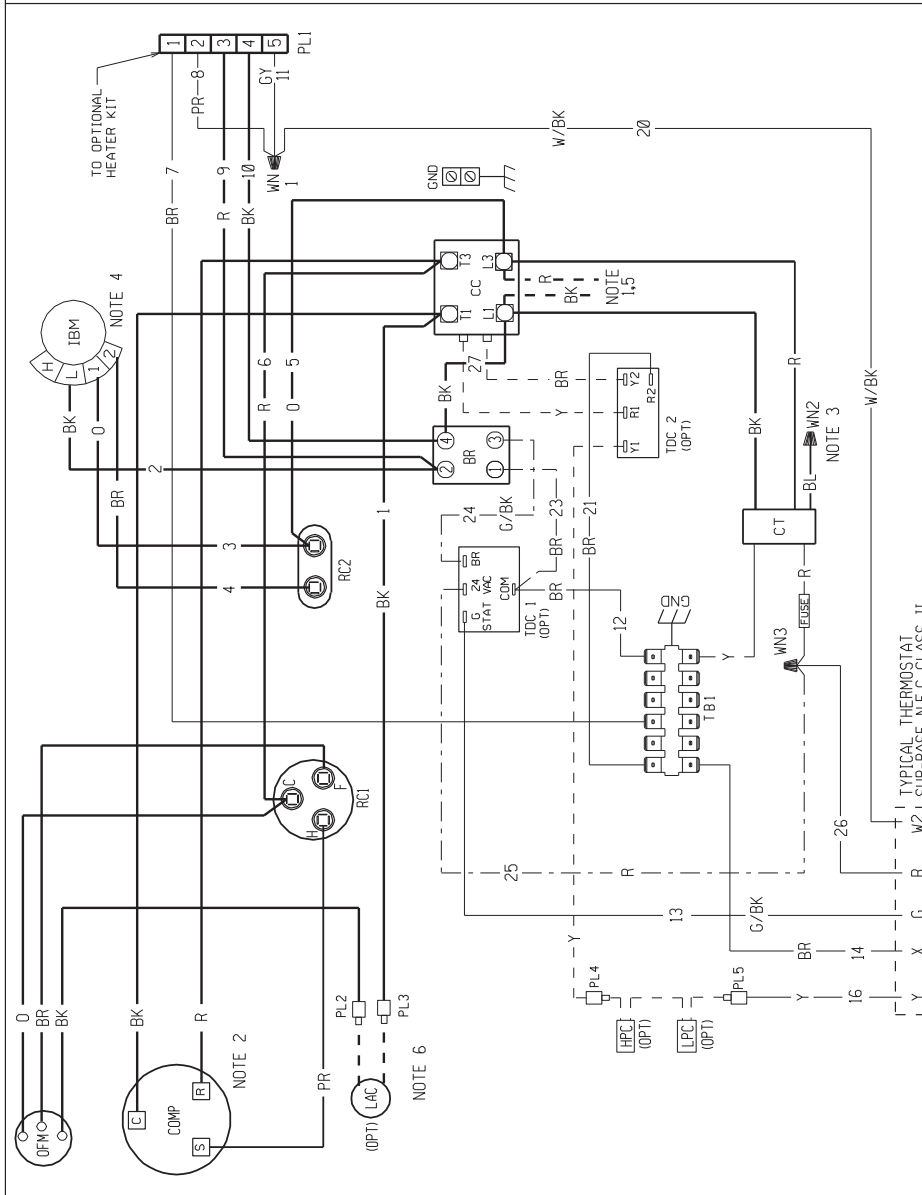
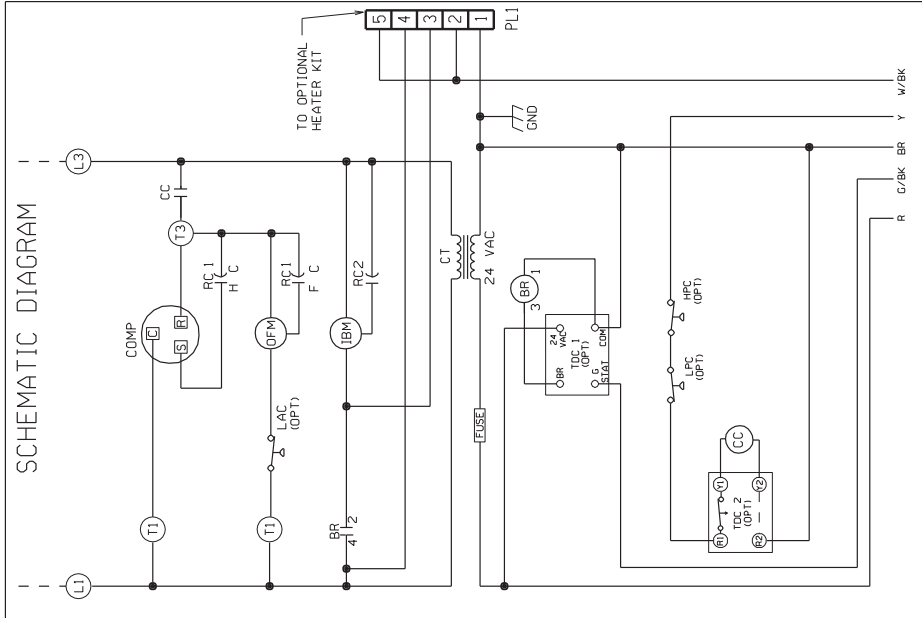
AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION

208-240 VOLT, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Single Power Supply For Both Unit And Heater Kit													
Model No. RSNJ-	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 @ 208-240V	Over Current Protective Device Size		Heater Kit Min. Ckt. Ampacity	Heater Kit Min. Ckt. Ampacity	Heat Pump Min. Ckt. Ampacity 208	Heat Pump Over Current Protective Device Size
								Min/Max @ 208 V	Min/Max @ 240 V				
A024J	No Heat	-	-	-	-	-	17/17	20/25	20/25	-	-	17/17	20/25
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	24/27	25/25	30/30	22/25	25/25	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	34/39	35/35	40/40	33/38	35/40	-	-
A030J	10J	2	1	7.2/9.6	24.5/32.76	34.67/40	45/52	50/50	60/60	44/50	45/50	-	-
	No Heat	-	-	-	-	-	21/21	25/35	25/35	-	-	21/21	25/35
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	24/27	25/35	30/35	22/25	25/25	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	35/40	35/35	40/40	33/38	35/40	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.67/40	46/52	50/50	60/60	44/50	45/50	-	-
A036J	15J	3	2	10.8/14.4	36.85/49.13	52/60	67/77	70/70	80/80	65/75	70/80	-	-
	No Heat	-	-	-	-	-	21/21	25/30	25/30	-	-	21/21	25/30
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	25/28	25/30	30/30	22/25	25/25	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	36/41	40/40	45/45	33/38	35/40	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.67/40	47/53	50/50	60/60	44/50	45/50	-	-
A042J	15J	3	2	10.8/14.4	36.85/49.13	52/60	68/78	70/70	80/80	65/75	70/80	-	-
	No Heat	-	-	-	-	-	25/25	30/40	30/40	-	-	25/25	30/40
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	25/29	30/40	30/40	22/25	25/25	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	36/41	40/40	45/45	33/38	35/40	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.67/40	47/54	50/50	60/60	44/50	45/50	-	-
A048J	15J	3	2	10.8/14.4	36.85/49.13	52/60	69/79	70/70	80/80	65/75	70/80	-	-
	20J	4	2	14.4/19.2	49.12/65.52	69.33/80	90/104	100/100	110/110	87/100	90/100	-	-
	No Heat	-	-	-	-	-	28/28	35/45	35/45	-	-	28/28	35/45
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	28/29	35/45	35/45	22/25	25/25	-	-
	07J	1	1	5.4/7.2	18.42/24.56	26/30	37/42	40/40	45/45	33/38	35/40	-	-
A060J	10J	2	1	7.2/9.6	24.57/32.76	34.67/40	47/54	50/50	60/60	44/50	45/50	-	-
	15J	3	2	10.8/14.4	36.85/49.13	52/60	69/79	70/70	80/80	65/65	70/80	-	-
	20J	4	2	14.4/19.2	49.12/65.52	69.33/80	91/104	100/100	110/110	87/100	90/100	-	-
	No Heat	-	-	-	-	-	40/40	50/60	50/60	-	-	40/40	50/60
	05J	1	1	3.6/4.8	12.28/16.38	17.33/20	40/40	50/60	50/60	22/25	25/25	-	-
A060J	07J	1	1	5.4/7.2	18.42/24.56	26/30	40/45	50/60	50/60	33/38	35/40	-	-
	10J	2	1	7.2/9.6	24.57/32.76	34.67/40	51/57	60/60	60/60	44/50	45/50	-	-
	15J	3	2	10.8/14.4	36.85/49.13	52/60	72/82	80/80	90/90	65/75	70/80	-	-
	20J	4	2	14.4/19.2	49.12/65.52	69.33/80	94/107	100/100	110/110	87/100	90/100	-	-

AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION

208-240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Model No. RSNJ-	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. @ 240 V	Unit Min. Ckt Ampacity @ 208-240 V	Over Current Protective Device Size @ 208 V	Min/Max @ 240 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 @ 208 V
A036C	No Heat	-	-	-	-	-	16/16	20/25	-	-	-	16/16	20/25
	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	30/34.6	41/47	45/45	38/44	40/45	-	-	-
A042C	No Heat	-	-	-	-	-	18/18	20/25	-	-	-	18/18	20/25
	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	30/34.6	41/47	45/45	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.2	54/62	60/60	50/58	50/60	-	-	-
A048C	No Heat	-	-	-	-	-	21/21	25/30	-	-	-	21/21	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	30/34.6	42/48	45/45	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.2	54/62	60/60	50/58	50/60	-	-	-
A060C	No Heat	-	-	-	-	-	30/30	35/45	-	-	-	30/30	35/45
	10C	2	1	7.2/9.6	24.57/32.76	20/23.1	40/40	40/40	25/29	25/30	-	-	-
	15C	3	2	10.8/14.4	36.85/49.13	30/34.6	45/51	45/45	38/44	40/45	-	-	-
	20C	4	2	14.4/19.2	49.12/65.52	40/46.2	58/65	60/60	50/58	50/60	-	-	-

FIGURE 7
WIRING DIAGRAM



WIRE COLOR CODE

BK	BLACK
BR	BROWN
BL	BLUE
G	GREEN
GY	GRAY
O	ORANGE
PR	PURPLE
R	RED
W	WHITE
Y	YELLOW

ELECTRICAL WIRING DIAGRAM

PACKAGE AIR CONDITIONER

1 PH, 208-230 VOLT - 60 HZ

DR. BY: BJJ APP. BY: BJJ DATE: 03-09-04 DWG. NO.: 90-23637-05 REV: 02

WIRING INFORMATION

- LINE VOLTAGE
- FACTORY STANDARD
- FACTORY OPTION
- FIELD INSTALLED
- LOW VOLTAGE
- FACTORY STANDARD
- FACTORY OPTION
- FIELD INSTALLED
- REPLACEMENT WIRE
- MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105 C MIN.)
- CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C. AND LOCAL CODES AS APPLICABLE.

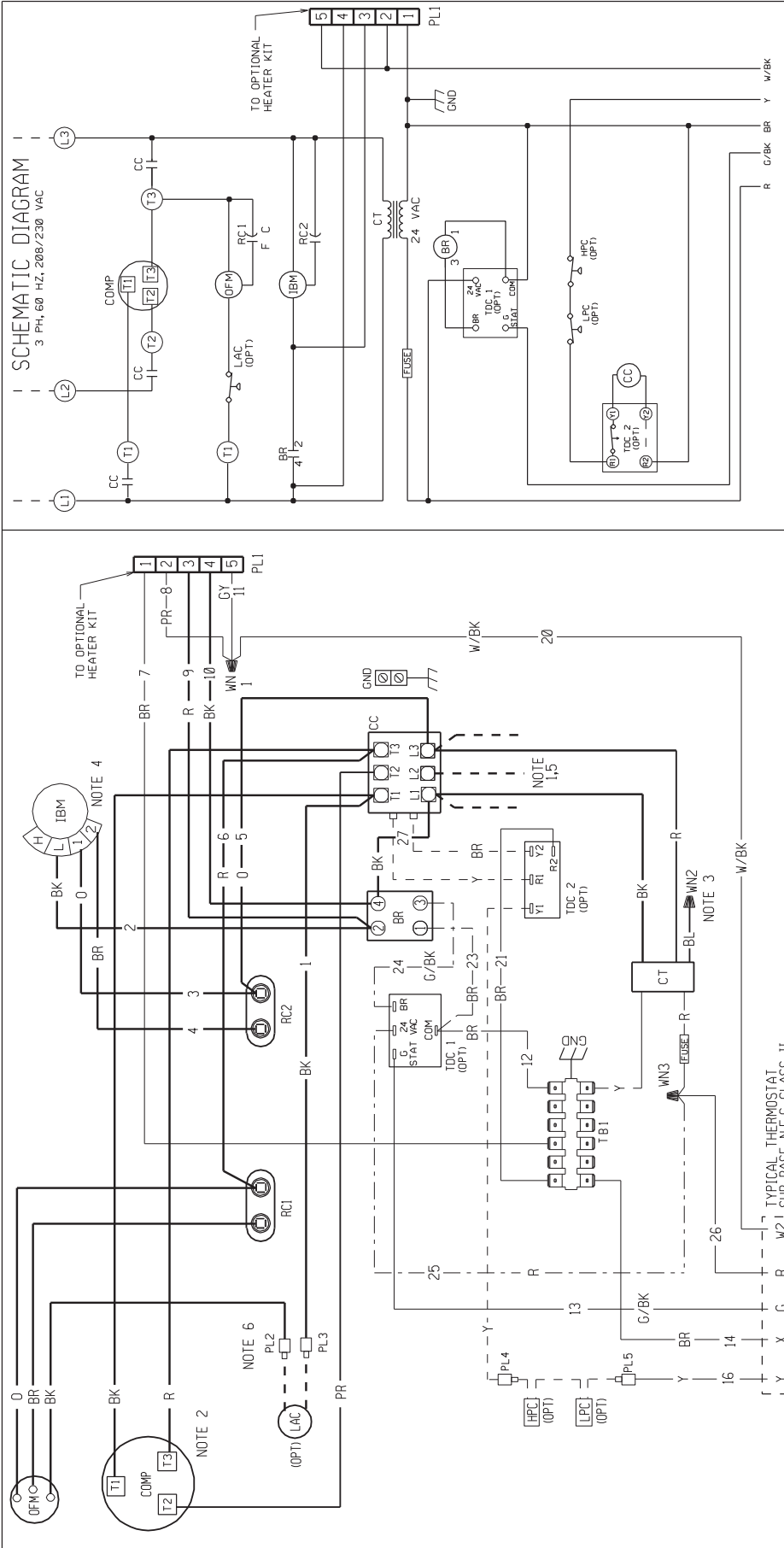
- NOTES:**
- CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
 - COMPRESSOR MOTOR THERMALLY PROTECTED.
 - TRANSFORMER FACTORY WIRED FOR 230 VOLTS. USE RED AND BLUE LEADS FOR 208 VOLTS.
 - MOTOR FACTORY WIRED FOR LOW SPEED. SEE AIRFLOW TABLES IN INSTALLATION INSTRUCTIONS TO DETERMINE CORRECT SPEED FOR UNIT APPLICATION.
 - FIELD WIRING OR CONNECTION FROM HEATER KIT FUSE BLOCK.
 - PL2 & PL3 ARE CONNECTED WHEN LAC IS NOT PRESENT.

COMPONENT CODE

ALC	AUX. LIMIT CONTROL
BR	BLOWER RELAY
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
GND	GROUND
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR
LAC	LOW AMBIENT COOLING CONTROL
OFM	OUTDOOR FAN MOTOR
OPT	OPTIONAL
PL	PLUG CAPACITOR
RC	RELAY
T1	THERMOSTAT
TIC	TIME DELAY CONTROL
WIRE NUT	WIRE NUT

DWG. NO. 90-23637-05 REV 02

FIGURE 8
WIRING DIAGRAM

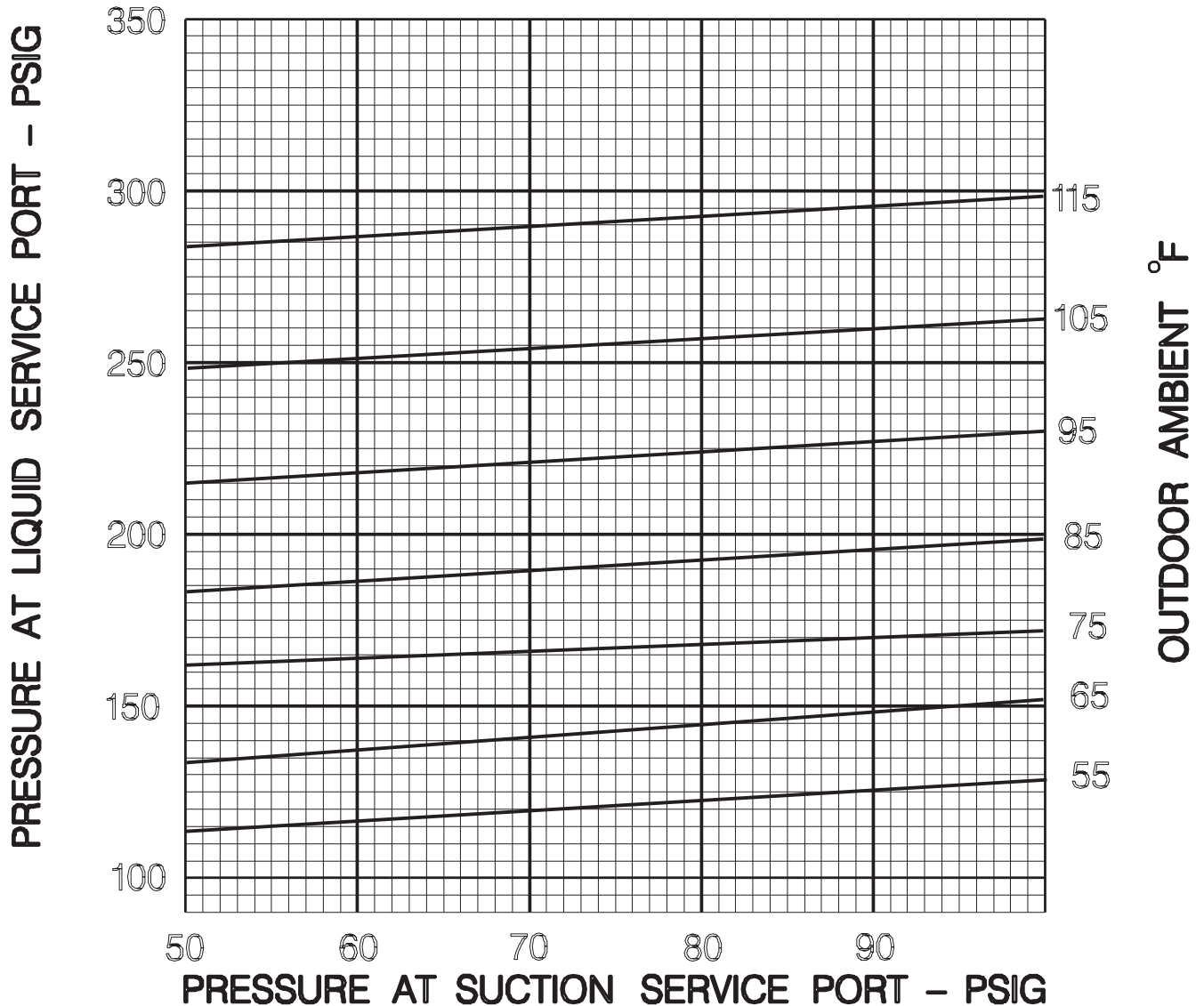


<p>SCHEMATIC DIAGRAM 3 PH, 60 HZ, 208/230 VAC</p>		<p>WIRE COLOR CODE</p> <p>BK---BLACK BR---BROWN BL---BLUE G---GREEN GY---GRAY O---ORANGE PR---PURPLE R---RED W---WHITE Y---YELLOW</p>	
<p>WIRING INFORMATION</p> <p>LINE VOLTAGE -FACTORY STANDARD -FACTORY OPTION LOW VOLTAGE -FACTORY STANDARD -FACTORY OPTION REPLACEMENT WIRE -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105 C MIN.) -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C. AND LOCAL CODES AS APPLICABLE.</p>		<p>ELECTRICAL WIRING DIAGRAM</p> <p>PACKAGE AIR CONDITIONER 3 PH, 208-230 VOLT - 60 HZ DWG. NO. 90-23637-06 REV 01</p>	
<p>NOTES:</p> <ol style="list-style-type: none"> CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY. COMPRESSOR MOTOR THERMALLY PROTECTED. TRANSFORMER FACTORY WIRED FOR 230 VOLTS. USE RED AND BLUE LEADS FOR 208 VOLTS. MOTOR FACTORY WIRED FOR LOW SPEED. SEE AIRFLOW CORRECT SPEED FOR UNIT APPLICATION. FIELD WIRING OR CONNECTION FROM HEATER KIT FUSE BLOCK. PL2 & PL3 ARE CONNECTED WHEN LAC IS NOT PRESENT. 		<p>COMPONENT CODE</p> <p>LAC LOW AMBIENT COOLING CONTROL OFM OUTDOOR FAN MOTOR OPT OPTIONAL PL PLUG CAPACITOR TBL THERMAL BLOCK TIC TIME DELAY CONTROL WIRE NUT</p> <p>AUX. LIMIT CONTROL BLOWER RELAY COMPRESSOR CONTACTOR CRANKCASE HEATER CONTROL TRANSFORMER GROUND PRESSURE CONTROL INDOOR BLOWER MOTOR</p>	
<p>COMPONENT CODE</p> <p>LAC LOW AMBIENT COOLING CONTROL OFM OUTDOOR FAN MOTOR OPT OPTIONAL PL PLUG CAPACITOR TBL THERMAL BLOCK TIC TIME DELAY CONTROL WIRE NUT</p> <p>AUX. LIMIT CONTROL BLOWER RELAY COMPRESSOR CONTACTOR CRANKCASE HEATER CONTROL TRANSFORMER GROUND PRESSURE CONTROL INDOOR BLOWER MOTOR</p>		<p>COMPONENT CODE</p> <p>LAC LOW AMBIENT COOLING CONTROL OFM OUTDOOR FAN MOTOR OPT OPTIONAL PL PLUG CAPACITOR TBL THERMAL BLOCK TIC TIME DELAY CONTROL WIRE NUT</p> <p>AUX. LIMIT CONTROL BLOWER RELAY COMPRESSOR CONTACTOR CRANKCASE HEATER CONTROL TRANSFORMER GROUND PRESSURE CONTROL INDOOR BLOWER MOTOR</p>	

FIGURE 9
2.0 TON CHARGING CHART

SNJ-A024

2.0 TON COOLING - HIGH EFFICIENCY SYSTEM CHARGE CHART - REFRIGERANT 22



INSTRUCTIONS:

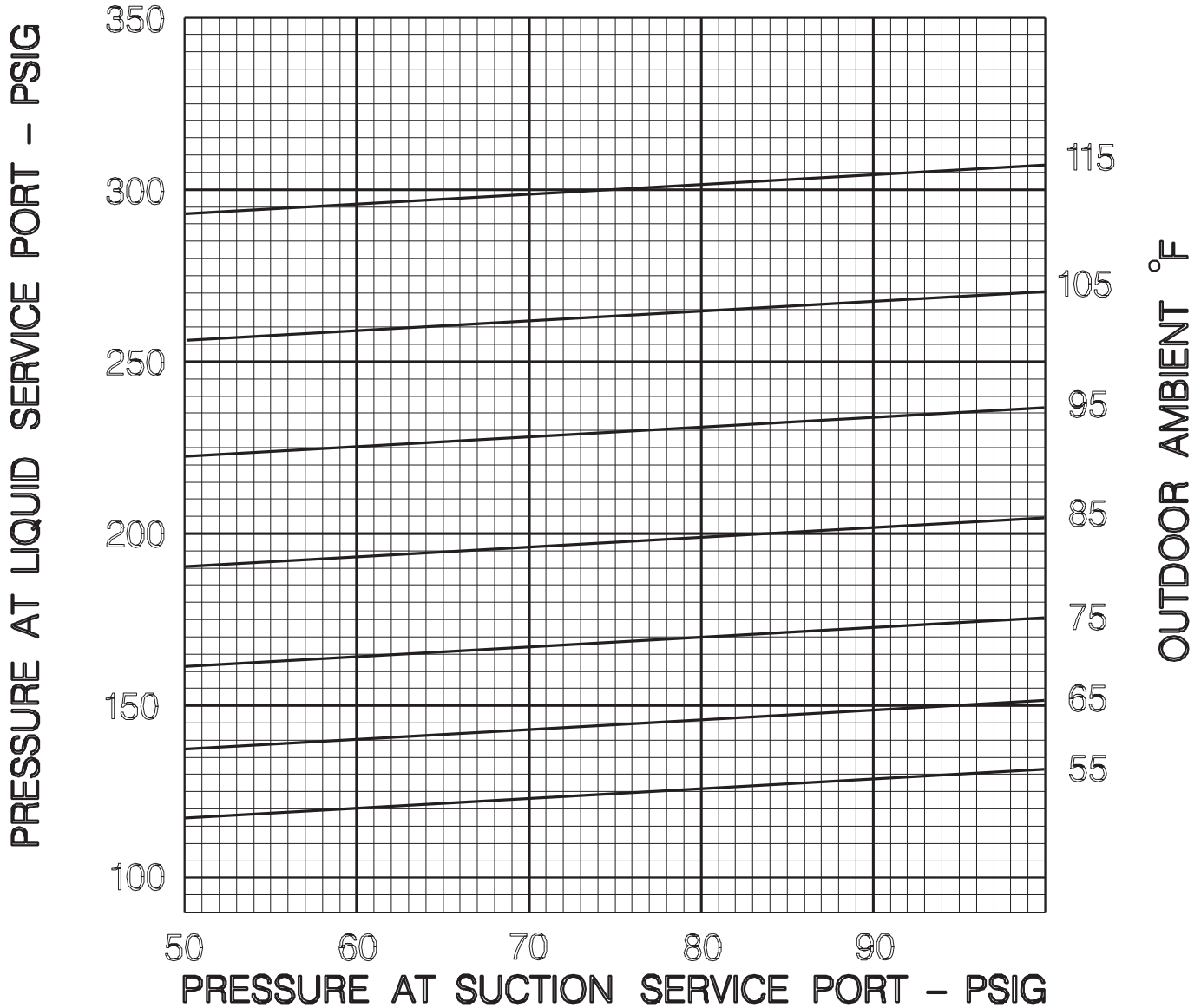
1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS AT OUTDOOR UNIT.
2. MEASURE AIR TEMPERATURE TO THE UNIT (OUTDOOR DRYBULB AMBIENT).
3. PLACE AN "X" ON THE CHART WHERE THE SUCTION AND LIQUID PRESSURE CROSS.
4. IF "X" IS BELOW OUTDOOR TEMPERATURE LINE, ADD CHARGE AND REPEAT 3.
5. IF "X" IS ABOVE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

92-100843-07-00

FIGURE 10
2.5 TON CHARGING CHART

SNJ-A030

2.5 TON COOLING - HIGH EFFICIENCY SYSTEM CHARGE CHART - REFRIGERANT 22



INSTRUCTIONS:

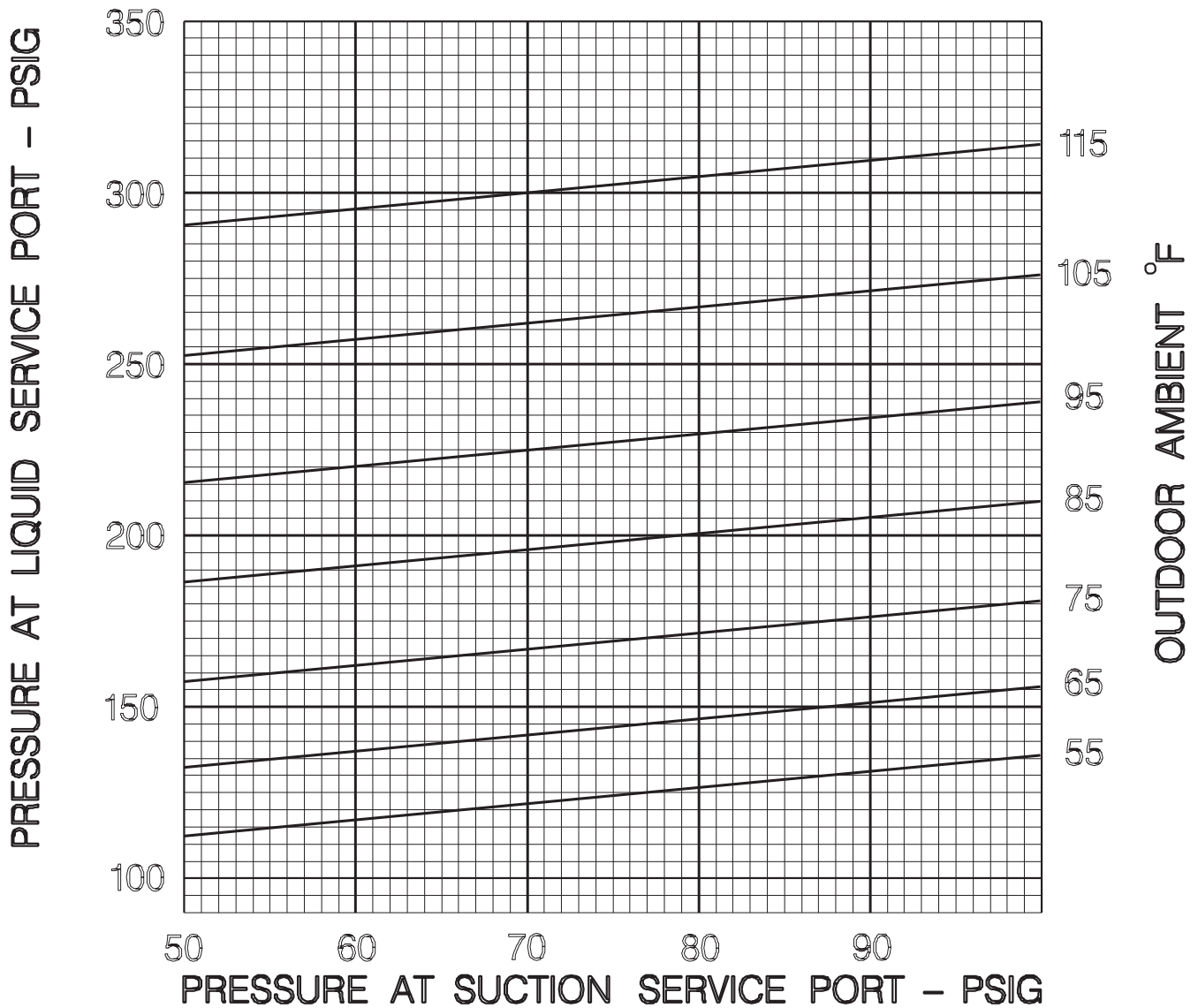
1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS AT OUTDOOR UNIT.
2. MEASURE AIR TEMPERATURE TO THE UNIT (OUTDOOR DRYBULB AMBIENT).
3. PLACE AN "X" ON THE CHART WHERE THE SUCTION AND LIQUID PRESSURE CROSS.
4. IF "X" IS BELOW OUTDOOR TEMPERATURE LINE, ADD CHARGE AND REPEAT 3.
5. IF "X" IS ABOVE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

92-100843-13-00

FIGURE 11
3.0 TON CHARGING CHART

SNJ-A036

3.0 TON COOLING - HIGH EFFICIENCY SYSTEM CHARGE CHART - REFRIGERANT 22



INSTRUCTIONS:

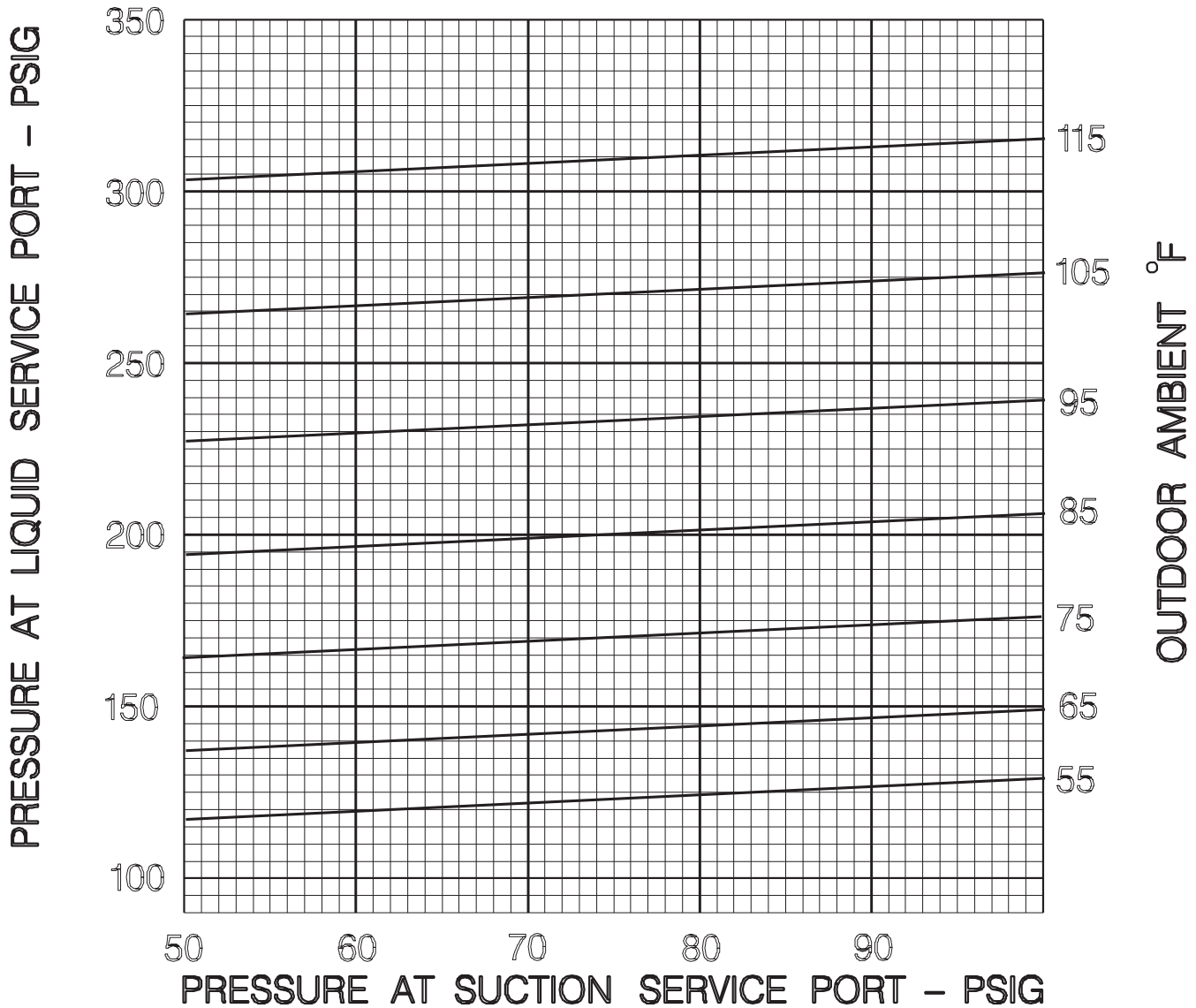
1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS AT OUTDOOR UNIT.
2. MEASURE AIR TEMPERATURE TO THE UNIT (OUTDOOR DRYBULB AMBIENT).
3. PLACE AN "X" ON THE CHART WHERE THE SUCTION AND LIQUID PRESSURE CROSS.
4. IF "X" IS BELOW OUTDOOR TEMPERATURE LINE, ADD CHARGE AND REPEAT 3.
5. IF "X" IS ABOVE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

92-100843-14-00

FIGURE 12
3.5 TON CHARGING CHART

SNJ-A042

3.5 TON COOLING - HIGH EFFICIENCY SYSTEM CHARGE CHART - REFRIGERANT 22



INSTRUCTIONS:

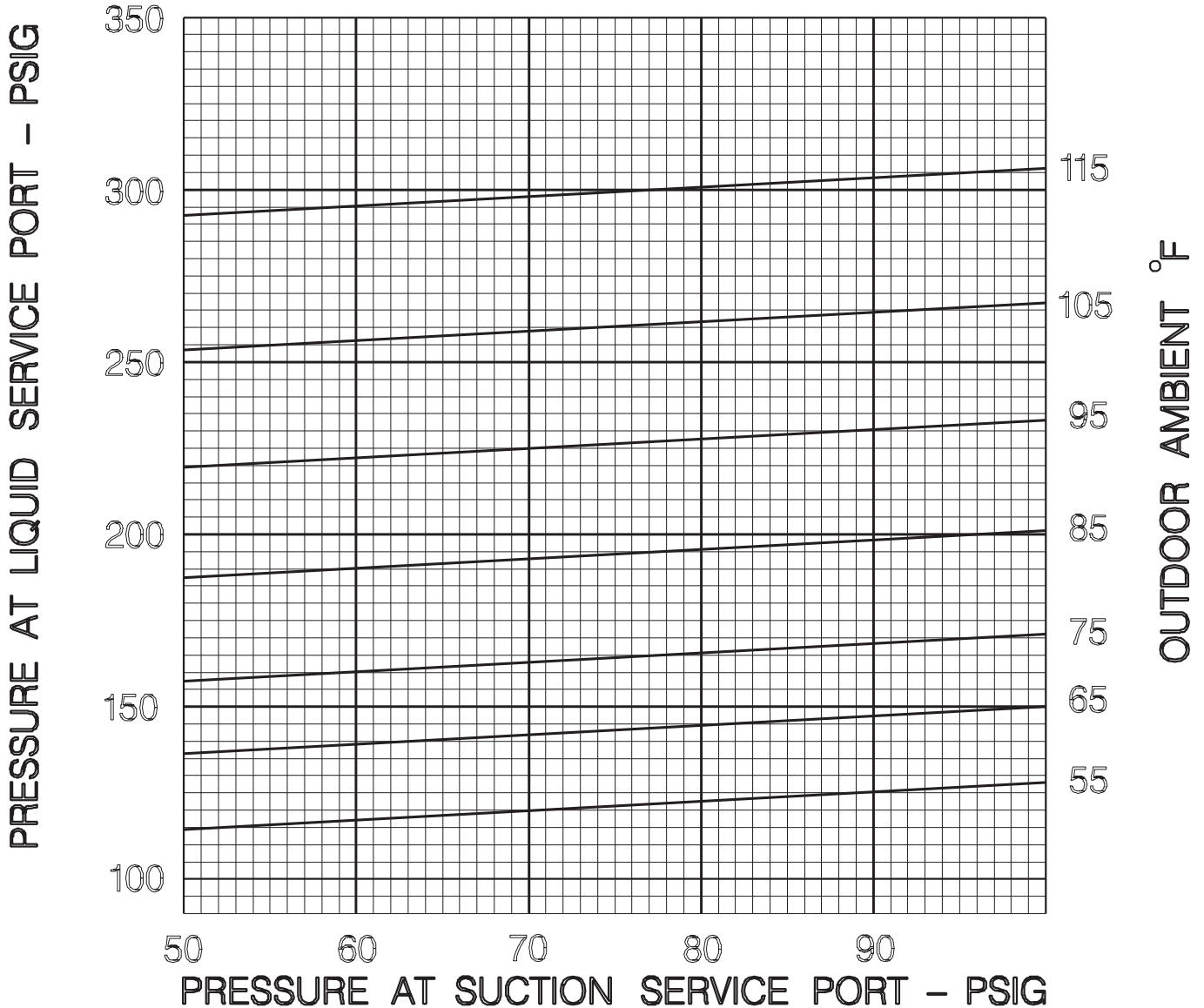
1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS AT OUTDOOR UNIT.
2. MEASURE AIR TEMPERATURE TO THE UNIT (OUTDOOR DRYBULB AMBIENT).
3. PLACE AN "X" ON THE CHART WHERE THE SUCTION AND LIQUID PRESSURE CROSS.
4. IF "X" IS BELOW OUTDOOR TEMPERATURE LINE, ADD CHARGE AND REPEAT 3.
5. IF "X" IS ABOVE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

92-100843-15-00

FIGURE 13
4.0 TON CHARGING CHART

SNJ-A048

4.0 TON COOLING - HIGH EFFICIENCY SYSTEM CHARGE CHART - REFRIGERANT 22



INSTRUCTIONS:

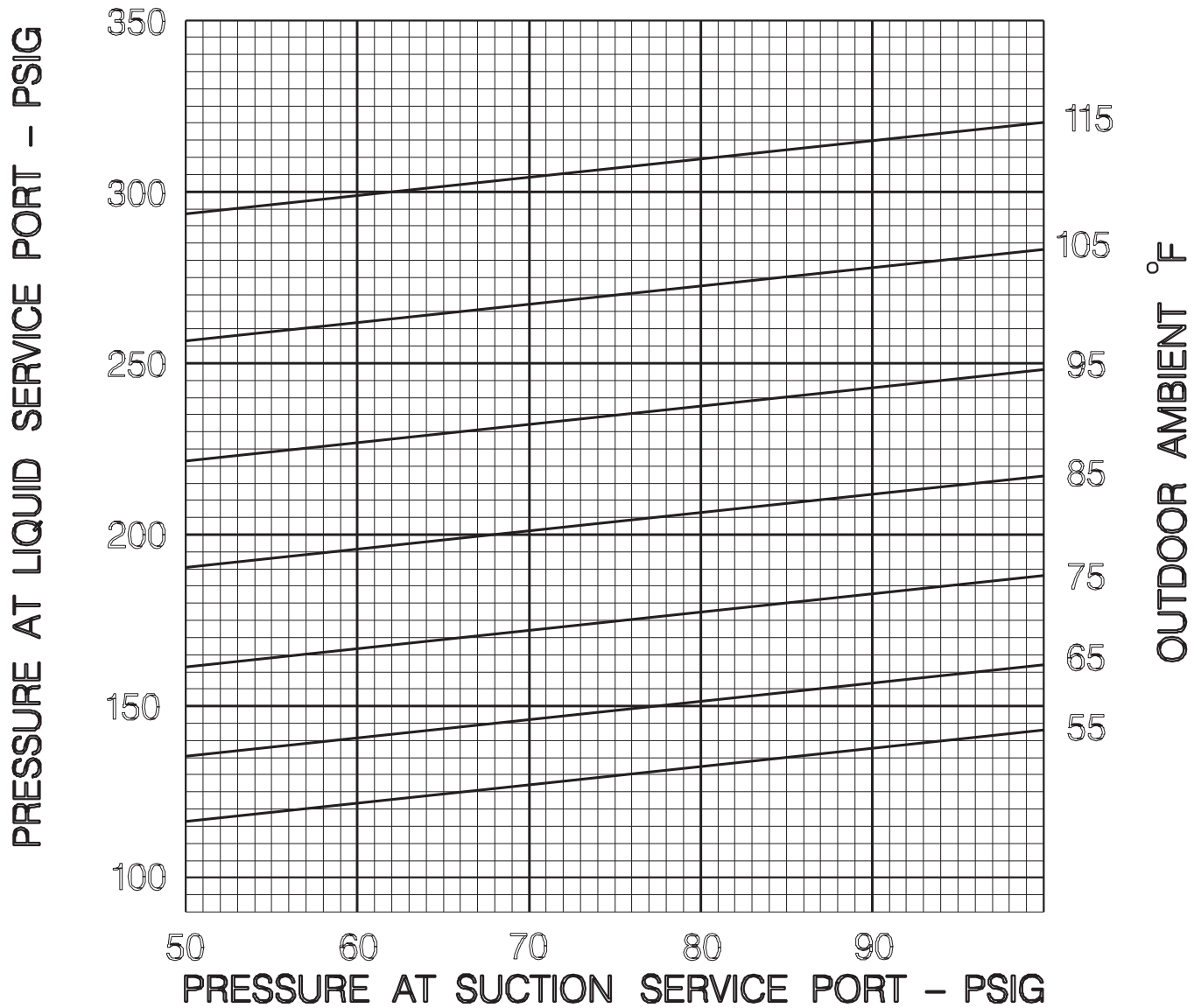
1. CONNECT PRESSURE GAUGES TO SUCTION AND LIQUID PORTS AT OUTDOOR UNIT.
2. MEASURE AIR TEMPERATURE TO THE UNIT (OUTDOOR DRYBULB AMBIENT).
3. PLACE AN "X" ON THE CHART WHERE THE SUCTION AND LIQUID PRESSURE CROSS.
4. IF "X" IS BELOW OUTDOOR TEMPERATURE LINE, ADD CHARGE AND REPEAT 3.
5. IF "X" IS ABOVE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

92-100843-16-00

FIGURE 14
5.0 TON CHARGING CHART

SNJ-A060

5.0 TON COOLING - HIGH EFFICIENCY SYSTEM CHARGE CHART - REFRIGERANT 22



INSTRUCTIONS:

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

92-100843-17-00

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

