INSTALLATION INSTRUCTIONS

PACKAGE AIR CONDITIONER

RLRL-C & RLRL-H SERIES 15 & 20 TON [52.8 & 70.3 kW]

RLRL-C: ASHRAE 90.1 2007 COMPLIANT, WITH CLEAR CONTROL

RLRL-H: ASHRAE 90.1 2010 COMPLIANT, WITH CLEAR CONTROL & VFD



15 TON SHOWN

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.

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

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⚠ 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 and 20 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), a circulation air blower, condenser fans, 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

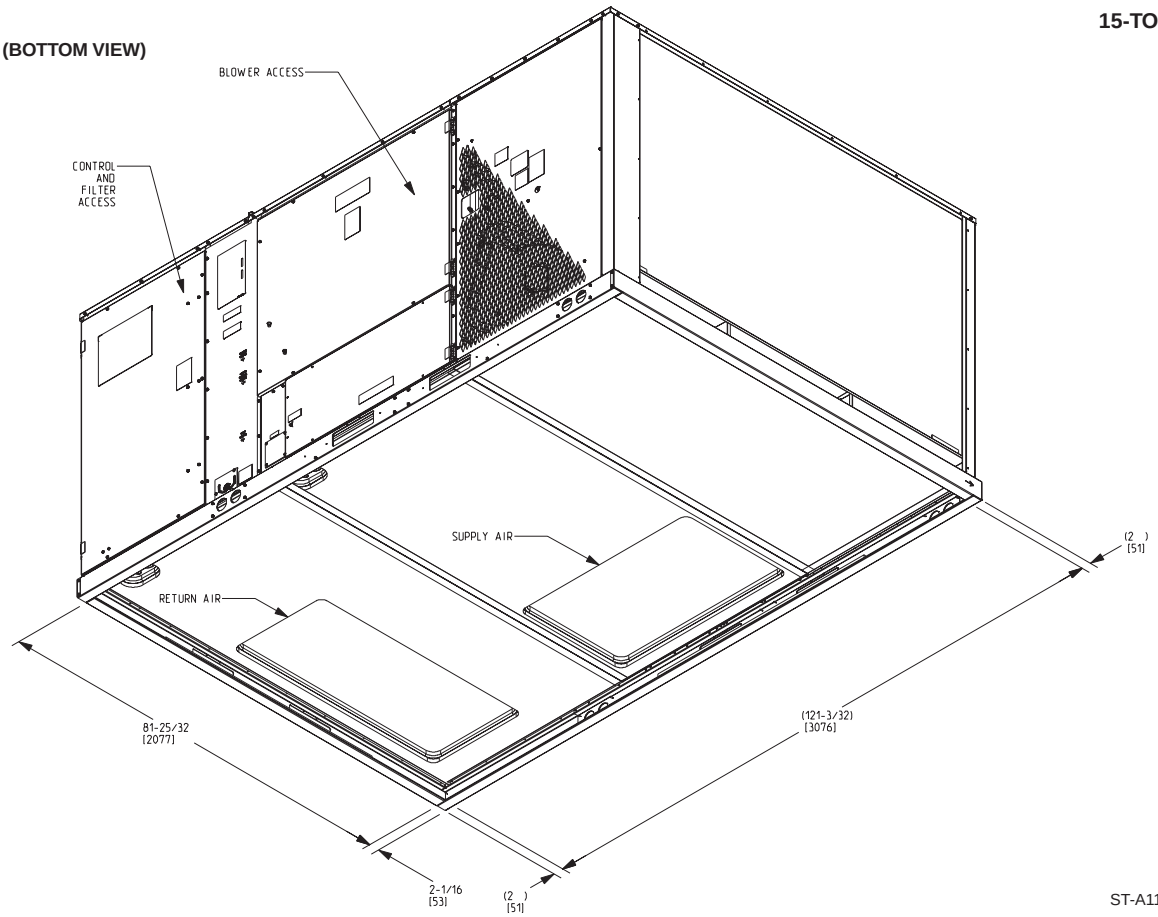
Recovery Cylinders:
-400 PSIG Pressure Rating
-Dept. of Transportation 4BA400 or BW400

⚠ 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)

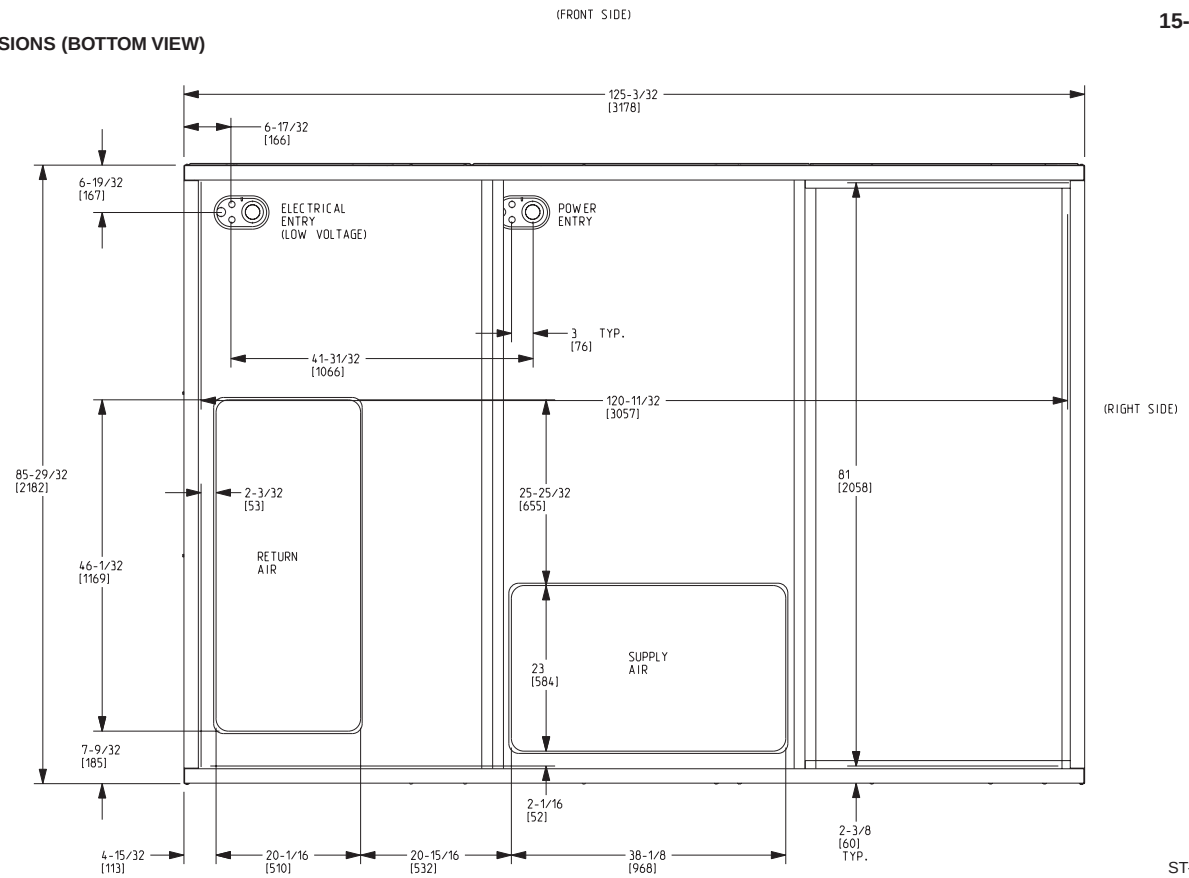
15-TON



ST-A1182-02B-00

FIGURE 2
UNIT DIMENSIONS (BOTTOM VIEW)

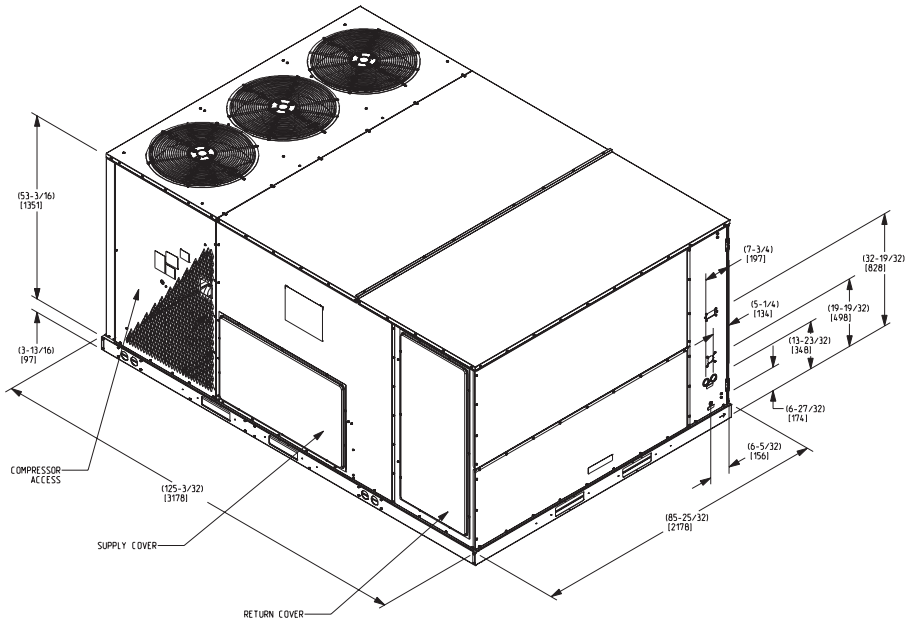
15-TON



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FIGURE 3
UNIT DIMENSIONS

15-TON

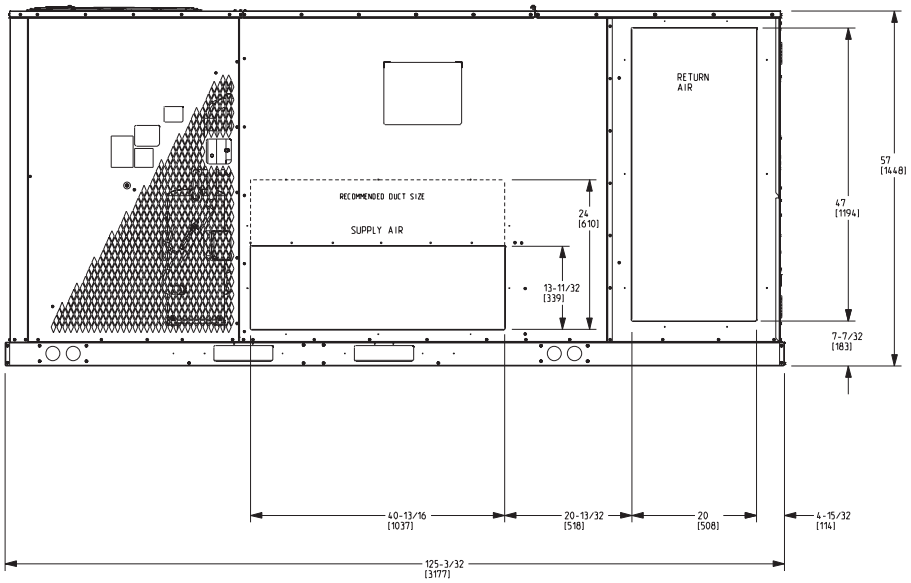


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FIGURE 4
UNIT DIMENSIONS

REAR VIEW

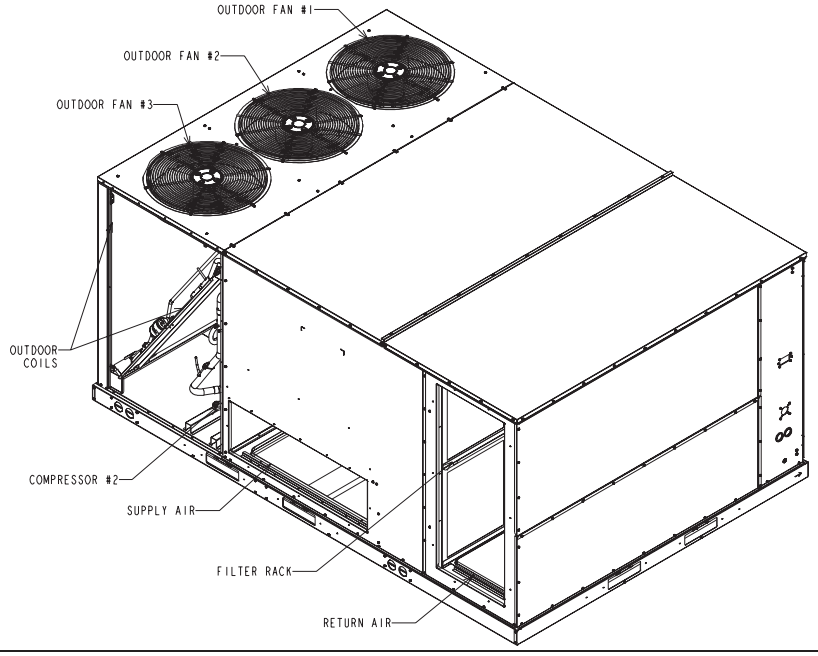
15-TON



ST-A1182-08B-00

FIGURE 5
COMPONENT LOCATION

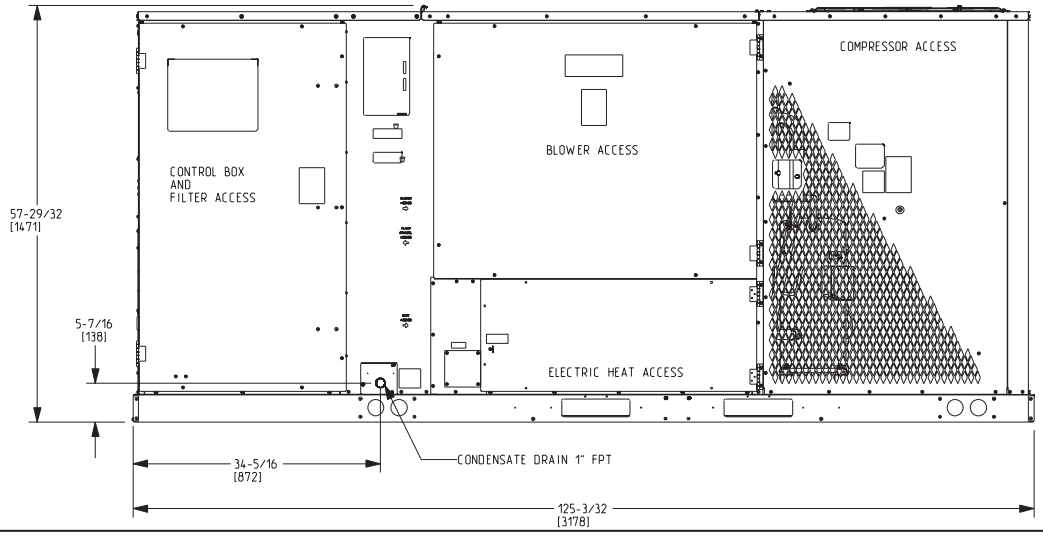
15-TON



ST-A1182-05-00

FIGURE 6
UNIT DIMENSIONS & COMPONENT ACCESS

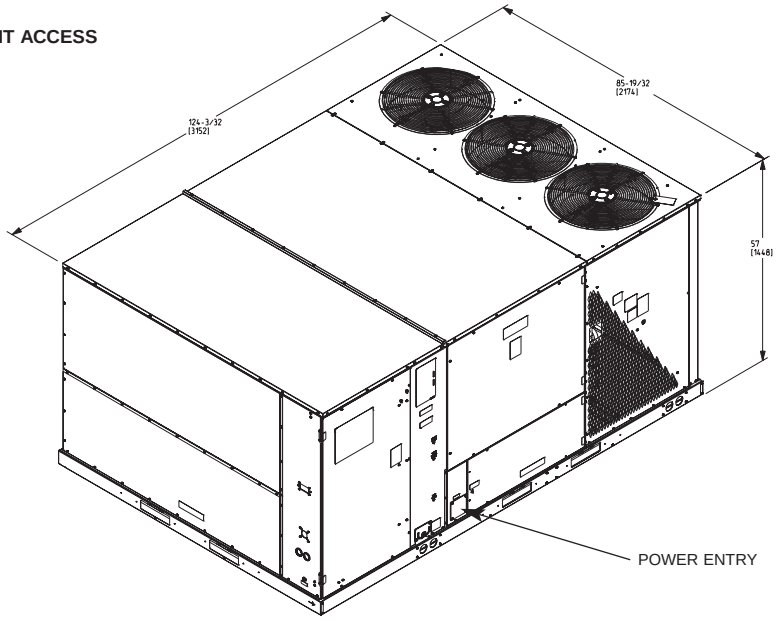
15-TON



ST-A1182-06B-00

FIGURE 7
UNIT DIMENSIONS & COMPONENT ACCESS

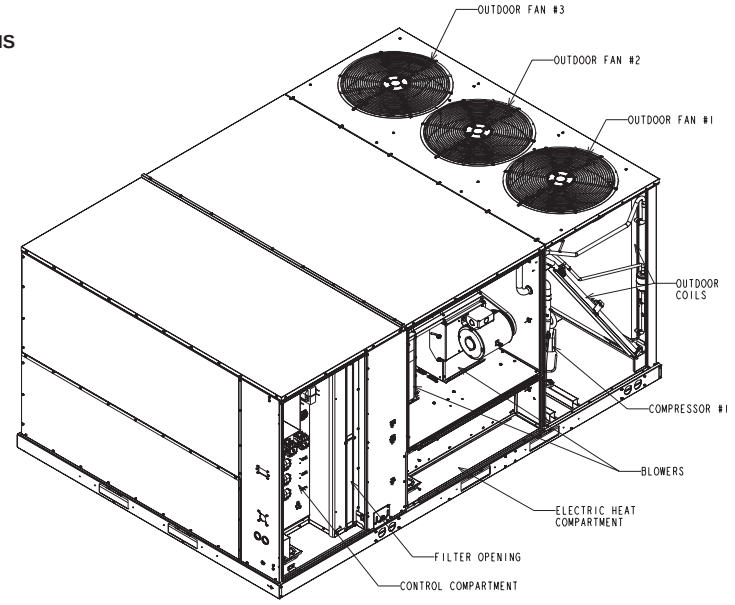
15-TON



ST-A1182-01B-00

FIGURE 8
INTERNAL COMPONENT LOCATIONS

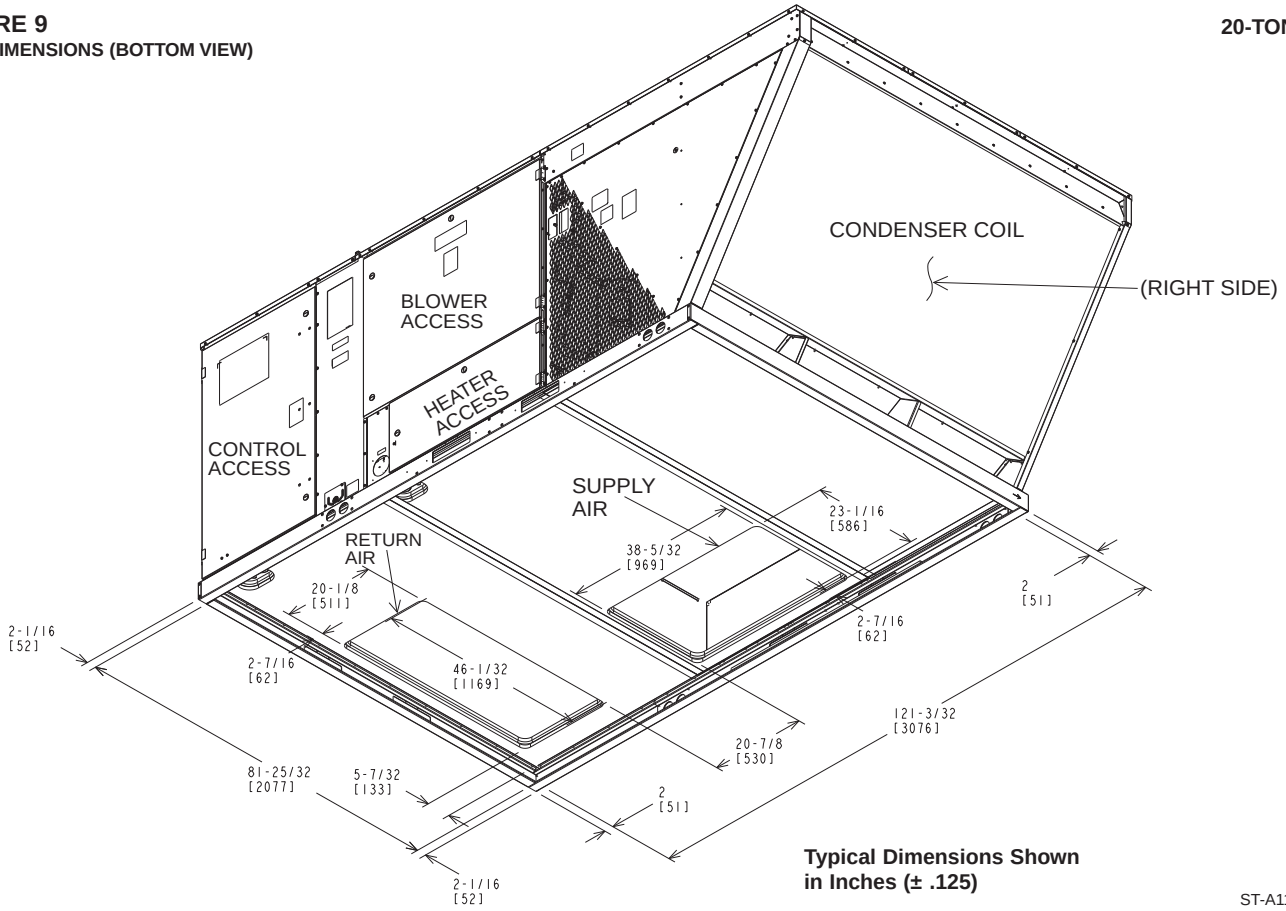
15-TON



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FIGURE 9
UNIT DIMENSIONS (BOTTOM VIEW)

20-TON

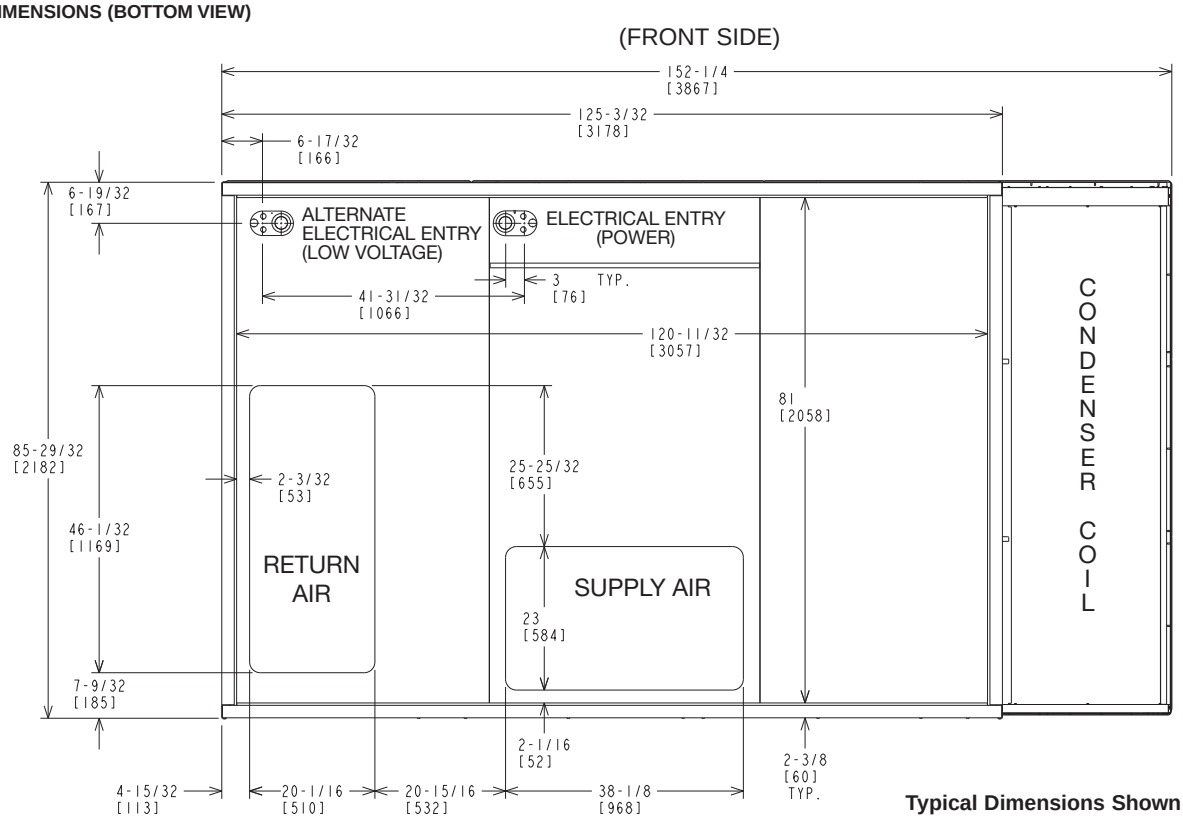


Typical Dimensions Shown in Inches (± .125)

ST-A1125-02B

FIGURE 10
UNIT DIMENSIONS (BOTTOM VIEW)

20-TON

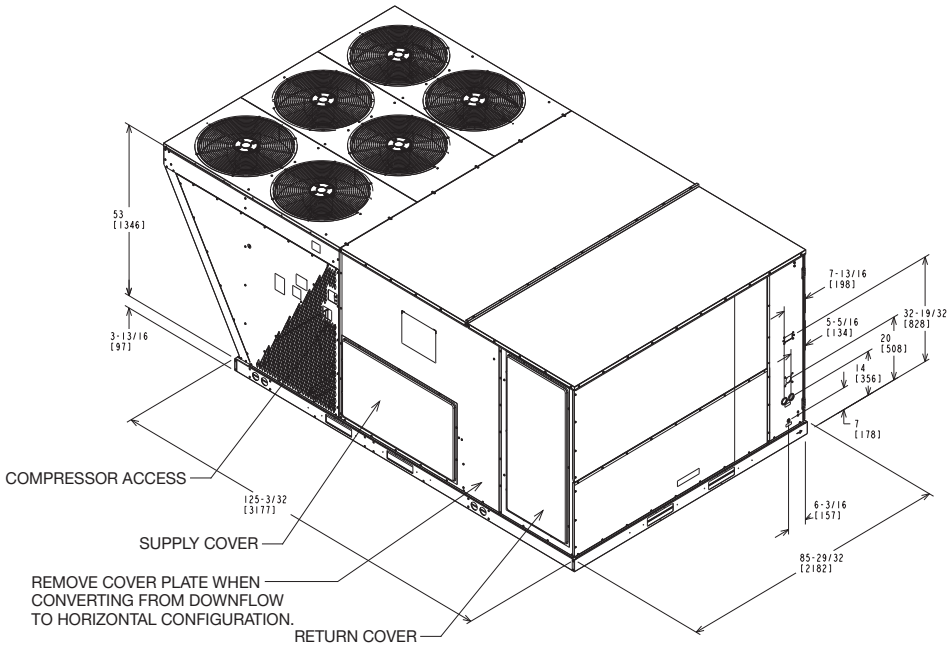


Typical Dimensions Shown in Inches (± .125 tolerance)

ST-A1125-09B

FIGURE 11
UNIT DIMENSIONS

20-TON

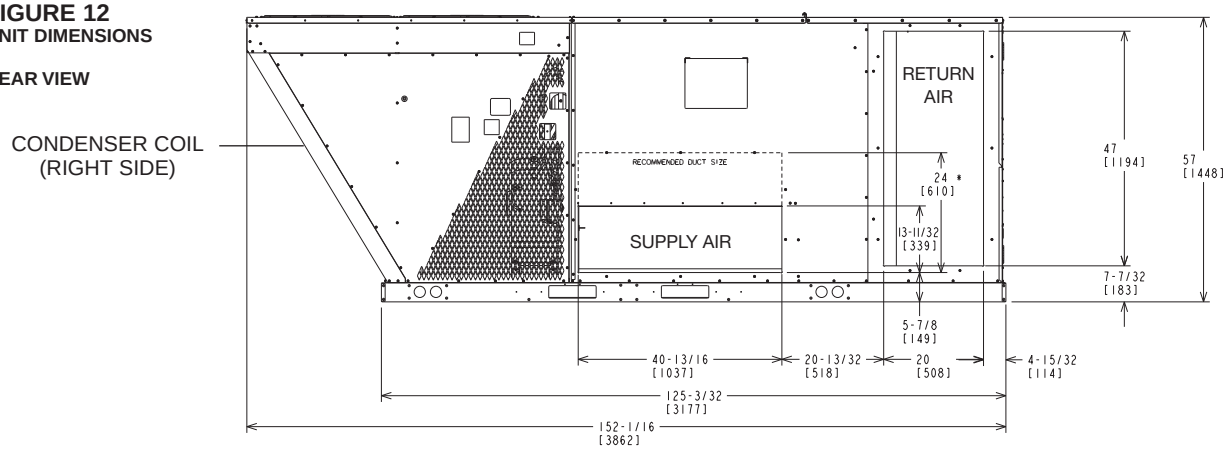


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FIGURE 12
UNIT DIMENSIONS

REAR VIEW

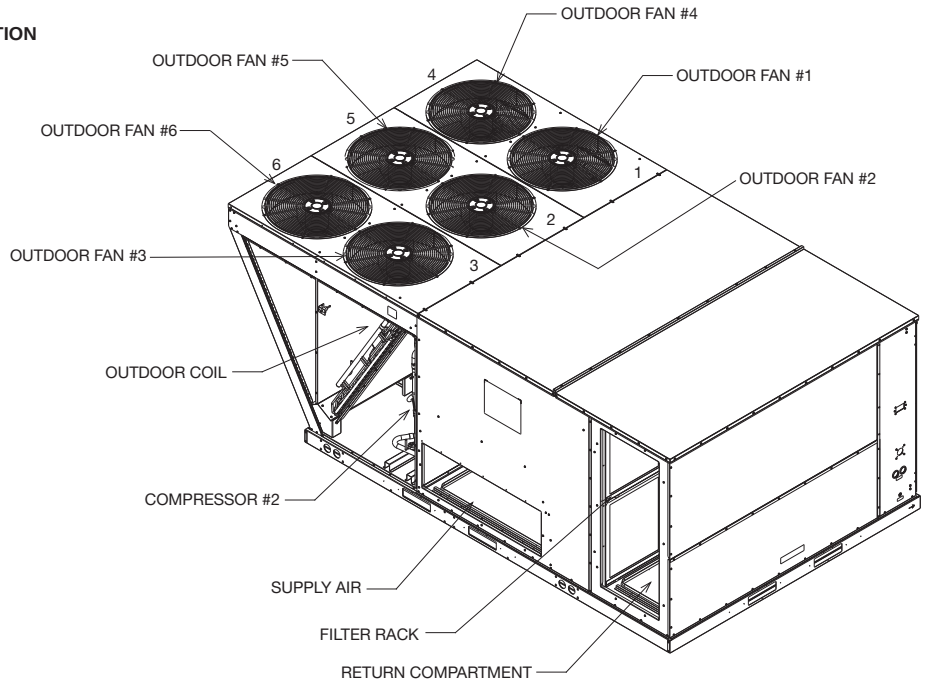
20-TON



ST-A1125-08B

FIGURE 13
COMPONENT LOCATION

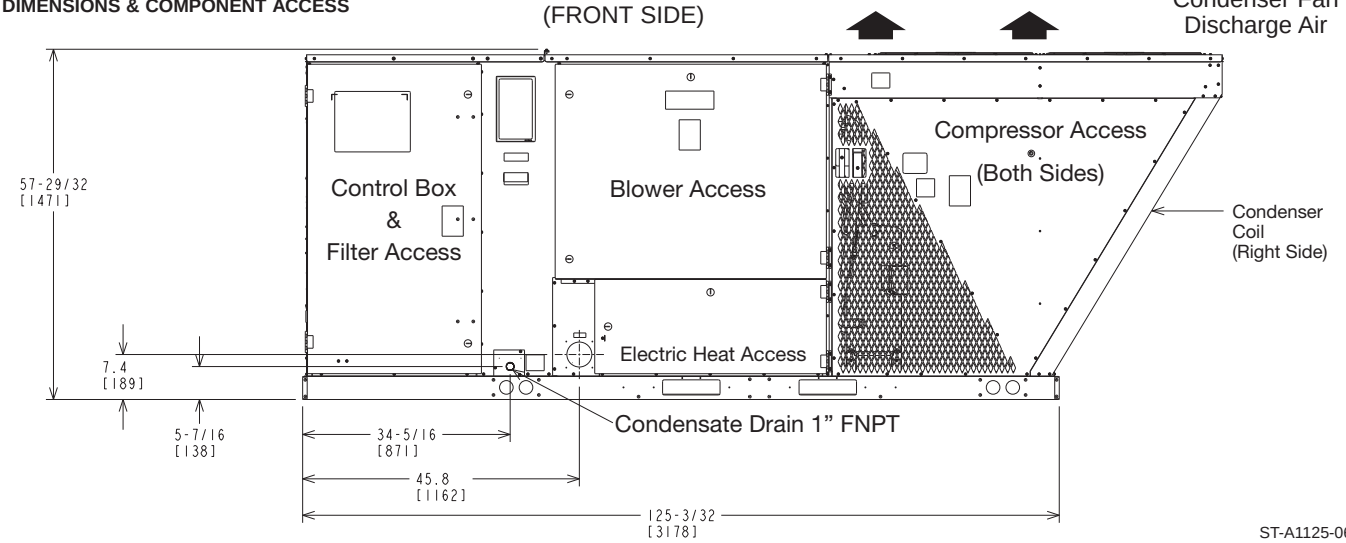
20-TON



ST-A1125-05

FIGURE 14
UNIT DIMENSIONS & COMPONENT ACCESS

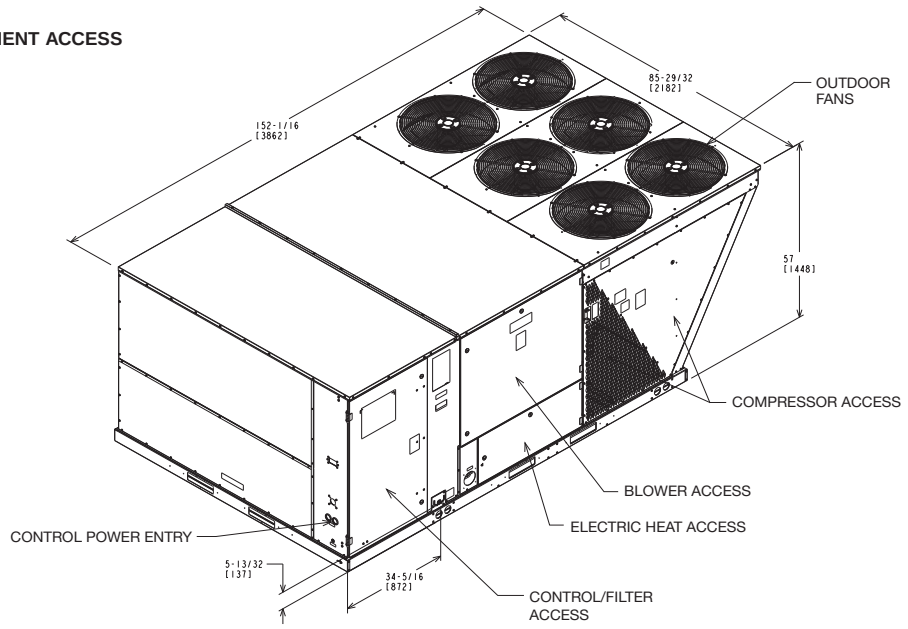
20-TON



ST-A1125-06B

FIGURE 15
UNIT DIMENSIONS & COMPONENT ACCESS

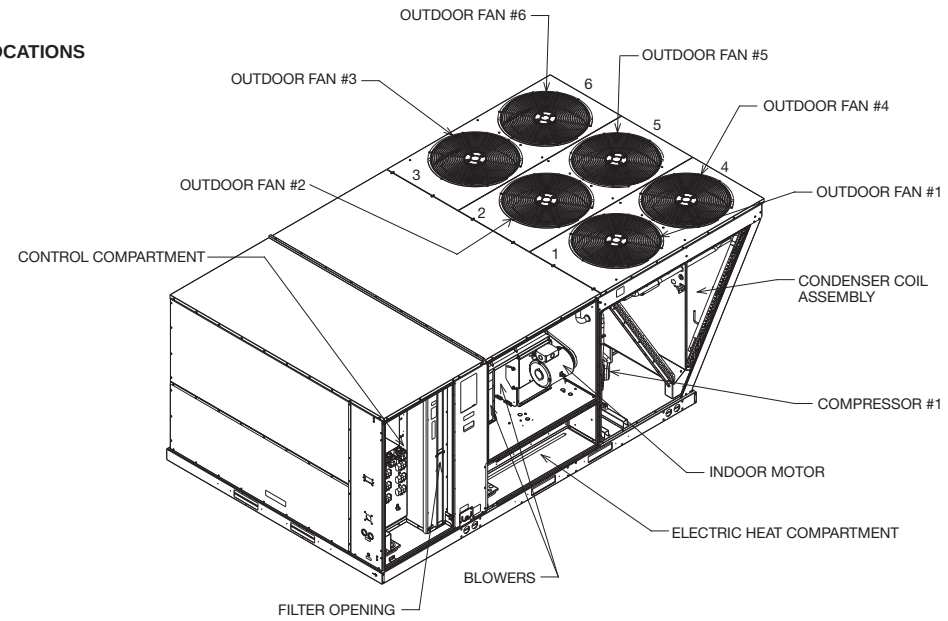
20-TON



ST-A1125-01B

FIGURE 16
INTERNAL COMPONENT LOCATIONS

20-TON



ST-A1125-04B

GENERAL DATA - RLRL

Model RLRL- Series Model RLRL- Series (with VFD)	C180CL H180CR	C180CM H180CS	C180DL H180DR	C180DM H180DS
Cooling Performance[1]				**Continued ->**
Gross Cooling Capacity Btu [kW]	178,000 [52.15]	178,000 [52.15]	178,000 [52.15]	178,000 [52.15]
EER, SEER[2]	12.2/NA	12.2/NA	12.2/NA	12.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	6000/5500 [2831/2595]	6000/5500 [2831/2595]	6000/5500 [2831/2595]	6000/5500 [2831/2595]
AHRI Net Cooling Capacity Btu [kW]	174,000 [50.98]	174,000 [50.98]	174,000 [50.98]	174,000 [50.98]
Net Sensible Capacity Btu [kW]	128,000 [37.5]	128,000 [37.5]	128,000 [37.5]	128,000 [37.5]
Net Latent Capacity Btu [kW]	46,000 [13.48]	46,000 [13.48]	46,000 [13.48]	46,000 [13.48]
IEER[3]	13.2/15	13.2/15	13.2/15	13.2/15
Net System Power kW	14.15	14.15	14.15	14.15
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	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Tube Size in. [mm] OD	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	50.8 [4.72]	50.8 [4.72]	50.8 [4.72]	50.8 [4.72]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [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]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	3/24 [609.6]	3/24 [609.6]	3/24 [609.6]	3/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	10000 [4719]	10000 [4719]	10000 [4719]	10000 [4719]
No. Motors/HP	3 at 1/3 HP	3 at 1/3 HP	3 at 1/3 HP	3 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	Single / Multiple	Single / Multiple	Single / Multiple	Single / 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]	170/173 [4820/4905]	170/173 [4820/4905]	170/173 [4820/4905]	170/173 [4820/4905]
Weights				
Net Weight lbs. [kg]	1883 [854]	1921 [871]	1883 [854]	1921 [871]
Ship Weight lbs. [kg]	2009 [911]	2047 [929]	2009 [911]	2047 [929]

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 (B300) is outside the scope of AHRI Standard 340/360.

GENERAL DATA - RLRL

Model RLRL- Series Model RLRL- Series (with VFD)	C180YL	C180YM	C240CL H240CR	C240CM H240CS
Cooling Performance[1]				**Continued ->**
Gross Cooling Capacity Btu [kW]	178,000 [52.15]	178,000 [52.15]	240,000 [70.32]	240,000 [70.32]
EER, SEER[2]	12.2/NA	12.2/NA	12.2/NA	12.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	6000/5500 [2831/2595]	6000/5500 [2831/2595]	8000/7375 [3775/3480]	8000/7375 [3775/3480]
AHRI Net Cooling Capacity Btu [kW]	174,000 [50.98]	174,000 [50.98]	232,000 [67.98]	232,000 [67.98]
Net Sensible Capacity Btu [kW]	128,000 [37.5]	128,000 [37.5]	169,000 [49.52]	169,000 [49.52]
Net Latent Capacity Btu [kW]	46,000 [13.48]	46,000 [13.48]	63,000 [18.46]	63,000 [18.46]
IEER[3]	13.2	13.2	13.2/15	13.2/15
Net System Power kW	14.15	14.15	19.02	19.02
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	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Tube Size in. [mm] OD	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	50.8 [4.72]	50.8 [4.72]	50.8 [4.72]	50.8 [4.72]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [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]	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]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	3/24 [609.6]	3/24 [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]	10000 [4719]	10000 [4719]	19800 [9344]	19800 [9344]
No. Motors/HP	3 at 1/3 HP	3 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	Single	Single	Single / Multiple	Single / Multiple
No. Motors	1	1	1	1
Motor HP	3	5	5	7 1/2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	184	184	213
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]	170/173 [4820/4905]	170/173 [4820/4905]	271/227 [7683/6435]	271/227 [7683/6435]
Weights				
Net Weight lbs. [kg]	1883 [854]	1921 [871]	2151 [976]	2189 [993]
Ship Weight lbs. [kg]	2009 [911]	2047 [929]	2251 [1021]	2289 [1038]

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 (B300) is outside the scope of AHRI Standard 340/360.

GENERAL DATA - RLRL

Model RLRL- Series Model RLRL- Series (with VFD)	C240DL H240DR	C240DM H240DS	C240YL	C240YM
Cooling Performance[1]				
Gross Cooling Capacity Btu [kW]	240,000 [70.32]	240,000 [70.32]	240,000 [70.32]	240,000 [70.32]
EER, SEER[2]	12.2/NA	12.2/NA	12.2/NA	12.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	8000/7375 [3775/3480]	8000/7375 [3775/3480]	8000/7375 [3775/3480]	8000/7375 [3775/3480]
AHRI Net Cooling Capacity Btu [kW]	232,000 [67.98]	232,000 [67.98]	232,000 [67.98]	232,000 [67.98]
Net Sensible Capacity Btu [kW]	169,000 [49.52]	169,000 [49.52]	169,000 [49.52]	169,000 [49.52]
Net Latent Capacity Btu [kW]	63,000 [18.46]	63,000 [18.46]	63,000 [18.46]	63,000 [18.46]
IEER[3]	13.2/15	13.2/15	13.2	13.2
Net System Power kW	14.15	14.15	19.02	19.02
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	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Tube Size in. [mm] OD	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	50.8 [4.72]	50.8 [4.72]	50.8 [4.72]	50.8 [4.72]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [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]	14 / 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]
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	Single / Multiple	Single / Multiple	Single	Single
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	184	184	213
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]	271/227 [7683/6435]	271/227 [7683/6435]	271/227 [7683/6435]	271/227 [7683/6435]
Weights				
Net Weight lbs. [kg]	2289 [1038]	2327 [1056]	2151 [976]	2189 [993]
Ship Weight lbs. [kg]	2389 [1084]	2427 [1101]	2251 [1021]	2289 [1038]

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 (B300) is outside the scope of AHRI Standard 340/360.

ELECTRICAL DATA - RLRL

ELECTRICAL DATA - RLRL SERIES							
		C180CL H180CR	**C180CM H180CS**	**C180DL H180DR**	**C180DM H180DS**	**C180YL**	**C180YM**
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	518-632	518-632
	Volts	208/230	208/230	460	460	575	575
	Minimum Circuit Ampacity	75/75	79/79	38	40	29	30
	Minimum Overcurrent Protection Device Size	90/90	90/90	45	45	35	35
	Maximum Overcurrent Protection Device Size	100/100	100/100	50	50	35	35
Compressor Motor	No.	2	2	2	2	2	2
	Volts	200/230	200/230	460	460	575	575
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (RLA), Comp. 1	25/25	25/25	12.8	12.8	9.6	9.6
	Amps (LRA), Comp. 1	164/164	164/164	100	100	78	78
	HP, Compressor 2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (RLA), Comp. 2	25/25	25/25	12.8	12.8	9.6	9.6
	Amps (LRA), Comp. 2	164/164	164/164	100	100	78	78
Condenser Motor	No.	3	3	3	3	3	3
	Volts	208/230	208/230	460	460	575	575
	Phase	1	1	1	1	1	1
	HP	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	1	1
	Amps (LRA, each)	4.7/4.7	4.7./4.7	2.1	2.4	1.8	1.8
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	HP	3	5	3	5	3	5
	Amps (FLA, each)	11.5/11.5	14.9/14.9	4.6	6.6	3.5	5.3
	Amps (LRA, each)	74.5/74.5	82.6/82.6	38.1	46.3	20	39.4

ELECTRICAL DATA - RLRL (continued)

ELECTRICAL DATA - RLRL SERIES							
		C240CL H240CR	**C240CM H240CS**	**C240DL H240DR**	**C240DM H240DS**	**C240YL**	**C240YM**
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	518-632	518-632
	Volts	208/230	208/230	460	460	575	575
	Minimum Circuit Ampacity	95/95	103/103	49	52	37	39
	Minimum Overcurrent Protection Device Size	110/110	125/125	60	60	40	45
	Maximum Overcurrent Protection Device Size	110/110	125/125	60	60	45	50
Compressor Motor	No.	2	2	2	2	2	2
	Volts	200/230	200/230	460	460	575	575
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	10	10	10	10	10	10
	Amps (RLA), Comp. 1	30.1/30.1	30.1/30.1	16.7	16.7	12.2	12.2
	Amps (LRA), Comp. 1	225/225	225/225	114	114	80	80
	HP, Compressor 2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (RLA), Comp. 2	27.6/27.6	27.6/27.6	12.8	12.8	9.6	9.6
	Amps (LRA), Comp. 2	191/191	191/191	100	100	78	78
Condenser Motor	No.	6	6	6	6	6	6
	Volts	208/230	208/230	460	460	575	575
	Phase	1	1	1	1	1	1
	HP	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	1	1
	Amps (LRA, each)	4.7/4.7	4.7./4.7	2.4	2.4	1.8	1.8
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	HP	5	7 1/2	5	7 1/2	5	7 1/2
	Amps (FLA, each)	14.7/14.7	23.1/23.1	6.6	9.6	5.3	7.8
	Amps (LRA, each)	82.6/82.6	136/136	46.3	67	39.4	53.8

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 Figures 17 and 18.)

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.

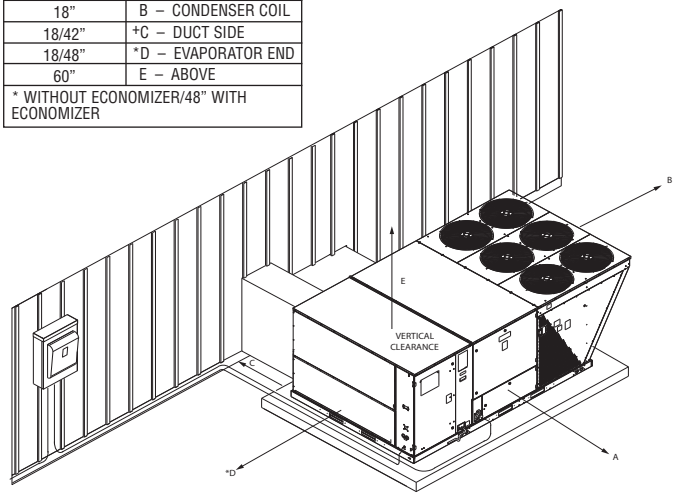
C. CLEARANCES

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

FIGURE 17
PACKAGED AIR CONDITIONER
OUTSIDE SLAB INSTALLATION, BASEMENT OR CRAWL SPACE DISTRIBUTION SYSTEM

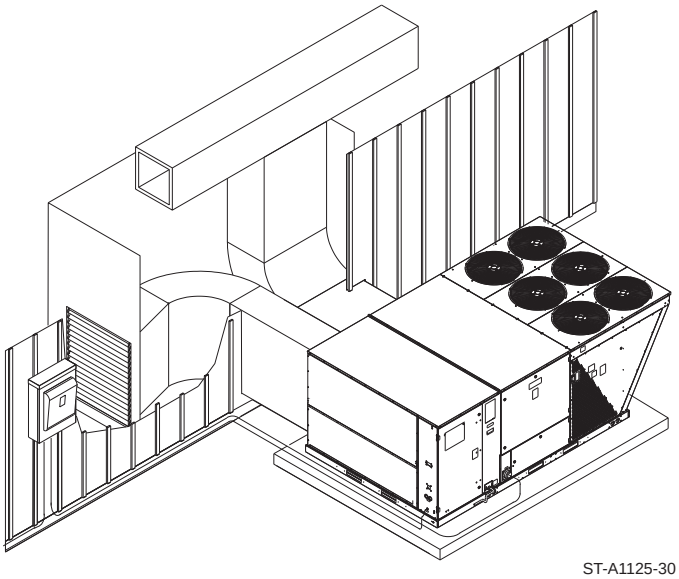
RECOMMENDED CLEARANCE	LOCATION
80"	A – FRONT
18"	B – CONDENSER COIL
18/42"	+C – DUCT SIDE
18/48"	*D – EVAPORATOR END
60"	E – ABOVE
* WITHOUT ECONOMIZER/48" WITH ECONOMIZER	

+ WITHOUT HORIZONTAL ECONOMIZER/ 42" WITH HORIZONTAL ECONOMIZER



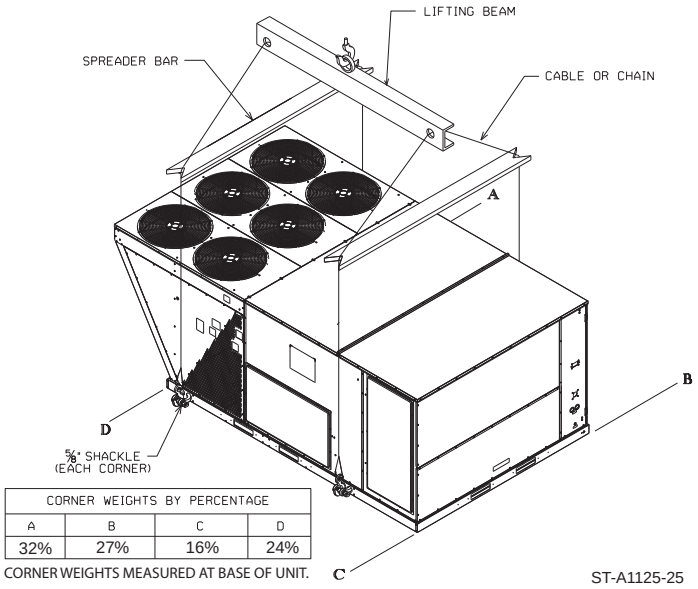
ST-A1125-29

FIGURE 18
PACKAGED AIR CONDITIONER
OUTSIDE SLAB INSTALLATION, CLOSET DISTRIBUTION SYSTEM. SLAB FLOOR CONSTRUCTION



ST-A1125-30

FIGURE 19



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

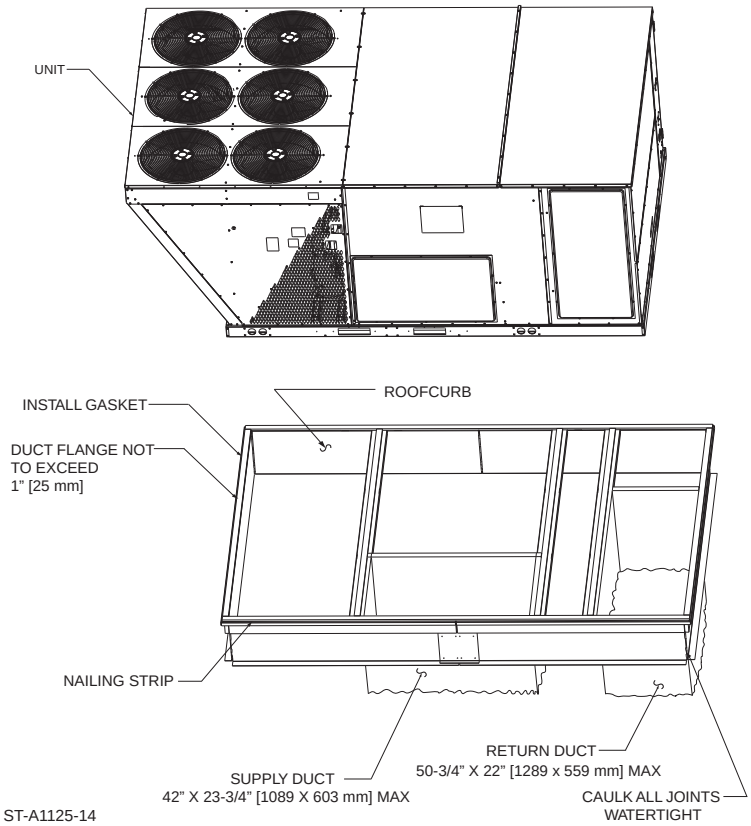
1. Provide 80" minimum clearance at the front of the unit to facilitate removal of the drain pan and return air filters. Provide 18" minimum clearance at all other sides of the unit.
2. Provide 60" minimum clearance between top of unit and maximum 3 foot overhang.
3. Unit is design certified for application on combustible flooring with 0" minimum clearance.
4. See Figure 17 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 19 and 20. 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 21.
6. The location of the unit on the roof should be such as to provide proper access for inspection and servicing.

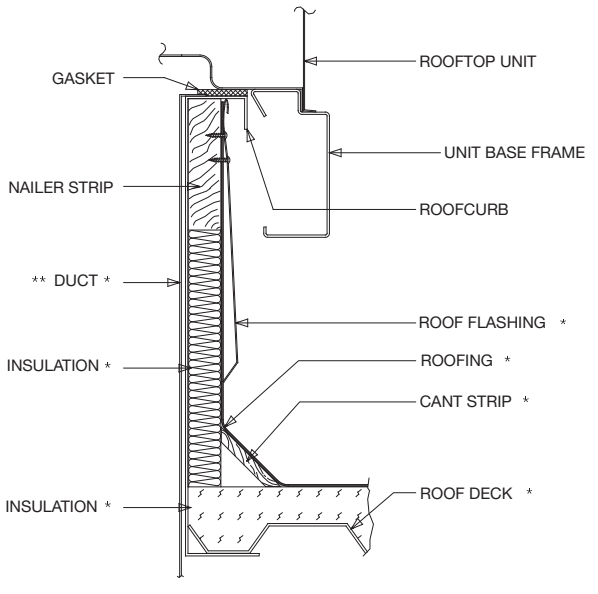
IMPORTANT: ***If unit will not be put into service immediately, cover supply and return openings to prevent excessive condensation.***

FIGURE 20



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.

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, 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".

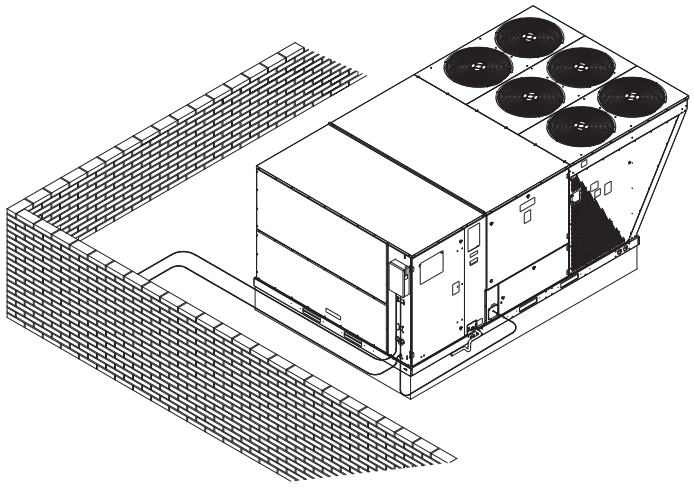
VIII. FILTERS

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 16.

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”)

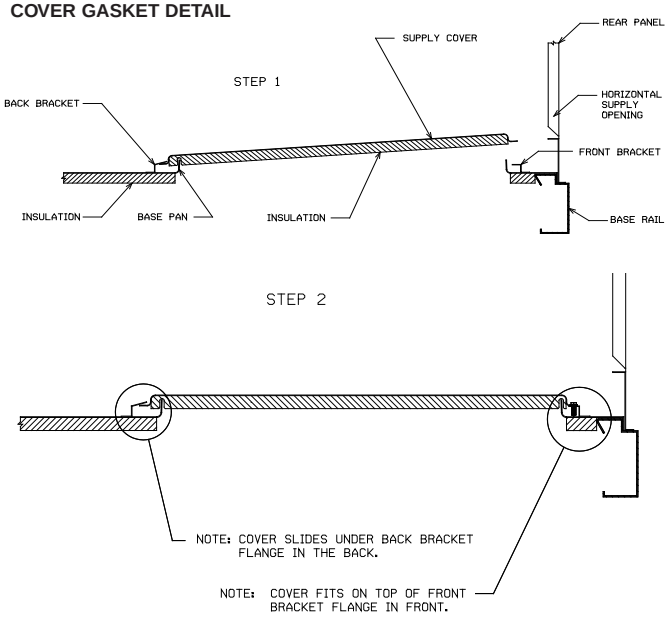
FIGURE 21



ST-A1125-01B

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

FIGURE 22
COVER GASKET DETAIL



IX. 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 8.
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 22.
3. Secure the return and supply cover to front bracket with two (2) screws.

X. CONDENSATE DRAIN

IMPORTANT: *Install a condensate trap to ensure proper condensate drainage. See Figure 23.*

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.

XI. ELECTRICAL WIRING

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

*C.E.C. in Canada

FIGURE 23
CONDENSATE DRAIN

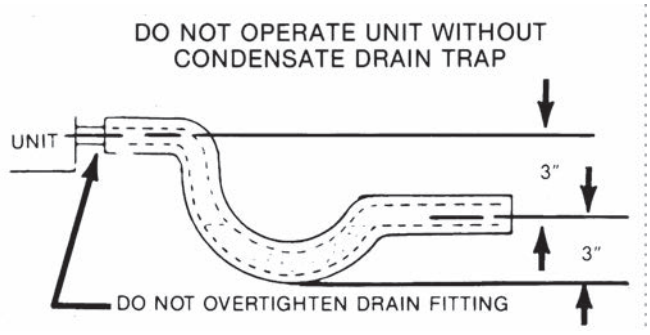
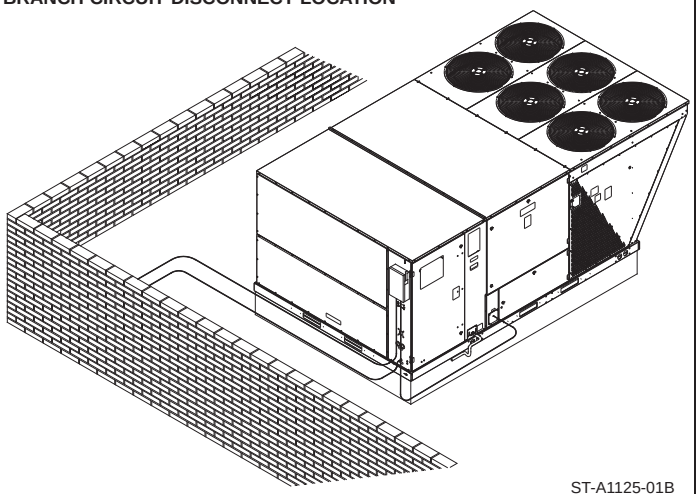


FIGURE 24
BRANCH CIRCUIT DISCONNECT LOCATION



⚠ 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.

A. POWER WIRING

1. This unit incorporates single-point electrical connections for the unit and electric heat accessory.
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 24. 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.

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 15. 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 26 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.

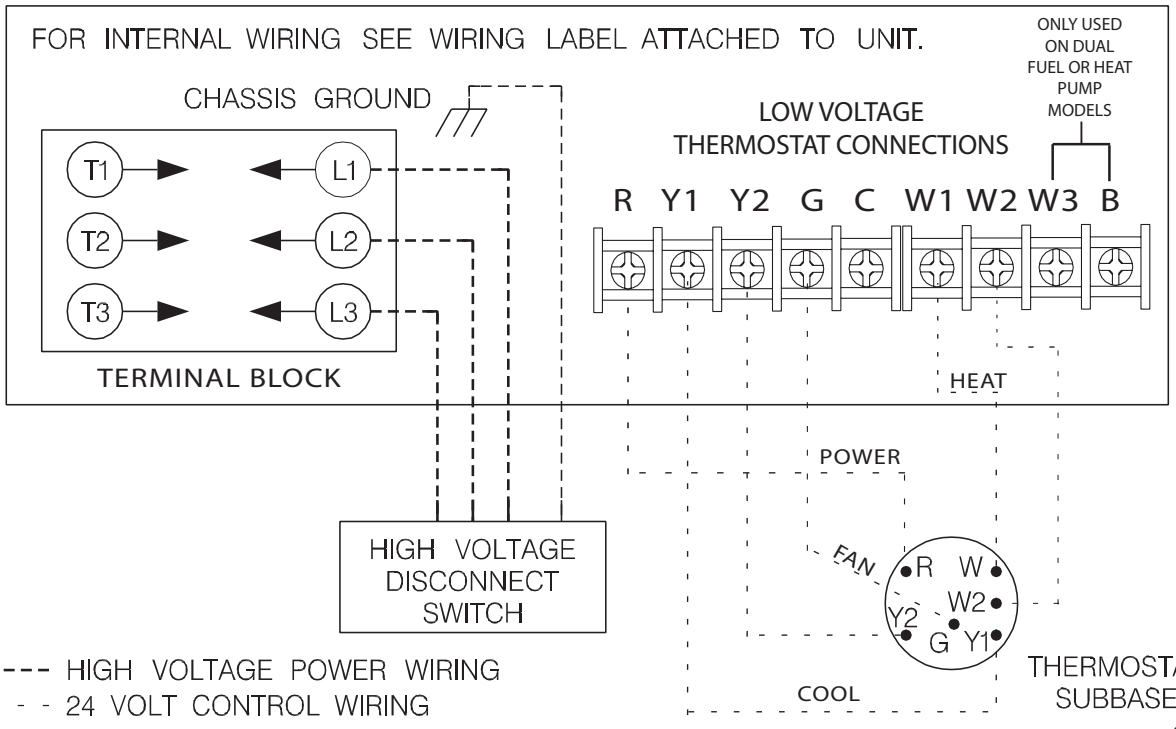
D. INTERNAL WIRING

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

The thermostat 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.

FIGURE 25



ST-A1125-12-00

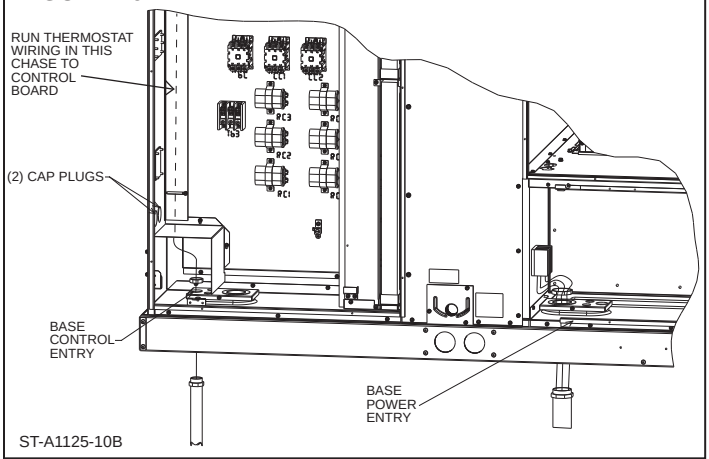
XII. INDOOR AIR FLOW DATA

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

XIII. CRANKCASE HEAT (OPTIONAL)

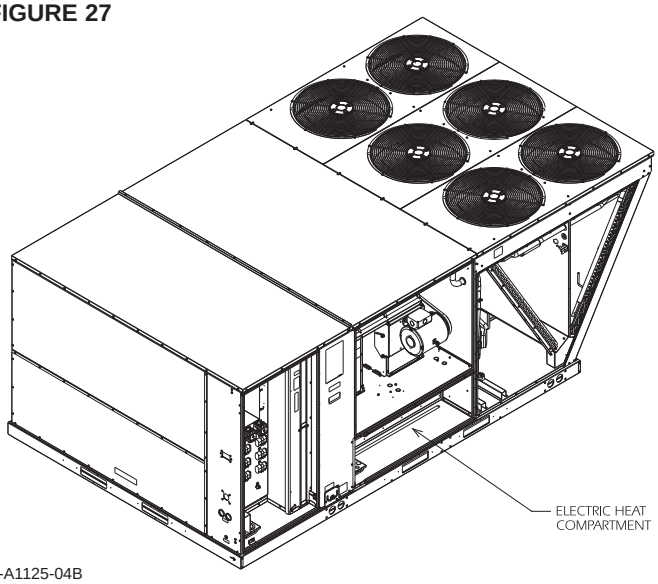
Crankcase heat is not required on scroll type compressors, but may be desirable under certain conditions. Wires have been provided for the addition of crankcase heaters (see wiring diagrams).

FIGURE 26



ST-A1125-10B

FIGURE 27



ST-A1125-04B

AIRFLOW PERFORMANCE — 15 TON [52.7kW] — SIDEFLOW

Air Flow CFM [L/s]	Model RLRL-C180 Voltage 208/230, 460, 575 — 3 phase 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]	—	—	—	—	—	—	—	—	—	—	583	1393	608	1508	632	1621	656	1732	679	1841	701	1947	723	2052	744	2154	764	2254	785	2326	805	2430	825	2537	844	2647	863	2761	881	2878
5000 [2359]	—	—	—	—	—	—	—	—	—	—	591	1476	616	1593	640	1707	663	1820	686	1930	708	2038	729	2145	750	2248	771	2350	791	2420	811	2528	830	2640	850	2755	868	2873	887	2995
5200 [2454]	—	—	—	—	—	—	—	—	575	1442	600	1562	624	1681	648	1797	671	1911	693	2023	715	2133	736	2241	757	2346	777	2410	797	2520	817	2633	836	2749	855	2869	874	2992	892	3118
5400 [2548]	—	—	—	—	—	—	—	—	583	1530	608	1652	632	1772	655	1890	678	2005	701	2119	722	2231	743	2340	764	2447	784	2512	804	2626	823	2744	842	2865	861	2989	879	3117	897	3248
5600 [2643]	—	—	—	—	—	—	—	—	592	1621	616	1745	640	1866	663	1986	686	2103	708	2218	729	2331	750	2442	770	2551	791	2620	810	2739	830	2861	849	2987	867	3116	885	3248	903	3384
5800 [2737]	—	—	—	—	—	—	576	1588	601	1715	625	1840	649	1964	672	2085	694	2204	716	2321	737	2436	757	2548	778	2614	798	2735	817	2858	836	2985	855	3116	873	3249	891	3386	909	3527
6000 [2831]	—	—	—	—	—	—	585	1683	610	1813	634	1940	657	2065	680	2187	702	2308	724	2426	744	2543	765	2657	785	2731	805	2856	824	2984	843	3116	861	3251	879	3389	897	3531	914	3676
6200 [2926]	—	—	—	—	570	1650	595	1783	619	1913	643	2042	666	2169	688	2293	710	2415	731	2535	752	2653	773	2728	792	2854	812	2984	831	3116	850	3253	868	3392	886	3535	903	3682	920	3832
6400 [3020]	—	—	—	—	579	1750	604	1885	628	2017	652	2148	674	2276	697	2402	718	2526	739	2648	760	2767	780	2852	800	2983	819	3118	838	3255	856	3396	875	3541	892	3688	909	3839	926	3994
6600 [3114]	—	—	—	—	589	1854	614	1991	637	2125	661	2257	683	2386	705	2514	727	2640	748	2763	768	2884	788	2984	808	3119	827	3258	845	3400	863	3546	881	3695	899	3847	916	4003	—	—
6800 [3209]	—	—	574	1822	599	1961	623	2099	647	2235	670	2369	692	2500	714	2629	735	2756	756	2882	776	2984	796	3121	815	3262	834	3405	853	3552	871	3702	888	3856	905	4013	922	4173	—	—
7000 [3303]	—	—	584	1930	609	2072	633	2211	656	2349	679	2484	701	2617	723	2748	744	2877	764	3003	785	3124	804	3265	823	3410	842	3559	860	3710	878	3865	895	4024	912	4185	929	4350	—	—
7200 [3398]	570	1897	595	2042	619	2185	643	2327	666	2466	689	2602	711	2737	732	2870	753	3000	773	3127	793	3270	812	3416	831	3566	849	3719	868	3875	885	4035	902	4198	919	4364	—	—	—	—

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

Drive Package	L						M					
Motor H.P. [W]	3 [2237.1]						5 [3728.5]					
Blower Sheave	BK105H						BK105H					
Motor Sheave	1VL-44						1VP-56					
Turns Open	**1**	2	3	4	5	6	1	2	3	**4**	5	6
RPM	**733**	701	669	640	605	572	927	903	873	**840**	808	775

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]	Model RLRL-C240 Voltage 208/230, 460, 575 — 3 phase 60 Hz																																			
	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]	—	—	—	—	—	—	—	—	685	2151	707	2306	729	2461	750	2617	771	2774	792	2932	813	3090	833	3250	853	3409	872	3570	892	3731	911	3894	929	4056	948	4220	966	4384	984	4549
6600 [3114]	—	—	—	—	—	—	—	—	698	2306	720	2462	741	2619	762	2777	783	2936	804	3095	824	3255	844	3415	863	3577	882	3739	901	3902	920	4065	938	4230	956	4395	974	4561	992	4727
6800 [3209]	—	—	—	—	—	—	690	2313	712	2470	733	2628	754	2786	775	2946	795	3106	815	3266	835	3428	854	3590	874	3753	892	3917	911	4081	929	4246	947	4412	965	4579	983	4746	1000	4914
7000 [3303]	—	—	—	—	682	2327	704	2484	725	2643	746	2802	766	2962	787	3123	807	3285	827	3447	846	3610	865	3774	884	3938	903	4103	921	4269	939	4436	957	4603	974	4771	991	4940	1008	5110
7200 [3398]	—	—	—	—	696	2505	717	2665	738	2825	759	2985	779	3147	799	3309	819	3472	838	3636	857	3801	876	3966	895	4132	913	4299	931	4466	949	4634	966	4803	983	4973	1000	5143	—	—
7400 [3492]	—	—	689	2533	710	2693	731	2854	752	3015	772	3177	792	3341	812	3504	831	3669	850	3834	869	4000	887	4167	906	4334	924	4503	941	4672	959	4841	976	5012	992	5183	1009	5355	—	—
7600 [3586]	682	2566	704	2727	724	2889	745	3051	765	3214	785	3378	805	3543	824	3708	843	3874	862	4041	880	4209	899	4377	917	4546	934	4716	951	4886	968	5057	985	5229	1002	5402	—	—	—	—
7800 [3681]	697	2768	718	2931	739	3094	759	3258	779	3423	798	3588	818	3754	837	3921	856	4089	874	4257	892	4426	910	4596	928	4766	945	4937	962	5109	979	5282	995	5456	—	—	—	—	—	—
8000 [3775]	712	2979	733	3143	753	3308	773	3473	793	3640	812	3806	831	3974	850	4142	868	4312	886	4481	904	4652	921	4823	939	4995	956	5168	972	5342	989	5516	1005	5691	—	—	—	—	—	—
8200 [3869]	728	3199	748	3365	768	3531	787	3698	806	3865	825	4034	844	4203	862	4373	881	4543	898	4715	916	4887	933	5060	950	5233	967	5407	983	5583	999	5758	—	—	—	—	—	—	—	—
8400 [3964]	743	3428	763	3595	782	3762	802	3931	820	4100	839	4270	857	4441	875	4612	893	4784	911	4957	928	5131	945	5305	961	5480	978	5656	994	5832	1009	6010	—	—	—	—	—	—	—	—
8600 [4058]	758	3665	778	3834	797	4003	816	4173	835	4343	853	4515	871	4687	889	4860	906	5034	923	5208	940	5383	956	5559	973	5735	989	5913	1004	6091	—	—	—	—	—	—	—	—	—	—
8800 [4153]	774	3911	793	4081	812	4252	830	4423	849	4596	867	4769	884	4942	902	5117	919	5292	936	5468	952	5644	968	5822	984	6000	1000	6179	—	—	—	—	—	—	—	—	—	—	—	—
9000 [4247]	790	4166	808	4338	827	4510	845	4683	863	4857	881	5031	898	5206	915	5382	932	5559	948	5736	964	5915	980	6093	996	6273	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9200 [4341]	805	4430	824	4603	842	4777	860	4951	877	5127	895	5303	912	5479	929	5657	945	5835	961	6014	977	6194	992	6374	1008	6555	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9400 [4436]	821	4703	839	4877	857	5052	875	5229	892	5405	909	5583	926	5761	942	5940	958	6120	974	6300	989	6481	1005	6663	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9600 [4530]	837	4984	855	5160	872	5337	890	5514	907	5693	923	5872	940	6052	956	6232	971	6413	987	6595	1002	6778	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

Drive Package	L						M						N (field installed only)					
Motor H.P. [W]	5 [3728.5]						7.5 [5592.7]						7.5 [5592.7]					
Blower Sheave	BK120H						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	**822**	798	771	742	712	684	932	905	878	**851**	824	797	1007	978	949	921	892	863

NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI 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.

Airflow CFM [L/s]	AIRFLOW CORRECTION FACTORS *			COMPONENT AIRFLOW RESISTANCE						
				Wet Coil	Downflow	Downflow Economizer RA Damper Open	Horizontal Economizer RA Damper Open	Concentric Grill RXRN-AD80 or RXRN-AD81 & Transition RXMC-CJ07	Concentric Grill RXRN-AD86 & Transition RXMC-CK08	Concentric Grill RXRN-AD88 & Transition RXMC-CL09
	Total MBH	Sensible MBH	Power kW	Resistance — Inches of Water [kPa]						
6400 [3020]	0.97	0.88	0.98	0.01 [.00]	0.06 [.01]	0.15 [.04]	0.04 [.01]	0.50 [.12]	—	—
6600 [3114]	0.97	0.90	0.99	0.02 [.00]	0.06 [.01]	0.16 [.04]	0.05 [.01]	0.54 [.13]	—	—
6800 [3209]	0.98	0.92	0.99	0.03 [.01]	0.07 [.02]	0.16 [.04]	0.05 [.01]	—	—	—
7000 [3303]	0.98	0.94	0.99	0.03 [.01]	0.08 [.02]	0.17 [.04]	0.06 [.01]	—	—	—
7200 [3398]	0.99	0.96	0.99	0.04 [.01]	0.08 [.02]	0.18 [.04]	0.06 [.01]	—	0.38 [.09]	—
7400 [3492]	0.99	0.97	1.00	0.05 [.01]	0.09 [.02]	0.19 [.05]	0.07 [.02]	—	0.41 [.10]	—
7600 [3586]	1.00	0.99	1.00	0.06 [.01]	0.10 [.02]	0.20 [.05]	0.07 [.02]	—	0.44 [.11]	—
7800 [3681]	1.00	1.01	1.00	0.06 [.01]	0.11 [.03]	0.21 [.05]	0.08 [.02]	—	0.47 [.12]	—
8000 [3775]	1.01	1.03	1.00	0.07 [.02]	0.12 [.03]	0.22 [.05]	0.09 [.02]	—	0.50 [.12]	—
8200 [3869]	1.01	1.05	1.01	0.08 [.02]	0.13 [.03]	0.23 [.06]	0.09 [.02]	—	0.53 [.13]	—
8400 [3964]	1.02	1.07	1.01	0.09 [.02]	0.14 [.03]	0.24 [.06]	0.10 [.02]	—	0.56 [.14]	—
8600 [4058]	1.02	1.09	1.01	0.09 [.02]	0.15 [.04]	0.25 [.06]	0.10 [.02]	—	0.59 [.15]	—
8800 [4153]	1.03	1.10	1.01	0.10 [.02]	0.16 [.04]	0.26 [.06]	0.11 [.03]	—	0.62 [.15]	—
9000 [4247]	1.03	1.12	1.01	0.11 [.03]	0.18 [.04]	0.27 [.07]	0.11 [.03]	—	—	—
9200 [4341]	1.03	1.14	1.02	0.12 [.03]	0.19 [.05]	0.28 [.07]	0.12 [.03]	—	—	—
9400 [4436]	1.04	1.16	1.02	0.12 [.03]	0.20 [.05]	0.29 [.07]	0.12 [.03]	—	—	—
9600 [4530]	1.04	1.18	1.02	0.13 [.03]	0.22 [.05]	0.30 [.07]	0.13 [.03]	—	—	—

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

[ ] Designates Metric Conversions

XIV. 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 10.)
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?

XV. 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

XVI. 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.

XVII. UNITS WITH A BLOWER VFD

No adjustments of the VFD are required for installation or operation of this 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 I & O Manual (92-104334-01) programming guide for safe and proper function.

OPERATION

The purpose of the VFD is to allow low airflow in Fan Only (G) and First Stage Cooling (Y1) operation of a two stage unit. Unit air balancing should be performed at 100% airflow (60Hz at VFD) during a W1, W2 or Y2 call by adjusting the blower motor sheave. 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 (ie. 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. For more information see VFD I & O Manual (92-104334-01).

XVIII. 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.

XIX. HEATER KIT CHARACTERISTICS

AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

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

RHEEM Model Number	Single Power Supply For Both Unit And Heater Kit						Separate Power Supply For Both Unit And Heater Kit				
	Heater Kit				Air Conditioner		Heater Kit		Air Conditioner		
	RXJJ-Heater Kit Nominal kW	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
RLRL-C180CL	No Heat	—	—	—	—	75/75	90/100	90/100	—	—	75/75	90/100	90/100
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	75/75	90/100	90/100	50/58	50/60	75/75	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	75/75	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	75/75	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	75/75	90/100	90/100
RLRL-C240CL	No Heat	—	—	—	—	95/95	110/110	110/110	—	—	95/95	110/110	110/110
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	95/95	110/110	110/110	50/58	50/60	95/95	110/110	110/110
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	119/134	125/125	150/150	100/116	100/125	95/95	110/110	110/110
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	169/192	175/175	200/200	150/173	150/175	95/95	110/110	110/110
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	206/235	225/225	250/250	188/217	200/225	95/95	110/110	110/110
RLRL-C180CM	No Heat	—	—	—	—	79/79	90/100	90/100	—	—	79/79	90/100	90/100
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	79/79	90/100	90/100	—	—	79/79	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	79/79	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	150/175	79/79	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	79/79	90/100	90/100
RLRL-C240CM	No Heat	—	—	—	—	103/103	125/125	125/125	—	—	103/103	125/125	125/125
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	103/103	125/125	125/125	50/58	50/60	103/103	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	103/103	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	150/175	103/103	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	103/103	125/125	125/125

XIX. HEATER KIT CHARACTERISTICS

AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

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

RHEEM Model Number	Single Power Supply For Both Unit And Heater Kit						Separate Power Supply For Both Unit And Heater Kit					
	Heater Kit					Air Conditioner	Heater Kit		Air Conditioner			
	RXJJ-Heater Kit Nominal kW	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
RLRL-H180CR	No Heat	—	—	—	—	75/75	90/100	90/100	—	—	75/75	90/100	90/100
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	75/75	90/100	90/100	50/58	50/60	75/75	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	75/75	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	75/75	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	75/75	90/100	90/100
RLRL-H240CR	No Heat	—	—	—	—	95/95	110/110	110/110	—	—	95/95	110/110	110/110
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	95/95	110/110	110/110	50/58	50/60	95/95	110/110	110/110
	CE40C	2	28.8/38.3	98.25/130.66	79.9/92.2	119/134	125/125	150/150	100/116	100/125	95/95	110/110	110/110
	CE60C	2	43.2/57.5	147.38/196.16	119.9/138.3	169/192	175/175	200/200	150/173	150/175	95/95	110/110	110/110
	CE75C	2	54/71.9	184.22/245.29	149.8/172.8	206/235	225/225	250/250	188/217	200/225	95/95	110/110	110/110
RLRL-H180CS	No Heat	—	—	—	—	79/79	90/100	90/100	—	—	79/79	90/100	90/100
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	79/79	90/100	90/100	—	—	79/79	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	79/79	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	150/175	79/79	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	79/79	90/100	90/100
RLRL-H240CS	No Heat	—	—	—	—	103/103	125/125	125/125	—	—	103/103	125/125	125/125
	CE20C	1	14.4/19.2	49.13/65.5	40/46.2	103/103	125/125	125/125	50/58	50/60	103/103	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	103/103	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	150/175	103/103	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	103/103	125/125	125/125

XIX. HEATER KIT CHARACTERISTICS AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 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		
	RXJJ-Heater Kit Nominal kW	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
RLRL-C180DL	No Heat	—	—	—	—	38	45/50	—	—	—	38	45/50	—
	CE20D	1	19.2	65.5	23.1	38	45/50	—	29	30	38	45/50	—
	CE40D	2	38.4	131	46.2	64	70/70	—	58	60	38	45/50	—
	CE60D	2	57.6	196.5	69.3	93	100/100	—	87	90	38	45/50	—
	CE75D	2	72	245.63	86.6	114	125/125	—	109	110	—	—	—
RLRL-C240DL	No Heat	—	—	—	—	49	60/60	—	—	—	49	60/60	—
	CE20D	1	19.2	65.5	23.1	49	60/60	—	29	30	49	60/60	—
	CE40D	2	38.4	131	46.2	67	70/70	—	58	60	49	60/60	—
	CE60D	2	57.6	196.5	69.3	95	100/100	—	87	90	49	60/60	—
	CE75D	2	72	245.63	86.6	117	125/125	—	109	110	49	60/60	—
RLRL-C180DM	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
RLRL-C240DM	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	70	70/70	—	58	60	52/0	60/60	0/0
	CE60D	2	57.6	196.5	69.3	99	100/100	—	87	90	52/0	60/60	0/0
	CE75D	2	72	245.63	86.6	121	125/125	—	109	110	52/0	60/60	0/0

XIX. HEATER KIT CHARACTERISTICS

AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

480 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION

RHEEM Model Number	Single Power Supply For Both Unit And Heater Kit								Separate Power Supply For Both Unit And Heater Kit				
	Heater Kit				Air Conditioner				Heater Kit		Air Conditioner		
	RXJJ-Heater Kit Nominal kW	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
RLRL-H180DR	No Heat	—	—	—	—	38	45/50	—	—	—	38	45/50	—
	CE20D	1	19.2	65.5	23.1	38	45/50	—	29	30	38/0	45/50	0/0
	CE40D	2	38.4	131	46.2	64	70/70	—	58	60	38/0	45/50	0/0
	CE60D	2	57.6	196.5	69.3	93	100/100	—	87	90	38/0	45/50	0/0
	CE75D	2	72	245.63	86.6	114	125/125	—	109	110	38/0	45/50	0/0
RLRL-H240DR	No Heat	—	—	—	—	49	60/60	—	—	—	49	60/60	—
	CE20D	1	19.2	65.5	23.1	49	60/60	—	29	30	49/0	60/60	0/0
	CE40D	2	38.4	131	46.2	67	70/70	—	58	60	49/0	60/60	0/0
	CE60D	2	57.6	196.5	69.3	95	100/100	—	87	90	49/0	60/60	0/0
	CE75D	2	72	245.63	86.6	117	125/125	—	109	110	49/0	60/60	0/0
RLRL-H180DS	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
RLRL-H240DS	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	70	70/70	—	58	60	52/0	60/60	0/0
	CE60D	2	57.6	196.5	69.3	99	100/100	—	87	90	52/0	60/60	0/0
	CE75D	2	72	245.63	86.6	121	125/125	—	109	110	52/0	60/60	0/0

XIX. HEATER KIT CHARACTERISTICS (CONTINUED).
AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

600 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION

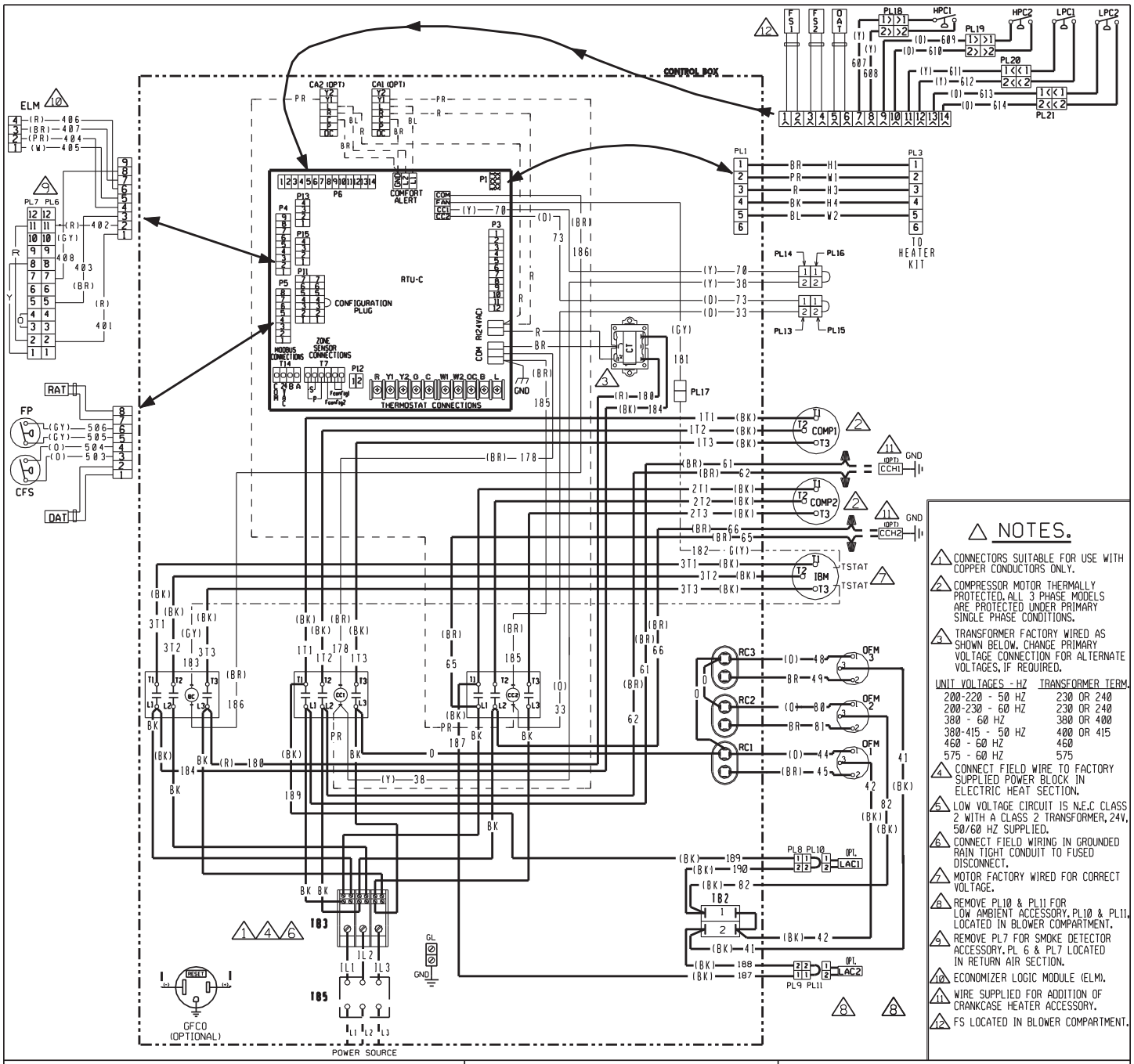
RHEEM Model Number	Single Power Supply For Both Unit And Heater Kit								Separate Power Supply For Both Unit And Heater Kit				
	Heater Kit				Air Conditioner				Heater Kit		Air Conditioner		
	RXJJ-Heater Kit Nominal kW	No. of Sequence Steps	Rated Heater kW @ 600 V	Heater KBTU/Hr @ 600 V	Heater Amp. @ 600 V	Unit Min. Ckt Ampacity @ 600 V	Over Current Protective Device Size		Min. Ckt. Ampacity 600V	Max. Fuse Size 600V	Min. Circuit Ampacity 600V	Over Current Protective Device Size	
							Min./Max. @ 600 V	Min./Max. @ 600 V				Min./Max. @ 600 V	Min./Max. @ 600 V
RLRL-C180YL	No Heat	—	—	—	—	29	35/35	—	—	—	29	35/35	—
	CE20Y	1	19.2	65.5	18.5	29	35/35	—	24	25	29/0	35/35	0/0
	CE40Y	2	38.4	131	37	51	60/60	—	47	50	29/0	35/35	0/0
	CE60Y	2	57.6	196.5	55.4	74	80/80	—	70	70	29/0	35/35	0/0
	CE75Y	2	72	245.63	69.3	92	100/100	—	87	90	29/0	35/35	0/0
RLRL-C240YL	No Heat	—	—	—	—	37	40/45	—	—	—	37	40/45	—
	CE20Y	1	19.2	65.5	18.5	37	40/45	—	24	25	37/0	40/45	0/0
	CE40Y	2	38.4	131	37	53	60/60	—	47	50	37/0	40/45	0/0
	CE60Y	2	57.6	196.5	55.4	76	80/80	—	70	70	37/0	40/45	0/0
	CE75Y	2	72	245.63	69.3	94	100/100	—	87	90	37/0	40/45	0/0
RLRL-C180YM	No Heat	—	—	—	—	30	35/35	—	—	—	30	35/35	—
	CE20Y	1	19.2	65.5	18.5	30	35/35	—	24	25	30/0	35/35	0/0
	CE40Y	2	38.4	131	37	53	60/60	—	47	50	30/0	35/35	0/0
	CE60Y	2	57.6	196.5	55.4	76	80/80	—	70	70	30/0	35/35	0/0
	CE75Y	2	72	245.63	69.3	94	100/100	—	87	90	30/0	35/35	0/0
RLRL-C240YM	No Heat	—	—	—	—	39	45/50	—	—	—	39	45/50	—
	CE20Y	1	19.2	65.5	18.5	39	45/50	—	24	25	39/0	45/50	0/0
	CE40Y	2	38.4	131	37	57	60/60	—	47	50	39/0	45/50	0/0
	CE60Y	2	57.6	196.5	55.4	80	80/80	—	70	70	39/0	45/50	0/0
	CE75Y	2	72	245.63	69.3	97	100/100	—	87	90	39/0	45/50	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 AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTION FOR ALTERNATE VOLTAGES, IF REQUIRED.

UNIT VOLTAGES - HZ	TRANSFORMER TERM.
200-220 - 50 HZ	230 OR 240
200-230 - 60 HZ	230 OR 240
380 - 60 HZ	380 OR 400
380-415 - 50 HZ	400 OR 415
460 - 60 HZ	460
575 - 60 HZ	575

4. △ CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRIC HEAT SECTION.
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.
8. △ REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11, 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. △ FS LOCATED IN BLOWER COMPARTMENT.

COMPONENT CODE

BC	BLOWER CONTACTOR
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
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
LPC	LOW PRESSURE CONTROL
OAT	OUTSIDE AIR SENSOR
OFM	OUTDOOR FAN MOTOR
PL	PLUG
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTU-C	ROOFTOP UNIT CONTROL
TB	TERMINAL BLOCK
	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.)

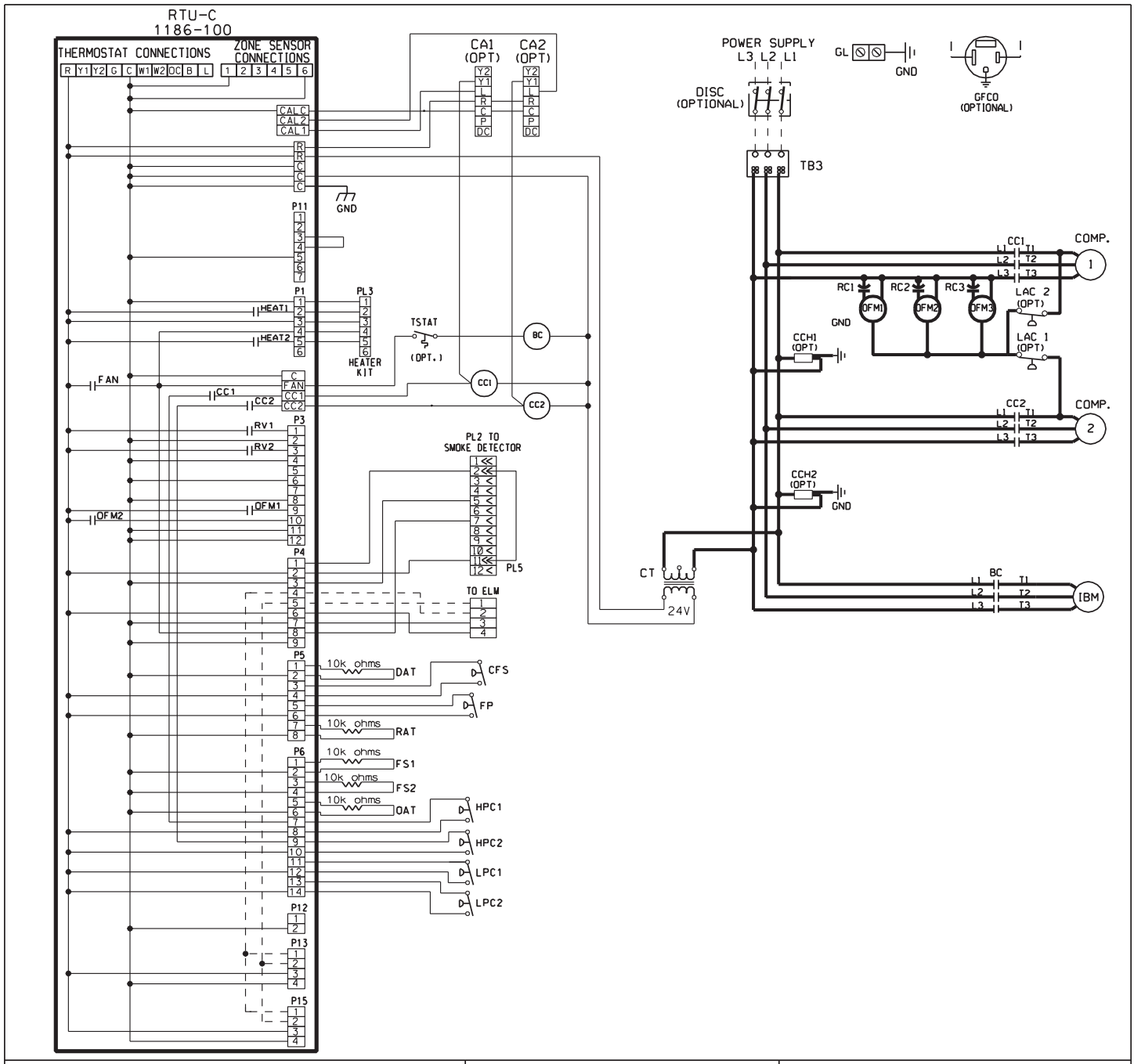
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

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
RLRL-C180
208-230/460/575V 3 PH, 60 HZ.
PACKAGED A/C W/RTU-C

DR. BY	APP. BY	DATE	DWG. NO.	REV
MGR		1-24-12	90-103079-12	00



COMPONENT CODE

BC	BLOWER CONTACTOR
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
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
LPC	LOW PRESSURE CONTROL
MAS	MIX AIR SENSOR
OAT	OUTSIDE AIR SENSOR
OFM	OUTDOOR FAN MOTOR
PL	PLUG
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
SCC	SPACE COMFORT CONTROL
SE	SPARK ELECTRODE
TB	TERMINAL BLOCK
	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
RLRL-C180Ø
208-230/460/575V 3 PH, 60 HZ.
PACKAGED A/C

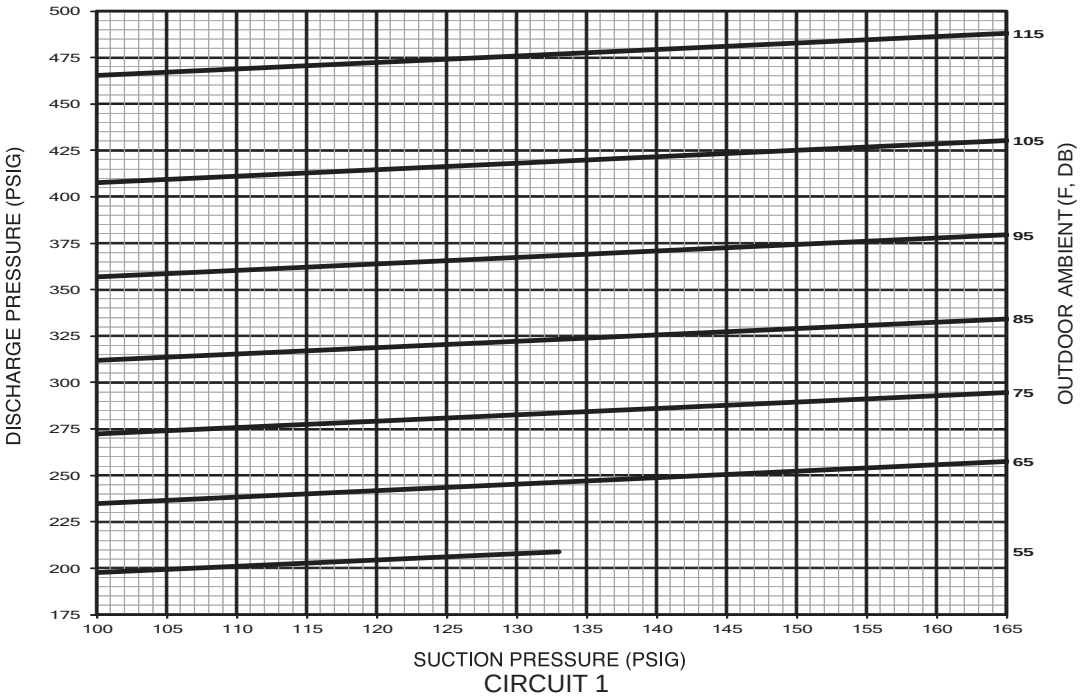
DR. BY	APP. BY	DATE	DWG. NO.	REV
MGR		1-25-12	90-103263-12	ØØ

RLRL SERIES – 15 TON

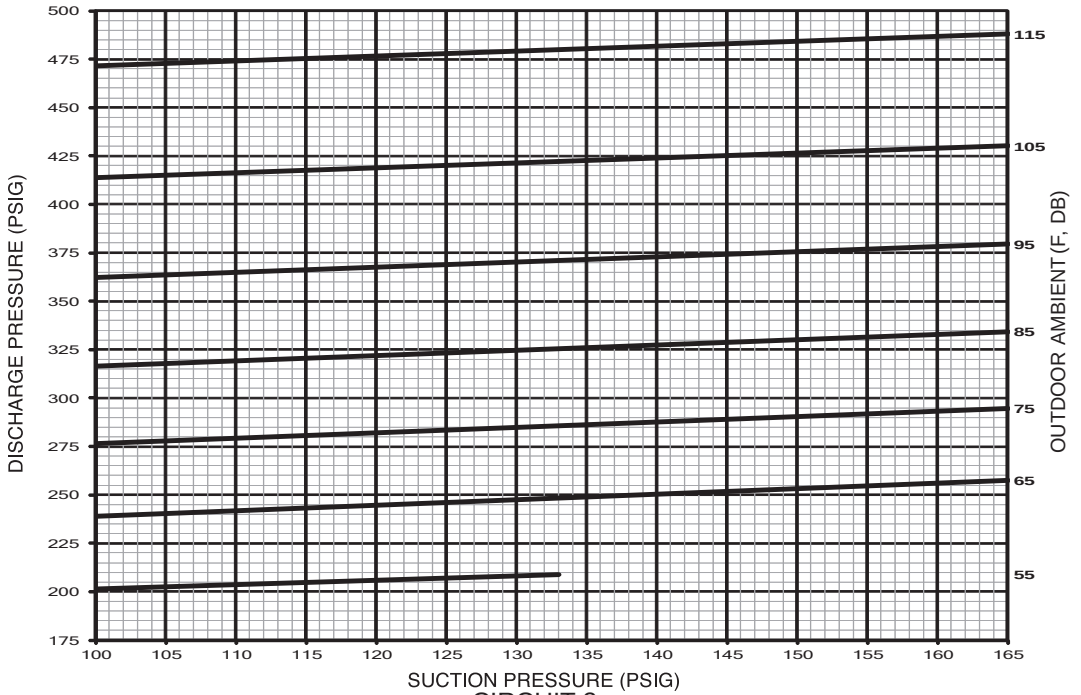
SYSTEM CHARGE CHART - REFRIGERANT 410A
15 TON, CIRCUITS 1 & 2

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

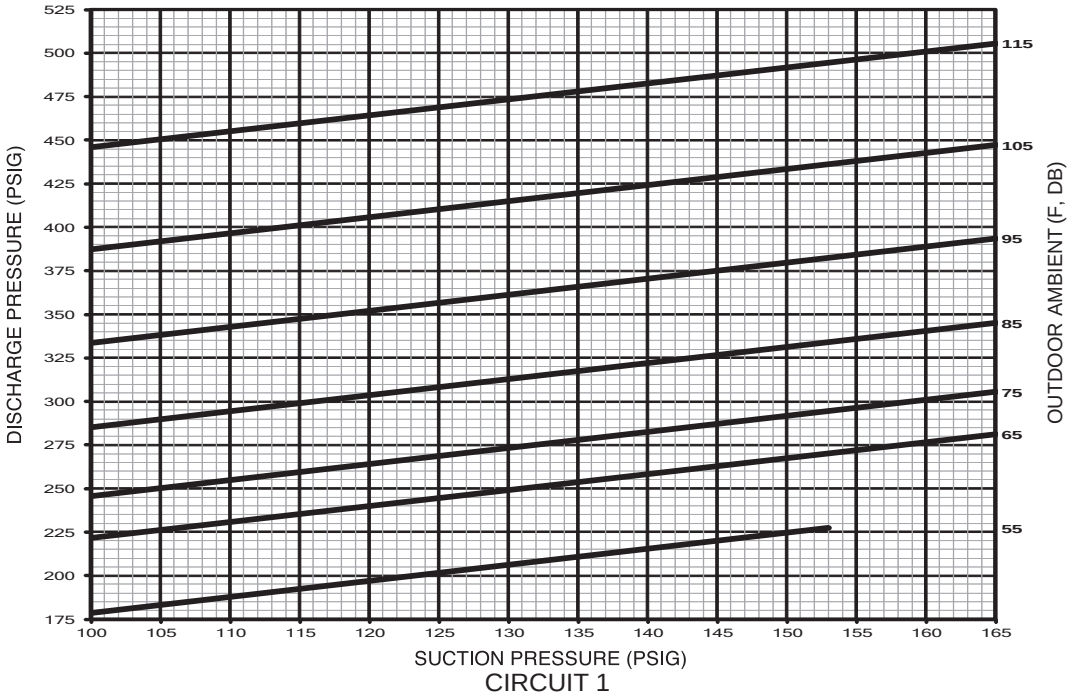
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RLRL SERIES – 20 TON

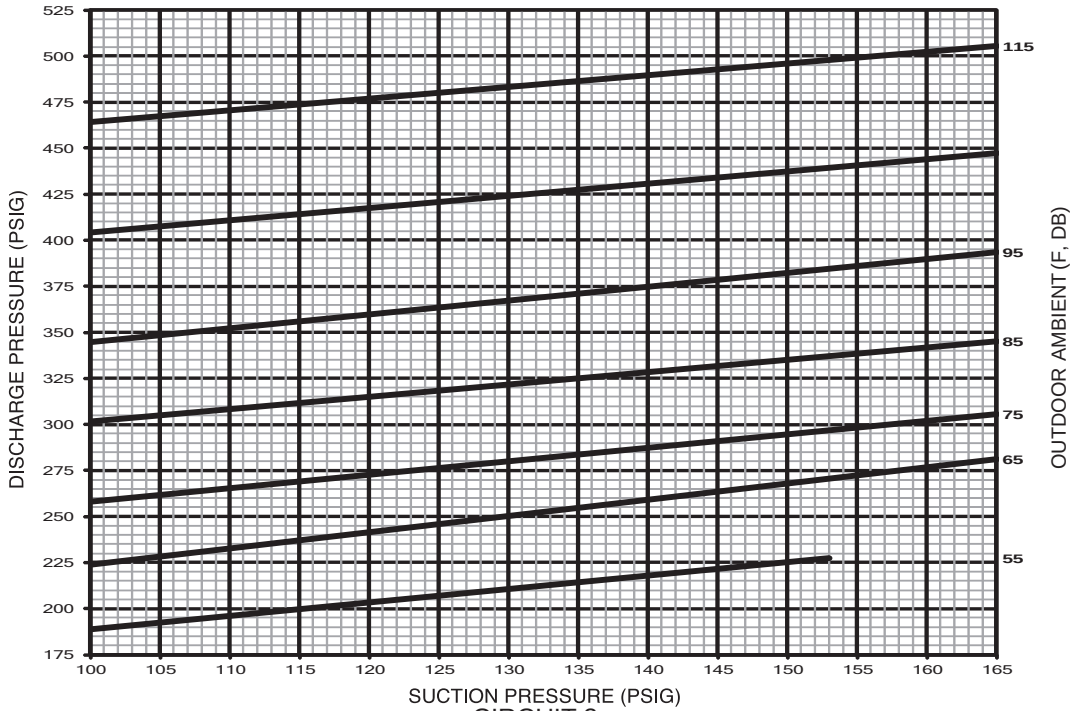
SYSTEM CHARGE CHART - REFRIGERANT 410A
20 TON, CIRCUITS 1 & 2

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

92-103943-03-00