INSTALLATION INSTRUCTIONS

FOR PACKAGE AIR CONDITIONERS FEATURING NEW INDUSTRY STANDARD R410A REFRIGERANT *R-410A*

WITH CLEAR CONTROL

RLNL-G SERIES 15, 20 & 25 TON [52.8, 70.3, 87.9 kW] 60 HZ MODELS (COMPLIES WITH ASHRAE 90.1-2007)



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.

AHRI CERTIFIED™ www.ahridirectory.org
Unitary Large AC
AHRI Standard 340/360
Certification applies only when the complete system is listed with AHRI.

25 TON IS OUTSIDE THE SCOPE OF ARI STANDARD 340/360

c UL us LISTED

Accredited by the RvA

ABS Quality Evaluations, Inc. Management System Certification

ANAB ACCREDITED

ISO 9001:2008
Certificate Number: 30164

DO NOT DESTROY THIS MANUAL

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

[ ] INDICATES METRIC CONVERSIONS

92-23577-126-01
SUPERSEDES 92-23577-126-00

I. TABLE OF CONTENTS

Table of Contents 2
Introduction 3
Checking Product Received 3
Equipment Protection 3
Specifications 3
  General 3
  Major Components 4
  R-410A Refrigerant 4
Unit Dimensions 5-7
General Data 8-10
Electrical Data 11-12
Installation 13
  General 13
    Pre-Installation Check Points 13
    Location 13
  Outside Slab Installation 13
  Clearances 13
  Rooftop Installation 14
Ductwork 15
Filters 15
Cover Panel Installation/Conversion Procedure 16
Condensate Drain 16
Electrical Wiring 16
  Power Wiring 16
  Control Wiring 17
  Internal Wiring 17
  Thermostat/Humidity Sensor 17
Indoor Air Flow Data 18
Crankcase Heat 18
Airflow Performance Tables 19-21
Pre-Start Check 22
Startup 22
Operation 22
  Cooling Mode 22
  Heating Mode 22
HumidiDry™ System 23
  Humidity Sensory 23
  Refrigerant Solenoid Valves 23
  Operation 23
Variable Frequency Drive (VFD) 24
  VFD Model 24
  Replacement 24
  Operation 24
Outdoor Fan Motor Controller 24
Auxiliary Heat 25
Heater Kit Characteristics 26-27
Troubleshooting Chart 28
Wiring Diagrams 29-30
Charge Charts 31-33

⚠ 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.

II. INTRODUCTION

This booklet contains the installation and operating instructions for your 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.

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

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 a good automobile polish will provide some protection.
3. A good 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

A. GENERAL

The Packaged Air Conditioner is available without heat or with 20, 40, 60 or 75 kW electric heat. Cooling capacities of 15, 20, and 25 nominal tons of cooling are available. Units are convertible from bottom supply and return to horizontal supply and return by relocation of supply and return air access panels. See cover installation detail.

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. The following information is for three phase units which **are not** covered under the DOE certification program.

1. The efficiency rating of this unit is a product thermal efficiency rating determined under continuous operating conditions independent of any installed system.

B. MAJOR COMPONENTS

The unit includes a hermetically-sealed refrigerating system (consisting of compressors, condenser coil, evaporator coil with thermal expansion valves, micro-channel reheat coil, solenoid valves), circulation air blower, condenser fans, variable frequency drive (VFD) outdoor fan motor controller (OFMC) 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

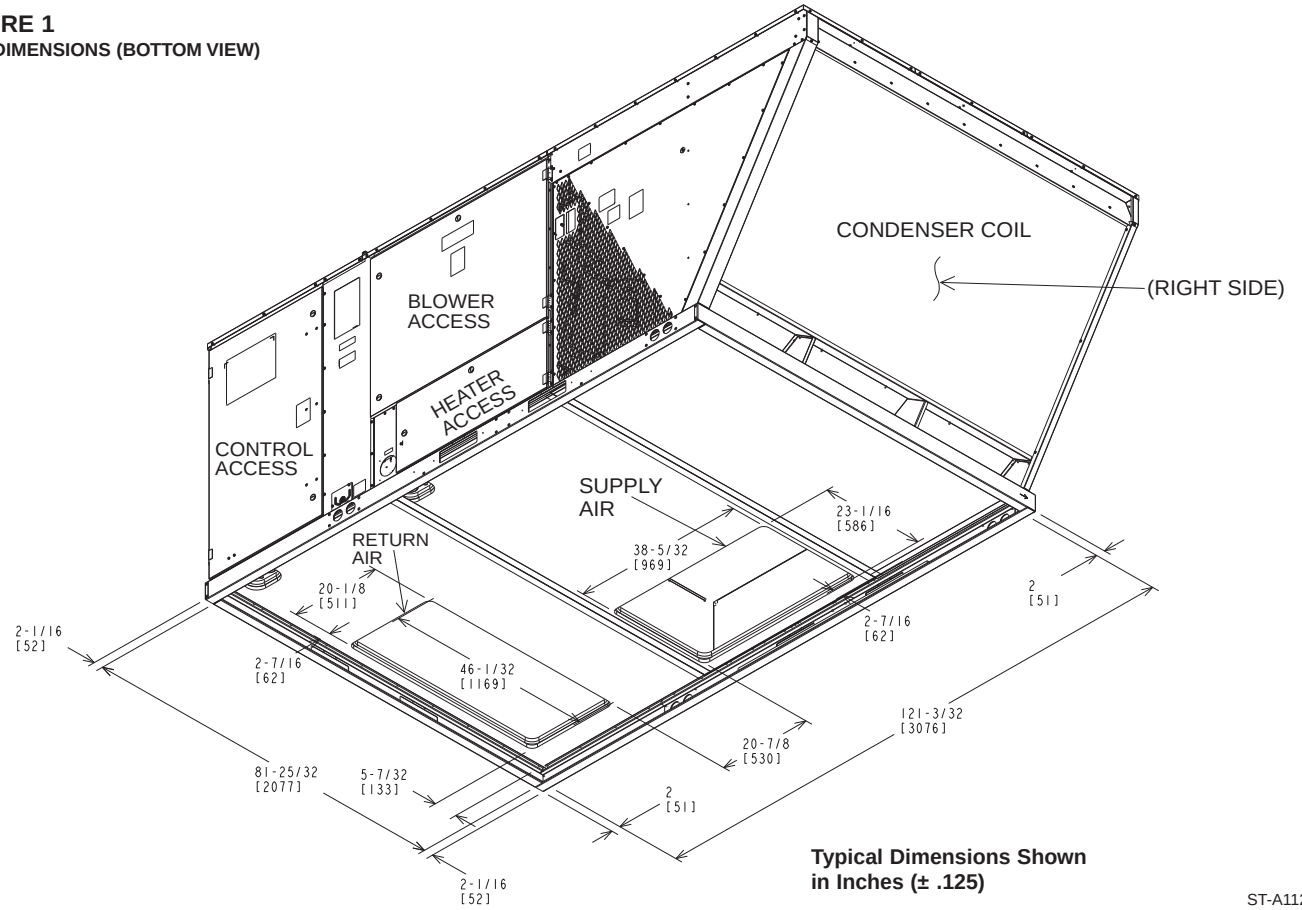
Manifold Hoses:
-Service Pressure Rating of 800 PSIG

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.

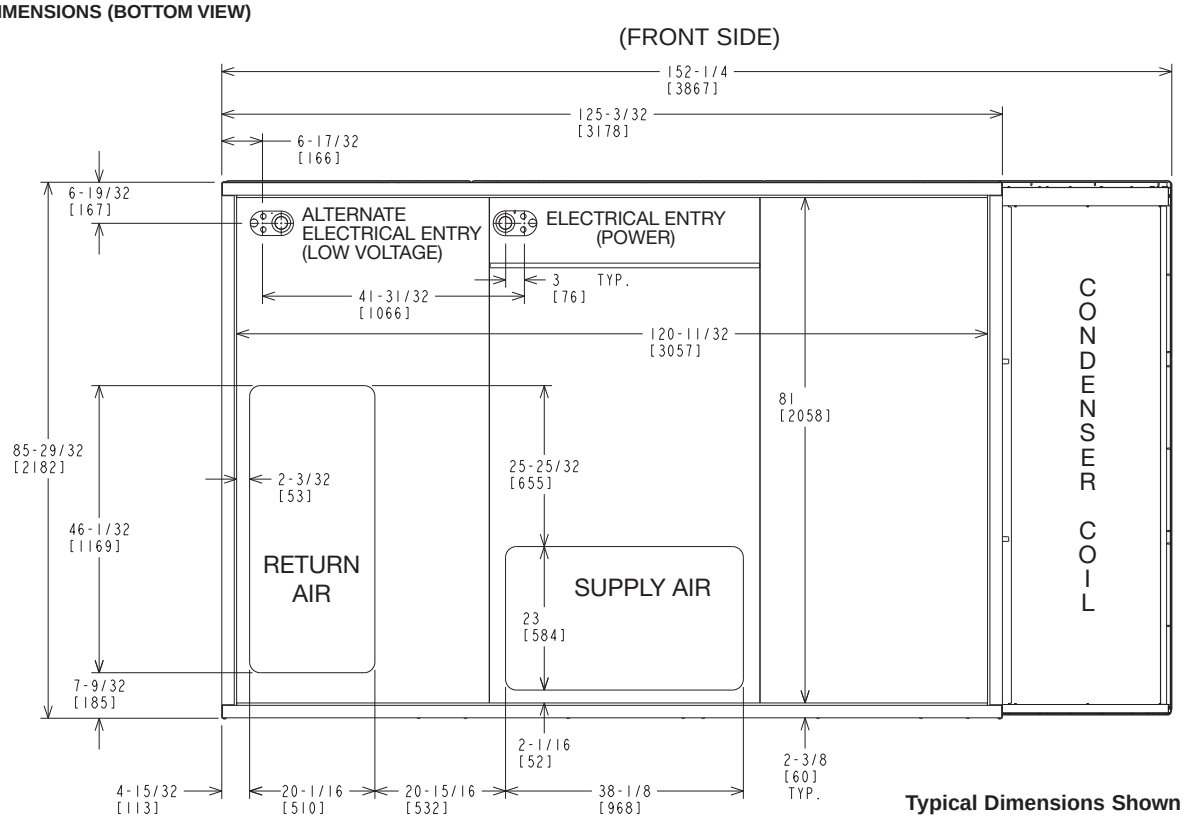
FIGURE 1
UNIT DIMENSIONS (BOTTOM VIEW)



Typical Dimensions Shown in Inches (± .125)

ST-A1125-02B

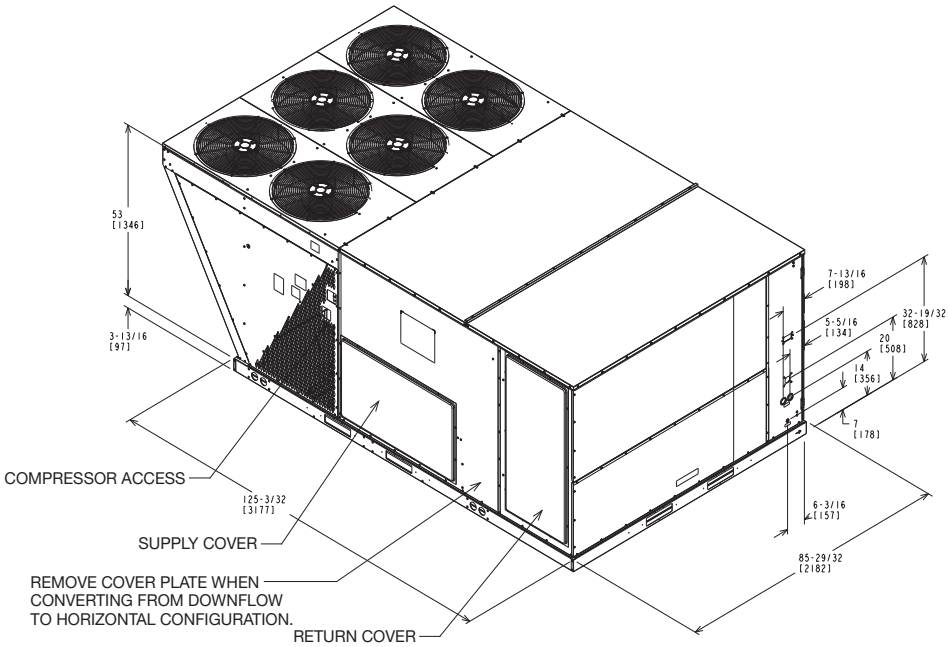
FIGURE 2
UNIT DIMENSIONS (BOTTOM VIEW)



Typical Dimensions Shown in Inches (± .125 tolerance)

ST-A1125-09B

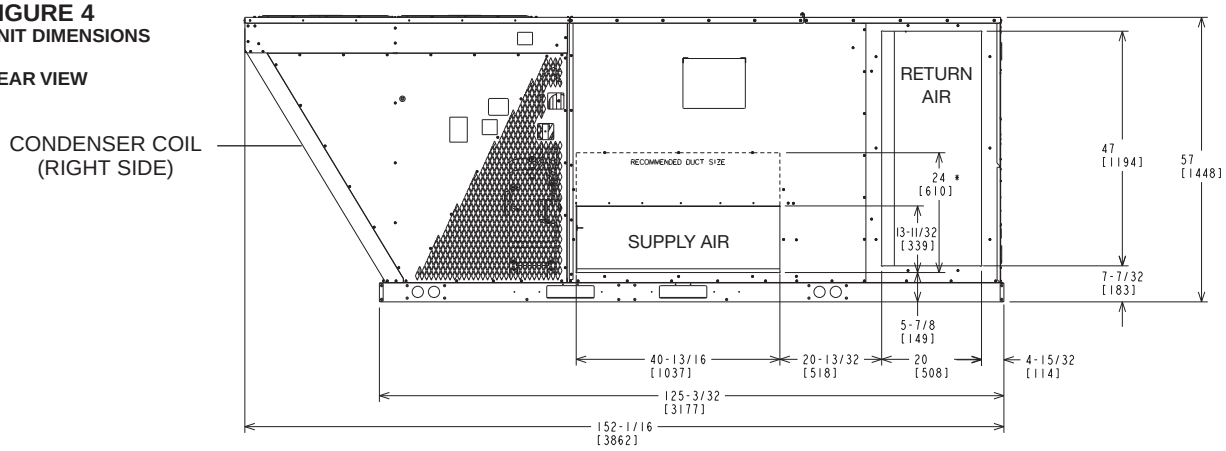
FIGURE 3
UNIT DIMENSIONS



ST-A1125-03

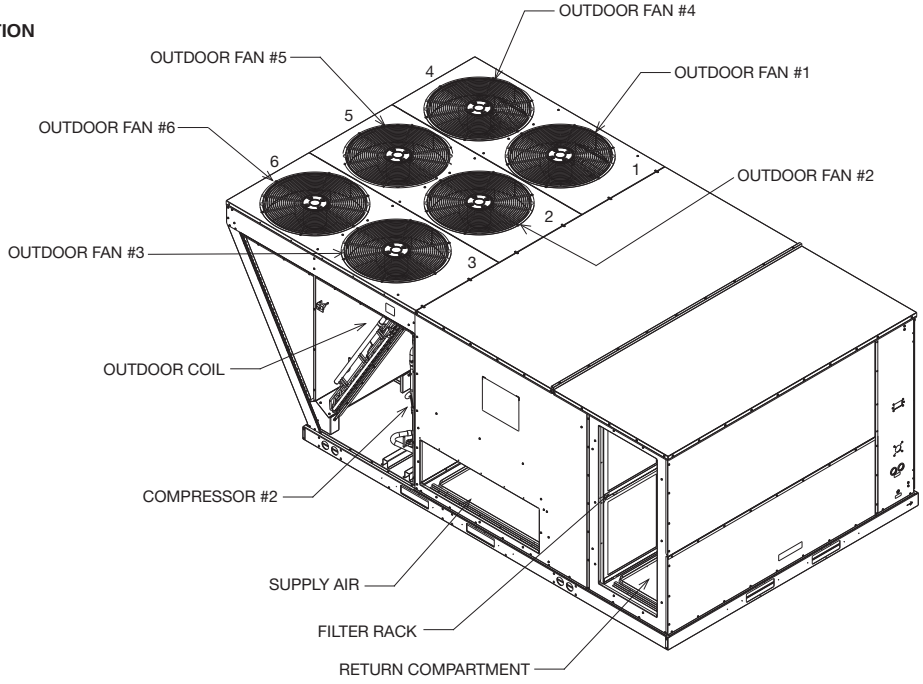
FIGURE 4
UNIT DIMENSIONS

REAR VIEW



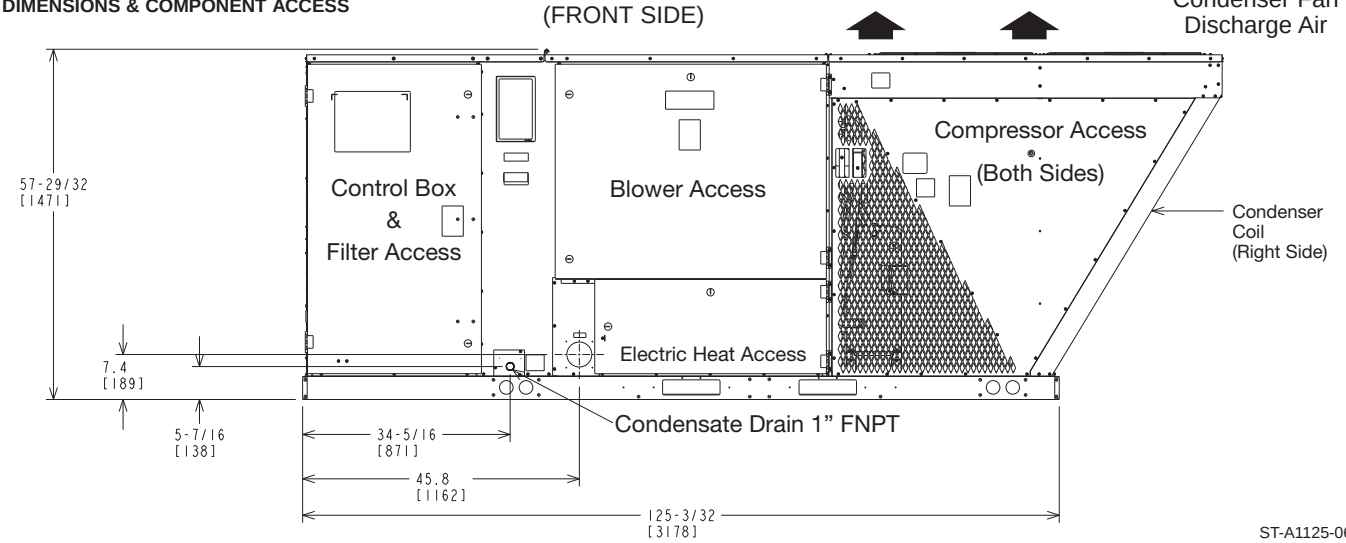
ST-A1125-08B

FIGURE 5
COMPONENT LOCATION



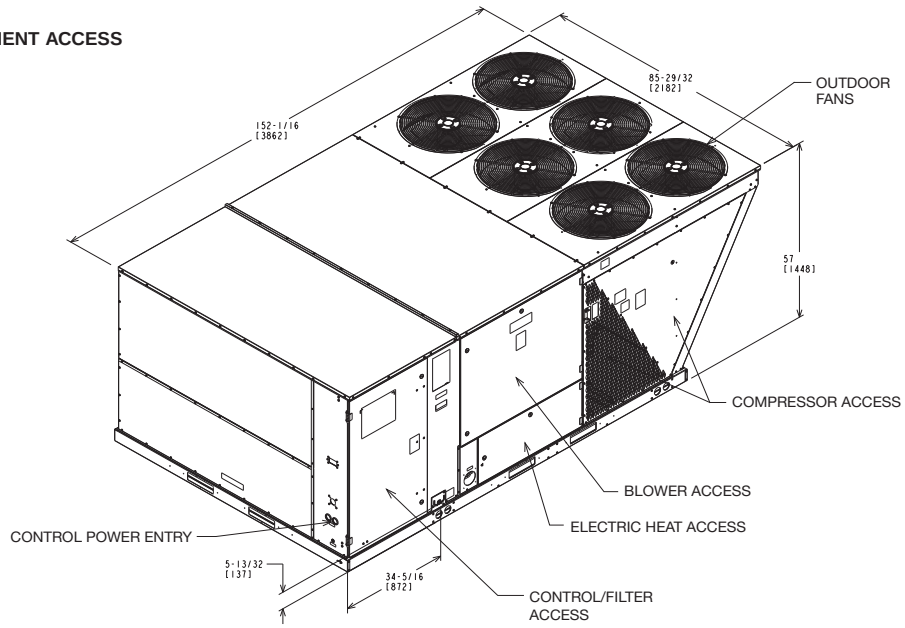
ST-A1125-05

FIGURE 6
UNIT DIMENSIONS & COMPONENT ACCESS



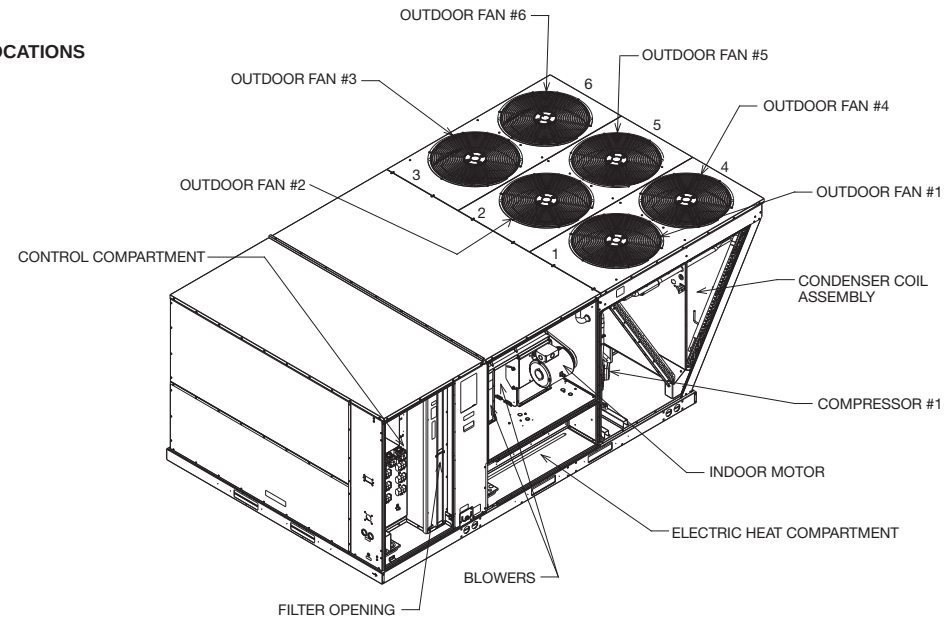
ST-A1125-06B

FIGURE 7
UNIT DIMENSIONS & COMPONENT ACCESS



ST-A1125-01B

FIGURE 8
INTERNAL COMPONENT LOCATIONS



ST-A1125-04B

GENERAL DATA - RLNL

Model RLNL- Series	G180CR	G180CS	G180DR	G180DS
Cooling Performance[1]				**Continued ->**
Gross Cooling Capacity Btu [kW]	188,000 [55.08]	188,000 [55.08]	188,000 [55.08]	188,000 [55.08]
EER, SEER[2]	11.1/NA	11.1/NA	11.1/NA	11.1/NA
Nominal CFM/AHRI Rated CFM [L/s]	6000/5900 [2831/2784]	6000/5900 [2831/2784]	6000/5900 [2831/2784]	6000/5900 [2831/2784]
AHRI Net Cooling Capacity Btu [kW]	182,000 [53.33]	182,000 [53.33]	182,000 [53.33]	182,000 [53.33]
Net Sensible Capacity Btu [kW]	135,700 [39.76]	135,700 [39.76]	135,700 [39.76]	135,700 [39.76]
Net Latent Capacity Btu [kW]	46,300 [13.57]	46,300 [13.57]	46,300 [13.57]	46,300 [13.57]
IEER[3] (Standard / VFD)	14.6	14.6	14.6	14.6
Net System Power kW	16.35	16.35	16.35	16.35
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)[5]	91	91	91	91
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]	53.3 [4.95]	53.3 [4.95]	53.3 [4.95]	53.3 [4.95]
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]	26.67 [2.48]	26.67 [2.48]	26.67 [2.48]	26.67 [2.48]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
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]
Re-Heat Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.709 [18]	0.709 [18]	0.709 [18]	0.709 [18]
Face Area sq. ft. [sq. m]	19.9 [1.85]	19.9 [1.85]	19.9 [1.85]	19.9 [1.85]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	4/24 [609.6]	4/24 [609.6]	4/24 [609.6]	4/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	16000 [7550]	16000 [7550]	16000 [7550]	16000 [7550]
No. Motors/HP	4 at 1/3 HP	4 at 1/3 HP	4 at 1/3 HP	4 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]	2/18x9 [457x229]	2/18x9 [457x229]	2/18x9 [457x229]	2/18x9 [457x229]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	3	5	3	5
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	184	56	184
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	299/211 [8477/5982]	299/211 [8477/5982]	299/211 [8477/5982]	299/211 [8477/5982]
Weights				
Net Weight lbs. [kg]	1906 [865]	1935 [878]	1906 [865]	1935 [878]
Ship Weight lbs. [kg]	2032 [922]	2061 [935]	2032 [922]	2061 [935]

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. AHRI 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 AHRI Standard 210/240 or 360.
2. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
3. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 210/240 or 340/360.
4. Not applicable to these units.
5. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270. 25 Ton Model is outside the scope of AHRI Standard 340/360.

GENERAL DATA - RLNL

Model RLNL- Series	G240CR	G240CS	G240DR	G240DS
Cooling Performance[1]				**Continued ->**
Gross Cooling Capacity Btu [kW]	244,000 [71.49]	244,000 [71.49]	244,000 [71.49]	244,000 [71.49]
EER, SEER[2]	11.1/NA	11.1/NA	11.1/NA	11.1/NA
Nominal CFM/AHRI Rated CFM [L/s]	8000/7725 [3775/3645]	8000/7725 [3775/3645]	8000/7725 [3775/3645]	8000/7725 [3775/3645]
AHRI Net Cooling Capacity Btu [kW]	234,000 [68.56]	234,000 [68.56]]	234,000 [68.56]]	234,000 [68.56]
Net Sensible Capacity Btu [kW]	171,600 [50.28]	171,600 [50.28]	171,600 [50.28]	171,600 [50.28]
Net Latent Capacity Btu [kW]	62,400 [18.28]	62,400 [18.28]	62,400 [18.28]	62,400 [18.28]
IEER[3] (Standard / VFD)	14.8	14.8	14.8	14.8
Net System Power kW	21.04	21.04	21.04	21.04
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)[5]	91	91	91	91
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]	53.3 [4.95]	53.3 [4.95]	53.3 [4.95]	53.3 [4.95]
Rows / FPI [FPcm]	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]	2 / 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]	26.67 [2.48]	26.67 [2.48]	26.67 [2.48]	26.67 [2.48]
Rows / FPI [FPcm]	3 / 13 [7]	3 / 13 [7]	3 / 13 [7]	3 / 13 [7]
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]
Re-Heat Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.709 [18]	0.709 [18]	0.709 [18]	0.709 [18]
Face Area sq. ft. [sq. m]	19.9 [1.85]	19.9 [1.85]	19.9 [1.85]	19.9 [1.85]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	6/24 [609.6]	6/24 [609.6]	6/24 [609.6]	6/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	19800 [9344]	19800 [9344]	19800 [9344]	19800 [9344]
No. Motors/HP	6 at 1/3 HP	6 at 1/3 HP	6 at 1/3 HP	6 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]	2/18x9 [457x229]	2/18x9 [457x229]	2/18x9 [457x229]	2/18x9 [457x229]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	5	7 1/2	5	7 1/2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	184	213	184	184
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	430/331 [1219/9384]	430/331 [1219/9384]	430/331 [1219/9384]	430/331 [1219/9384]
Weights				
Net Weight lbs. [kg]	2231 [1012]	2269 [1029]	2231 [1012]	2269 [1029]
Ship Weight lbs. [kg]	2357 [1069]	2395 [1086]	2357 [1069]	2395 [1086]

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. AHRI 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 AHRI Standard 210/240 or 360.
2. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
3. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 210/240 or 340/360.
4. Not applicable to these units.
5. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270. 25 Ton Model is outside the scope of AHRI Standard 340/360.

GENERAL DATA - RLNL

Model RLNL- Series	G300CR	G300CS	G300DR	G300DS
Cooling Performance[1]				
Gross Cooling Capacity Btu [kW]	304,000 [89.07]	304,000 [89.07]	304,000 [89.07]	304,000 [89.07]
EER, SEER[2]	10/NA	10/NA	10/NA	10/NA
Nominal CFM/AHRI Rated CFM [L/s]	10000/9575 [4719/4518]	10000/9575 [4719/4518]	10000/9575 [4719/4518]	10000/9575 [4719/4518]
AHRI Net Cooling Capacity Btu [kW]	288,000 [84.38]	288,000 [84.38]	288,000 [84.38]	288,000 [84.38]
Net Sensible Capacity Btu [kW]	210,000 [61.53]	210,000 [61.53]	210,000 [61.53]	210,000 [61.53]
Net Latent Capacity Btu [kW]	78,000 [22.85]	78,000 [22.85]	78,000 [22.85]	78,000 [22.85]
IEER[3] (Standard / VFD)	14.1	14.1	14.1	14.1
Net System Power kW	26.87	26.87	26.87	26.87
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)[5]	91	91	91	91
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]	53.3 [4.95]	53.3 [4.95]	53.3 [4.95]	53.3 [4.95]
Rows / FPI [FPcm]	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]	2 / 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]	26.67 [2.48]	26.67 [2.48]	26.67 [2.48]	26.67 [2.48]
Rows / FPI [FPcm]	4 / 15 [6]	4 / 15 [6]	4 / 15 [6]	4 / 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]
Re-Heat Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.709 [18]	0.709 [18]	0.709 [18]	0.709 [18]
Face Area sq. ft. [sq. m]	19.9 [1.85]	19.9 [1.85]	19.9 [1.85]	19.9 [1.85]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	6/24 [609.6]	6/24 [609.6]	6/24 [609.6]	6/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	19800 [9344]	19800 [9344]	19800 [9344]	19800 [9344]
No. Motors/HP	6 at 1/3 HP	6 at 1/3 HP	6 at 1/3 HP	6 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]	2/18x9 [457x229]	2/18x9 [457x229]	2/18x9 [457x229]	2/18x9 [457x229]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	7 1/2	10	7 1/2	10
Motor RPM	1725	1725	1725	1725
Motor Frame Size	213	215	213	215
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]	(8)2x25x20 [51x635x508]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	464/357 [13154/10121]	464/357 [13154/10121]	464/357 [13154/10121]	464/357 [13154/10121]
Weights				
Net Weight lbs. [kg]	2330 [1057]	2341 [1062]	2330 [1057]	2341 [1062]
Ship Weight lbs. [kg]	2456 [1114]	2467 [1119]	2456 [1114]	2467 [1119]

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. AHRI 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 AHRI Standard 210/240 or 360.
2. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
3. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 210/240 or 340/360.
4. Not applicable to these units.
5. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270. 25 Ton Model is outside the scope of AHRI Standard 340/360.

ELECTRICAL DATA - RLNL

ELECTRICAL DATA - RLNL SERIES									
		G180CR	**G180CS**	**G180DR**	**G180DS**	**G240CR**	**G240CS**	**G240DR**	**G240DS**
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	187-253	187-253	414-506	414-506
	Volts	208/230	208/230	460	460	208/230	208/230	460	460
	Minimum Circuit Ampacity	78/78	81/81	38	40	101/101	109/109	52	56
	Minimum Overcurrent Protection Device Size	90/90	90/90	45	45	110/110	125/125	60	60
	Maximum Overcurrent Protection Device Size	100/100	100/100	45	50	125/125	125/125	60	70
Compressor Motor	No.	2	2	2	2	2	2	2	2
	Volts	200/230	200/230	460	460	200/230	200/230	460	460
	Phase	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	7	7	7	7	10	10	10	10
	Amps (RLA), Comp. 1	25/25	25/25	12.2	12.2	33.3/33.3	33.3/33.3	17.9	17.9
	Amps (LRA), Comp. 1	164/164	164/164	100	100	239/239	239/239	125	125
	HP, Compressor 2	7	7	7	7	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (RLA), Comp. 2	25/25	25/25	12.2	12.2	29.5/29.5	29.5/29.5	14.7	14.7
	Amps (LRA), Comp. 2	164/164	164/164	100	100	195/195	195/195	95	95
Condenser Motor	No.	4	4	4	4	6	6	6	6
	Volts	208/230	208/230	460	460	208/230	208/230	460	460
	Phase	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
	Amps (FLA, each)	2.4/2.4	2.4/2.4	1.4	1.4	2.4/2.4	2.4/2.4	1.4	1.4
	Amps (LRA, each)	4.7/4.7	4.7./4.7	2.4	2.4	4.7/4.7	4.7/4.7	2.4	2.4
Evaporator Fan	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	460	460
	Phase	3	3	3	3	3	3	3	3
	HP	3	5	3	5	5	7 1/2	5	7 1/2
	Amps (FLA, each)	11.5/11.5	14.9/14.9	4.6	6.6	14.7/14.7	23.1/23.1	6.6	9.6
	Amps (LRA, each)	74.5/74.5	82.6/82.6	38.1	46.3	82.6/82.6	136/136	46.3	67

ELECTRICAL DATA - RLNL (continued)

ELECTRICAL DATA - RLNL SERIES					
		G300CR	G300CS	G300DR	G300DS
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506
	Volts	208/230	208/230	460	460
	Minimum Circuit Ampacity	147/147	149/149	60	63
	Minimum Overcurrent Protection Device Size	175/175	175/175	70	70
	Maximum Overcurrent Protection Device Size	175/175	175/175	70	70
Compressor Motor	No.	2	2	2	2
	Volts	208/240	208/240	460	460
	Phase	3	3	3	3
	RPM	3450	3450	3450	3450
	HP, Compressor 1	11 1/2	11 1/2	11 1/2	11 1/2
	Amps (RLA), Comp. 1	48.1/48.1	48.1/48.1	18.6	18.6
	Amps (LRA), Comp. 1	245/245	245/245	125	125
	HP, Compressor 2	11 1/2	11 1/2	11 1/2	11 1/2
	Amps (RLA), Comp. 2	48.1/48.1	48.1/48.1	18.6	18.6
	Amps (LRA), Comp. 2	245/245	245/245	125	125
Condenser Motor	No.	6	6	6	6
	Volts	208/230	208/230	460	460
	Phase	1	1	1	1
	HP	1/3	1/3	1/3	1/3
	Amps (FLA, each)	2.4/2.4	2.4/2.4	1.4	1.4
	Amps (LRA, each)	4.7/4.7	4.7/4.7	2.4	2.4
Evaporator Fan	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	HP	7 1/2	10	7 1/2	10
	Amps (FLA, each)	24.2/24.2	28.5/28.5	9.6	12.5
	Amps (LRA, each)	136/136	178/178	67	74.6

V. 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 Figures 9 and 10.)

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.

C. CLEARANCES

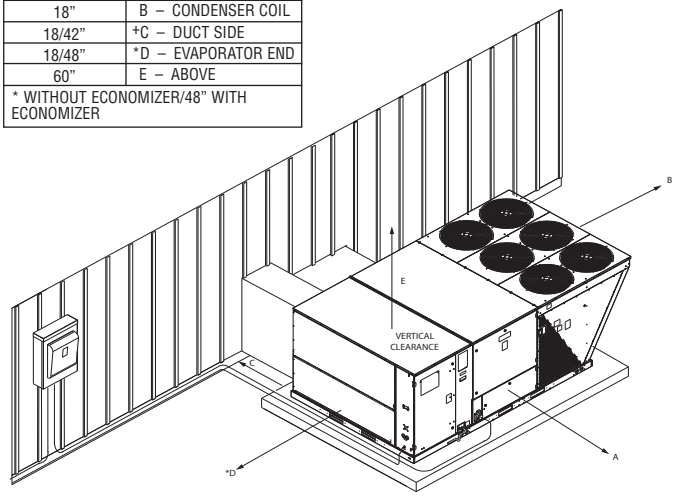
The following minimum clearances must be observed for proper unit performance and serviceability.

FIGURE 9
PACKAGED AIR CONDITIONER
OUTSIDE SLAB INSTALLATION, BASEMENT OR CRAWL SPACE DISTRIBUTION SYSTEM

RECOMMENDED CLEARANCE	LOCATION
80"	A – FRONT
18"	B – CONDENSER COIL
18/42"	+C – DUCT SIDE
18/48"	*D – EVAPORATOR END
60"	E – ABOVE

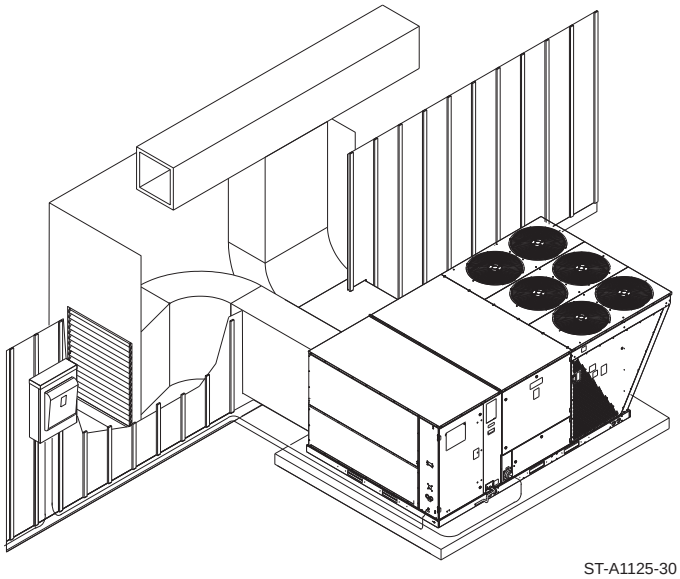
* WITHOUT ECONOMIZER/48" WITH ECONOMIZER

+ WITHOUT HORIZONTAL ECONOMIZER/ 42" WITH HORIZONTAL ECONOMIZER



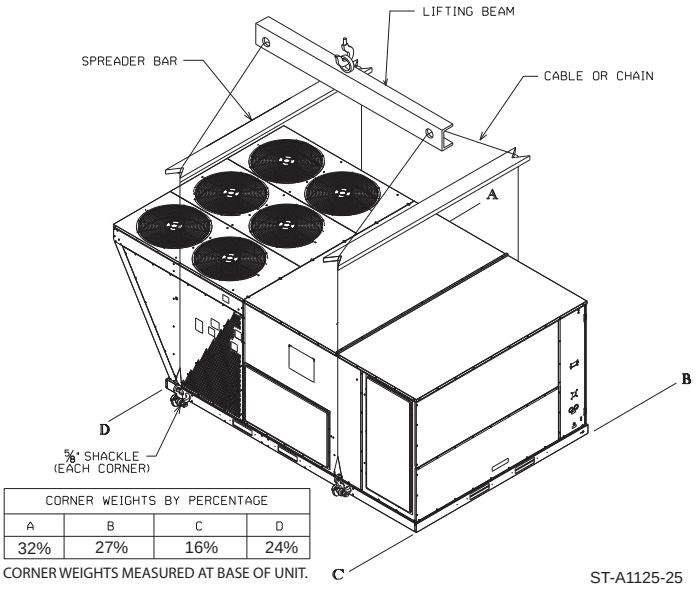
ST-A1125-29

FIGURE 10
PACKAGED AIR CONDITIONER
OUTSIDE SLAB INSTALLATION, CLOSET DISTRIBUTION SYSTEM. SLAB FLOOR CONSTRUCTION



ST-A1125-30

FIGURE 11



CORNER WEIGHTS BY PERCENTAGE			
A	B	C	D
32%	27%	16%	24%

CORNER WEIGHTS MEASURED AT BASE OF UNIT.

ST-A1125-25

PACKAGED AIR CONDITIONER
RIGGING FOR LIFTING

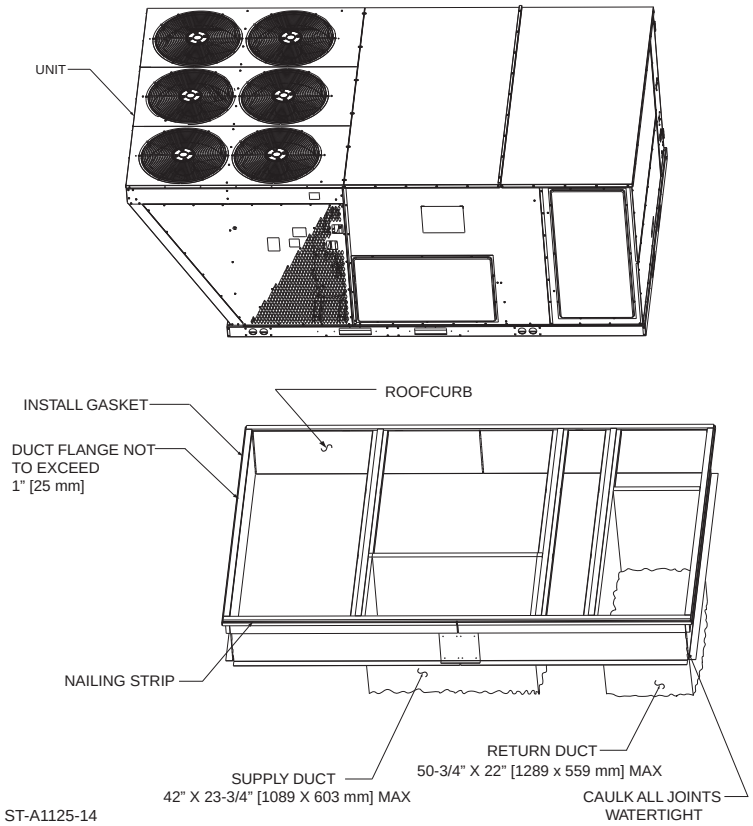
1. Provide 80" minimum clearance at the front of the unit to facilitate removal of the drain pan and return air filters. Provide 18" minimum clearance at all other sides of the unit.
2. Provide 60" minimum clearance between top of unit and maximum 3 foot overhang.
3. Unit is design certified for application on combustible flooring with 0" minimum clearance.
4. See Figure 9 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. This is very important and user's responsibility.
2. For rigging and roofcurb details, see Figures 11 and 12. Use field-furnished spreaders.
3. For roofcurb assembly, see Roofcurb Installation Instructions.
4. If the roofcurb is not used, provisions for disposing of condensate water runoff must be provided.
5. The unit should be placed on a solid and level roofcurb or platform of adequate strength. See Figure 13.
6. The location of the unit on the roof should be such as to provide proper access for inspection and servicing.

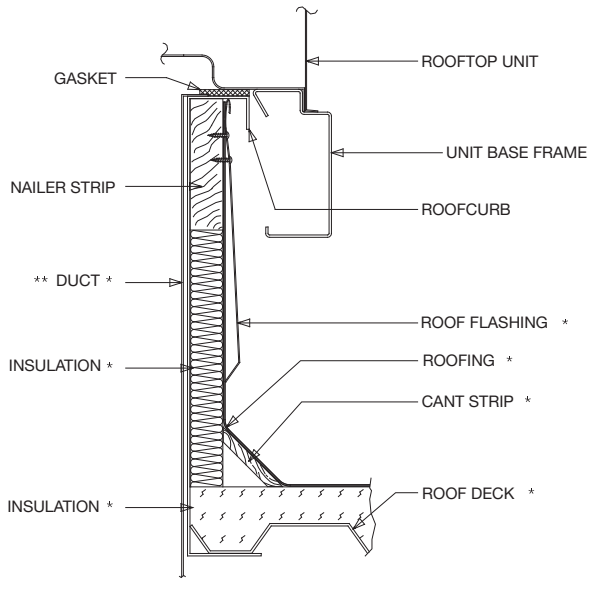
IMPORTANT: ***If unit will not be put into service immediately, cover supply and return openings to prevent excessive condensation.***

FIGURE 12



ST-A1125-14

PACKAGED AIR CONDITIONER
ROOFCURB INSTALLATION



ST-A0888-02

* BY CONTRACTOR

** FOR INSTALLATION OF DUCT AS SHOWN, USE RECOMMENDED DUCT SIZES FROM ROOFCURB INSTALLATION INSTRUCTIONS. FOR DUCT FLANGE ATTACHMENT TO UNIT, SEE UNIT INSTALLATION INSTRUCTIONS FOR RECOMMENDED DUCT SIZES.

VI. 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, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, http:/www.acca.org.

The unit should be placed as close to the space to be air conditioned as possible allowing clearance dimensions as indicated. Ducts should be run 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. A slab installation could be considered 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.

Balancing dampers should be provided for each branch duct in the supply system. Ductwork should be properly supported from the structure.

When installing ductwork, consider the following items:

1. Noncombustible flexible connectors should be used between ductwork and unit to reduce noise and vibration transmission into the ductwork.
2. When auxiliary heaters are installed, use noncombustible flexible connectors and clearance to combustible material of 0" for the first 3 feet of discharge duct. Clearance to unit top and side is 0".

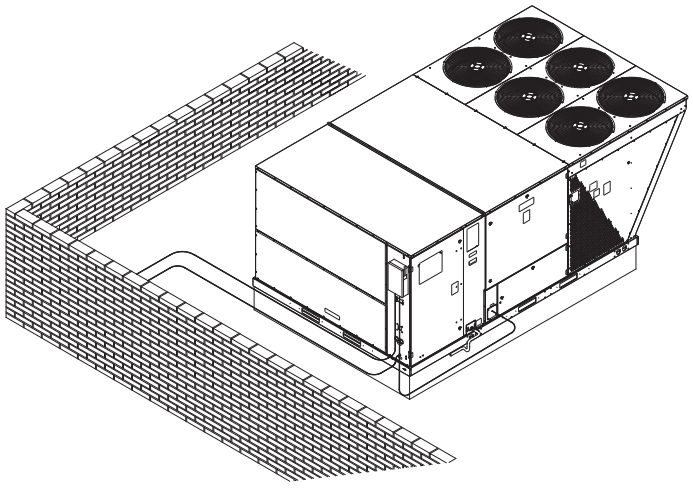
VII. FILTERS

This unit is provided with 8 - 20" x 25" x 2" disposable filters. When replacing filters, ensure they are inserted fully to the back to prevent bypass. See Figure 8.

Recommended supplier of this filter is Glassfloss Industries, Inc. or

AAF International
215 Central Avenue
P.O. Box 35690
Louisville, KY 40232
Phone: 1-800-501-3146
Part #: 54-42541-04 (20” x 25” x 2”)

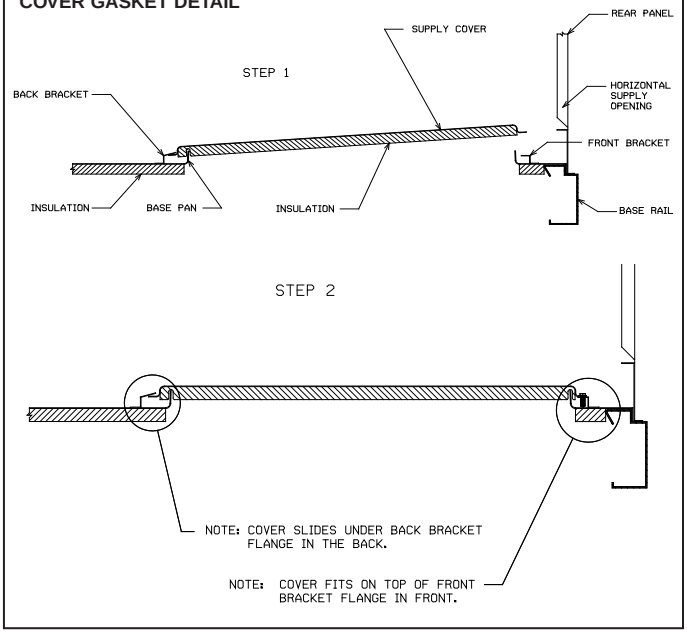
FIGURE 13



ST-A1125-01B

PACKAGED AIR CONDITIONER
FLAT ROOFTOP INSTALLATION, ATTIC OR DROP CEILING DISTRIBUTION SYSTEM. MOUNTED ON ROOFCURB. CURB MUST BE LEVEL

FIGURE 14
COVER GASKET DETAIL



VIII. COVER PANEL INSTALLATION/ CONVERSION PROCEDURE

DOWNFLOW TO HORIZONTAL

1. Remove the screws and covers from the outside of the supply and return sections. Also remove and discard cover plate. See Figure 3.
2. Install the covers over the bottom supply and return openings, painted side up, inserting the ***leading flange under the bracket provided.*** Place the ***back flange to top of the front bracket provided.*** See Figure 14.
3. Secure the return and supply cover to front bracket with two (2) screws.

IX. CONDENSATE DRAIN

IMPORTANT: *Install a condensate trap to ensure proper condensate drainage. See Figure 15.*

The condensate drain pan has a threaded female 1 inch NPT (11.5 TPI) connection. Consult local codes or ordinances for specific requirements of condensate drain piping and disposal.

- To use the removable drain pan feature of this unit, some of the condensate line joints should assembled for easy removal and cleaning.
- Use a thin layer of Teflon tape or paste on drain pan connections and install only hand tight.
- Do not over tighten drain pan connections as damage to the drain pan may occur.
- Drain line MUST NOT block service access panels.
- Drain line must be no smaller than drain pan outlet and adequately sized to accommodate the condensate discharge from the unit.
- Drain line should slope away from unit a minimum of 1/8” per foot to ensure proper drainage.
- Drain line must be routed to an acceptable drain or outdoors in accordance with local codes.
- Do not connect condensate drain line to a closed sewer pipe.
- Drain line may need insulation or freeze protection in certain applications.

X. ELECTRICAL WIRING

Field wiring must comply with the National Electrical Code* and local ordinances that may apply.

*C.E.C. in Canada

A. POWER WIRING

1. This unit incorporates single-point electrical connections for the unit and electric heat accessory.

FIGURE 15
CONDENSATE DRAIN

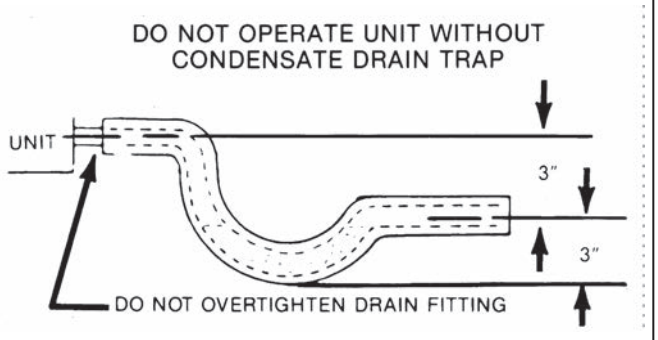
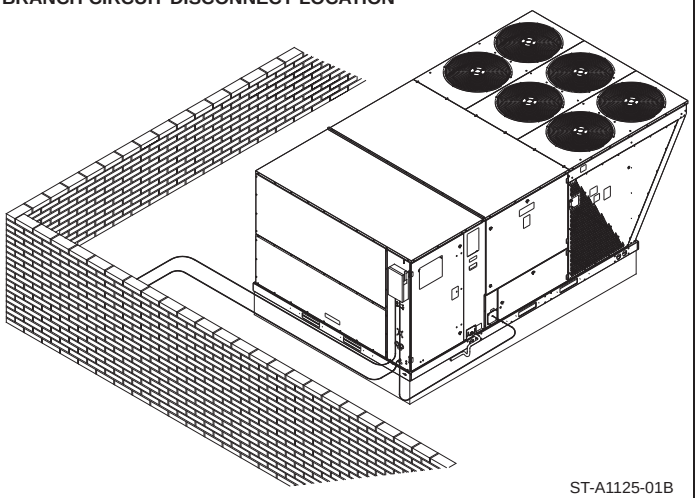


FIGURE 16
BRANCH CIRCUIT DISCONNECT LOCATION



ST-A1125-01B

2. It is important that proper electrical power is available to the unit. Voltage should not vary more than 10% from the values marked on the unit rating plate. Phase voltages must be balanced within 3%.
3. Install a branch circuit disconnect within sight of the unit. See Figure 16. Use the unit rating plate or Tables A, B, C, and D to determine the required size.
4. The branch circuit wire must be sized in accordance with the National Electrical Code (C.E.C. in Canada) and local ordinances that may apply using the minimum circuit ampacity found on the unit rating plate.
5. Field-installed power wiring must be run through grounded rain-tight conduit attached to the unit power entry panel and connected as follows:

   UNITS WITHOUT ELECTRIC HEAT - Connect power wiring to the power terminal block located on the left side of the electric heat compartment. Connect the ground wire to the adjacent ground lug.

   UNITS WITH FACTORY INSTALLED ELECTRIC HEAT - Connect power wiring to the power terminal block located on the electric heater kit. Connect the ground wire to the adjacent ground lug. DO NOT connect aluminum wiring directly to the electric heater terminal block. Wiring to the unit contactors is factory-connected.
6. For field installation of an electric heater kit, follow the instructions below. Refer to the information supplied with the kit.
   a. Removing screws as required, open heater access door and detach adjacent power entry panel.
   b. Remove unit contactor wires (1L1, 1L2, 1L3) from unit terminal block on the left side of the electric heat compartment. Remove and discard the terminal block and the adjacent ground lug.
   c. Remove the heater kit block-off panel and install the heater kit in its place using the screws previously removed.
   d. Connect the unit contactor wires (1L1, 1L2, 1L3) to the compressor fuse block on the heater kit.
   e. Re-install the power entry panel & run conduit and the proper size field wiring through the opening in the panel.
   f. Connect field wiring to the power terminal block located on the electric heater kit. Connect ground wire to the adjacent ground lug.
   g. Connect heater kit control plug to the receptacle on the control wiring harness.
   h. Close heater access door and secure with screws previously removed.

⚠ WARNING

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

B. CONTROL WIRING (Class II)

1. Low voltage wiring should not be run in conduit with power wiring.
2. Control wiring is routed through the 7/8" hole in the unit side panel. See Figure 7. Use a minimum #18 AWG thermostat wire. For wire lengths exceeding 50', use #16 AWG thermostat wire. Connect the control wiring to the low voltage terminal block located below the unit control box.
3. Recommended thermostats can be found in the thermostat specifications catalog T11-001.
4. Figure 18 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.

D. INTERNAL WIRING

1. A diagram of the internal wiring of this unit is located on the inside of the electrical access panel. 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.

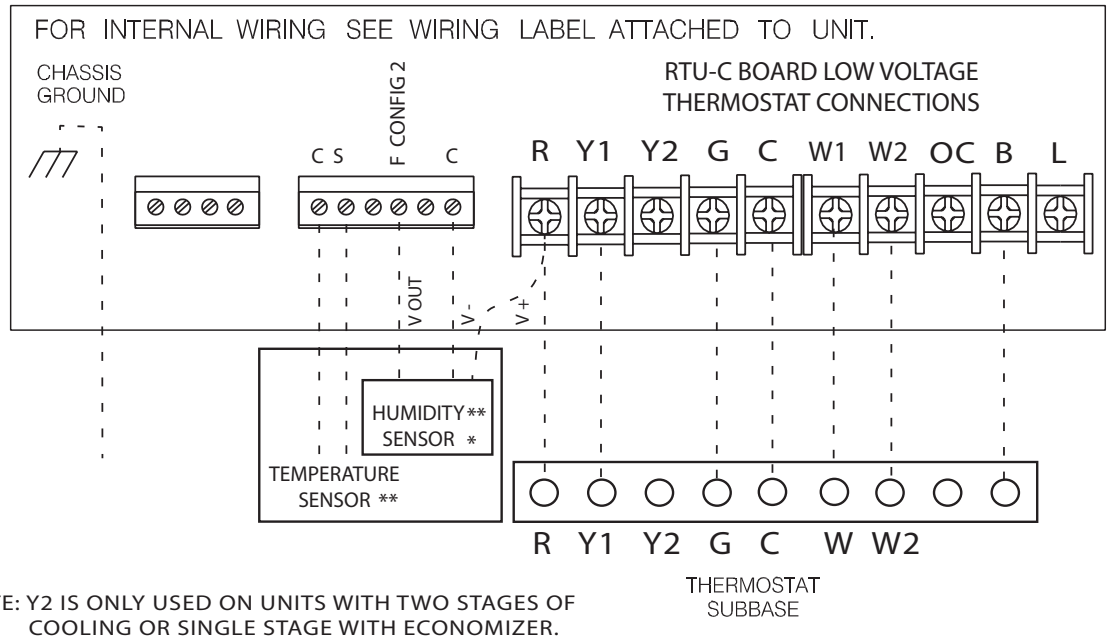
E. THERMOSTAT/HUMIDITY SENSOR

The HumidiDry™ System requires both a thermostat (or temperature sensor) and a humidity sensor. Both devices should be mounted 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 heat pump thermostat package CAREFULLY because each has some different wiring requirements.

See Section XVI for humidity sensor information.

FIGURE 17

STANDARD WIRING



NOTE: Y2 IS ONLY USED ON UNITS WITH TWO STAGES OF COOLING OR SINGLE STAGE WITH ECONOMIZER.

W2 ONY USED ON UNITS WITH TWO STAGES OF GAS HEAT
* REPRESENTS HUMIDITY SENSOR RHC-ZNS4
** REPRESENTS HUMIDITY AND TEMPERATURE SENSOR RHC-ZNS5
- - - - 24 VOLT CONTROL WIRING.

ST-A1141-16-01

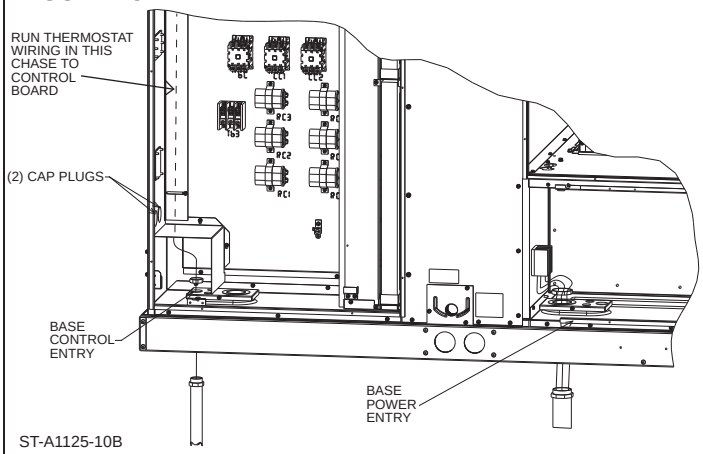
XI. INDOOR AIR FLOW DATA

Belt-drive blower models have motor sheaves set for proper CFM at a typical external static. See airflow tables for blower performance.

XII. CRANKCASE HEAT (OPTIONAL)

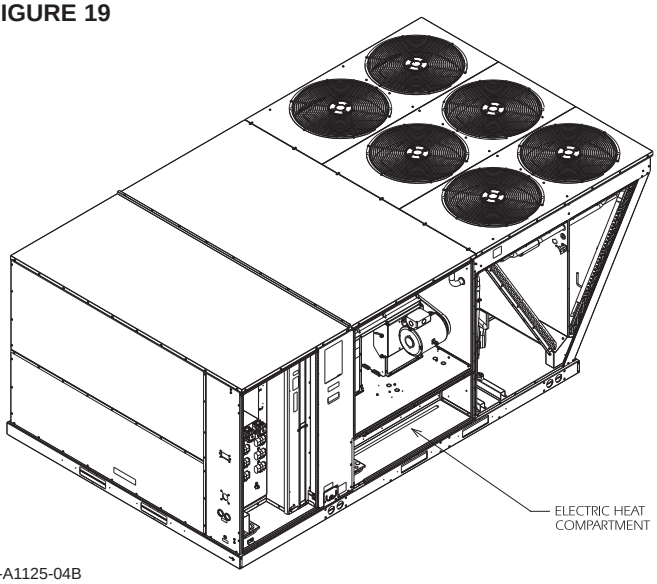
Crankcase heat is not required on scroll type compressors, but may be desirable under certain conditions. Wires have been provided for the addition of crankcase heaters (see wiring diagrams).

FIGURE 18



ST-A1125-10B

FIGURE 19



ST-A1125-04B

AIRFLOW PERFORMANCE — 15 TON [52.7kW] — 60 Hz — SIDEFLOW

Air Flow CFM [L/s]	Capacity 15 tons [52.7kW] External Static Pressure — Inches of Water [kPa]																																			
	0.1 [.02]		0.2 [.05]		0.3 [.07]		0.4 [.10]		0.5 [.12]		0.6 [.15]		0.7 [.17]		0.8 [.20]		0.9 [.22]		1.0 [.25]		1.1 [.27]		1.2 [.30]		1.3 [.32]		1.4 [.35]		1.5 [.37]		1.6 [.40]		1.7 [.42]		1.8 [.45]		1.9 [.47]		2.0 [.50]	
	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
4800 [2265]	—	—	—	—	—	—	—	—	—	—	565	1521	591	1621	616	1723	640	1827	663	1934	686	2044	708	2156	729	2270	750	2387	770	2507	789	2629	808	2753	825	2880	843	3009	859	3141
5000 [2359]	—	—	—	—	—	—	—	—	—	—	574	1587	599	1692	624	1799	648	1909	671	2021	693	2136	715	2253	736	2372	757	2494	777	2619	796	2746	814	2875	832	3007	849	3142	865	3279
5200 [2454]	—	—	—	—	—	—	—	—	557	1553	583	1661	608	1771	632	1883	656	1998	679	2115	701	2235	723	2357	744	2482	764	2609	784	2739	802	2871	821	3006	838	3143	855	3283	871	3425
5400 [2548]	—	—	—	—	—	—	—	—	566	1630	592	1742	617	1857	641	1975	664	2095	687	2218	709	2343	731	2470	751	2600	771	2732	791	2867	809	3005	827	3144	845	3287	861	3431	877	3579
5600 [2643]	—	—	—	—	—	—	—	—	576	1714	601	1832	625	1952	649	2075	673	2200	695	2328	717	2458	738	2591	759	2726	779	2863	798	3003	816	3146	834	3291	851	3438	868	3588	884	3740
5800 [2737]	—	—	—	—	—	—	559	1686	585	1807	610	1930	634	2055	658	2183	681	2313	703	2446	725	2582	746	2719	766	2860	786	3002	805	3148	823	3295	841	3445	858	3598	874	3753	890	3910
6000 [2831]	—	—	—	—	—	—	569	1781	594	1907	619	2035	643	2166	667	2299	689	2435	712	2573	733	2713	754	2856	774	3001	794	3149	812	3300	830	3452	848	3608	865	3765	881	3926	896	4088
6200 [2926]	—	—	—	—	—	—	578	1885	603	2016	628	2149	652	2285	675	2423	698	2564	720	2707	741	2852	762	3001	782	3151	801	3304	820	3460	838	3618	855	3778	871	3941	887	4106	902	4274
6400 [3020]	—	—	—	—	562	1862	588	1996	613	2132	637	2270	661	2411	684	2555	707	2701	728	2849	749	3000	770	3153	790	3309	809	3467	827	3628	845	3791	862	3956	878	4124	894	4295	909	4468
6600 [3114]	—	—	—	—	572	1976	597	2115	622	2256	647	2400	670	2546	693	2695	715	2846	737	2999	758	3155	778	3313	797	3474	816	3638	835	3804	852	3972	869	4143	885	4316	901	4491	915	4670
6800 [3209]	—	—	555	1957	582	2099	607	2242	632	2389	656	2537	679	2689	702	2842	724	2999	745	3157	766	3318	786	3482	805	3648	824	3816	842	3987	859	4161	876	4337	892	4515	907	4696	—	—
7000 [3303]	—	—	566	2082	592	2228	617	2378	641	2529	665	2683	688	2839	711	2998	733	3160	754	3323	774	3490	794	3658	813	3830	832	4003	850	4179	867	4358	883	4539	899	4722	914	4908	—	—
7200 [3398]	—	—	576	2215	602	2366	627	2521	651	2677	675	2836	698	2998	720	3162	742	3328	763	3497	783	3669	803	3843	821	4019	840	4198	857	4379	874	4563	890	4749	906	4938	921	5129	—	—

NOTE: L-Drive left of bold line, M-Drive right of bold line

Drive Package	R						S					
Motor H.P. [W]	3 [2237.1]						5 [3728.5]					
Blower Sheave	BK105H						BK105H					
Motor Sheave	1VP-44						1VP-56					
Turns Open	**1**	2	3	4	5	6	1	2	3	**4**	5	6
RPM	**716**	689	655	624	593	560	920	888	860	**826**	795	761

NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at ARI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

COMPONENT AIRFLOW RESISTANCE — 15 TON [52.7kW]

CFM [L/s]	4800 [2265]	5000 [2359]	5200 [2454]	5400 [2548]	5600 [2643]	5800 [2737]	6000 [2831]	6200 [2926]	6400 [3020]	6600 [3114]	6800 [3209]	7000 [3303]	7200 [3398]
	Resistance — Inches of Water [kPa]												
Wet Coil	0.03 [.01]	0.04 [.01]	0.05 [.01]	0.06 [.01]	0.06 [.01]	0.07 [.02]	0.08 [.02]	0.09 [.02]	0.10 [.02]	0.10 [.02]	0.11 [.03]	0.12 [.03]	0.13 [.03]
Downflow	0.05 [.01]	0.05 [.01]	0.05 [.01]	0.05 [.01]	0.05 [.01]	0.05 [.01]	0.05 [.01]	0.06 [.01]	0.06 [.01]	0.06 [.01]	0.07 [.02]	0.08 [.02]	0.08 [.02]
Downflow Economizer RA Damper Open	0.09 [.02]	0.10 [.02]	0.10 [.02]	0.11 [.03]	0.12 [.03]	0.13 [.03]	0.13 [.03]	0.14 [.03]	0.15 [.04]	0.16 [.04]	0.16 [.04]	0.17 [.04]	0.18 [.04]
Horizontal Economizer RA Damper Open	0.00 [.00]	0.01 [.00]	0.01 [.00]	0.02 [.00]	0.02 [.00]	0.03 [.01]	0.03 [.01]	0.04 [.01]	0.04 [.01]	0.05 [.01]	0.05 [.01]	0.06 [.01]	0.06 [.01]
Concentric Grill RXRN-AD80 or RXRN-AD81 & Transition RXMC-CJ07	0.21 [.05]	0.25 [.06]	0.28 [.07]	0.32 [.08]	0.35 [.09]	0.39 [.10]	0.43 [.11]	0.46 [.11]	0.50 [.12]	0.54 [.13]	0.57 [.14]	0.61 [.15]	0.64 [.16]

AIRFLOW CORRECTION FACTORS — 15 TON [52.7kW]

	CFM [L/s]	4800 [2265]	5000 [2359]	5200 [2454]	5400 [2548]	5600 [2643]	5800 [2737]	6000 [2831]	6200 [2926]	6400 [3020]	6600 [3114]	6800 [3209]	7000 [3303]	7200 [3398]
	Total MBH	0.97	0.97	0.98	0.98	0.99	1.00	1.00	1.01	1.02	1.02	1.03	1.03	1.04
	Sensible MBH	0.87	0.90	0.92	0.94	0.97	0.99	1.02	1.04	1.06	1.09	1.11	1.14	1.16
	Power kW	0.98	0.98	0.99	0.99	0.99	1.00	1.00	1.00	1.01	1.01	1.01	1.02	1.02

NOTE: Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[ ] Designates Metric Conversions

AIRFLOW PERFORMANCE — 20 TON [70.3kW] — 60 Hz — SIDEFLOW

Air Flow CFM [L/s]	Capacity 20 Tons [70.3kW] External Static Pressure — Inches of Water [kPa]																																			
	0.1 [.02]		0.2 [.05]		0.3 [.07]		0.4 [.10]		0.5 [.12]		0.6 [.15]		0.7 [.17]		0.8 [.20]		0.9 [.22]		1.0 [.25]		1.1 [.27]		1.2 [.30]		1.3 [.32]		1.4 [.35]		1.5 [.37]		1.6 [.40]		1.7 [.42]		1.8 [.45]		1.9 [.47]		2.0 [.50]	
	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
6400 [3020]	—	—	—	—	—	—	—	—	—	—	628	2260	652	2378	675	2498	697	2621	719	2746	740	2873	762	3004	782	3136	802	3272	822	3410	842	3550	860	3693	879	3838	897	3986	915	4136
6600 [3114]	—	—	—	—	—	—	—	—	615	2247	638	2367	661	2489	684	2613	706	2740	728	2869	749	3001	770	3136	790	3273	810	3412	830	3555	849	3699	867	3846	886	3996	903	4148	921	4303
6800 [3209]	—	—	—	—	—	—	—	—	625	2358	648	2482	671	2608	694	2736	715	2868	737	3001	758	3138	778	3277	798	3418	818	3562	837	3708	856	3857	875	4008	893	4162	910	4319	927	4478
7000 [3303]	—	—	—	—	—	—	612	2352	636	2477	659	2605	681	2735	703	2868	725	3004	746	3142	767	3282	787	3426	807	3571	826	3719	845	3870	864	4023	882	4179	900	4337	917	4498	934	4661
7200 [3398]	—	—	—	—	—	—	623	2475	646	2605	669	2737	691	2872	713	3009	734	3149	755	3291	776	3436	796	3583	815	3733	834	3885	853	4040	871	4198	889	4358	907	4520	924	4685	940	4853
7400 [3492]	—	—	—	—	—	—	634	2607	657	2741	679	2877	701	3016	723	3158	744	3302	764	3448	784	3597	804	3749	824	3903	842	4060	861	4219	879	4381	897	4545	914	4712	930	4881	947	5053
7600 [3586]	—	—	—	—	622	2611	645	2747	667	2885	689	3026	711	3169	732	3315	753	3463	774	3614	794	3767	813	3923	832	4082	851	4243	869	4406	887	4572	904	4741	921	4912	937	5085	953	5261
7800 [3681]	—	—	—	—	633	2756	656	2895	678	3038	700	3183	721	3331	742	3481	763	3633	783	3788	803	3946	822	4106	841	4269	859	4434	877	4602	895	4772	912	4945	928	5120	944	5298	960	5478
8000 [3775]	—	—	622	2767	644	2908	667	3053	689	3199	711	3349	732	3500	752	3655	773	3812	793	3971	812	4133	831	4297	849	4464	868	4634	885	4806	902	4980	919	5157	936	5337	952	5519	967	5704
8200 [3869]	—	—	633	2923	656	3069	678	3218	700	3369	721	3523	742	3679	762	3837	783	3998	802	4162	821	4328	840	4497	858	4668	876	4842	894	5018	910	5197	927	5378	943	5562	959	5749	974	5937
8400 [3964]	622	2941	645	3089	667	3239	689	3392	711	3547	732	3705	752	3865	773	4028	792	4194	812	4362	831	4532	849	4705	867	4881	885	5059	902	5239	919	5422	935	5608	951	5796	966	5987	981	6180
8600 [4058]	634	3111	657	3263	679	3417	701	3574	722	3734	743	3896	763	4061	783	4228	802	4397	822	4570	840	4744	858	4922	876	5101	893	5284	910	5468	927	5656	943	5846	958	6038	974	6233	988	6430
8800 [4153]	647	3289	669	3445	691	3604	712	3765	733	3929	754	4095	774	4264	793	4436	813	4610	831	4786	850	4965	868	5147	885	5331	902	5517	919	5706	935	5898	951	6092	966	6289	981	6488	—	—
9000 [4247]	659	3475	681	3635	702	3799	724	3964	744	4132	765	4303	784	4476	804	4652	823	4830	841	5011	859	5194	877	5380	894	5568	911	5759	927	5952	943	6148	959	6347	974	6548	989	6751	—	—
9200 [4341]	671	3670	693	3835	714	4002	735	4172	756	4344	776	4519	795	4697	814	4877	833	5059	851	5244	869	5432	887	5622	904	5814	920	6009	936	6207	952	6407	967	6610	982	6815	—	—	—	—
9400 [4436]	684	3873	705	4042	726	4214	747	4388	767	4565	787	4744	806	4925	825	5110	843	5297	861	5486	879	5678	896	5872	913	6069	929	6268	945	6470	960	6675	975	6881	990	7091	—	—	—	—
9600 [4530]	696	4085	717	4258	738	4434	759	4612	779	4793	798	4977	817	5163	836	5351	854	5542	872	5736	889	5932	906	6131	922	6332	938	6535	954	6742	969	6950	984	7162	—	—	—	—	—	—

NOTE: L-Drive left of bold line, M-Drive right of bold line, N-Drive right of double line.

Drive Package	R						S						T (field installed only)					
Motor H.P. [W]	5 [3728.5]						7.5 [5592.7]						7.5 [5592.7]					
Blower Sheave	BK130H						BK130H						BK120H					
Motor Sheave	1VP-56						1VP-71						1VP-71					
Turns Open	**1**	2	3	4	5	6	1	2	3	**4**	5	6	1	2	3	4	5	6
RPM	**748**	723	696	668	641	614	927	902	875	**848**	820	793	994	967	940	912	883	853

NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at ARI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

COMPONENT AIRFLOW RESISTANCE — 20 TON [70.3kW]

CFM [L/s]	6400 [3020]	6600 [3114]	6800 [3209]	7000 [3303]	7200 [3398]	7400 [3492]	7600 [3586]	7800 [3681]	8000 [3775]	8200 [3869]	8400 [3964]	8600 [4058]	8800 [4153]	9000 [4247]	9200 [4341]	9400 [4436]	9600 [4530]
	Resistance — Inches of Water [kPa]																
Wet Coil	0.00 [.00]	0.00 [.00]	0.00 [.00]	0.01 [.00]	0.01 [.00]	0.02 [.00]	0.02 [.00]	0.03 [.01]	0.03 [.01]	0.04 [.01]	0.04 [.01]	0.05 [.01]	0.05 [.01]	0.06 [.01]	0.06 [.01]	0.07 [.02]	0.07 [.02]
Downflow	0.06 [.01]	0.06 [.01]	0.07 [.02]	0.08 [.02]	0.08 [.02]	0.09 [.02]	0.10 [.02]	0.11 [.03]	0.12 [.03]	0.13 [.03]	0.14 [.03]	0.15 [.04]	0.16 [.04]	0.18 [.04]	0.19 [.05]	0.20 [.05]	0.22 [.05]
Downflow Economizer RA Damper Open	0.15 [.04]	0.16 [.04]	0.16 [.04]	0.17 [.04]	0.18 [.04]	0.19 [.05]	0.20 [.05]	0.21 [.05]	0.22 [.05]	0.23 [.06]	0.24 [.06]	0.25 [.06]	0.26 [.06]	0.27 [.07]	0.28 [.07]	0.29 [.07]	0.30 [.07]
Horizontal Economizer RA Damper Open	0.04 [.01]	0.05 [.01]	0.05 [.01]	0.06 [.01]	0.06 [.01]	0.07 [.02]	0.07 [.02]	0.08 [.02]	0.09 [.02]	0.09 [.02]	0.10 [.02]	0.10 [.02]	0.11 [.03]	0.11 [.03]	0.12 [.03]	0.12 [.03]	0.13 [.03]
Concentric Grill RXRN-AD86 & Transition RXMC-CK08	0.26 [.06]	0.29 [.07]	0.32 [.08]	0.35 [.09]	0.38 [.09]	0.41 [.10]	0.44 [.11]	0.47 [.12]	0.50 [.12]	0.53 [.13]	0.56 [.14]	0.59 [.15]	0.62 [.15]	0.65 [.16]	0.69 [.17]	0.72 [.18]	0.75 [.19]

AIRFLOW CORRECTION FACTORS — 20 TON [70.3kW]

CFM [L/s]	6400 [3020]	6600 [3114]	6800 [3209]	7000 [3303]	7200 [3398]	7400 [3492]	7600 [3586]	7800 [3681]	8000 [3775]	8200 [3869]	8400 [3964]	8600 [4058]	8800 [4153]	9000 [4247]	9200 [4341]	9400 [4436]	9600 [4530]
Total MBH	0.97	0.97	0.98	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.02	1.03	1.03	1.03	1.04	1.04
Sensible MBH	0.88	0.90	0.92	0.94	0.96	0.97	0.99	1.01	1.03	1.05	1.07	1.09	1.10	1.12	1.14	1.16	1.18
Power kW	0.98	0.99	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.02	1.02	1.02

NOTE: Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[ ] Designates Metric Conversions

AIRFLOW PERFORMANCE — 25 TON [87.9kW] — 60 Hz — SIDEFLOW

Air Flow CFM [L/s]	Capacity 25 Tons [87.9kW]																																					
	External Static Pressure — Inches of Water [kPa]																																					
	0.1 [.02]		0.2 [.05]		0.3 [.07]		0.4 [.10]		0.5 [.12]		0.6 [.15]		0.7 [.17]		0.8 [.20]		0.9 [.22]		1.0 [.25]		1.1 [.27]		1.2 [.30]		1.3 [.32]		1.4 [.35]		1.5 [.37]		1.6 [.40]		1.7 [.42]		1.8 [.45]		1.9 [.47]		2.0 [.50]	
	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
8000 [3775]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	807	4333	826	4498	845	4666	863	4837	882	5010	900	5187	918	5366	936	5549	954	5734	971	5922	988	6113
8200 [3869]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	797	4331	816	4499	835	4670	854	4844	872	5021	890	5201	909	5383	927	5569	944	5757	962	5949	979	6143	996	6340
8400 [3964]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	806	4505	825	4679	844	4856	863	5036	881	5219	899	5404	917	5593	935	5784	953	5979	970	6176	987	6377	1004	6580
8600 [4058]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	797	4514	816	4691	835	4871	854	5054	872	5240	890	5429	908	5621	926	5816	944	6013	961	6214	979	6417	996	6623	1012	6833
8800 [4153]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	807	4707	826	4890	845	5077	863	5266	882	5458	900	5653	918	5851	935	6051	953	6255	970	6462	987	6671	1004	6883	1021	7099
9000 [4247]	—	—	—	—	—	—	—	—	—	—	—	—	798	4727	817	4914	836	5103	855	5295	873	5490	891	5689	909	5890	927	6094	944	6300	962	6510	979	6723	996	6938	1013	7157	1029	7378
9200 [4341]	—	—	—	—	—	—	—	—	—	—	790	4751	809	4941	828	5133	846	5329	865	5527	883	5728	901	5932	919	6140	936	6349	954	6562	971	6778	988	6997	1005	7218	1021	7443	1038	7670
9400 [4436]	—	—	—	—	—	—	—	—	—	—	801	4972	820	5167	838	5366	857	5567	875	5772	893	5979	911	6189	928	6403	946	6619	963	6837	980	7059	997	7284	1014	7512	1030	7742	1046	7976
9600 [4530]	—	—	—	—	—	—	—	—	793	5007	812	5205	830	5407	849	5612	867	5819	885	6030	903	6243	921	6459	938	6679	956	6901	973	7126	990	7354	1006	7584	1023	7818	1039	8055	1055	8294
9800 [4624]	—	—	—	—	—	—	—	—	804	5247	823	5452	841	5660	860	5871	878	6084	896	6301	914	6520	931	6743	949	6968	966	7196	983	7427	999	7661	1016	7898	1032	8138	1048	8380	1064	8626
10000 [4719]	—	—	—	—	—	—	797	5293	815	5501	834	5712	852	5926	871	6143	889	6363	907	6585	924	6811	942	7039	959	7270	976	7504	993	7742	1009	7982	1026	8224	1042	8470	1058	8719	—	—
10200 [4813]	—	—	—	—	789	5343	808	5554	827	5768	846	5985	864	6205	882	6428	900	6654	917	6882	935	7114	952	7348	969	7586	986	7826	1003	8069	1019	8315	1035	8564	1051	8816	1067	9071	—	—
10400 [4908]	—	—	—	—	802	5611	820	5828	839	6048	857	6271	875	6497	893	6726	911	6958	928	7193	946	7430	963	7671	980	7914	996	8161	1013	8410	1029	8662	1045	8917	1061	9175	—	—	—	—
10600 [5002]	—	—	795	5672	814	5892	832	6115	851	6342	869	6571	887	6803	905	7038	922	7276	940	7516	957	7760	974	8007	990	8256	1007	8508	1023	8764	1040	9022	1056	9283	1071	9547	—	—	—	—
10800 [5096]	789	5736	807	5960	826	6186	845	6416	863	6648	881	6883	899	7121	916	7362	934	7606	951	7853	968	8103	985	8355	1001	8611	1018	8869	1034	9131	1050	9395	1066	9662	—	—	—	—	—	—
11000 [5191]	801	6031	820	6261	839	6494	857	6729	875	6967	893	7209	910	7453	928	7700	945	7950	962	8203	979	8458	996	8717	1012	8979	1029	9243	1045	9511	1061	9781	—	—	—	—	—	—	—	—
11200 [5285]	814	6340	833	6575	851	6814	869	7056	887	7300	905	7547	923	7797	940	8051	957	8307	974	8566	991	8827	1007	9092	1024	9360	1040	9630	1056	9904	1071	10180	—	—	—	—	—	—	—	—
11400 [5379]	827	6661	846	6903	864	7148	882	7395	900	7646	917	7899	935	8155	952	8414	969	8677	986	8942	1002	9209	1019	9480	1035	9754	1051	10031	1067	10310	—	—	—	—	—	—	—	—	—	—
11600 [5474]	841	6996	859	7244	877	7494	895	7748	912	8004	930	8264	947	8526	964	8791	981	9060	998	9331	1014	9605	1030	9881	1046	10161	1062	10444	—	—	—	—	—	—	—	—	—	—	—	—
11800 [5568]	854	7343	872	7597	890	7854	908	8114	925	8376	943	8642	960	8910	977	9181	993	9456	1010	9733	1026	10013	1042	10296	1058	10582	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12000 [5663]	868	7704	886	7964	903	8227	921	8493	938	8761	955	9033	972	9307	989	9585	1006	9865	1022	10148	1038	10434	1054	10723	1070	11015	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: L-Drive left of bold line, M-Drive right of bold line, N-Drive right of double line.

Drive Package	R						S					
Motor H.P. [W]	7.5 [5592.7]						10 [7457.0]					
Blower Sheave	BK130H						BK120H					
Motor Sheave	1VP-71						1VP-75					
Turns Open	**1**	2	3	4	5	6	1	2	3	**4**	5	6
RPM	**922**	894	870	843	818	791	1067	1041	1010	**987**	954	929

NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at ARI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

COMPONENT AIRFLOW RESISTANCE — 25 TON [87.9kW]

CFM [L/s]	8000 [3775]	8400 [3964]	8800 [4153]	9200 [4341]	9600 [4530]	10000 [4719]	10400 [4908]	10800 [5096]	11200 [5285]	11600 [5474]	12000 [5663]
	Resistance — Inches of Water [kPa]										
Wet Coil	0.07 [.02]	0.09 [.02]	0.10 [.02]	0.12 [.03]	0.13 [.03]	0.15 [.04]	0.16 [.04]	0.18 [.04]	0.19 [.05]	0.21 [.05]	0.22 [.05]
Downflow	0.12 [.03]	0.14 [.03]	0.16 [.04]	0.19 [.05]	0.22 [.05]	0.25 [.06]	0.29 [.07]	0.33 [.08]	0.37 [.09]	0.42 [.10]	0.46 [.11]
Downflow Economizer RA Damper Open	0.22 [.05]	0.24 [.06]	0.26 [.06]	0.28 [.07]	0.30 [.07]	0.32 [.08]	0.34 [.08]	0.37 [.09]	0.39 [.10]	0.41 [.10]	0.44 [.11]
Horizontal Economizer RA Damper Open	0.09 [.02]	0.10 [.02]	0.11 [.03]	0.12 [.03]	0.13 [.03]	0.14 [.03]	0.15 [.04]	0.16 [.04]	0.17 [.04]	0.18 [.04]	0.19 [.05]
Concentric Grill RXRN-AD88 & Transition RXMC-CL09	0.17 [.04]	0.23 [.06]	0.30 [.07]	0.36 [.09]	0.43 [.11]	0.50 [.12]	0.56 [.14]	0.63 [.16]	0.69 [.17]	0.76 [.19]	0.82 [.20]

AIRFLOW CORRECTION FACTORS — 25 TON [87.9kW]

CFM [L/s]	8000 [3775]	8400 [3964]	8800 [4153]	9200 [4341]	9600 [4530]	10000 [4719]	10400 [4908]	10800 [5096]	11200 [5285]	11600 [5474]	12000 [5663]
Total MBH	0.97	0.98	0.99	0.99	1.00	1.01	1.02	1.03	1.03	1.04	1.05
Sensible MBH	0.89	0.92	0.95	0.98	1.01	1.04	1.08	1.11	1.14	1.17	1.20
Power kW	0.99	0.99	1.00	1.00	1.00	1.01	1.01	1.01	1.02	1.02	1.02

NOTE: Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[ ] Designates Metric Conversions

XIII. PRE-START CHECK

1. Is unit properly located and slightly slanted toward indoor condensate drain?
2. Is ductwork insulated, weatherproofed, with proper spacing to combustible materials?
3. Is air free to travel to and from outdoor coil? (See Figure 5.)
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?

XIV. 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.
   Record the following after the unit has run some time.
   A. Operating Mode _____
   B. Discharge Pressures (High) _____PSIG
   C. Vapor Pressure at Compressors (Low) _____PSIG
   D. Vapor Line Temperature at Compressors °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 Contactors _____Amps
   K. Model Number_____
   L. Serial Number _____
   M. Location_____
   N. Owner _____
   O. Date_____
8. Turn thermostat system switch to “HEAT.” Unit compressors should stop. Raise temperature setting to above room temperature. Unit should run in heating mode and auxiliary heaters, if installed, should come on.
9. Check the refrigerant charge using the instructions located on unit charging chart. Replace service port caps. Service port cores are for system access only and will leak if not tightly capped.
10. Adjust discharge air grilles and balance system.
11. Check ducts for condensation and air leaks.
12. Check unit for tubing and sheet metal rattles.
13. Instruct the owner on operation and maintenance.
14. Leave “INSTALLATION” and ”USE AND CARE“ instructions with owner

XV. OPERATION

COOLING MODE

With thermostat in the cool mode, fan auto and the room temperature higher than the thermostat setting:

A. Indoor blower contactor is energized through thermostat contact (G).

B. Compressor contactors are energized through thermostat contacts (Y1) & (Y2) and pressure controls.

C. Economizer enthalpy control (if installed) controls operation of first-stage cooling and positions fresh air damper to maintain mixed air temperature. Second-stage cooling operates normally as required by second stage of thermostats.

D. The system will continue in cooling operation as long as all safety controls are closed, until the thermostat is satisfied.

HEATING MODE

With thermostat in the heat mode, fan auto and the room temperature lower than the thermostat setting the indoor blower contactor is energized through thermostat contact (G).

⚠ 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.

XVI. HUMIDIDRY™ SYSTEM

The HumidiDry™ system controls both cooling and humidity loads. In addition to two stages of cooling, the unit includes two stages of reheat. A temperature sensor or thermostat relates a low cooling demand (Y1) or high cooling demand (Y2) to the RTU-C. A separate humidity sensor sends the actual indoor relative humidity to the RTU-C via a 0-10 VDC signal. The RTU-C considers a relative humidity level 2%-5% above the humidity setpoint as a “low humidity demand” (H1). The RTU-C considers a relative humidity level greater than 5% above the humidity setpoint as a “high humidity demand” (H2). The RTU-C determines the unit mode of operation based on the Y1, Y2, H1 and H2 (Table A). Low reheat is only initiated when there is a humidity call (H1 or H2) and no cooling call (Y1 or Y2). In this mode the unit provides essentially “neutral air” (supply air is within +1°F and -5°F of return air temperature). High reheat is only used when there is a high humidity demand (H2) with a low cooling demand (Y1).

See RTU-C I&O manual for reheat unit setup and for thermostat/sensor combinations.

HUMIDITY SENSOR

An indoor relative humidity sensor (not included with the unit) is required for reheat operation. Available accessory Humidity sensor models are: RHC-ZNS4 (Room Relative Humidity Sensor – for use with a standard thermostat) and RHC-ZNS5 (Room Temperature and Relative Humidity Sensor – for use with a BAS system). Mount sensor per thermostat/humidity sensor section requirements. See wiring diagram (Figure 17).

REFRIGERANT SOLENOID VALVES

The reheat refrigerant system is part of System 1 only. Three refrigerant solenoid valves (discharge, liquid and reheat) are used to change operation from Cooling Mode to Reheat Mode. The Discharge Solenoid Valve (DSV) is located in the outdoor section (front side of unit) and is a Normally Closed (N.C.) valve. The Liquid Solenoid Valve (LSV) is located in the liquid line in the blower section and is a Normally Open (N.O.) valve. The Reheat Solenoid Valve (RSV) is near the bottom of the reheat coil (between the evaporator coil and the blower) and is normally open.

OPERATION

During the Cooling mode the RSV is the only valve energized (closed position), LSV is open, DSV is closed. The refrigeration cycle is standard cooling, reheat coil is bypassed.

System 2 operates during High Cooling or High Reheat modes but is not part of the reheat circuit (always operates in standard cooling).

During Low Reheat or High Reheat modes the LSV is energized (closed position), DSV is energized (open position), RSV is open. Some hot gas bypasses the condenser coil and creates a warm two phase mix that enters the reheat coil. See Table A for Modes of Operation including compressor operation, fan speed, thermostat/humidistat calls for each mode. See Blower VFD section (above) for VFD operation.

TABLE A

Two Stage HumidiDry™ – Modes of Operation				
Mode	**Compressor 1**	**Compressor 2**	**Fan**	**Notes**
High Cool	Cool	Cool	High	Operates with (Y2) call, ignores (H1/H2)
High Reheat	Reheat	Cool	High	Operates with (Y1 & Y2)
Low Reheat	Reheat	Off	Low	Operates with (H1 only) or (H2 only)
Low Cool	Cool	Off	Low	Operates with (Y1) or (Y1 & H1), Factory set point

Notes Definitions:	
Y1	Single stage cooling operation
Y2	Two stage cooling operation
H1	Space is above humidity set point by more than 2% and less than or equal to 5%.
H2	Space is above humidity set point by more than 5%.

TABLE B

OFMC	
Factory Settings	
Unit	Setpoint
090	95°F
120	90°F
180	100°F
240	95°F
300	90°F

XVII. VARIABLE FREQUENCY DRIVE (VFD)

No adjustments of the VFD are required for installation or operation of this unit.

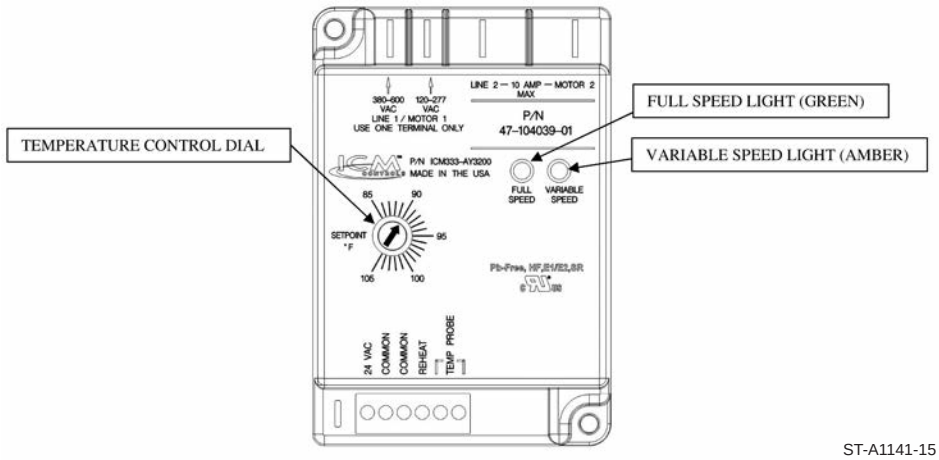
Location: Control Section (front left) of the unit.

VFD Model
Schneider Altivar 212 (factory programmed).

Replacement
The VFD is horsepower and voltage specific therefore; replacement must be the same model as the existing. A preprogrammed VFD is recommended and available from ProStock. A non-programmed Schneider Altivar 212 may be used but must be programmed exactly per the included VFD programming guide for safe and proper function.

Operation
The purpose of the VFD is to allow low airflow in Fan Only (G), Low Reheat and First Stage Cooling (Y1) operation of a two stage unit. Unit air balancing should be performed at High Airflow (100% at RTU-C, 60Hz at VFD) by adjusting the blower motor sheave. High Airflow always occurs during a W1, W2, or Y2 call. For air balancing, without heating or cooling, the fan only speed can be temporarily increased to 100% by adjustment through the RTU-C keypad. To meet ASHRAE 90.1-2010 and for best performance, First Stage Cool and Fan Only speeds are factory set at 50% airflow (30 Hz at VFD). Both of these speeds are independently adjustable at the RTU-C. The VFD display will indicate an equivalent value in Hz (i.e. Low Cool adjusted to 60% at RTU-C will display as 36Hz at the VFD). A 20 second (adjustable at the VFD) ramp-up or ramp-down is used whenever the blower speed is increased or decreased. Low speed blower operation first ramps to 75%, to close fan proving switch, before ramping to the desired speed. Since the VFD operates on 24VDC control voltage, a blower relay (with 24VAC across the coil) is used to turn the VFD on. Blower speeds are changed via Modbus communication from the RTU-C.

FIGURE 20



ST-A1141-15

XVIII. OUTDOOR FAN MOTOR CONTROLLER (OFMC)

Location: Control Section (front left) of the unit.

During Low Reheat Mode the OFMC slows the outdoor fans to increase the discharge pressure/temperature to maintain an optimized amount of reheat required to provide neutral air to the occupied space. The OFMC is located in the control box section. On 15-25 ton units the OFMC slows fans during both Low and High Reheat Modes (circuit 1 fans only). The factory setting for the outdoor fan motor controller is unit specific (Table B). The setpoint temperature will provide neutral air +1 to –5°F from the entering air temperature (example if the entering or return air temperature is 75°F the leaving or supply air temperature will be 76° to 70°F during the reheat mode. If field adjustment is required to raise or lower the leaving air temperature this may be accomplished by turning the temperature control dial on the OFMC (Figure 20). Turning the dial to a higher temperature setting will increase the leaving or supply air temperature and turning the dial to a lower setting will reduce the leaving or supply temperature. During cooling modes the OFMC will operate at full speed (green light –Figure 20). During reheat modes the OFMC will typically operate at variable speed

(amber light – Figure 20) but can change to full speed or off (no lights) depending on the reheat capacity required. During high reheat, the 7½ and 10 ton models must operate the OFMC at full speed to prevent excessive head pressure on system 2.

XIX. AUXILIARY HEAT

In the heating mode, the thermostat will energize one or more supplementary resistance heaters.

REPLACEMENT PARTS

Contact your local distributor for a complete parts list.

CHARGE INFORMATION

Refer to the appropriate charge chart on the unit, or in this booklet.

TROUBLESHOOTING

Refer to the troubleshooting chart included in this manual.

WIRING DIAGRAMS

Refer to the appropriate wiring diagram included in this manual.

XX. HEATER KIT CHARACTERISTICS
TABLE C. AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15, 17.5, 20 & 25 TON MODELS)

208/240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION

Single Power Supply For Both Unit And Heater Kit									Separate Power Supply For Both Unit And Heater Kit				
RHEEM Model Number	Heater Kit					Air Conditioner			Heater Kit		Air Conditioner		
		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. Ckt. Ampacity 208/240V	Max. Fuse Size 208/240V	Min. Circuit Ampacity 208/240V	Over Current Protective Device Size	
							Min./Max. @ 208 V	Min./Max. @ 240 V				Min./Max. @ 208 V	Min./Max. @ 240 V
RLNL-G180CR	No Heat	—	—	—	—	78/78	90/100	90/100	—	—	78/78	90/100	90/100
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	78/78	90/100	90/100	50/58	50/60	78/78	90/100	90/100
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	115/130	125/125	150/150	100/116	100/125	78/78	90/100	90/100
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	165/188	175/175	200/200	150/173	150/175	78/78	90/100	90/100
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	202/231	225/225	250/250	188/217	200/225	78/78	90/100	90/100
RLNL-G240CR	No Heat	—	—	—	—	101/101	110/125	110/125	—	—	101/101	110/125	110/125
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	101/101	110/125	110/125	50/58	50/60	101/101	110/125	110/125
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	119/134	125/125	150/150	100/116	100/125	101/101	110/125	110/125
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	169/192	175/175	200/200	150/173	150/175	101/101	110/125	110/125
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	206/235	225/225	250/250	188/217	200/225	101/101	110/125	110/125
RLNL-G300CR	No Heat	—	—	—	—	147/147	175/175	175/175	—	—	147/147	175/175	175/175
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	147/147	175/175	175/175	50/58	50/60	147/147	175/175	175/175
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	147/147	175/175	175/175	100/116	100/125	147/147	175/175	175/175
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	181/204	200/200	225/225	150/173	150/175	147/147	175/175	175/175
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	218/247	225/225	250/250	188/217	200/225	147/147	175/175	175/175
RLNL-G180CS	No Heat	—	—	—	—	81/81	90/100	90/100	—	—	81/81	90/100	90/100
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	81/81	90/100	90/100	50/58	50/60	81/81	90/100	90/100
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	119/134	125/125	150/150	100/116	100/125	81/81	90/100	90/100
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	169/192	175/175	200/200	150/173	150/157	81/81	90/100	90/100
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	206/235	225/225	250/250	188/217	200/225	81/81	90/100	90/100
RLNL-G240CS	No Heat	—	—	—	—	109/109	125/125	125/125	—	—	109/109	125/125	125/125
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	109/109	125/125	125/125	50/58	50/60	109/109	125/125	125/125
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	129/145	150/150	150/150	100/116	100/125	109/109	125/125	125/125
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	179/202	200/200	225/225	150/173	150/157	109/109	125/125	125/125
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	217/245	225/225	250/250	188/217	200/225	109/109	125/125	125/125
RLNL-G300CS	No Heat	—	—	—	—	149/149	175/175	175/175	—	—	149/149	175/175	175/175
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	149/149	175/175	175/175	50/58	50/60	149/149	175/175	175/175
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	149/151	175/175	175/175	100/116	100/125	149/149	175/175	175/175
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	186/209	200/200	225/225	150/173	150/157	149/149	175/175	175/175
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	223/252	225/225	300/300	188/217	200/225	149/149	175/175	175/175

XX. HEATER KIT CHARACTERISTICS

TABLE C (CONTINUED). AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15, 20 & 25 TON MODELS)

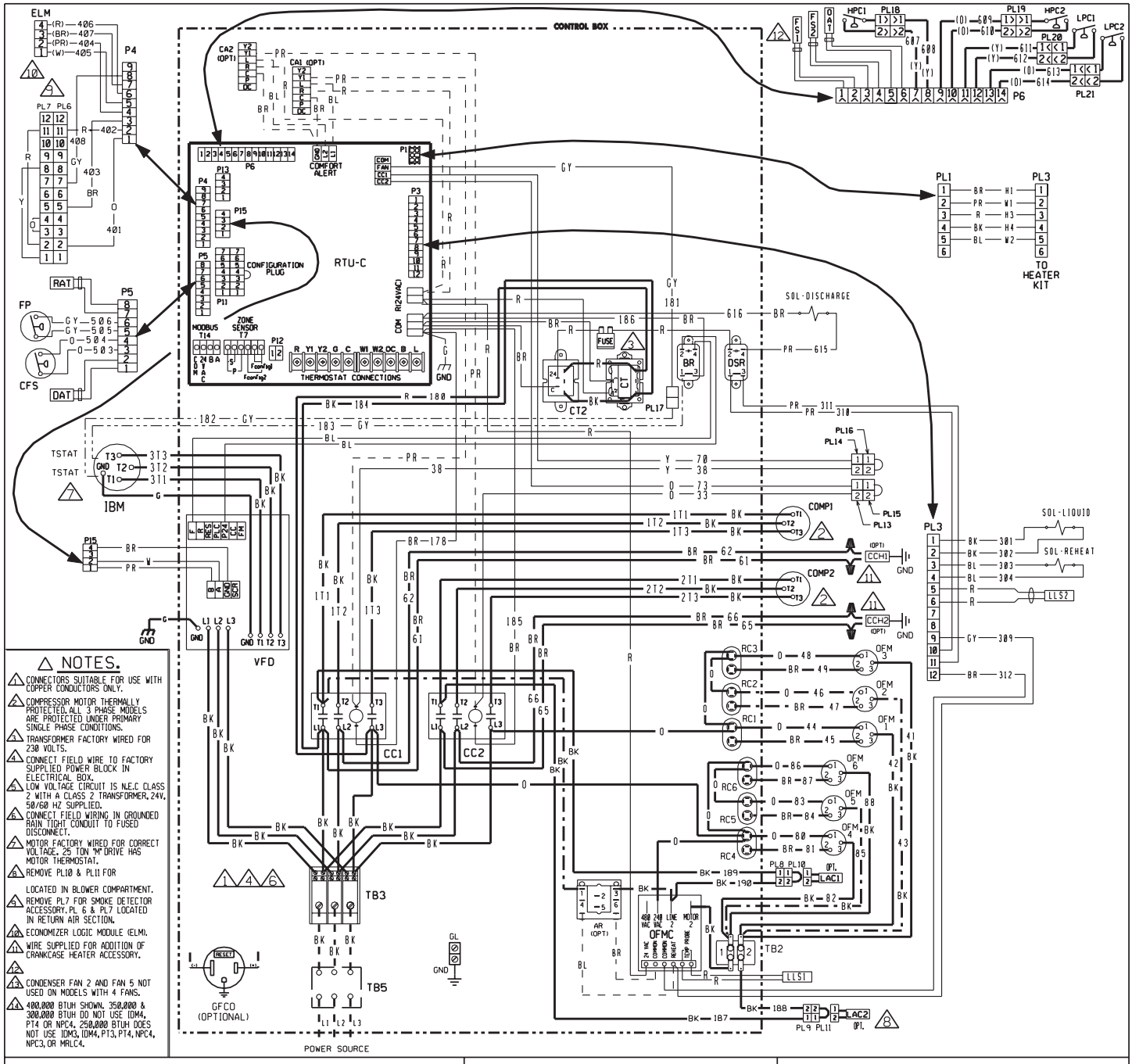
480 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION														
	Single Power Supply For Both Unit And Heater Kit							Separate Power Supply For Both Unit And Heater Kit						
RHEEM Model Number		Heater Kit				Air Conditioner			Heater Kit		Air Conditioner			
		No. of Sequence Steps	Rated Heater kW @ 480 V	Heater KBTU/Hr @ 480 V	Heater Amp. @ 480 V	Unit Min. Ckt Ampacity @ 480 V	Over Current Protective Device Size		Min. Ckt. Ampacity 480V	Max. Fuse Size 480V	Min. Circuit Ampacity 480V	Over Current Protective Device Size	
							Min./Max. @ 480 V	Min./Max. @ 480 V				Min./Max. @ 480 V	Min./Max. @ 480 V
RLNL-G180DR	No Heat	—	—	—	—	38	45/45	—	—	—	38	45/45	—
	CE20D	1	19.2	65.5	23.1	38	45/45	—	29	30	38/0	45/45	0/0
	CE40D	2	38.4	131	46.2	64	70/70	—	58	60	38/0	45/45	0/0
	CE60D	2	57.6	196.5	69.3	93	100/100	—	87	90	38/0	45/45	0/0
	CE75D	2	72	245.63	86.6	114	125/125	—	109	110	38/0	45/45	0/0
RLNL-G240DR	No Heat	—	—	—	—	52	60/60	—	—	—	52	60/60	—
	CE20D	1	19.2	65.5	23.1	52	60/60	—	29	30	52/0	60/60	0/0
	CE40D	2	38.4	131	46.2	67	70/70	—	58	60	52/0	60/60	0/0
	CE60D	2	57.6	196.5	69.3	95	100/100	—	87	90	52/0	60/60	0/0
	CE75D	2	72	245.63	86.6	117	125/125	—	109	110	52/0	60/60	0/0
RLNL-G300DR	No Heat	—	—	—	—	60	70/70	—	—	—	60	70/70	—
	CE20D	1	19.2	65.5	23.1	60	70/70	—	29	30	60/0	70/70	0/0
	CE40D	2	38.4	131	46.2	70	70/70	—	58	60	60/0	70/70	0/0
	CE60D	2	57.6	196.5	69.3	99	100/100	—	87	90	60/0	70/70	0/0
	CE75D	2	72	245.63	86.6	121	125/125	—	109	110	60/0	70/70	0/0
RLNL-G180DS	No Heat	—	—	—	—	40	45/50	—	—	—	40	45/50	—
	CE20D	1	19.2	65.5	23.1	40	45/50	—	29	30	40/0	45/50	0/0
	CE40D	2	38.4	131	46.2	67	70/70	—	58	60	40/0	45/50	0/0
	CE60D	2	57.6	196.5	69.3	95	100/100	—	87	90	40/0	45/50	0/0
	CE75D	2	72	245.63	86.6	117	125/125	—	109	110	40/0	45/50	0/0
RLNL-G240DS	No Heat	—	—	—	—	56	60/70	—	—	—	56	60/70	—
	CE20D	1	19.2	65.5	23.1	56	60/70	—	29	30	56/0	60/70	0/0
	CE40D	2	38.4	131	46.2	70	70/70	—	58	60	56/0	60/70	0/0
	CE60D	2	57.6	196.5	69.3	99	100/100	—	87	90	56/0	60/70	0/0
	CE75D	2	72	245.63	86.6	121	125/125	—	109	110	56/0	60/70	0/0
RLNL-G300DS	No Heat	—	—	—	—	63	70/80	—	—	—	63	70/80	—
	CE20D	1	19.2	65.5	23.1	63	70/80	—	29	30	63/0	70/80	0/0
	CE40D	2	38.4	131	46.2	74	80/80	—	58	60	63/0	70/80	0/0
	CE60D	2	57.6	196.5	69.3	103	110/110	—	87	90	63/0	70/80	0/0
	CE75D	2	72	245.63	86.6	124	125/125	—	109	110	63/0	70/80	0/0

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	• 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	• 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- • Replace thermostat wiring
Condenser fan runs, compressor doesn't	• Run capacitor defective (single phase only) • Loose connection • Compressor stuck, grounded or open motor winding open internal overload. • Low voltage condition	• 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.
Insufficient cooling	• Improperly sized unit • Improper airflow • Incorrect refrigerant charge • Air, non-condensibles or moisture in system • Incorrect voltage	• 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	• Incorrect voltage • Defective overload protector • Refrigerant undercharge	• At compressor terminals, voltage must be ± 10% of nameplate marking when unit is operating. • Replace - check for correct voltage • Add refrigerant
Registers sweat	• Low evaporator airflow	• Increase speed of blower or reduce restriction - replace air filter
High head-low vapor pressures	• Restriction in liquid line, expansion device or filter drier • TXV does not open	• Remove or replace defective component • Replace TXV
High head-high or normal vapor pressure - Cooling mode	• Dirty condenser coil • Refrigerant overcharge • Condenser fan not running • Air or non-condensibles in system	• Clean coil • Correct system charge • Repair or replace • Recover refrigerant, evacuate & recharge
Low head-high vapor pressures	• Defective Compressor valves	• Replace compressor
Low vapor - cool compressor - iced evaporator coil	• Low evaporator airflow • Operating below 65°F outdoors • Moisture in system • Dirty evaporator coil, bent fins	• Increase speed of blower or reduce restriction - replace air filter • Add Low Ambient Kit • Recover refrigerant - evacuate & recharge - add filter drier • Clean evaporator coil, straighten fins
High vapor pressure	• Excessive load • Defective compressor	• Recheck load calculation • Replace
Fluctuating head & vapor pressures	• TXV hunting • Air or non-condensibles in system	• 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	• Air or non-condensibles in system	• Recover refrigerant, evacuate & recharge



NOTES.

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
3. TRANSFORMER FACTORY WIRED FOR 230 VOLTS.
4. CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
5. LOW VOLTAGE CIRCUIT IS N.E.C CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
6. CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
7. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE. 25 TON "M" DRIVE HAS MOTOR THERMOSTAT.
8. REMOVE PL10 & PL11 FOR LOCATED IN BLOWER COMPARTMENT.
9. REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
10. ECONOMIZER LOGIC MODULE (ELM).
11. WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY.
12.
13. CONDENSER FAN 2 AND FAN 5 NOT USED ON MODELS WITH 4 FANS.
14. 400,000 BTUH SHOWN. 350,000 & 300,000 BTUH DO NOT USE 1DM4, PT4 OR NPC4. 250,000 BTUH DOES NOT USE 1DM3, 1DM4, PT3, PT4, NPC4, NPC3, OR MRLC4.

COMPONENT CODE

AR	ACCESSORY RELAY
BR	BLOWER RELAY
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
DSR	DISCHARGE SOLENOID RELAY
DISC	DISCONNECT SWITCH
FP	FAN PROVING
FS	FREEZE SENSOR
GFCO	GROUND FAULT CONVENIENCE OUTLET
GL	GROUND LUG
GND	GROUND
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR BELT DRIVE
LAC	LOW AMBIENT COOLING CONTROL
LC	LIMIT CONTROL
LLS	LIQUID LINE SENSOR
LPC	LOW PRESSURE CONTROL
OAT	OUTSIDE AIR SENSOR
OFM	OUTDOOR FAN MOTOR
OFMC	OUTDOOR FAN MOTOR CONTROLLER
PL	PLUG
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTU-C	ROOFTOP UNIT CONTROL
TB	TERMINAL BLOCK
VFD	VARIABLE FREQUENCY DRIVE
	WIRE NUT

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.)

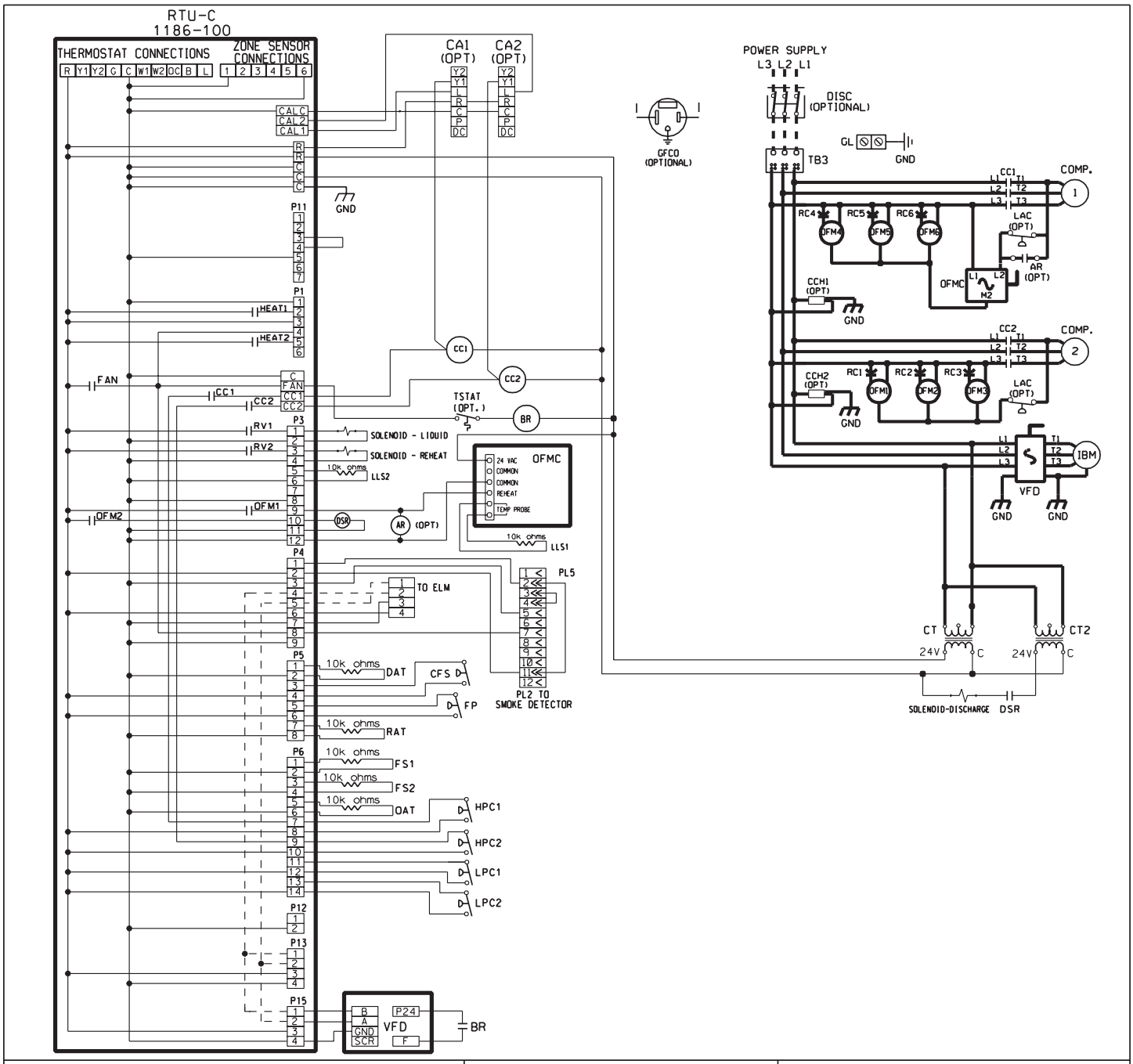
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

WIRE COLOR CODE

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

WIRING DIAGRAM
REHEAT MODELS
208-230/460V 3 PH, 60 HZ.
SELF-CONTAINED/PACKAGE A/C W/RTU-C

DR. BY	APP. BY	DATE	DWG. NO.	REV
MCB		10-21-11	90-103079-05	02



COMPONENT CODE

AR	ACCESSORY RELAY
BR	BLOWER RELAY
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
DSR	DISCHARGE SOLENOID RELAY
DISC	DISCONNECT SWITCH
FP	FAN PROVING
FS	FREEZE SENSOR
GFCO	GROUND FAULT CONVENIENCE OUTLET
GL	GROUND LUG
GND	GROUND
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR BELT DRIVE
IFC	INTEGRATED FURNACE CONTROL
LAC	LOW AMBIENT COOLING CONTROL
LC	LIMIT CONTROL
LLS	LIQUID LINE SENSOR
LPC	LOW PRESSURE CONTROL
OAT	OUTSIDE AIR SENSOR
OFM	OUTDOOR FAN MOTOR
OFMC	OUTDOOR FAN MOTOR CONTROLLER
PL	PLUG
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTU-C	ROOFTOP UNIT CONTROL
TB	TERMINAL BLOCK
VFD	VARIABLE FREQUENCY DRIVE
	WIRE NUT

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.)

WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

WIRE COLOR CODE

BK__BLACK	O___ORANGE
BR__BROWN	PR__PURPLE
BL__BLUE	R___RED
G___GREEN	W___WHITE
GY__GRAY	Y___YELLOW

WIRING SCHEMATIC
REHEAT 180/240/300
208-230/460V 3 PH, 60 HZ.
SELF-CONTAINED/PACKAGE A/C W/RTU-C

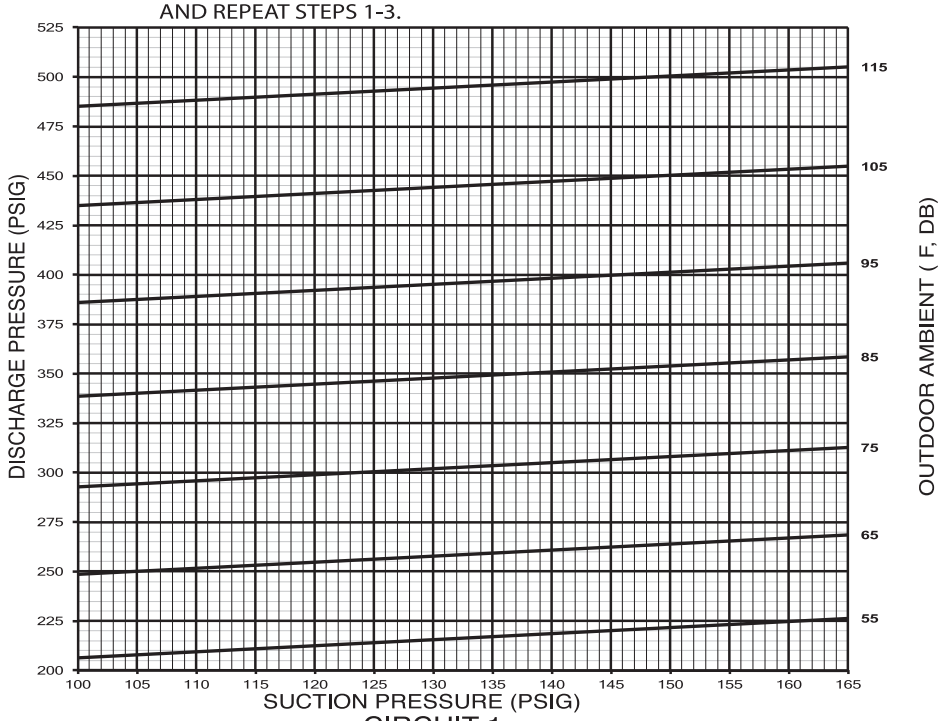
DR. BY	APP. BY	DATE	DWG. NO.	REV
MCB		10-21-11	90-103263-05	02

RLNL SERIES – 15 TON

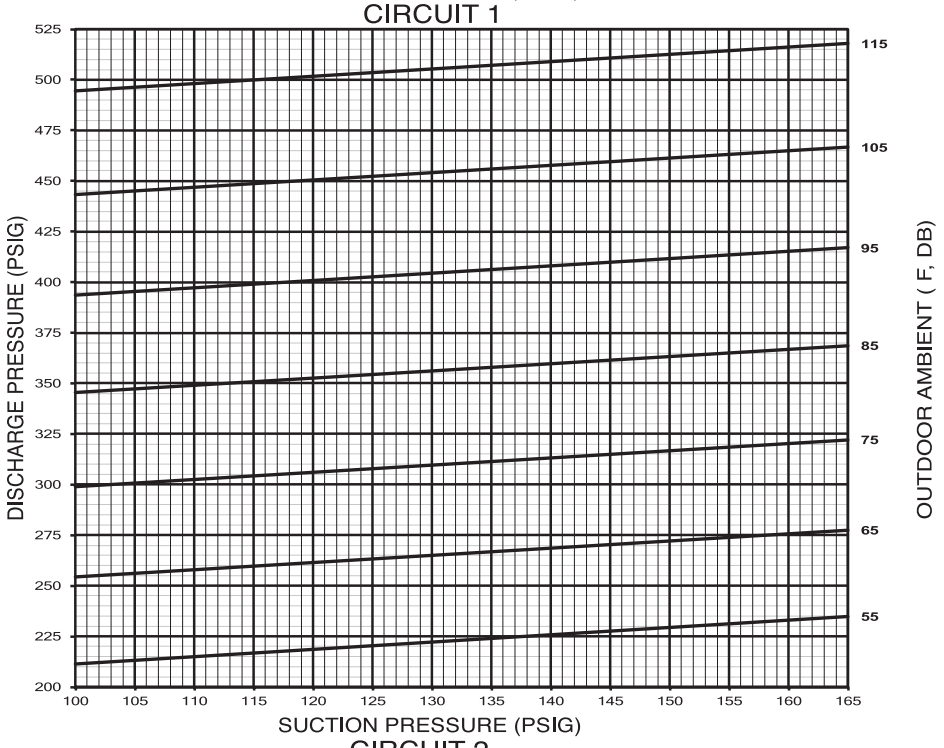
SYSTEM CHARGE CHART - REFRIGERANT 410A
15 TON, CIRCUITS 1 & 2

CAUTION:
1. BOTH COMPRESSORS MUST BE OPERATING BEFORE CHECKING REFRIGERANT CHARGE.
2. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND DISCHARGE.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND DISCHARGE INTERSECT.
4. IF (X) IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF (X) IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.



CIRCUIT 1



CIRCUIT 2

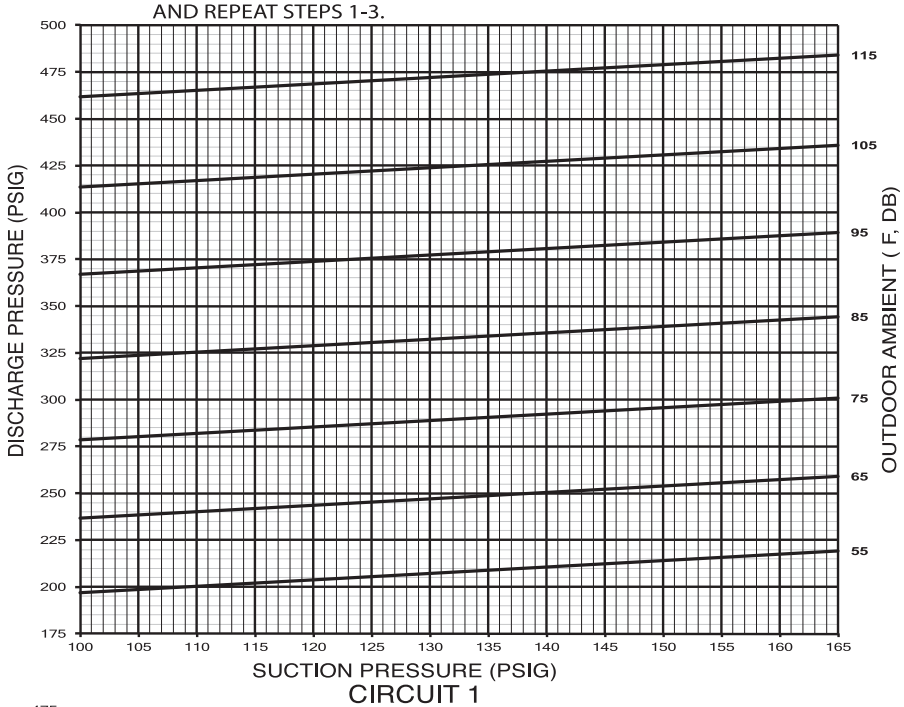
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RLNL SERIES – 20 TON

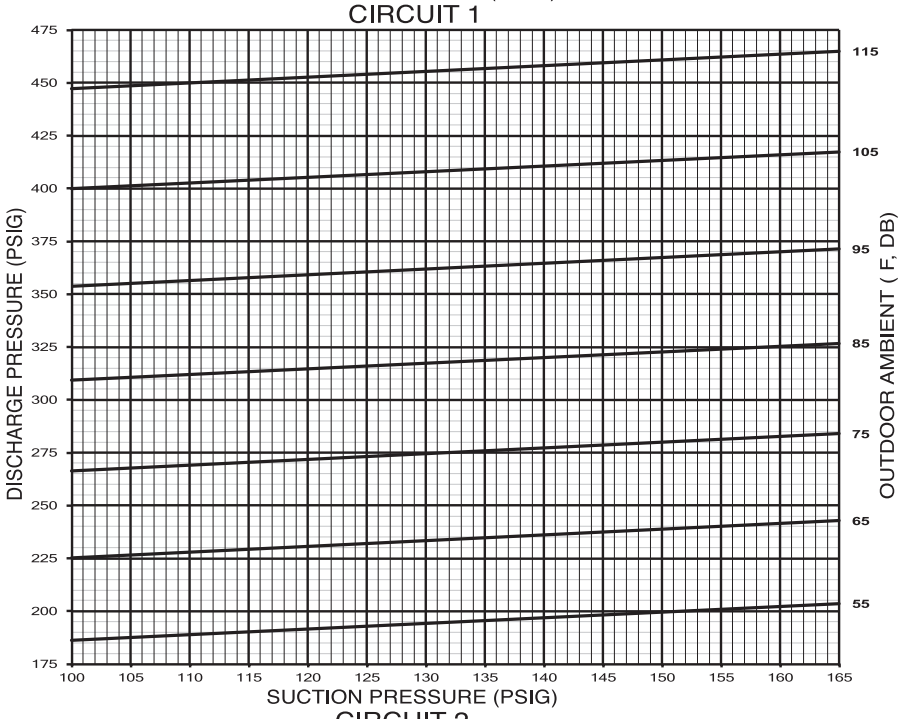
SYSTEM CHARGE CHART - REFRIGERANT 410A
20 TON, CIRCUITS 1 & 2

CAUTION:
1. BOTH COMPRESSORS MUST BE OPERATING BEFORE CHECKING REFRIGERANT CHARGE.
2. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND DISCHARGE.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND DISCHARGE INTERSECT.
4. IF (X) IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF (X) IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.



CIRCUIT 1



CIRCUIT 2

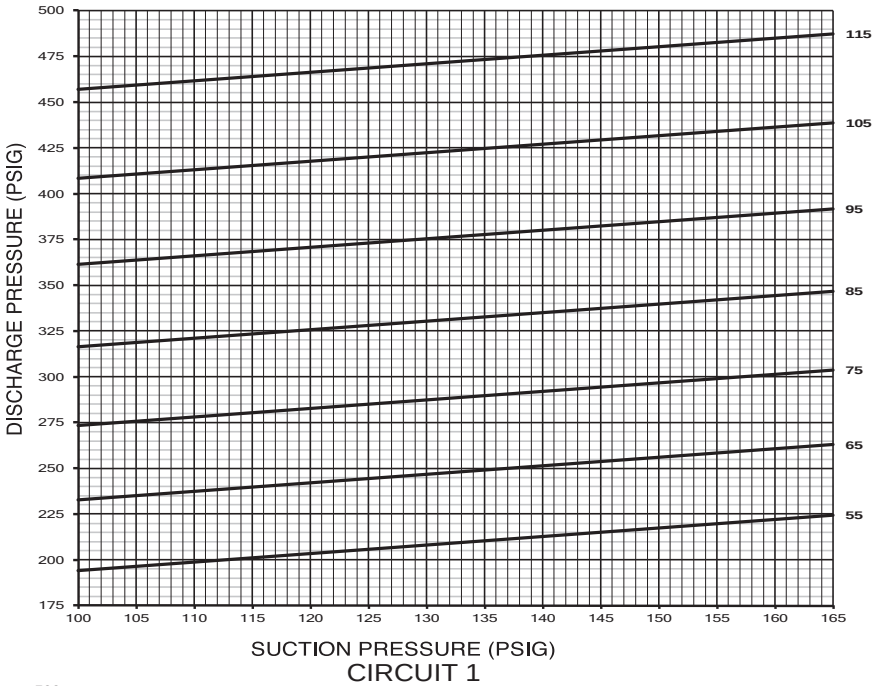
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RLNL SERIES – 25 TON

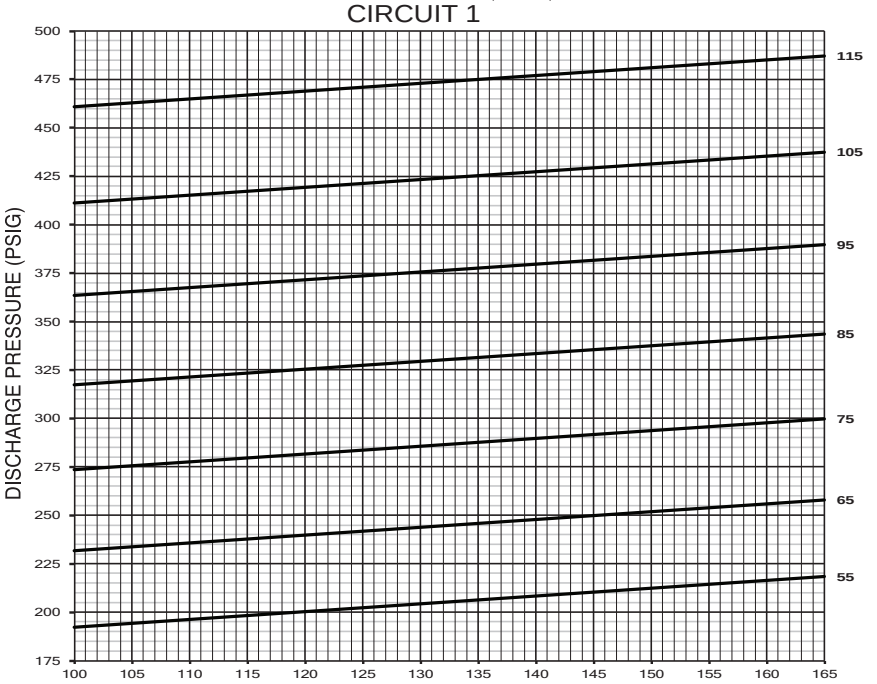
SYSTEM CHARGE CHART - REFRIGERANT 410A
25 TON, CIRCUITS 1 & 2

CAUTION:
1. BOTH COMPRESSORS MUST BE OPERATING BEFORE CHECKING REFRIGERANT CHARGE.
2. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND DISCHARGE.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND DISCHARGE INTERSECT.
4. IF (X) IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF (X) IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.



CIRCUIT 1



CIRCUIT 2

92-102778-07-00