

INSTALLATION INSTRUCTIONS

FOR COMBINATION HEATING AND COOLING ROOFTOP UNITS

RKNL-B/RKNL-C SERIES 6, 7.5, 8.5, 10 & 12.5 TON

[21.1, 26.4, 29.9, 35.2 & 44 kW]



RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

▲ WARNING

IF THE INFORMATION IN THESE INSTRUCTIONS IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT, CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

▲ WARNING

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED 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, CARBON MONOXIDE POISONING, EXPLOSION, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

▲ WARNING

PROPOSITION 65 WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

▲ WARNING

- Do not store or use gasoline or other flammable vapors and liquids, or other combustible materials in the vicinity of this or any other appliance.
- WHAT TO DO IF YOU SMELL GAS
 - Do not try to light any appliance.
 - Do not touch any electrical switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
 - Do not return to your home until authorized by the gas supplier or fire department.
- DO NOT RELY ON SMELL ALONE TO DETECT LEAKS. DUE TO VARIOUS FACTORS, YOU MAY NOT BE ABLE TO SMELL FUEL GASES.
 - U.L. recognized fuel gas and CO detectors are recommended in all applications, and their installation should be in accordance with the manufacturer's recommendations and/or local laws, rules, regulations, or customs.
- Improper installation, adjustment, alteration, service or maintenance can cause injury, property damage or death. Refer to this manual. Installation and service must be performed by a qualified installer, service agency or the gas supplier. In the commonwealth of Massachusetts, installation must be performed by a licensed plumber or gas fitter for appropriate fuel.

**Featuring New Industry
Standard R-410A**

R-410A



TABLE OF CONTENTS

	Page No.
INTRODUCTION	2
Checking Product Received	2
I. SPECIFICATIONS	2
General	2
Major Components	2
R-410A Refrigerant	2
Safety Information	3
Unit Dimensions	4-6
General Data	7-23
Electrical Data	24-28
II. INSTALLATION	29
General	29
Location Considerations	29
Outside Installation	29
Exhaust & Combustion	
Air Inlet Hoods	30
Cover Panel Installation	30
Filter Replacement	30
Clearances	31
Rooftop Installation	32
Ducting	32
Return Air	33
III. GAS SUPPLY & PIPING	34
Gas Connection	34
LP Conversion	35
Adjusting or Checking	
Furnace Input	35
Condensate Drain	36
IV. WIRING	37
Power Supply	37
Hook-up	38
Internal Wiring	38
Thermostat	38
V. FURNACE CONTROLS	39
Operating Sequence	39
Operating Instructions	39
Burners	40
Manual Reset	40
Pressure Switch	40
Limit Control	40
VI. OPERATION INFO	40
Advise Customer	40
Furnace Maintenance	40
Lubrication	41
Cooling Maintenance	41
Replacement Parts	41
Troubleshooting	41
Wiring Diagrams	41
Charging	41
VII. AIRFLOW PERFORMANCE	42-46
VIII. TROUBLESHOOTING	47-49
IX. WIRING DIAGRAMS	50-65
X. CHARGE CHARTS	66-71

INTRODUCTION

▲ 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.

This booklet contains the installation and operating instructions for your combination gas heating/electric cooling unit. There are some 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.

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. **IMPORTANT:** Check the unit model number, heating size, electrical characteristics, and accessories to determine if they are correct.

I. SPECIFICATIONS

A. GENERAL

The Combination Gas Heating/Electric Cooling Rooftop is available in 150,000, 225,000 and 252,000 BTUH heating input. Cooling capacity is 7.5, 8.5, 10, 12 & 15 nominal tons. Units are convertible from bottom supply and return to side supply and return by relocation of supply and return air cover panels. See cover installation detail.

The units are weatherized for mounting outside of the building.

▲ WARNING

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

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 energy consumption of the ignition system used with this unit is 175 watts.
2. 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 a scroll compressor, condenser coil, evaporator coil with fixed restrictor assembly or TXV, a circulation air blower, a condenser fan, a heat exchanger assembly, gas burner and control assembly, combustion air motor and fan, and all necessary internal electrical wiring. The cooling system of these units is factory-evacuated, charged and performance tested. Refrigerant amount and type are indicated on rating plate.

C. R-410A REFRIGERANT

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

1. Specifications 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 PRESSURE THAN R-22 SYSTEMS. DO NOT USE R-22 SERVICE EQUIPMENT OR COMPONENTS ON R-410A EQUIPMENT.

SAFETY INFORMATION

⚠ WARNING

USE ONLY WITH TYPE OF GAS APPROVED FOR THIS UNIT. REFER TO THE UNIT RATING PLATE.

⚠ WARNING

INSTALL THIS UNIT ONLY IN A LOCATION AND POSITION AS SPECIFIED IN THE LOCATION REQUIREMENTS AND CONSIDERATIONS SECTION OF THESE INSTRUCTIONS. PROVIDE ADEQUATE COMBUSTION AND VENTILATION AIR TO THE UNIT SPACE AS SPECIFIED IN THE VENTING SECTION OF THESE INSTRUCTIONS.

⚠ WARNING

PROVIDE ADEQUATE COMBUSTION AND VENTILATION AIR TO THE UNIT SPACE AS SPECIFIED IN THE COMBUSTION AND VENTILATION AIR SECTION OF THESE INSTRUCTIONS.

⚠ WARNING

COMBUSTION PRODUCTS MUST BE DISCHARGED OUTDOORS. CONNECT THE FACTORY SUPPLIED EXHAUST AND COMBUSTION AIR INLET HOODS ONLY, AS SPECIFIED IN THE EXHAUST AND COMBUSTION AIR INLET HOODS INSTALLATION SECTION OF THESE INSTRUCTIONS.

⚠ WARNING

NEVER TEST FOR GAS LEAKS WITH AN OPEN FLAME. USE A COMMERCIALLY AVAILABLE SOAP SOLUTION MADE SPECIFICALLY FOR THE DETECTION OF LEAKS TO CHECK ALL CONNECTIONS, AS SPECIFIED IN GAS SUPPLY AND PIPING SECTION OF THESE INSTRUCTIONS.

⚠ WARNING

ALWAYS INSTALL UNIT TO OPERATE WITHIN THE UNIT'S INTENDED TEMPERATURE-RISE RANGE WITH A DUCT SYSTEM WHICH HAS AN EXTERNAL STATIC PRESSURE WITHIN THE ALLOWABLE RANGE, AS SPECIFIED IN DUCTING SECTION OF THESE INSTRUCTIONS. SEE ALSO UNIT RATING PLATE.

⚠ WARNING

WHEN A UNIT IS INSTALLED SO THAT SUPPLY DUCTS CARRY AIR CIRCULATED BY THE UNIT TO AREAS OUTSIDE THE SPACE CONTAINING THE UNIT, THE RETURN AIR SHALL ALSO BE HANDLED BY DUCT(S) SEALED TO THE UNIT CASING AND TERMINATING OUTSIDE THE SPACE CONTAINING THE UNIT.

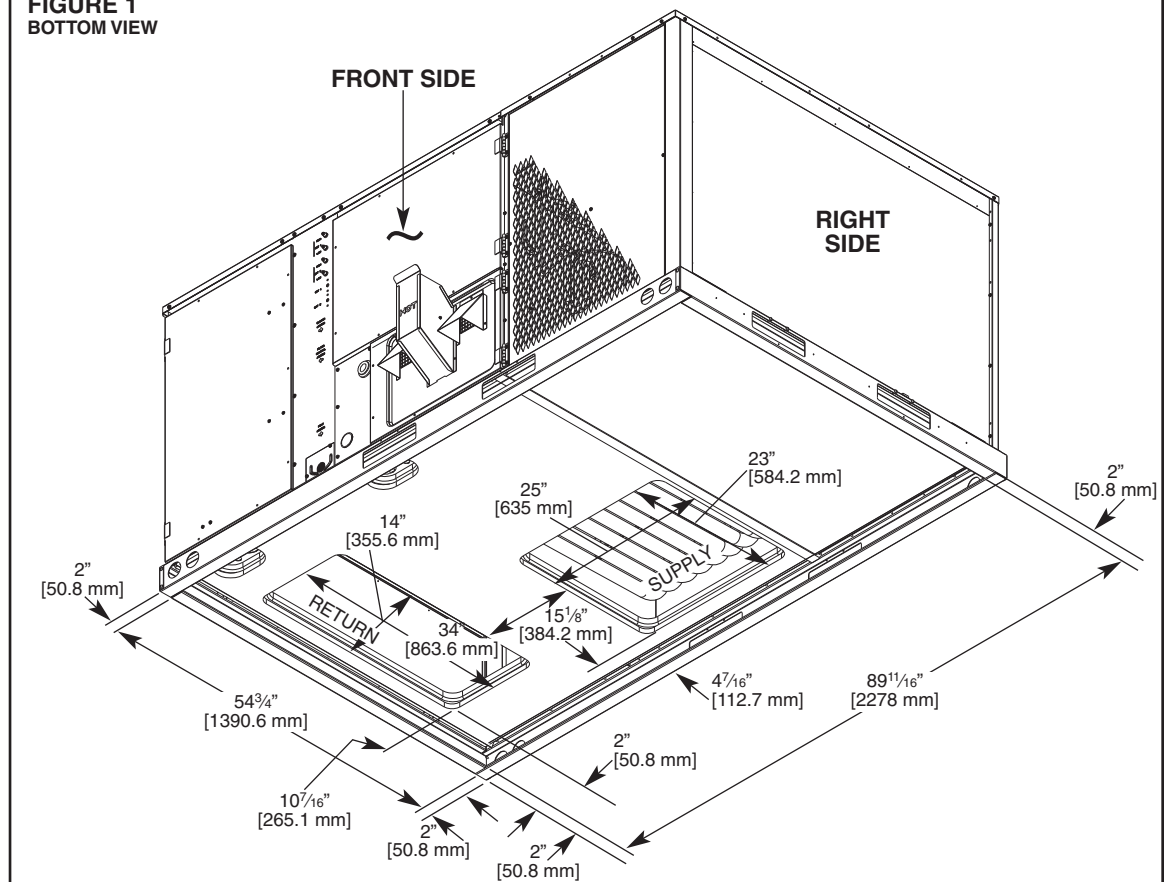
⚠ WARNING

THIS UNIT MAY BE USED TO HEAT THE BUILDING OR STRUCTURE DURING CONSTRUCTION IF THE FOLLOWING INSTALLATION REQUIREMENTS ARE MET. INSTALLATION MUST COMPLY WITH ALL INSTALLATION INSTRUCTIONS INCLUDING:

- PROPER VENT INSTALLATION;
- FURNACE OPERATING UNDER THERMOSTATIC CONTROL;
- RETURN AIR DUCT SEALED TO THE FURNACE;
- AIR FILTERS IN PLACE;
- SET FURNACE INPUT RATE AND TEMPERATURE RISE PER RATING PLATE MARKING;
- RETURN AIR TEMPERATURE MAINTAINED BETWEEN 55°F (13°C) AND 80°F (27°C); AND
- INSTALLATION OF EXHAUST AND COMBUSTION AIR INLET HOODS COMPLETED;
- CLEAN FURNACE, DUCT WORK AND COMPONENTS UPON SUBSTANTIAL COMPLETION OF THE CONSTRUCTION PROCESS, AND VERIFY FURNACE OPERATING CONDITIONS INCLUDING IGNITION INPUT RATE, TEMPERATURE RISE AND VENTING, ACCORDING TO THE INSTRUCTIONS.

IMPORTANT: THIS UNIT MUST BE MOUNTED LEVEL IN BOTH DIRECTIONS TO ALLOW WATER TO DRAIN FROM THE CONDENSER SECTION AND CONDENSATE PAN.

FRONT SIDE



FRONT SIDE

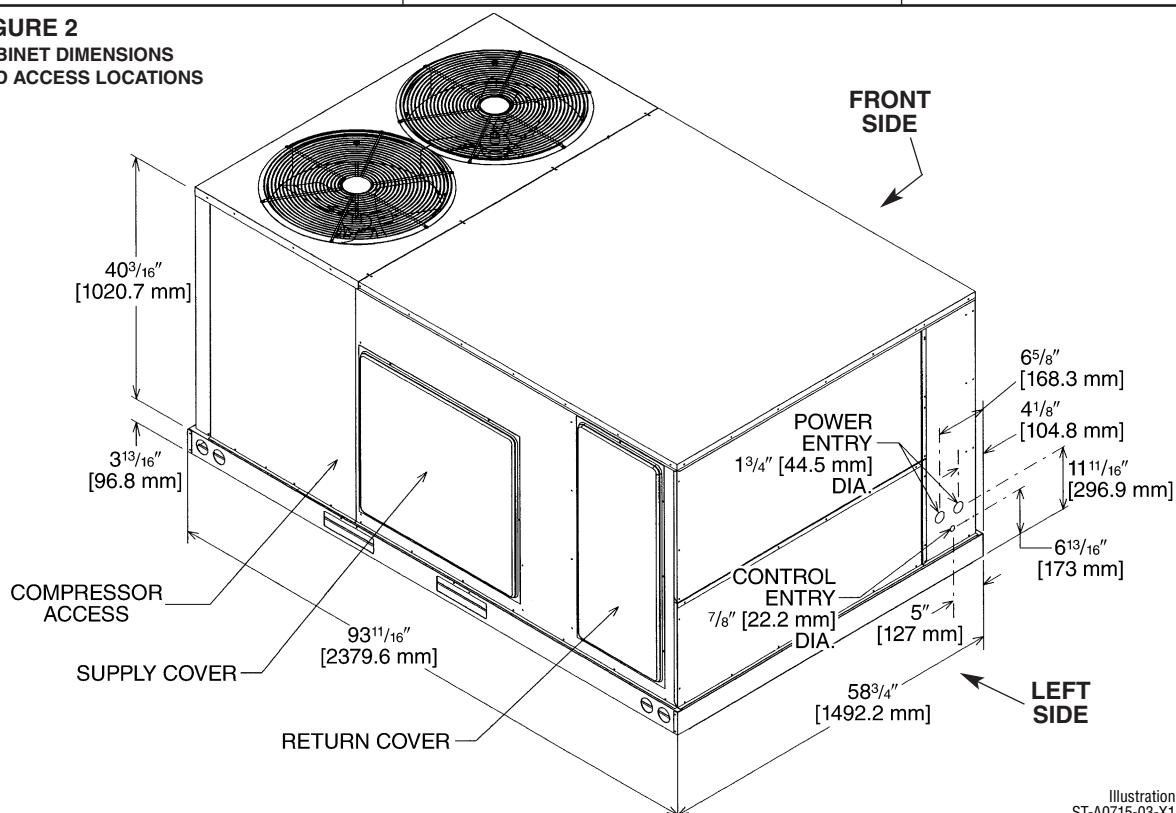


Illustration
ST-A0715-03-X1

(BOTTOM VIEW)



(SIDE VIEW – REAR)



5

FIGURE 5

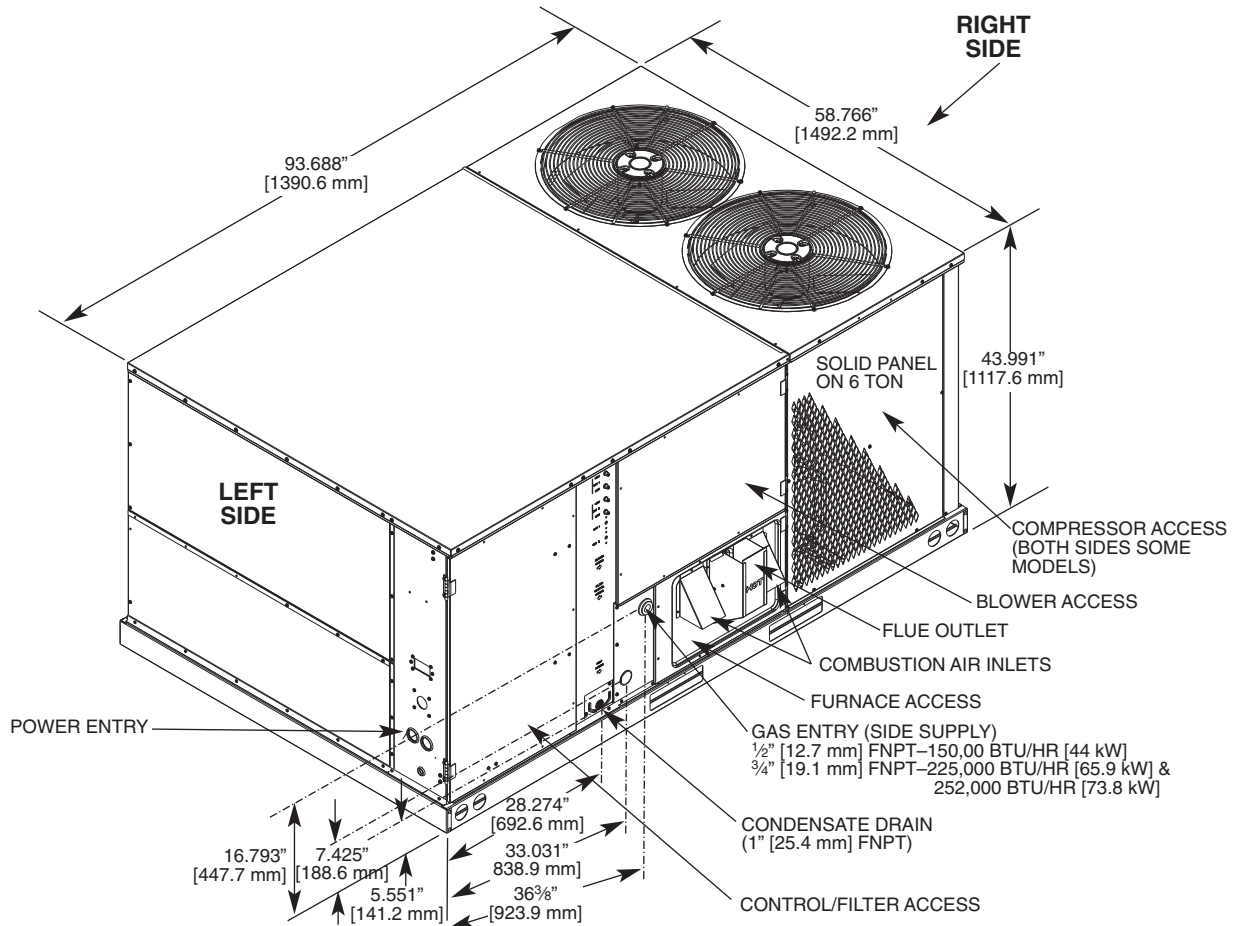


FIGURE 6
ROOFCURB INSTALLATION

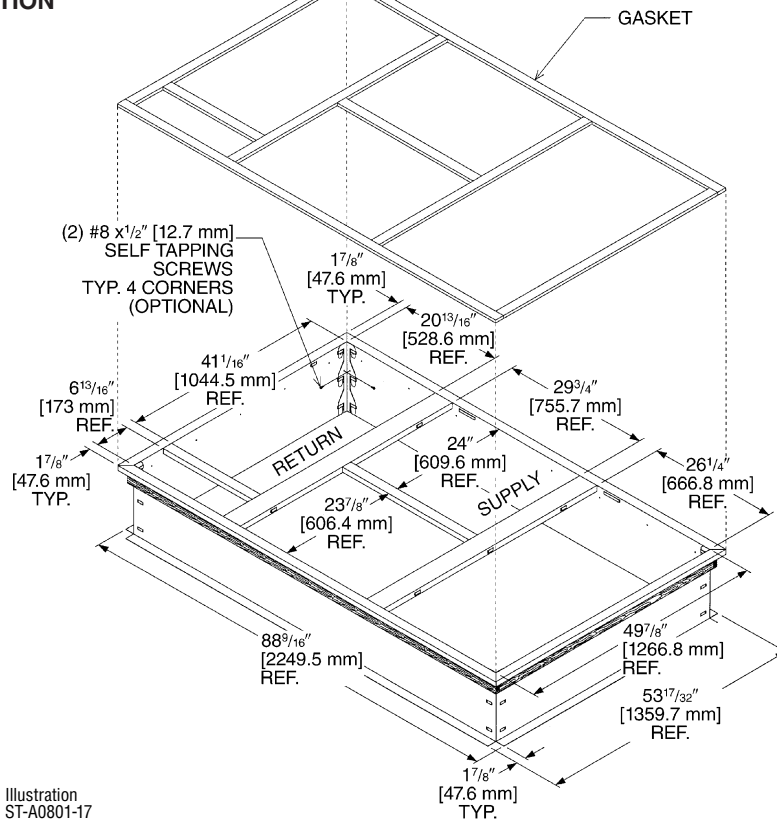


Illustration
ST-A0801-17

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B072CL15E/C072CL15E	B072CM15E/C072CM15E	B072DL15E/C072DL15E	B072DM15E/C072DM15E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	76,000 [22.27]	76,000 [22.27]	76,000 [22.27]	76,000 [22.27]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	2400/2400 [1133/1133]	2400/2400 [1133/1133]	2400/2400 [1133/1133]	2400/2400 [1133/1133]
AHRI Net Cooling Capacity Btu [kW]	73,000 [21.39]	73,000 [21.39]	73,000 [21.39]	73,000 [21.39]
Net Sensible Capacity Btu [kW]	53,900 [15.79]	53,900 [15.79]	53,900 [15.79]	53,900 [15.79]
Net Latent Capacity Btu [kW]	19,100 [5.6]	19,100 [5.6]	19,100 [5.6]	19,100 [5.6]
IEER ³	12.8	12.8	12.8	12.8
Net System Power kW	6.31	6.31	6.31	6.31
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 30-60 [16.7/33.3]	0-0 [0/0] / 30-60 [16.7/33.3]	0-0 [0/0] / 30-60 [16.7/33.3]	0-0 [0/0] / 30-60 [16.7/33.3]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	6	6	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.5 [12.7]	0.5 [12.7]	0.5 [12.7]
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	Orifices	Orifices	Orifices	Orifices
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x12 [279x305]	1/11x12 [279x305]	1/11x12 [279x305]	1/11x12 [279x305]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	1 1/2	1 1/2	1 1/2	1 1/2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. [g]	120 [3402]	120 [3402]	120 [3402]	120 [3402]
Weights				
Net Weight lbs. [kg]	901 [409]	901 [409]	901 [409]	901 [409]
Ship Weight lbs. [kg]	938 [425]	938 [425]	938 [425]	938 [425]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B072YL15E/C072YL15E	B072YM15E/C072YM15E	B085CL15E/C085CL15E	B085CL22E/C085CL22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	76,000 [22.27]	76,000 [22.27]	88,000 [25.78]	88,000 [25.78]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	2400/2400 [1133/1133]	2400/2400 [1133/1133]	2800/3000 [1321/1416]	2800/3000 [1321/1416]
AHRI Net Cooling Capacity Btu [kW]	73,000 [21.39]	73,000 [21.39]	85,000 [24.9]	85,000 [24.9]
Net Sensible Capacity Btu [kW]	53,900 [15.79]	53,900 [15.79]	66,100 [19.37]	66,100 [19.37]
Net Latent Capacity Btu [kW]	19,100 [5.6]	19,100 [5.6]	18,900 [5.54]	18,900 [5.54]
IEER ³	12.8	12.8	11.8	11.8
Net System Power kW	6.31	6.31	7.53	7.53
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 30-60 [16.7/33.3]	0-0 [0/0] / 30-60 [16.7/33.3]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	6	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.5 [12.7]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵				88
Outdoor Coil - Fin Type				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]	13.5 [1.25]	13.5 [1.25]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
Indoor Coil - Fin Type				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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	Orifices	Orifices	Orifices	Orifices
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
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type				FC Centrifugal
No. Used/Diameter in. [mm]	1/11x12 [279x305]	1/11x12 [279x305]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	1 1/2	1 1/2	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type				Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. [g]				190.9 [5412]
Weights				
Net Weight lbs. [kg]	901 [409]	901 [409]	965 [438]	1001 [454]
Ship Weight lbs. [kg]	938 [425]	938 [425]	1002 [455]	1002 [455]

- NOTES:**
- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
 - EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
 - Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
 - Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
 - Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B085CM15E/C085CM15E	B085CM22E/C085CM22E	B085CN15E/C085CN15E	B085CN22E/C085CN22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	88,000 [25.78]	88,000 [25.78]	88,000 [25.78]	88,000 [25.78]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	2800/3000 [1321/1416]	2800/3000 [1321/1416]	2800/3000 [1321/1416]	2800/3000 [1321/1416]
AHRI Net Cooling Capacity Btu [kW]	85,000 [24.9]	85,000 [24.9]	85,000 [24.9]	85,000 [24.9]
Net Sensible Capacity Btu [kW]	66,100 [19.37]	66,100 [19.37]	66,100 [19.37]	66,100 [19.37]
Net Latent Capacity Btu [kW]	18,900 [5.54]	18,900 [5.54]	18,900 [5.54]	18,900 [5.54]
IEER ³	11.8	11.8	11.8	11.8
Net System Power kW	7.53	7.53	7.53	7.53
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 22-55 [12.2/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵				88
Outdoor Coil - Fin Type				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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
Indoor Coil - Fin Type				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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	Orifices	Orifices	Orifices	Orifices
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
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type				FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	2	2	3	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type				Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. [g]				190.9 [5412]
Weights				
Net Weight lbs. [kg]	965 [438]	1001 [454]	973 [441]	1000 [454]
Ship Weight lbs. [kg]	1002 [455]	1002 [455]	1002 [455]	1002 [455]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B085DL15E/C085DL15E	B085DL22E/C085DL22E	B085DM15E/C085DM15E	B085DM22E/C085DM22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	76,000 [22.27]	76,000 [22.27]	88,000 [25.78]	88,000 [25.78]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	2400/2400 [1133/1133]	2400/2400 [1133/1133]	2800/3000 [1321/1416]	2800/3000 [1321/1416]
AHRI Net Cooling Capacity Btu [kW]	73,000 [21.39]	73,000 [21.39]	85,000 [24.9]	85,000 [24.9]
Net Sensible Capacity Btu [kW]	53,900 [15.79]	53,900 [15.79]	66,100 [19.37]	66,100 [19.37]
Net Latent Capacity Btu [kW]	19,100 [5.6]	19,100 [5.6]	18,900 [5.54]	18,900 [5.54]
IEER ³	12.8	12.8	11.8	11.8
Net System Power kW	6.31	6.31	7.53	7.53
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 30-60 [16.7/33.3]	0-0 [0/0] / 30-60 [16.7/33.3]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	6	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.5 [12.7]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	13.5 [1.25]	13.5 [1.25]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	Orifices	Orifices	Orifices	Orifices
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x12 [279x305]	1/11x12 [279x305]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	1 1/2	1 1/2	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. [g]	120 [3402]	120 [3402]	190.9 [5412]	190.9 [5412]
Weights				
Net Weight lbs. [kg]	901 [409]	901 [409]	965 [438]	1001 [454]
Ship Weight lbs. [kg]	938 [425]	938 [425]	1002 [455]	1002 [455]

- NOTES:**
- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
 - EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
 - Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
 - Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
 - Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B085DN15E/C085DN15E	B085DN22E/C085DN22E	B085YL22E/C085YL22E	B085YM22E/C085YM22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	88,000 [25.78]	88,000 [25.78]	88,000 [25.78]	88,000 [25.78]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	2800/3000 [1321/1416]	2800/3000 [1321/1416]	2800/3000 [1321/1416]	2800/3000 [1321/1416]
AHRI Net Cooling Capacity Btu [kW]	85,000 [24.9]	85,000 [24.9]	85,000 [24.9]	85,000 [24.9]
Net Sensible Capacity Btu [kW]	66,100 [19.37]	66,100 [19.37]	66,100 [19.37]	66,100 [19.37]
Net Latent Capacity Btu [kW]	18,900 [5.54]	18,900 [5.54]	18,900 [5.54]	18,900 [5.54]
IEER ³	11.8	11.8	11.8	11.8
Net System Power kW	7.53	7.53	7.53	7.53
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 40-70 [22.2/38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	9	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.75 [19]	0.75 [19]
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	Orifices	Orifices	Orifices	Orifices
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	3	3	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. [g]	190.9 [5412]	190.9 [5412]	190.9 [5412]	190.9 [5412]
Weights				
Net Weight lbs. [kg]	973 [441]	1000 [454]	1001 [454]	1001 [454]
Ship Weight lbs. [kg]	1002 [455]	1002 [455]	1002 [455]	1002 [455]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B085YN22E/C085YNWW3	B090CL15E/C090CL15E	B090CL22E/C090CL22E	B090CM15E/C090CM15E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	88,000 [25.78]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	2800/3000 [1321/1416]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	85,000 [24.9]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	66,100 [19.37]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	18,900 [5.54]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER ³	11.8	11.9	11.9	11.9
Net System Power kW	7.53	7.99	7.99	7.99
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
Compressor				
No./Type	1/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	Orifices	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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	3	2	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	190.9 [5412]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
Net Weight lbs. [kg]	1000 [454]	1017 [461]	1053 [478]	1017 [461]
Ship Weight lbs. [kg]	1002 [455]	1054 [478]	1054 [478]	1054 [478]

- NOTES:**
- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
 - EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
 - Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
 - Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
 - Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B090CM22E/C090CM22E	B090CN15E/C090CN15E	B090CN22E/C090CN22E	B090DL15E/C090DL15E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER ³	11.9	11.9	11.9	11.9
Net System Power kW	7.99	7.99	7.99	7.99
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	2	3	3	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
Net Weight lbs. [kg]	1053 [478]	1025 [465]	1050 [476]	1025 [465]
Ship Weight lbs. [kg]	1054 [478]	1054 [478]	1054 [478]	1054 [478]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B090DL22E/C090DL22E	B090DM15E/C090DM15E	B090DM22E/C090DM22E	B090DN15E/C090DN15E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER ³	11.9	11.9	11.9	11.9
Net System Power kW	7.99	7.99	7.99	7.99
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	2	2	2	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
Net Weight lbs. [kg]	1053 [478]	1017 [461]	1053 [478]	1025 [465]
Ship Weight lbs. [kg]	1054 [478]	1054 [478]	1054 [478]	1054 [478]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B090DN22E/C090DN22E	B090YL22E/C090YL22E	B090YM22E/C090YM22E	B090YN22E/C090YN22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER ³	11.9	11.9	11.9	11.9
Net System Power kW	7.99	7.99	7.99	7.99
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 40-70 [22.2/38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	9	9	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.75 [19]	0.75 [19]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	3	2	2	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
Net Weight lbs. [kg]	1050 [476]	1053 [478]	1053 [478]	1050 [476]
Ship Weight lbs. [kg]	1054 [478]	1054 [478]	1054 [478]	1054 [478]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B102CL15E/C102CL15E	B102CL22E/C102CL22E	B102CM15E/C102CM15E	B102CM22E/C102CM22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]
AHRI Net Cooling Capacity Btu [kW]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]
Net Sensible Capacity Btu [kW]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]
Net Latent Capacity Btu [kW]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]
IEER ³	12	12	12	12
Net System Power kW	8.59	8.59	8.59	8.59
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	2	2	3	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
Weights				
Net Weight lbs. [kg]	1059 [480]	1095 [497]	1067 [484]	1090 [494]
Ship Weight lbs. [kg]	1096 [497]	1096 [497]	1096 [497]	1096 [497]

- NOTES:**
- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
 - EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
 - Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
 - Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
 - Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B102DL15E/C102DL15E	B102DL22E/C102DL22E	B102DM15E/C102DM15E	B102DM22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]
AHRI Net Cooling Capacity Btu [kW]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]
Net Sensible Capacity Btu [kW]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]
Net Latent Capacity Btu [kW]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]
IEER ³	12	12	12	12
Net System Power kW	8.59	8.59	8.59	8.59
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 40-70 [22.2/38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	2	2	3	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
Weights				
Net Weight lbs. [kg]	1059 [480]	1095 [497]	1067 [484]	1090 [494]
Ship Weight lbs. [kg]	1096 [497]	1096 [497]	1096 [497]	1096 [497]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B102YL22E/C102YL22E	B102YM22E/C102YM22E	B120CL15E/B120CL15E	B120CL22E/C120CL22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	101,000 [29.59]	123,000 [36.04]	123,000 [36.04]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	4000/3750 [1888/1770]	4000/3750 [1888/1770]
AHRI Net Cooling Capacity Btu [kW]	97,000 [28.42]	97,000 [28.42]	118,000 [34.57]	118,000 [34.57]
Net Sensible Capacity Btu [kW]	74,000 [21.68]	74,000 [21.68]	88,800 [26.02]	88,800 [26.02]
Net Latent Capacity Btu [kW]	23,000 [6.74]	23,000 [6.74]	29,200 [8.56]	29,200 [8.56]
IEER ³	12	12	11.9	11.9
Net System Power kW	8.59	8.59	10.49	10.49
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/22,500 [32.96/6.59]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	911,250/182,250 [266.99/53.4]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 40-70 [22.2/38.9]	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.75 [19]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	3 / 18 [7]	3 / 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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	2	3	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]
Weights				
Net Weight lbs. [kg]	1095 [497]	1095 [497]	1112 [504]	1148 [521]
Ship Weight lbs. [kg]	1096 [497]	1096 [497]	1149 [521]	1149 [521]

- NOTES:**
- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
 - EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
 - Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
 - Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
 - Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B120CM15E/C120CM15E	B120CM22E/C120CM22E	B120DL15E/C120DL15E	B120DL22E/C120DL22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]
AHRI Net Cooling Capacity Btu [kW]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]
Net Sensible Capacity Btu [kW]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]
Net Latent Capacity Btu [kW]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]
IEER ³	11.9	11.9	11.9	11.9
Net System Power kW	10.49	10.49	10.49	10.49
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	3 / 18 [7]	3 / 18 [7]	3 / 18 [7]	3 / 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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	3	3	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]
Weights				
Net Weight lbs. [kg]	1120 [508]	1145 [519]	1112 [504]	1148 [521]
Ship Weight lbs. [kg]	1149 [521]	1149 [521]	1149 [521]	1149 [521]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B120DM15E/C120DM15E	B120DM22E/C120DM11E	B120YL22E/C120YL22E	B120YM22E/C120YM22E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]
EER/SEER ²	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]
AHRI Net Cooling Capacity Btu [kW]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]
Net Sensible Capacity Btu [kW]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]
Net Latent Capacity Btu [kW]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]
IEER ³	11.9	11.9	11.9	11.9
Net System Power kW	10.49	10.49	10.49	10.49
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	9	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.75 [19]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	3 / 18 [7]	3 / 18 [7]	3 / 18 [7]	3 / 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]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	3	3	2	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]
Weights				
Net Weight lbs. [kg]	1120 [508]	1145 [519]	1148 [521]	1145 [519]
Ship Weight lbs. [kg]	1149 [521]	1149 [521]	1149 [521]	1149 [521]

- NOTES:**
- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
 - EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
 - Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
 - Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
 - Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B150CL15E/C150CL15E	B150CL25E/C150CL25E	B150CM15E/C150CM15E	B150CM25E/C150CM25E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	156,000 [45.71]	156,000 [45.71]	156,000 [45.71]	156,000 [45.71]
EER/SEER ²	11/NA	11/NA	11/NA	11/NA
Nominal CFM/AHRI Rated CFM [L/s]	5000/4400 [2360/2076]	5000/4400 [2360/2076]	5000/4400 [2360/2076]	5000/4400 [2360/2076]
AHRI Net Cooling Capacity Btu [kW]	148,000 [43.36]	148,000 [43.36]	148,000 [43.36]	148,000 [43.36]
Net Sensible Capacity Btu [kW]	107,600 [31.53]	107,600 [31.53]	107,600 [31.53]	107,600 [31.53]
Net Latent Capacity Btu [kW]	40,400 [11.84]	40,400 [11.84]	40,400 [11.84]	40,400 [11.84]
IEER ³	11.4	11.4	11.4	11.4
Net System Power kW	13.39	13.39	13.39	13.39
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	126,000/252,000 [36.92/73.84]	75,000/150,000 [21.97/43.95]	126,000/252,000 [36.92/73.84]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	102,000/204,000 [29.89/59.77]	60,750/121,500 [17.8/35.6]	102,000/204,000 [29.89/59.77]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵				88
Outdoor Coil - Fin Type				Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 20 [8]	2 / 20 [8]	2 / 20 [8]	2 / 20 [8]
Indoor Coil - Fin Type				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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]
Outdoor Fan - Type				Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type				FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	3	3	5	5
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	184	184
Filter - Type				Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]				159.2/156 [4513/4423]
Weights				
Net Weight lbs. [kg]	1230 [558]	1266 [574]	1238 [562]	1265 [574]
Ship Weight lbs. [kg]	1267 [575]	1267 [575]	1267 [575]	1267 [575]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B150DL15E/C150DL15E	B150DL25E/C150DL25E	B150DM15E/C150DM15E	B150DM25E/C150DM25E
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	156,000 [45.71]	156,000 [45.71]	156,000 [45.71]	156,000 [45.71]
EER/SEER ²	11/NA	11/NA	11/NA	11/NA
Nominal CFM/AHRI Rated CFM [L/s]	5000/4400 [2360/2076]	5000/4400 [2360/2076]	5000/4400 [2360/2076]	5000/4400 [2360/2076]
AHRI Net Cooling Capacity Btu [kW]	148,000 [43.36]	148,000 [43.36]	148,000 [43.36]	148,000 [43.36]
Net Sensible Capacity Btu [kW]	107,600 [31.53]	107,600 [31.53]	107,600 [31.53]	107,600 [31.53]
Net Latent Capacity Btu [kW]	40,400 [11.84]	40,400 [11.84]	40,400 [11.84]	40,400 [11.84]
IEER ³	11.4	11.4	11.4	11.4
Net System Power kW	13.39	13.39	13.39	13.39
Heating Performance (Gas)⁴				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	126,000/252,000 [36.92/73.84]	75,000/150,000 [21.97/43.95]	126,000/252,000 [36.92/73.84]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	102,000/204,000 [29.89/59.77]	60,750/121,500 [17.8/35.6]	102,000/204,000 [29.89/59.77]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 15-45 [8.3/25]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 20 [8]	2 / 20 [8]	2 / 20 [8]	2 / 20 [8]
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]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
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]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type/No. Speeds	Belt/Variable	Belt/Variable	Belt/Variable	Belt/Variable
No. Motors	1	1	1	1
Motor HP	3	3	5	5
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	184	184
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	159.2/156 [4513/4423]	159.2/156 [4513/4423]	159.2/156 [4513/4423]	159.2/156 [4513/4423]
Weights				
Net Weight lbs. [kg]	1230 [558]	1266 [574]	1238 [562]	1265 [574]
Ship Weight lbs. [kg]	1267 [575]	1267 [575]	1267 [575]	1267 [575]

- NOTES:**
- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
 - EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
 - Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
 - Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
 - Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RKNL MODELS

NOM. SIZES 6-12.5 TON [21.1 - 44.0 kW]

Model RKNL- Series	B150YL25E/C150YL25E	B150YM25E/C150YM25E
Cooling Performance¹		
Gross Cooling Capacity Btu [kW]	156,000 [45.71]	156,000 [45.71]
EER/SEER ²	11/NA	11/NA
Nominal CFM/AHRI Rated CFM [L/s]	5000/4400 [2360/2076]	5000/4400 [2360/2076]
AHRI Net Cooling Capacity Btu [kW]	148,000 [43.36]	148,000 [43.36]
Net Sensible Capacity Btu [kW]	107,600 [31.53]	107,600 [31.53]
Net Latent Capacity Btu [kW]	40,400 [11.84]	40,400 [11.84]
IEER ³	11.4	11.4
Net System Power kW	13.39	13.39
Heating Performance (Gas)⁴		
Heating Input Btu [kW] (1st Stage / 2nd Stage)	126,000/252,000 [36.92/73.84]	126,000/252,000 [36.92/73.84]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	102,000/204,000 [29.89/59.77]	102,000/204,000 [29.89/59.77]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	0-0 [0/0] / 25-55 [13.9/30.6]	0-0 [0/0] / 25-55 [13.9/30.6]
Steady State Efficiency (%)	81	81
No. Burners	9	9
No. Stages	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.75 [19]
Compressor		
No./Type	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵		
	88	88
Outdoor Coil - Fin Type		
Tube Type	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 20 [8]	2 / 20 [8]
Indoor Coil - Fin Type		
Tube Type	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	4 / 15 [6]	4 / 15 [6]
Refrigerant Control	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]
Outdoor Fan - Type		
No. Used/Diameter in. [mm]	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/2 HP	2 at 1/2 HP
	1075	1075
Indoor Fan - Type		
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal
Drive Type/No. Speeds	1/15x15 [381x381]	1/15x15 [381x381]
No. Motors	Belt/Variable	Belt/Variable
Motor HP	1	1
Motor RPM	3	5
Motor Frame Size	1725	1725
	56	184
Filter - Type		
Furnished	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]		
	159.2/156 [4513/4423]	159.2/156 [4513/4423]
Weights		
Net Weight lbs. [kg]	1266 [574]	1265 [574]
Ship Weight lbs. [kg]	1267 [575]	1267 [575]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. 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.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is rated in accordance with AHRI Standard 210/240 or 340/360. Units are rated at 80° F ambient, 80° F entering dry bulb, and 67° F entering wet bulb at ARI rated cfm.
- Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

ELECTRICAL DATA - RKNL MODELS

ELECTRICAL DATA - RKNL SERIES										
		B072CL/ C072CL	B072CM/ C072CM	B072DL/ C072DL	B072DM/ C072DM	B072YL/ C072YL	B072YM/ C072YM	B085CL/ C085CL	B085CM/ C085CM	B085CN/ C085CN
Unit Information	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	518-632	518-632	187-253	187-253	187-253
	Volts	208/230	208/230	460	460	575	575	208/230	208/230	208/230
	Minimum Circuit Ampacity	37/37	37/37	18	18	14	14	42/42	42/42	47/47
	Minimum Overcurrent Protection Device Size	40/40	40/40	20	20	15	15	45/45	45/45	50/50
	Maximum Overcurrent Protection Device Size	50/50	50/50	25	25	20	20	60/60	60/60	70/70
Compressor Motor	No.	1	1	1	1	1	1	1	1	1
	Volts	200/240	200/240	480	480	600	600	200/240	200/240	200/240
	Phase	3	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	5	5	5	5	5	5	6	6	6
	Amps (RLA), Comp. 1	20.5/20.5	20.5/20.5	9.6	9.6	7.6	7.6	23.2/23.2	23.2/23.2	23.2/23.2
	Amps (LRA), Comp. 1	155/155	155/155	75	75	54	54	164/164	164/164	164/164
	HP, Compressor 2	—	—	—	—	—	—	—	—	—
	Amps (RLA), Comp. 2	—	—	—	—	—	—	—	—	—
	Amps (LRA), Comp. 2	—	—	—	—	—	—	—	—	—
Condenser Motor	No.	2	2	2	2	2	2	2	2	2
	Volts	208/230	208/230	460	460	575	575	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	2.4/2.4	2.4/2.4	1.4	1.4	1	1	2.4/2.4	2.4/2.4	2.4/2.4
	Amps (LRA, each)	4.7/4.7	4.7/4.7	2.4	2.4	1.5	1.5	4.7/4.7	4.7/4.7	4.7/4.7
Evaporator Fan	No.	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575	208/230	208/230	208/230
	Phase	3	3	3	3	3	3	3	3	3
	HP	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2	2	3
	Amps (FLA, each)	5.6/5.6	5.6/5.6	2.8	2.8	1.9	1.9	8/8	8/8	13/13
	Amps (LRA, each)	28.8/28.8	28.8/28.8	14.4	14.4	14	14	56/56	56/56	74.5/74.5

ELECTRICAL DATA - RKNL MODELS

ELECTRICAL DATA - RKNL SERIES										
		B085DL/ C085DL	B085DM/ C085DM	B085DN/ C085DN	B085YL/ C085YL	B085YM/ C085YM	B085YN/ C085YN	B090CL/ C090CL	B090CM/ C090CM	B090CN/ C090CN
Unit Information	Unit Operating Voltage Range	414-506	414-506	414-506	518-632	518-632	518-632	187-253	187-253	187-253
	Volts	460	460	460	575	575	575	208/230	208/230	208/230
	Minimum Circuit Ampacity	21	21	24	16	16	20	43/43	43/43	48/48
	Minimum Overcurrent Protection Device Size	25	25	25	20	20	20	45/45	45/45	50/50
	Maximum Overcurrent Protection Device Size	30	30	35	20	20	25	50/50	50/50	60/60
Compressor Motor	No.	1	1	1	1	1	1	2	2	2
	Volts	480	480	480	600	600	600	200/240	200/240	200/240
	Phase	3	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	6	6	6	6	6	6	3 1/4	3 1/4	3 1/4
	Amps (RLA), Comp. 1	11.2	11.2	11.2	7.9	7.9	7.9	13.1/13.1	13.1/13.1	13.1/13.1
	Amps (LRA), Comp. 1	75	75	75	54	54	54	83.1/83.1	83.1/83.1	83.1/83.1
	HP, Compressor 2	—	—	—	—	—	—	3 1/4	3 1/4	3 1/4
	Amps (RLA), Comp. 2	—	—	—	—	—	—	13.1/13.1	13.1/13.1	13.1/13.1
	Amps (LRA), Comp. 2	—	—	—	—	—	—	83.1/83.1	83.1/83.1	83.1/83.1
Condenser Motor	No.	2	2	2	2	2	2	2	2	2
	Volts	460	460	460	575	575	575	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	1.4	1.4	1.4	1	1	1	2.4/2.4	2.4/2.4	2.4/2.4
	Amps (LRA, each)	2.4	2.4	2.4	1.5	1.5	1.5	4.7/4.7	4.7/4.7	4.7/4.7
Evaporator Fan	No.	1	1	1	1	1	1	1	1	1
	Volts	460	460	460	575	575	575	208/230	208/230	208/230
	Phase	3	3	3	3	3	3	3	3	3
	HP	2	2	3	2	2	3	2	2	3
	Amps (FLA, each)	4	4	7	4	4	8	8/8	8/8	13/13
	Amps (LRA, each)	28	28	38.1	19	19	20	56/56	56/56	74.5/74.5

ELECTRICAL DATA - RKNL MODELS

ELECTRICAL DATA - RKNL SERIES										
		B090DL/ C090DL	B090DM/ C090DM	B090DN/ C090DN	B090YL/ C090YL	B090YM/ C090YM	B090YN/ C090YN	B102CL/ C102CL	B102CM/ C102CM	B102DL/ C102DL
Unit Information	Unit Operating Voltage Range	414-506	414-506	414-506	518-632	518-632	518-632	187-253	187-253	414-506
	Volts	460	460	460	575	575	575	208/230	208/230	460
	Minimum Circuit Ampacity	21	21	24	16	16	21	49/49	54/54	23
	Minimum Overcurrent Protection Device Size	25	25	25	20	20	25	50/50	55/55	25
	Maximum Overcurrent Protection Device Size	25	25	30	20	20	25	60/60	60/60	25
Compressor Motor	No.	2	2	2	2	2	2	2	2	2
	Volts	480	480	480	600	600	600	200/230	200/230	460
	Phase	3	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 3/4	3 3/4	3 3/4
	Amps (RLA), Comp. 1	6.1	6.1	6.1	4.4	4.4	4.4	16/16	16/16	7.1
	Amps (LRA), Comp. 1	41	41	41	33	33	33	91/91	91/91	46
	HP, Compressor 2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 3/4	3 3/4	3 3/4
	Amps (RLA), Comp. 2	6.1	6.1	6.1	4.4	4.4	4.4	16/16	16/16	7.1
	Amps (LRA), Comp. 2	41	41	41	33	33	33	91/91	91/91	46
Condenser Motor	No.	2	2	2	2	2	2	2	2	2
	Volts	460	460	460	575	575	575	208/230	208/230	460
	Phase	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	1.4	1.4	1.4	1	1	1	2.4/2.4	2.4/2.4	1.4
	Amps (LRA, each)	2.4	2.4	2.4	1.5	1.5	1.5	4.7/4.7	4.7/4.7	2.4
Evaporator Fan	No.	1	1	1	1	1	1	1	1	1
	Volts	460	460	460	575	575	575	208/230	208/230	460
	Phase	3	3	3	3	3	3	3	3	3
	HP	2	2	3	2	2	3	2	3	2
	Amps (FLA, each)	4	4	7	4	4	8	8/8	13/13	4
	Amps (LRA, each)	28	28	38.1	19	19	20	56/56	74.5/74.5	28

ELECTRICAL DATA - RKNL MODELS

ELECTRICAL DATA - RKNL SERIES									
		B102DM/ C102DM	B102YL/ C102YL	B102YM/ C102YM	B120CL/ C120CL	B120CM/ C120CM	B120DL/ C120DL	B120DM/ C120DM	B120YL/ C120YL
Unit Information	Unit Operating Voltage Range	414-506	518-632	518-632	187-253	187-253	414-506	414-506	518-632
	Volts	460	575	575	208/230	208/230	460	460	575
	Minimum Circuit Ampacity	26	19	24	49/49	54/54	25	28	19
	Minimum Overcurrent Protection Device Size	30	20	25	50/50	55/55	25	30	20
	Maximum Overcurrent Protection Device Size	30	20	30	60/60	60/60	30	35	20
Compressor Motor	No.	2	2	2	2	2	2	2	2
	Volts	460	575	575	200/240	200/240	480	480	575
	Phase	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	3 3/4	3 3/4	3 3/4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4
	Amps (RLA), Comp. 1	7.1	5.6	5.6	16/16	16/16	7.8	7.8	5.7
	Amps (LRA), Comp. 1	46	37	37	110/110	110/110	52	52	38.9
	HP, Compressor 2	3 3/4	3 3/4	3 3/4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4
	Amps (RLA), Comp. 2	7.1	5.6	5.6	16/16	16/16	7.8	7.8	5.7
	Amps (LRA), Comp. 2	46	37	37	110/110	110/110	52	52	38.9
Condenser Motor	No.	2	2	2	2	2	2	2	2
	Volts	460	575	575	208/230	208/230	460	460	575
	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)	1.4	1	1	2.4/2.4	2.4/2.4	1.4	1.4	1
	Amps (LRA, each)	2.4	1.5	1.5	4.7/4.7	4.7/4.7	2.4	2.4	1.5
Evaporator Fan	No.	1	1	1	1	1	1	1	1
	Volts	460	575	575	208/230	208/230	460	460	575
	Phase	3	3	3	3	3	3	3	3
	HP	3	2	3	2	3	2	3	2
	Amps (FLA, each)	7	4	8	8/8	13/13	4	7	4
	Amps (LRA, each)	38.1	19	20	56/56	74.5/74.5	28	38.1	19

ELECTRICAL DATA - RKNL MODELS

ELECTRICAL DATA - RKNL SERIES								
		B120YM/ C120YM	B150CL/ C150CL	B150CM/ C150CM	B150DL/ C150DL	B150DM/ C150DM	B150YL/ C150YL	B150YM/ C150YM
Unit Information	Unit Operating Voltage Range	518-632	187-253	187-253	414-506	414-506	518-632	518-632
	Volts	575	208/230	208/230	460	460	575	575
	Minimum Circuit Ampacity	24	67/67	71/71	33	36	28	28
	Minimum Overcurrent Protection Device Size	25	70/70	75/75	35	40	30	30
	Maximum Overcurrent Protection Device Size	30	80/80	90/90	40	45	35	35
Compressor Motor	No.	2	2	2	2	2	2	2
	Volts	575	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	4 1/4	5 3/4	5 3/4	5 3/4	5 3/4	5 3/4	5 3/4
	Amps (RLA), Comp. 1	5.7	22.4/22.4	22.4/22.4	10.6	10.6	7.7	7.7
	Amps (LRA), Comp. 1	38.9	149/149	149/149	75	75	54	54
	HP, Compressor 2	4 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4
	Amps (RLA), Comp. 2	5.7	19/19	19/19	9.7	9.7	7.4	7.4
	Amps (LRA), Comp. 2	38.9	123/123	123/123	62	62	50	50
Condenser Motor	No.	2	2	2	2	2	2	2
	Volts	575	208/230	208/230	460	460	575	575
	Phase	1	1	1	1	1	1	1
	HP	1/3	1/2	1/2	1/2	1/2	1/2	1/2
	Amps (FLA, each)	1	2.3/2.3	2.3/2.3	1.5	1.5	1	1
	Amps (LRA, each)	1.5	5.6/5.6	5.6/5.6	3.1	3.1	2.2	2.2
Evaporator Fan	No.	1	1	1	1	1	1	1
	Volts	575	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3	3
	HP	3	3	5	3	5	3	5
	Amps (FLA, each)	8	15/15	18.8/18.8	7	10	8	8
	Amps (LRA, each)	20	74.5/74.5	82.6/82.6	38.1	41.3	20	33

II. INSTALLATION

A. GENERAL

1. **INSTALLATION** — Install this unit in accordance with The American National Standard Z223.1-latest edition booklet entitled "National Fuel Gas Code," and the requirements or codes of the local utility or other authority having jurisdiction.

Additional helpful publications available from the "National Fire Protection Association" are: NFPA-90A - Installation of Air Conditioning and Ventilating Systems 1985 or latest edition. NFPA-90B - Warm Air Heating and Air Conditioning Systems 1984.

These publications are available from:

National Fire Protection
Association, Inc.
Batterymarch Park
Quincy, MA 02269

2. **PRE-INSTALLATION CHECK-POINTS** — Before attempting any installation, carefully consider the following points:

Structural strength of supporting members

(Rooftop Installation)

Clearances and provision for servicing

Power supply and wiring

Gas supply and piping

Air duct connections and sizing

Drain facilities and connections

Location for minimum noise and vibration - away from bedroom windows

LOCATION CONSIDERATIONS

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, give special attention to the equipment location and exposure.

1. Avoid having lawn sprinkler heads spray directly on the unit cabinet.
2. In coastal areas locate the unit on the side of the building away from the waterfront.
3. Shielding by a fence or shrubs may give some protection.

▲ WARNING

DISCONNECT ALL POWER TO UNIT BEFORE STARTING MAINTENANCE. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR DEATH. 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 an automobile polish will provide some protection.

3. A liquid cleaner may be used several times a year to remove matter that will not wash off with water.

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

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

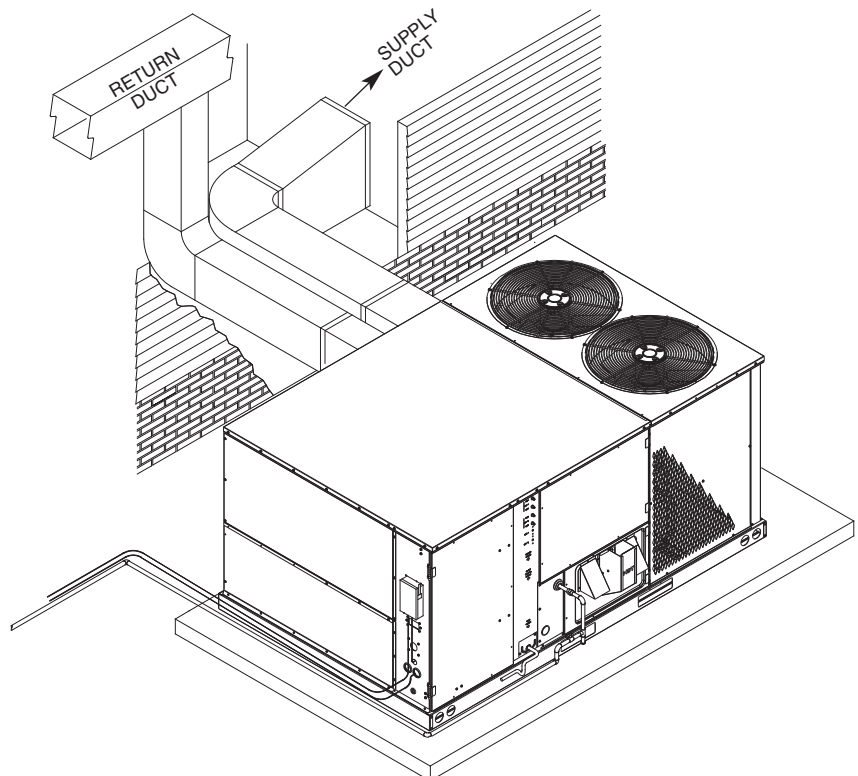
B. OUTSIDE INSTALLATION

▲ WARNING

THESE UNITS ARE DESIGNED CERTIFIED FOR OUTDOOR INSTALLATION ONLY. INSTALLATION INSIDE ANY PART OF A STRUCTURE CAN RESULT IN INADEQUATE UNIT PERFORMANCE AS WELL AS PROPERTY DAMAGE. INSTALLATION INSIDE CAN ALSO CAUSE RECIRCULATION OF FLUE PRODUCTS INTO THE CONDITIONED SPACE RESULTING IN PERSONAL INJURY OR DEATH.

FIGURE 7

OUTSIDE SLAB INSTALLATION. CLOSET DISTRIBUTION SYSTEM. SLAB FLOOR CONSTRUCTION.



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(Typical outdoor slab installation is shown in Figure 7.)

1. Select a location where external water drainage cannot collect around unit.
2. Provide a level slab sufficiently high enough above grade to prevent surface water from entering the unit
3. Locate the unit to provide proper access for inspection and servicing as shown in Figure 9.
4. Locate unit where operating sounds will not disturb owner or neighbors.
5. Locate unit so roof runoff water does not pour directly on the unit. Provide gutter or other shielding at roof level. Do not locate unit in an area where excessive snow drifting may occur or accumulate.
6. Where snowfall is anticipated, the height of the unit above the ground level must be considered. Mount unit high enough to be above anticipated maximum area snowfall and to allow combustion air to enter the combustion air inlet.
7. Select an area which will keep the areas of the vent, air intake, and A/C condenser fins free and clear of obstructions such as weeds, shrubs, vines, snow, etc. Inform the user accordingly.

C. ATTACHING EXHAUST AND COMBUSTION AIR INLET HOODS

IMPORTANT: Do not operate this unit without the exhaust/combustion air inlet hood properly installed. This hood is shipped in a carton in the blower compartment inside the unit and must be attached when the unit is installed. See Figure 5.

To attach exhaust/combustion air inlet hood:

1. Remove screws securing blower access panel and remove access panel. For location of blower access panel, see Figure 5.
2. Remove exhaust/combustion air inlet hood from the carton, located inside the blower compartment.
3. Attach blower access panel.
4. Attach the combustion air inlet/exhaust hood with screws. Reference Figure 5 for proper location. Screws are in carton with the hood.
5. Vent the unit using the flue exhaust hood, as supplied from the factory, without alteration or addition. Consult your local utility or other authority having jurisdiction for accepted venting techniques.

D. COVER PANEL INSTALLATION/ CONVERSION PROCEDURE

DOWNFLOW TO HORIZONTAL

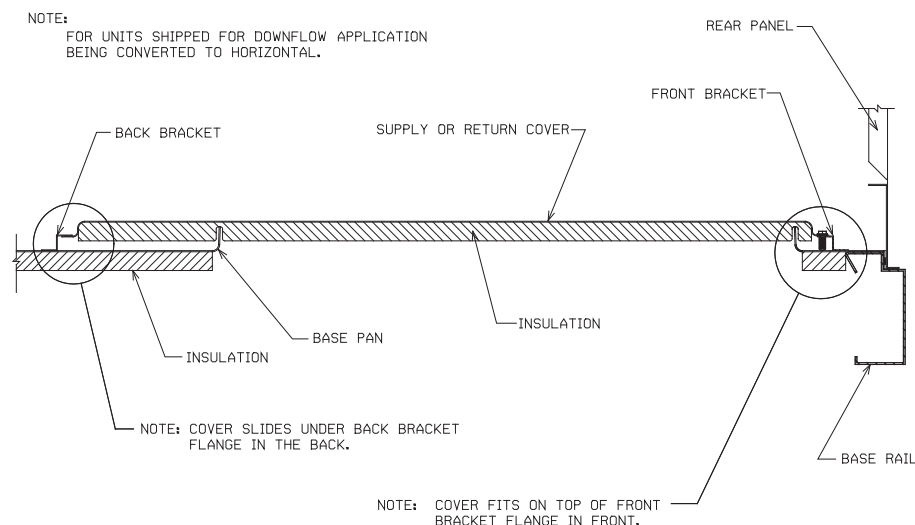
1. Remove the screws and covers from the outside of the supply and return sections. See Figure 2.
2. Install the covers over the bottom supply and return openings, painted side up, inserting the leading flange under the bracket provided. Place the back flange to top of the front bracket provided. See Figure 8.
3. Secure the return and supply cover to front bracket with one (1) screw.

E. FILTER REPLACEMENT

This unit is provided with 6 - 18" X 18" X 2" disposable filters. When replacing filters, ensure they are inserted fully to the back to prevent bypass. See Figure 3.

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

FIGURE 8
COVER GASKET DETAIL FOR UNITS SHIPPED FOR DOWNFLOW APPLICATION BEING CONVERTED TO HORIZONTAL



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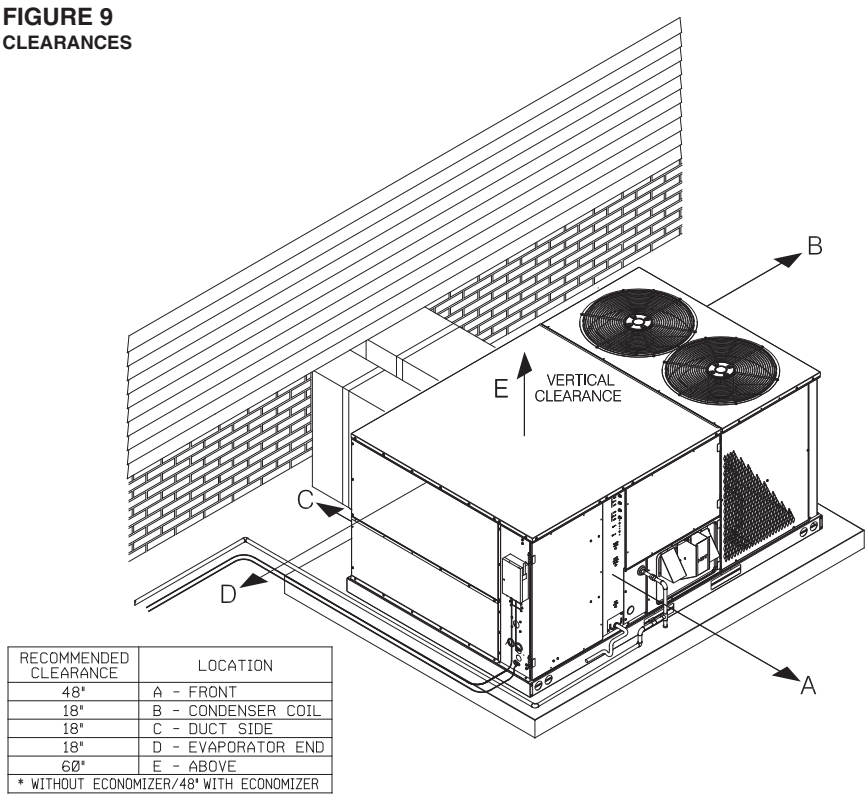
E. CLEARANCES

The following minimum clearances must be observed for proper unit performance and serviceability. Reference Figure 9.

Recommended Clearance	Location
48"	A - Front
18"	B - Condenser Coil
18"	C - Duct Side
18"*	D - Evaporator End
60"	E - Above

*Without Economizer. 48" With Economizer

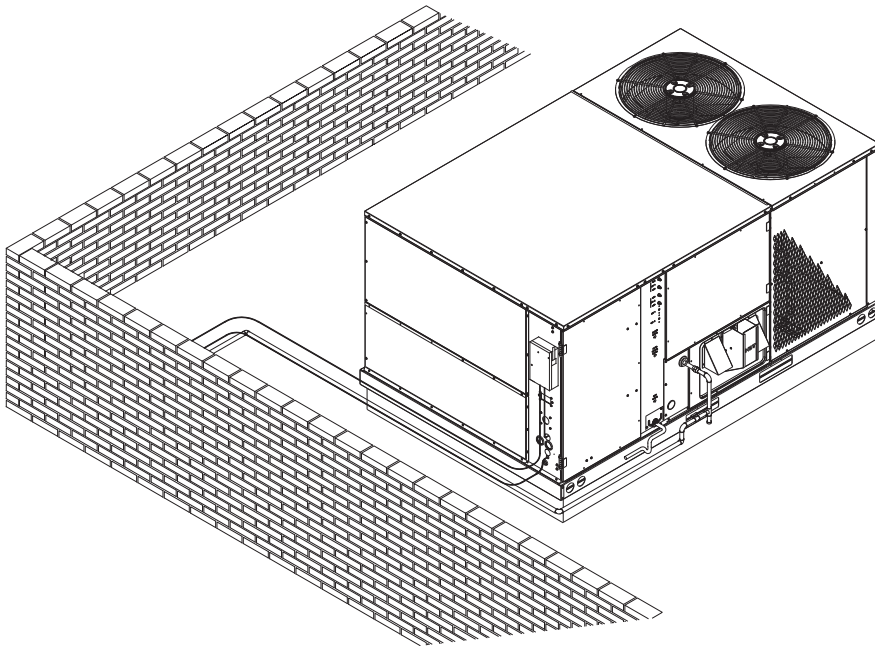
FIGURE 9
CLEARANCES



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FIGURE 10A

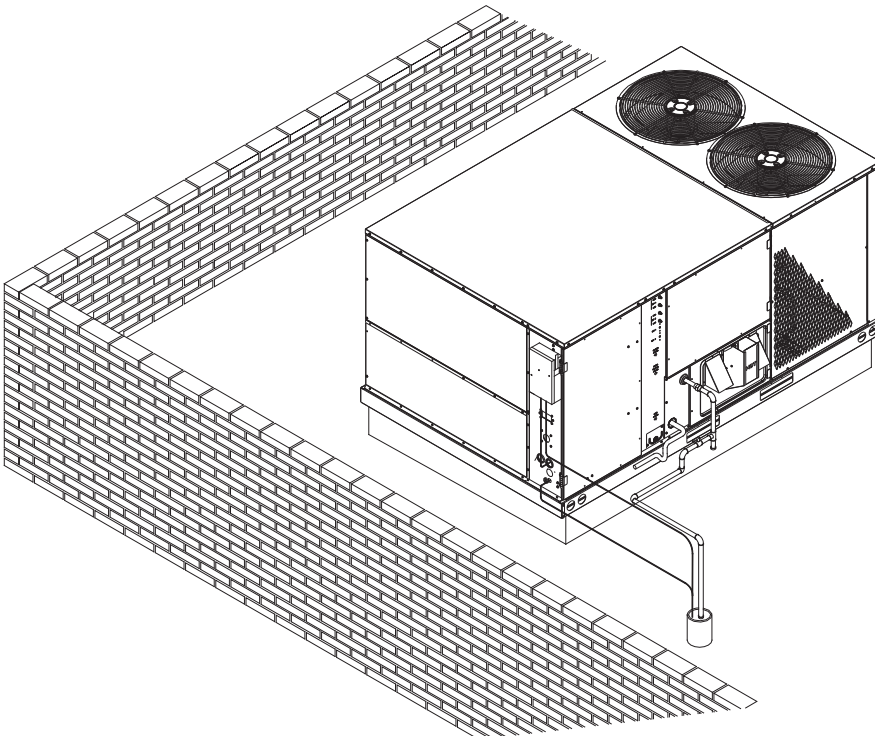
FLAT ROOFTOP INSTALLATION, ATTIC OR DROP CEILING DISTRIBUTING SYSTEM.
MOUNTED ON ROOFCURB. CURB MUST BE LEVEL.



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FIGURE 10B

FLAT ROOFTOP INSTALLATION, ATTIC OR DROP CEILING DISTRIBUTING SYSTEM.
MOUNTED ON ROOFCURB. CURB MUST BE LEVEL.



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G. ROOFTOP INSTALLATION

1. Before locating the unit on the roof, make sure that the roof structure is adequate to support the weight involved. (See Electrical & Physical Tables in this manual.) **THIS IS VERY IMPORTANT AND THE INSTALLER'S RESPONSIBILITY.**
2. For rigging and roofcurb details, see Figures 11, 12 and 13.
3. The location of the unit on the roof should be such as to provide proper access for inspection and servicing.

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

H. DUCTING

The installing contractor should fabricate ductwork in accordance with local codes. Use industry manuals as a guide when sizing and designing the duct system. Contact Air Conditioning Contractors of America, 1513 16th St. N.W., Washington, D.C. 20036.

⚠ WARNING

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

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

On ductwork exposed to outside 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. Half-inch to 1" thick insulation is usually sufficient for ductwork inside the air conditioned space.

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

IMPORTANT: In the event that the return air ducts must be run through an "unconfined" space containing other fuel burning equipment, it is imperative that the user/homeowner must be informed against future changes in construction which might change this to a "confined space." Also, caution the

user/homeowner against any future installation of additional equipment (such as power ventilators, clothes dryers, etc.), within the existing unconfined and/or confined space which might create a negative pressure within the vicinity of other solid, liquid, or gas fueled appliances.

RETURN AIR

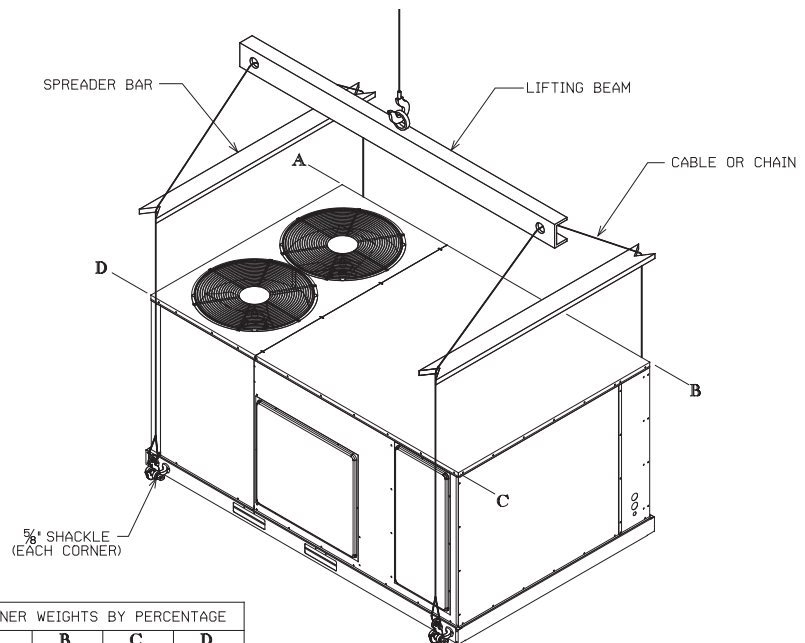
▲ WARNING

NEVER ALLOW PRODUCTS OF COMBUSTION OR THE FLUE PRODUCTS TO ENTER THE RETURN AIR DUCTWORK, OR THE CIRCULATING AIR SUPPLY. ALL RETURN DUCTWORK MUST BE ADEQUATELY SEALED AND SECURED TO THE FURNACE WITH SHEET METAL SCREWS, AND JOINTS

TAPED. ALL OTHER DUCT JOINTS MUST BE SECURED WITH APPROVED CONNECTIONS AND SEALED AIRTIGHT.

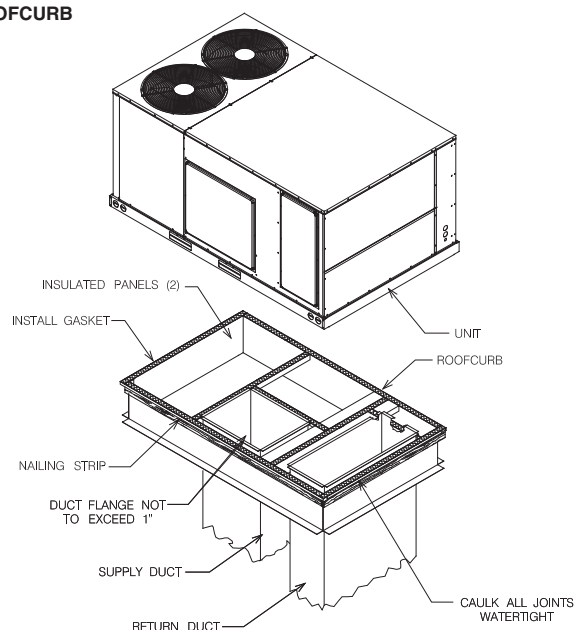
FAILURE TO PREVENT PRODUCTS OF COMBUSTION FROM BEING CIRCULATED INTO THE LIVING SPACE CAN CREATE POTENTIALLY HAZARDOUS CONDITIONS, INCLUDING CARBON MONOXIDE POISONING THAT COULD RESULT IN PERSONAL INJURY OR DEATH.

FIGURE 11
LIFTING DETAIL



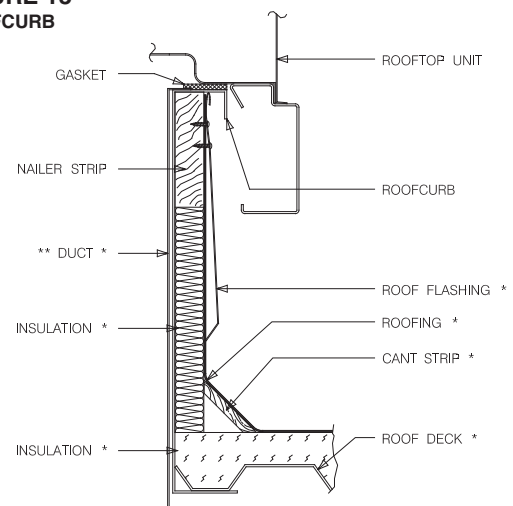
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FIGURE 12
ROOFCURB



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FIGURE 13
ROOFCURB



* 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.

A074302

III. GAS SUPPLY, CONDENSATE DRAIN AND PIPING

A. GAS CONNECTION

IMPORTANT: Connect this unit only to gas supplied by a commercial utility.

1. Install gas piping in accordance with local codes and regulations of the local utility company. In the absence of local codes, the installation must conform to the specifications of the National Fuel Gas Code, ANSI Z223.1 - latest edition.

NOTE: The use of flexible gas connectors is not permitted.
2. Connect the gas line to the gas valve supplied with unit. Routing can be through the gas pipe opening shown in Figures 7 or 10 or through the base as shown in Figure 17.
3. Size the gas line to the furnace adequate enough to prevent undue pressure drop and never less than 1/2".
4. Install a drip leg or sediment trap in the gas supply line as close to the unit as possible.
5. Install an outside ground joint union to connect the gas supply to the control assembly at the burner tray.
6. Gas valves have been factory installed. Install a manual gas valve where local codes specify a shut-off valve outside the unit casing. (See Figure 14.)
7. Make sure piping is tight. **A pipe compound resistant to the action of liquefied petroleum gases must be used at all threaded pipe connections.**

8. **IMPORTANT:** any additions, changes or conversions required for the furnace to satisfactorily meet the application should be made by a qualified installer, service agency or the gas supplier, using factory-specified or approved parts. In the commonwealth of Massachusetts, installation must be performed by a licensed plumber or gas fitter for appropriate fuel.

IMPORTANT: Disconnect the furnace and its individual shutoff valve from the gas supply piping during any pressure testing of that system at test pressures in excess of 1/2 pound per square inch gauge or isolate the system from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of this gas supply system at pressures equal to or less than 1/2 PSIG.

TO CHECK FOR GAS LEAKS, USE A SOAP AND WATER SOLUTION OR OTHER APPROVED METHOD. DO NOT USE AN OPEN FLAME.

⚠ WARNING

DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS. THE USE OF AN OPEN FLAME CAN RESULT IN FIRE, EXPLOSION, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

IMPORTANT: Check the rating plate to make certain the appliance is equipped to burn the type of gas supplied. Care should be taken after installation of this equipment that the gas control valve not be subjected to high gas supply line pressure.

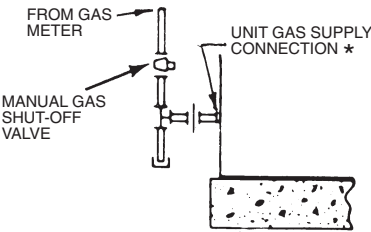
In making gas connections, avoid strains as they may cause noise and damage the controls. A backup wrench is required to be used on the valve to avoid damage.

TABLE 10
GAS PIPE CAPACITY TABLE (CU. FT./HR.)

Nominal Iron Pipe Size, Inches	Equivalent Length of Pipe, Feet							
	10	20	30	40	50	60	70	80
1/2	132	92	73	63	56	50	46	43
3/4	278	190	152	130	115	105	96	90
1	520	350	285	245	215	195	180	170
1 1/4	1,050	730	590	500	440	400	370	350
1 1/2	1,600	1,100	890	760	670	610	560	530

FIGURE 14
SUGGESTED GAS PIPING

ROOF OR GROUND LEVEL INSTALLATION



*Factory supplied grommet must be utilized.

The capacities of gas pipe of different diameters and lengths in cu. ft. per hr. with pressure drop of 0.3 in. and specific gravity of 0.60 (natural gas) are shown in Table 10.

After determining the pipe length, select the pipe size which will provide the minimum cubic feet per hour required for the gas input rating of the furnace. By formula:

$$\text{Cu. Ft. Per Hr. Required} = \frac{\text{Gas Input of Furnace (BTU/HR)}}{\text{Heating Value of Gas (BTU/FT}^3\text{)}}$$

The gas input of the furnace is marked on the furnace rating plate. The heating value of the gas (BTU/FT³) may be determined by consulting the local natural gas utility or the L.P. gas supplier.

B. LP CONVERSION

⚠ WARNING

THIS UNIT IS EQUIPPED AT THE FACTORY FOR USE ON NATURAL GAS ONLY. CONVERSION TO LP GAS REQUIRES A SPECIAL KIT SUPPLIED BY THE DISTRIBUTOR OR MANUFACTURER. MAILING ADDRESSES ARE LISTED ON THE FURNACE RATING PLATE, PARTS LIST AND WARRANTY. FAILURE TO USE THE PROPER CONVERSION KIT CAN CAUSE FIRE, CARBON MONOXIDE POISONING, EXPLOSION, PERSONAL INJURY, PROPERTY DAMAGE OR DEATH.

Convert the unit to use liquefied petroleum (LP) gas by replacing with the gas valve supplied in the conversion kit. The LP gas valve maintains the proper manifold pressure for LP gas. The correct burner LP orifices are included in the kit.

IMPORTANT: To remove the natural gas valve, remove the four screws securing the manifold pipe to the burner tray. Remove the manifold pipe with gas valve attached.

NOTE: Order the correct LP conversion kit from the furnace manufacturer. **See Conversion Kit Index shipped with unit for proper LP kit number. Furnace conversion to LP gas must be performed by a qualified technician.**

TABLE 11

LP GAS PIPE CAPACITY TABLE (CU. FT./HR.)

Maximum capacity of pipe in thousands of BTU per hour of undiluted liquefied petroleum gases (at 11 inches water column inlet pressure).
(Based on a Pressure Drop of 0.5 Inch Water Column)

Nominal Iron Pipe Size, Inches	Length of Pipe, Feet											
	10	20	30	40	50	60	70	80	90	100	125	150
1/2	275	189	152	129	114	103	96	89	83	78	69	63
3/4	567	393	315	267	237	217	196	182	173	162	146	132
1	1,071	732	590	504	448	409	378	346	322	307	275	252
1-1/4	2,205	1,496	1,212	1,039	913	834	771	724	677	630	567	511
1-1/2	3,307	2,299	1,858	1,559	1,417	1,275	1,181	1,086	1,023	976	866	787
2	6,221	4,331	3,465	2,992	2,646	2,394	2,205	2,047	1,921	1,811	1,606	1,496

Example (LP): Input BTU requirement of unit, 150,000
Equivalent length of pipe, 60 ft. = 3/4" IPS required.

C. ADJUSTING OR CHECKING FURNACE INPUT

- Natural Gas Line Pressure 5" - 10.5" W.C.
- LP Gas Line Pressure 11" - 13" W.C.
- Natural Gas Manifold Pressure 3.5" W.C.
- LP Gas Manifold Pressure - 10" W.C.

Supply and manifold pressure taps are located on the gas valve body 1/8" N.P.T. and on the manifold.

Use a properly calibrated manometer gauge for accurate gas pressure readings.

Only small variations in the gas flow should be made by means of the pressure regulator adjustment. Furnaces functioning on LP gas must be set by means of the tank or branch supply regulators. The furnace manifold pressure should be set at 10" W.C. at the gas control valve.

To adjust the pressure regulator, remove the regulator cap and turn the adjustment screw clockwise to increase pressure or counterclockwise to decrease pressure. **Then replace the regulator cap securely.**

Any necessary major changes in the gas flow rate should be made by changing the size of the burner orifices. To change orifice spuds, shut off the manual main gas valve and remove the gas manifold.

For elevations up to 2,000 feet, rating plate input ratings apply. For high altitudes (elevations over 2,000 ft.), see conversion kit index 92-21519-XX for derating and orifice spud sizes.

Check of input is important to prevent over-firing of the furnace beyond its design-rated input. NEVER SET INPUT ABOVE THAT SHOWN ON THE RATING PLATE. Use the following table or formula to determine input rate.

TABLE 12

METER TIME IN MINUTES AND SECONDS FOR NORMAL INPUT RATING OF FURNACES EQUIPPED FOR NATURAL OR LP GAS											
INPUT BTU/HR	METER SIZE CU. FT.	HEATING VALUE OF GAS BTU PER CU. FT.									
		900		1000		1040		1100		2500	
		MIN.	SEC.	MIN.	SEC.	MIN.	SEC.	MIN.	SEC.	MIN.	SEC.
150,000	ONE TEN	3	21.6 36	4	24.0 0	4	25.0 10	4	26.4 24	1 10	0.0 0
220,000	ONE TEN	2	14.7 28	2	16.4 44	2	17.0 51	3	18.0 0	6 50	40.9 0
250,000	ONE TEN	2	13.0 10	2	14.4 24	2	15.0 30	2	15.8 39	6 0	36.0 0

$$\text{Cu. Ft. Per Hr. Required} = \frac{\text{Heating Value of Gas (BTU/Cu. Ft.)} \times 3600}{\text{Time in Seconds (for 1 Cu. Ft.) of Gas}}$$

Start the furnace and measure the time required to burn one cubic foot of gas. Prior to checking the furnace input, make certain that all other gas appliances are shut off, with the exception of pilot burners. Time the meter with only the furnace in operation.

IMPORTANT NOTE FOR ALTITUDES ABOVE 2,000 FEET (610 METERS): The main burner orifices in your furnace and in these kits are sized for the nameplate input and intended for installations at elevations up to 2,000 feet in the USA or Canada, or for elevations of 2,000 - 4,500 feet (610 - 1,373 meters) in Canada if the unit has been derated at the factory. For

elevations above 2,000 feet (610 meters) **IN THE USA ONLY** (see ANSI-Z223.1), the burner orifices must be sized to reduce the input 4% for each 1,000 feet (305 meters) above sea level.

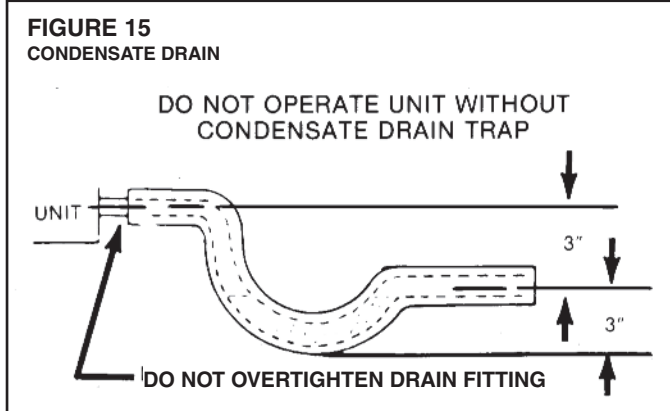
NOTICE: DERATING OF THE HEATING INPUT FOR HIGH ALTITUDE IN THE FIELD IS UNLAWFUL IN CANADA (REFER TO CAN/CGA 2.17). UNITS INSTALLED IN ALTITUDES GREATER THAN 2,000 FEET (610 METERS) MUST BE SHIPPED FROM THE FACTORY OR FROM A FACTORY AUTHORIZED CONVERSION STATION WITH THE HEATING INPUT DERATED BY 10% SO AS TO OPERATE PROPERLY IN ALTITUDES FROM 2,000 - 4,500 FEET (610 - 1,373 METERS).

D. 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 be 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.



IV. WIRING

A. POWER SUPPLY

▲ WARNING

TURN OFF THE MAIN ELECTRICAL POWER AT THE BRANCH CIRCUIT DISCONNECT CLOSEST TO THE UNIT BEFORE ATTEMPTING ANY WIRING. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR DEATH.

1. All wiring should be made in accordance with the **National Electrical Code**. Consult the local power company to determine the availability of sufficient power to operate the unit. Check the voltage at power supply to make sure it corresponds to the unit's **RATED VOLTAGE REQUIREMENT**. Install a branch circuit disconnect near the rooftop, in accordance with the N.E.C., C.E.C. or local codes.
2. It is important that proper electrical power is available at the unit. Voltage should not vary more than 10% from that stamped on the unit nameplate. On three phase units, phases must be balanced within 3%.
3. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size for the length of run can be determined from Table 10 using the circuit ampacity found on the unit rating plate. Use the smallest wire size allowable in Table 13 from the unit disconnect to unit.

TABLE 13

AWG Copper Wire Size	AWG Aluminum Wire Size	Connector Type and Size (or equivalent)	
#12	#10	T & B Wire Nut	PT2
#10	# 8	T & B Wire Nut	PT3
# 8	# 6	Sherman Split Bolt	TSP6
# 6	# 4	Sherman Split Bolt	TSP4
# 4	# 2	Sherman Split Bolt	TSP2

4. For through the base wiring entry reference **Figure 17**. All fittings and conduit are field supplied for this application. Reference the chart with **Figure 17** for proper hole and conduit size.

NOTES:

1. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size for the length of run can be determined from this table using the circuit ampacity found on the unit rating plate. From the unit disconnect to unit, the smallest wire size allowable in Table 1 may be used, as the disconnect must be in sight of the unit.
2. Wire size based on 75°C rated wire insulation for 1% voltage drop.
3. For more than 3 conductors in a raceway or cable, see the N.E.C. (C.E.C. in Canada) for derating the ampacity of each conductor.

IMPORTANT: THIS UNIT IS APPROVED FOR USE WITH COPPER CONDUCTORS ONLY CONNECTED TO UNIT CONTACTOR.

WARRANTY MAY BE JEOPARDIZED IF ALUMINUM WIRE IS CONNECTED TO UNIT CONTACTOR.

Special instructions apply for power wiring with aluminum conductors: Warranty is void if connections are not made per instructions.

Attach a length (6" or more) of recommended size copper wire to the unit contactor terminals L1, L2 and L3 for three phase.

Select the equivalent aluminum wire size from the tabulation below:

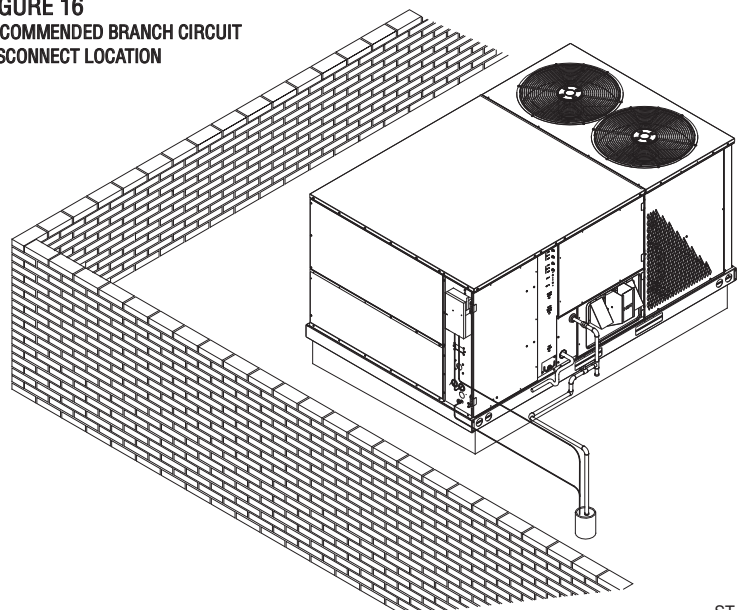
Splice copper wire pigtails to aluminum wire with U.L. recognized connectors for copper-aluminum splices. Please exercise the following instructions very carefully to obtain a positive and lasting connection:

1. Strip insulation from aluminum conductor.
2. Coat the stripped end of the aluminum wire with the recommended inhibitor, and wire brush the aluminum surface through inhibitor. INHIBITORS: Brundy-Pentex "A"; Alcoa-No. 2EJC; T & B-KPOR Shield.
3. Clean and recoat aluminum conductor with inhibitor.
4. Make the splice using the above listed wire nuts or split bolt connectors.
5. Coat the entire connection with inhibitor and wrap with electrical insulating tape.

TABLE 14

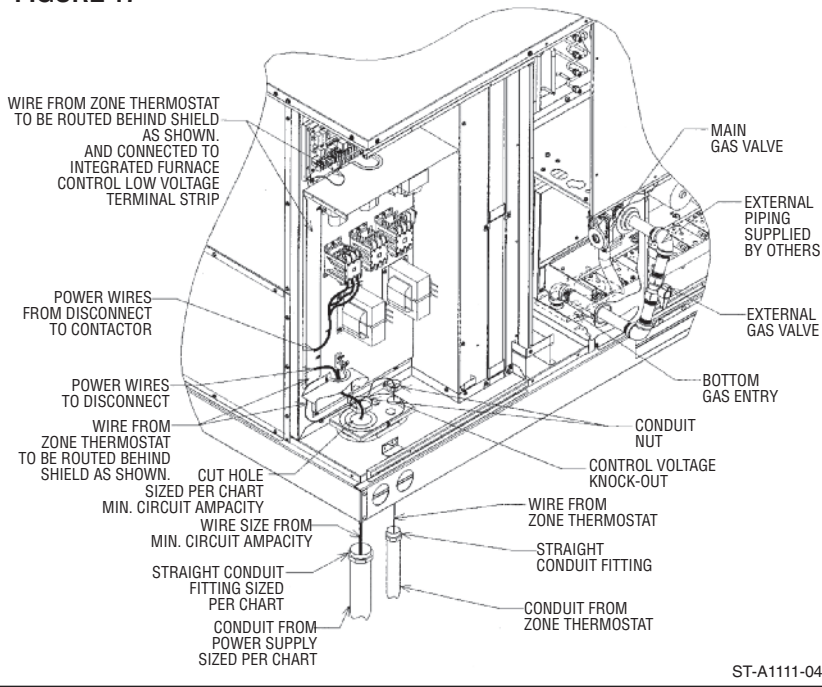
UNIT MCA	COPPER WIRE SIZE—AWG					
	SUPPLY WIRE LENGTH—FEET					
	50	100	150	200	250	300
20	10	8	6	4	4	4
25	10	8	6	4	4	3
30	8	6	4	4	3	2
35	8	6	4	3	2	1
40	8	6	4	3	2	1
45	8	4	3	2	1	1/0
50	6	4	3	2	1	1/0
60	6	4	2	1	1/0	2/0
70	4	3	2	1/0	2/0	3/0
80	4	3	1	1/0	2/0	3/0
90	3	2	1/0	2/0	3/0	4/0
100	3	2	1/0	2/0	3/0	4/0
110	2	1	2/0	3/0	4/0	250
125	1	1	2/0	3/0	4/0	250

**FIGURE 16
RECOMMENDED BRANCH CIRCUIT
DISCONNECT LOCATION**

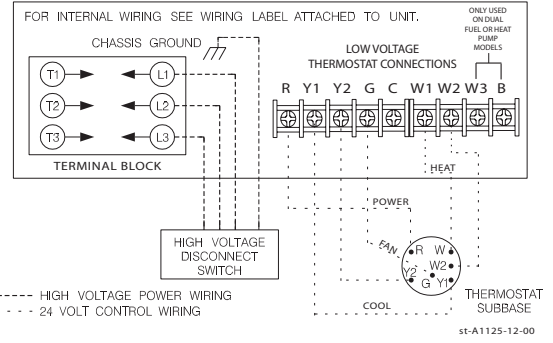


ST-A1111-03

FIGURE 17



**FIGURE 18
TYPICAL THERMOSTAT WIRING**



	WIRE SIZE, AWG										
	14	12	10	8	6	4	3	2	1	0	00
CONDUIT SIZE	1/2"	1/2"	1/2"	3/4"	1"	1"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"
HOLE SIZE	7/8"	7/8"	7/8"	1-31/32"	1-23/64"	1-23/64"	1-23/32"	1-23/32"	1-31/32"	1-31/32"	2-15/32"

- NOTES: 1. DETERMINE REQUIRED WIRE SIZE FROM MINIMUM CIRCUIT AMPACITY SHOWN IN INSTALLATION & OPERATING INSTRUCTION.
2. BOTTOM POWER ENTRY WILL NOT ACCOMMODATE WIRE LARGER THAN #2 AWG (SHADED AREA).

B. HOOK-UP

To wire unit, refer to the following hook-up diagram.

Refer to Figures 2 and 17 for location of wiring entrances.

Wiring to be done in the field between the unit and devices not attached to the unit, or between separate devices which are field installed and located, shall conform with the temperature limitation for Type T wire [63°F rise (35°C)] when installed in accordance with the manufacturer's instructions.

C. INTERNAL WIRING

A diagram of the internal wiring of this unit is located on the inside of control access panel and in this manual. If any of the original wire as supplied with the appliance must be replaced, the wire gauge and insulation must be same as original wiring.

Transformer is factory wired for 230 volts on 208/230 volt models and must be changed for 208 volt applications. See unit wiring diagram for 208 volt wiring.

D. THERMOSTAT

The room thermostat must be compatible with the spark ignition control on the unit. Generally, all thermostats that are not of the "current robbing" type are compatible with the integrated furnace control. The low voltage wiring should be sized as shown in Table 10.

Install the room thermostat in accordance with the instruction sheet packed in the box with the thermostat. Run the thermostat lead wires through control entry opening (Figure 2 or Figure 17) and connect to the low voltage thermostat connections (see wiring diagram). Never install the thermostat on an outside wall or where it will be influenced by drafts, concealed hot or cold water pipes or ducts, lighting fixtures, radiation from fireplace, sun rays,

lamps, televisions, radios or air streams from registers. Refer to instructions packed with the thermostat for "heater" selection or adjustment.

The following is a list of recommended thermostats to be used with or without an economizer:

TABLE 15

FIELD WIRE SIZE FOR 24 VOLT THERMOSTAT CIRCUITS						
Thermostat Load - Amps	SOLID COPPER WIRE - AWG.					
	3.0	2.5	2.0	1.5	1.0	0.5
	16	14	12	10	10	10
	16	14	12	12	12	10
	18	16	14	12	12	10
	50	100	150	200	250	300
	Length of Run - Feet (1)					

(1) The total wire length is the distance from the furnace to the thermostat and back to the furnace.

NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

V. FURNACE SECTION CONTROLS AND IGNITION SYSTEM

NORMAL FURNACE OPERATING SEQUENCE

This unit is equipped with a two stage integrated direct spark ignition control.

NORMAL HEAT MODE

A. Call For First Stage (low fire) Only:

1. Zone thermostat contacts close, a call for first stage (low fire) heat is initiated.
2. Control runs self check.
3. Control checks the high-limit switch for normally closed contacts, each pressure switch for normally open contacts, and all flame rollout switches for continuity.
4. Control energizes each low-fire inducer.
5. Control checks each low-fire pressure switch for closure.
6. If each low-fire pressure switch is closed, the control starts a 30 second prepurge. If either low-fire pressure switch is still open after 180 seconds, the high-fire inducers will be energized until closure.
7. After prepurge timeout, control initiates spark for 2 seconds minimum, 7 second maximum ignition trial, initiates 45 second, second stage (high fire) warm up timing.
8. Control detects flame, de-energizes spark and initiates 45 second delay on blower timing.
9. After a fixed 45 seconds indoor blower delay on, the control energizes the indoor blower.
10. After the 45 second second stage warmup period control checks thermostat input. If only W1 is called for, W2 is de-energized and the control starts a 5 second off delay on the W2 inducer.
11. After fixed 5 seconds the W2 inducer is de-energized.
12. Control enters normal operating loop where all inputs are continuously checked.

B. Call For Second Stage, After First Stage Established; Starting from A.11:

1. If a call for second stage (high fire) is initiated after a call for first stage heat is established, the control energizes the W2 inducer assures the high-fire pressure switch is closed and energizes the second stage of the gas valve.
2. Control enters normal operating loop where all inputs are continuously checked.

C. Second Stage Satisfied; First Stage Still Called For; Starting From B.2:

1. Once the call for second stage is satisfied, the control starts a 30 second off delay on W2 inducer and reduces the gas valve to first stage.
2. Control enters normal operating loop where all inputs are continuously checked.

D. First Stage Satisfied:

1. Zone thermostat is satisfied.

2. Control de-energizes gas valve.
3. Control senses loss of flame.
4. Control initiates 5 second inducer postpurge and 90 second indoor blower delay off.
5. Control de-energizes inducer blower.
6. Control de-energizes indoor blower.
7. Control in the stand by mode with solid red LED.

E. First Stage and Second Stage Called Simultaneously:

1. Zone thermostat contacts close, a call for first stage (low fire) and second stage (high fire) heat is initiated.
2. Control runs self check.
3. Control checks the high-limit switch for normally closed contacts, each pressure switch for normally open contacts, and all flame rollout switches for continuity.
4. Control energizes each low-fire inducer.
5. Control checks each pressure switch for closure.
6. If each low-fire pressure switch is closed, the control starts a 30 second prepurge. If either switch is still open after 180 seconds, the high-fire inducers will be energized until closure.
7. After prepurge timeout, control initiates spark for 2 seconds minimum, 7 second maximum ignition trial, and initiates 45 second second stage warm up timing.
8. Control detects flame, de-energizes spark and starts a 45 second indoor blower delay on timing.
9. After a fixed 45 seconds indoor blower delay on, the control energizes the indoor blower.
10. After the 45 seconds second stage warmup period control checks the thermostat input. If W1 and W2 is present control enters normal operating loop where all inputs are continuously checked.

F. First Stage and Second Stage Removed Simultaneously:

1. Upon a loss of W1 and W2 the gas valve is de-energized.
2. Upon a loss of flame, each inducer will complete a 5 second postpurge and the indoor blower will complete a 90 second delay off.
3. Control in the stand by mode with solid red LED.

The integrated control is a four-ignition system.

After a total of four cycles without sensing main burner flame, the system goes into a 100% lockout mode. After one hour, the ignition control repeats the prepurge and ignition cycles for 4 tries and then go into 100% lockout mode again. It continues this sequence of cycles and lockout each hour until ignition is successful or power is interrupted. During the lockout mode, neither the ignitor or gas valve will be energized until the system is reset by turning the thermostat to the "OFF"

position or interrupting the electrical power to the unit for 3 seconds or longer. The induced draft blower and main burner will shut off when the thermostat is satisfied.

The circulating air blower will start and run on the heating speed if the thermostat fan switch is in the "ON" position.

The integrated furnace control is equipped with diagnostic LED. The LED is lit continuously when there is power to the control, with or without a call for heat. If the LED is not lit, there is either no power to the control or there is an internal component failure within the control, and the control should be replaced.

If the control detects the following failures, the LED will flash on for approximately 1/4 second, then off for 3/4 second for designated failure detections.

- 1 Flash: Failed to detect flame within the four tries for ignition.
- 2 Flash: Pressure switch or induced draft blower problem detected.
- 3 Flash: High limit or auxiliary limit open.
- 4 Flash: Flame sensed and gas valve not energized or flame sensed with no "W" signal.
- 5 Flash: Overtemperature switch open.

OPERATING INSTRUCTIONS

This appliance is equipped with integrated furnace control. This device lights the main burners each time the room thermostat (closes) calls for heat. See operating instructions on the back of the furnace/controls access panel.

⚠ WARNING

DO NOT ATTEMPT TO MANUALLY LIGHT THIS FURNACE WITH A MATCH OR ANY OPEN FLAME. ATTEMPTING TO DO SO CAN CAUSE AN EXPLOSION OR FIRE RESULTING IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

TO START THE FURNACE

1. Set the thermostat to its lowest setting.
2. Turn off all electric power to the appliance.
3. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
4. Remove control door.
5. Move control knob to the "OFF" position. Turn the knob by hand only, do not use any kind of tool.
6. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow B in the safety information on the Operating Instructions located on the back of the controls/access panel. If you don't smell gas, go to the next step.

7. Move the gas control knob from "OFF" position to "ON" position. Operate this appliance with the gas control knob in the "ON" position only. Do not use the gas control knob as a means for throttling the burner input rate.
8. Replace the control door.
9. Turn on all electric power to the appliance.
10. Set the thermostat to the desired setting.
11. If the appliance will not operate, follow the instructions below on how to shut down the furnace.

▲ WARNING

THE SPARK IGNITOR AND IGNITION LEAD FROM THE IGNITION CONTROL ARE HIGH VOLTAGE. KEEP HANDS OR TOOLS AWAY TO PREVENT ELECTRICAL SHOCK. SHUT OFF ELECTRICAL POWER BEFORE SERVICING ANY OF THE CONTROLS. FAILURE TO ADHERE TO THIS WARNING CAN RESULT IN PERSONAL INJURY OR DEATH.

The initial start-up on a new installation may require the control system to be energized for some time until air has bled through the system and fuel gas is available at the burners.

TO SHUT DOWN FURNACE

1. Set the thermostat to the lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Remove control door.

4. Move control knob to the "OFF" position.
5. Replace control door.

▲ WARNING

SHOULD OVERHEATING OCCUR OR THE GAS SUPPLY FAIL TO SHUT OFF, SHUT OFF THE MANUAL GAS VALVE TO THE APPLIANCE BEFORE SHUTTING OFF THE ELECTRICAL SUPPLY. FAILURE TO DO SO CAN RESULT IN AN EXPLOSION OR FIRE CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH!

BURNERS

Burners for these units have been designed so that field adjustment is not required. Burners are tray-mounted and accessible for easy cleaning when required.

MANUAL RESET OVERTEMPERATURE CONTROL

Two manual reset overtemperature controls are located on the burner shield. These devices sense blockage in the heat exchanger or insufficient combustion air. This shuts off the main burners if excessive temperatures occur in the burner compartment.

Operation of this control indicates an abnormal condition. Therefore, the unit should be examined by a qualified installer, service agency, or the gas

supplier before being placed back into operation.

▲ WARNING

do not jumper this device! Do not reset the overtemperature control without taking corrective action to assure that an adequate supply of combustion air is maintained under all conditions of operation. Failure to do so can result in carbon monoxide poisoning or death. Replace this control only with the identical replacement part.

PRESSURE SWITCH

This furnace has two pressure switches for sensing a blocked exhaust or a failed induced draft blower. They are normally open and close when the induced draft blower starts, indicating air flow through the combustion chamber.

LIMIT CONTROL

The supply air high temperature limit cut-off is set at the factory and cannot be adjusted. It is calibrated to prevent the air temperature leaving the furnace from exceeding the maximum outlet air temperature.

▲ WARNING

DO NOT JUMPER THIS DEVICE! DOING SO CAN CAUSE A FIRE OR EXPLOSION RESULTING IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

IMPORTANT: Replace this control only with the identical replacement part.

VI. SYSTEM OPERATING INFORMATION

ADVISE THE CUSTOMER

1. Change the air filters regularly. The heating system operates better, more efficiently and more economically.
2. Arrange the furniture and drapes so that the supply air registers and the return air grilles are unobstructed.
3. Close doors and windows. This reduces the heating and cooling load on the system.
4. Avoid excessive use of exhaust fans.
5. Do not permit the heat generated by television, lamps or radios to influence the thermostat operation.
6. Except for the mounting platform, keep all combustible articles three feet from the unit and exhaust system.
7. **IMPORTANT:** Replace all blower doors and compartment cover after servicing the unit. Do not operate the unit without all panels and doors securely in place.
8. Do not allow snow or other debris to accumulate in the vicinity of the appliance.

FURNACE SECTION MAINTENANCE

The unit's furnace should operate for many years without excessive scale build-up in flue passageways; however, it is recommended that a qualified installer, service agency, or the gas supplier annually inspect the flue passageways, the exhaust system and the burners for continued safe operation, paying particular attention to deterioration from corrosion or other sources.

If during inspection the flue passageways and exhaust system are determined to require cleaning, the following procedures should be followed **(by a qualified installer, service agency, or gas supplier):**

1. Turn off the electrical power to the unit and set the thermostat to the lowest temperature.
2. Shut off the gas supply to the unit either at the meter or at manual valve in the supply piping.

▲ WARNING

LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN

CAUSE IMPROPER AND DANGEROUS OPERATION RESULTING IN FIRE, ELECTRICAL SHOCK, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

3. Remove the furnace controls access panel and the control box cover.
4. Disconnect the gas supply piping from the gas valve.
5. Disconnect the wiring to the induced draft blower motor, gas valve, flame sensor, and flame roll-out control, and ignitor cable. **Mark all wires disconnected for proper reconnection.**
6. Remove the screws (4) connecting the burner tray to the heat exchanger mounting panel.
7. Remove the burner tray and the manifold assembly from the unit.
8. Remove the screws (10) connecting the two induced draft blowers to the collector box and screws (12) connecting the inducer mounting plate to the heat exchanger center panel. Remove the induced draft blower and the collector box from the unit.
9. Remove the turbulators from inside the heat exchangers by inserting the blade of a screwdriver under the locking tabs. Pop the tabs out of the expanded

grooves of the heat exchanger. Slide the turbulators out of the heat exchangers.

10. Direct a water hose into the outlet of the heat exchanger top. Flush the inside of each heat exchanger tube with water. Blow out each tube with air to remove excessive moisture.
11. Reassemble (steps 1 through 9 in reverse order). **Be careful not to strip out the screw holes used to mount the collector box and inducer blower. Replace inducer blower gasket and collector box gasket with factory replacements if damaged.**

▲ WARNING

HOLES IN THE EXHAUST TRANSITION OR HEAT EXCHANGER CAN CAUSE TOXIC FUMES TO ENTER THE HOME. THE EXHAUST TRANSITION OR HEAT EXCHANGER MUST BE REPLACED IF THEY HAVE HOLES OR CRACKS IN THEM. FAILURE TO DO SO CAN CAUSE CARBON MONOXIDE POISONING RESULTING IN PERSONAL INJURY OR DEATH.

The manufacturer recommends that a qualified installer, service agency or the gas supplier visually inspect the burner flames for the desired flame appearance at the beginning of the heating season and approximately midway in heating season.

The manufacturer also recommends that a qualified installer, service agency or the gas supplier clean the flame sensor with steel wool at the beginning of the heating season.

▲ WARNING

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

LUBRICATION

IMPORTANT: DO NOT attempt to lubricate the bearings on the blower motor or the induced draft blower motor. Addition of lubricants can reduce the motor life and void the warranty.

The blower motor and induced draft blower motor are prelubricated by the manufacturer and do not require further attention.

A qualified installer, service agency or the gas supplier must periodically clean the motors to prevent the possibility of overheating due to an accumulation of dust and dirt on the windings or on the motor exterior. And, as suggested elsewhere in these instructions, the air filters should be kept clean because dirty filters can restrict air flow and the motor depends upon sufficient air flowing across and through it to prevent overheating.

COOLING SECTION MAINTENANCE

▲ WARNING

DISCONNECT MAIN ELECTRICAL POWER TO THE UNIT BEFORE ATTEMPTING MAINTENANCE. FAILURE TO DO SO CAN CAUSE ELECTRICAL SHOCK RESULTING IN SEVERE PERSONAL INJURY OR DEATH.

It is recommended that at the beginning of each cooling season a qualified installer or service agency inspect and clean the cooling section of this unit. The following areas should be addressed: evaporator coil, condenser coil, condenser fan motor and venturi area.

To inspect the evaporator coil:

1. Open the control/filter access panel and remove filters. Also, remove blower access panel. In downflow applications remove the horizontal return to gain access.

▲ WARNING

LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING THE UNIT. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION RESULTING IN FIRE, ELECTRICAL SHOCK, PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

2. Shine a flashlight on the evaporator coil (both sides) and inspect for accumulation of lint, insulation, etc.
3. If coil requires cleaning, follow the steps shown below.

Cleaning Evaporator Coil

1. The coil should be cleaned when it is dry. If the coil is coated with dirt or lint, vacuum it with a soft brush attachment. Be careful not to bend the coil fins.
2. If the coil is coated with oil or grease, clean it with a mild detergent-and-water solution. Rinse the coil thoroughly with water. **IMPORTANT: Do not** use excessive water pressure. Excessive water pressure can bend the fins and tubing of the coil and lead to inadequate unit performance. Be careful not to splash water excessively into unit.
3. Inspect the drain pan and condensate drain at the same time the evaporator coil is checked. Clean the drain pan by flushing with water and removing any matters of obstructions which may be present.
4. Go to next section for cleaning the condenser coil.

Cleaning Condenser Coil, Condenser Fan, Circulation Air Blower and Venturi

1. Remove the compressor access panel. Disconnect the wires to the condenser fan motor in the control box (see wiring diagram).
2. The coil should be cleaned when it is dry. If the coil is coated with dirt or lint, vacuum it with a soft brush attachment. Be careful not to bend the coil fins.
3. If the coil is coated with oil or grease, clean it with a mild detergent-and-water solution. Rinse the coil thoroughly with water. **IMPORTANT: Do not** use excessive water pressure. Excessive water pressure can bend the fins and tubing of the coil and lead to inadequate unit performance. Be careful not to splash water excessively into unit.
4. The venturi should also be inspected for items of obstruction such as collections of grass, dirt or spider webs. Remove any that are present.
5. Inspect the circulating air blower wheel and motor for accumulation of lint, dirt or other obstruction and clean it necessary. Inspect the blower motor mounts and the blower housing for loose mounts or other damage. Repair or replace if necessary.

Re-assembly

1. Reconnect fan motor wires per the wiring diagram attached to the back of the cover.
2. Close the filter control and replace the blower/evaporator coil access panels.
3. Replace the control box cover.
4. Restore electrical power to the unit and check for proper operation, especially the condenser fan motor.

REPLACEMENT PARTS

Contact your local distributor for a complete parts list.

TROUBLESHOOTING

Refer to Figures 19 and 20 for determining cause of unit problems.

WIRING DIAGRAMS

Figures 21 through 28 are complete wiring diagrams for the unit and its power sources. Also located on back of compressor access panel.

CHARGING

See Figures 29 through 40 for proper charging information.

TABLE 16 - AIR-FLOW PERFORMANCE – 6 TON RKNL MODELS

Model RKNL-B072/C072		External Static Pressure — Inches of Water [kPa]																															
Voltage 208/230, 460, 575 — 3 phase																																	
Air Flow CFM [L/s]	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]				
	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			
1800 [849]	—	—	—	—	—	—	—	—	835	631	880	686	924	740	965	794	1005	847	1043	898	1079	949	1113	999	1113	1048	1177	1096	1206	1144			
1900 [897]	—	—	—	—	—	—	808	622	854	681	899	739	941	795	982	851	1021	906	1058	960	1093	1013	1127	1065	1117	1189	1167	1217	1217				
2000 [944]	—	—	—	—	—	—	828	673	874	734	918	794	959	853	999	911	1037	968	1074	1025	1108	1080	1141	1135	1172	1189	1201	1242	1228	1293			
2100 [991]	—	—	—	—	—	803	663	850	727	894	790	937	853	978	914	1017	974	1055	1034	1090	1093	1124	1151	1156	1208	1264	1214	1319	1241	1373			
2200 [1038]	—	—	—	—	—	826	718	871	784	915	850	957	914	997	978	1036	1041	1072	1103	1107	1164	1140	1224	1171	1283	1201	1342	1228	1399	1254			
2300 [1085]	—	—	802	706	849	775	894	844	937	912	978	979	1017	1045	1055	1110	1091	1174	1125	1238	1157	1300	1187	1362	1242	1423	1242	1482	1267	1541			
2400 [1133]	—	—	826	764	872	836	916	907	959	977	999	1047	1038	1115	1075	1183	1110	1249	1143	1315	1174	1380	1204	1444	1231	1507	1257	1569	1282	1630			
2500 [1180]	805	751	852	826	897	900	940	973	981	1046	1021	1118	1059	1188	1095	1258	1129	1327	1162	1395	1192	1462	1221	1529	1248	1594	1273	1658	—	—			
2600 [1227]	831	813	877	890	922	967	964	1043	1005	1118	1044	1191	1081	1265	1116	1337	1149	1408	1181	1478	1211	1548	1239	1616	1265	1684	—	—	—	—			
2700 [1274]	858	878	904	958	947	1037	989	1115	1029	1192	1067	1268	1103	1344	1137	1418	1170	1492	1201	1565	1230	1637	1257	1708	1282	1778	—	—	—	—			
2800 [1321]	886	947	931	1029	973	1110	1014	1190	1053	1270	1091	1349	1126	1426	1160	1503	1191	1579	1221	1654	1250	1728	1276	1802	—	—	—	—	—	—			

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

Drive Package	L										M									
Motor H.P. [W]	1.5 [1118.6]										1.5 [1118.6]									
Blower Sheave	AK66										AK66									
Motor sheave	1VP-44										1VP-50									
Turns Open	0	1	2	3	4	5	0	1	2	3	4	5								
RPM	1119	1072	1019	967	915	859	1267	1215	1163	1113	1064	1015								

- 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 E.S.P.
4. Drive data shown is for horizontal airflow with dry coil. add component resistance to duct resistance to determine total E.S.P.

COMPONENT AIR RESISTANCE, IWC
6 TONS [21.10 kW]

AIRFLOW CORRECTION FACTORS
6 TONS [21.10 kW]

Actual CFM [L/s]	1800 [849]	2000 [944]	2200 [1038]	2400 [1133]	2600 [1227]	2800 [1321]
Total MBH	0.97	0.98	0.99	1.00	1.01	1.02
Sensible MBH	0.91	0.94	0.97	1.00	1.02	1.05
Power KW	0.99	0.99	0.99	1.00	1.00	1.01

Component	Standard Indoor Airflow-CFM [L/s]					
	1800 [849]	2000 [944]	2200 [1038]	2400 [1133]	2600 [1227]	2800 [1321]
	Resistance-Inches Water [Kpa]					
Wet Coil	0.031 [0.008]	0.036 [0.009]	0.041 [0.01]	0.047 [0.012]	0.051 [0.013]	0.055 [0.014]
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	0.017 [0.042]	0.02 [0.050]
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	DNA
Economizer 100% R.A. Damper Open	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
Horizontal Economiser 100% R.A. Open	0.02 [0.005]	0.02 [0.005]	0.03 [0.007]	0.03 [0.007]	0.04 [0.01]	0.04 [0.01]
Horizontal Economiser 100% O.A. Damper Open	0.07 [0.017]	0.07 [0.017]	0.07 [0.017]	0.08 [0.02]	0.08 [0.02]	0.08 [0.02]

[] Designates Metric Conversions

TABLE 17 - AIR-FLOW PERFORMANCE – 7.5 TON RKNL-B085/C085 & B090/C090 MODELS

Air Flow CFM [L/s]		Capacity 7.5 Ton [26.4 kW]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		External Static Pressure—Inches of Water [kPa]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		0.1 [0.02]				0.2 [0.05]				0.3 [0.07]				0.4 [0.10]				0.5 [0.12]				0.6 [0.15]				0.7 [0.17]				0.8 [0.20]				0.9 [0.22]				1.0 [0.25]				1.1 [0.27]				1.2 [0.30]				1.3 [0.32]				1.4 [0.35]				1.5 [0.37]				1.6 [0.40]				1.7 [0.42]				1.8 [0.45]				1.9 [0.47]				2.0 [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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	

NOTE: L-Drive left of 1st bold line, M-Drive in middle of bold lines, N-Drive right of 2nd bold line.

Drive Package	L						M						N					
Motor H.P. [W]	2.0 [1491.4]						2.0 [1491.4]						3.0 [2237.1]					
Blower Sheave	BK110						BK90						BK65					
Motor Sheave	1VP-44						1VP-44						1VP-44					
Turns Open	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
RPM	682	650	620	587	555	523	806	774	742	710	1157	1106	1056	1005	954	904	854	804

- NOTES: 1. Factory sheave settings are shown in bold print.
2. Re-adjustment of sheave required to achieve rated airflow at ARI minimum E.S.P.
3. Do not operate above blower RPM shown as motor overloading will occur.
4. Do not set motor sheave below one turn open.

AIRFLOW CORRECTION FACTORS
7.5 TON [26.4 kW]

ACTUAL—CFM [L/s]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1605]	3600 [1699]	3800 [1793]
TOTAL MBH	0.97	0.98	0.99	1.00	1.01	1.02	1.03
SENSIBLE MBH	0.91	0.94	0.97	1.00	1.02	1.05	1.08
POWER kW	0.99	0.99	0.99	1.00	1.00	1.01	1.02

- NOTES: 1. Multiply correction factor times gross performance data.
2. Resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

COMPONENT AIR RESISTANCE, IWC
7.5 TON [26.4 kW]

Component	Standard Indoor Airflow—CFM [L/s]						
	2400 [1133]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1604]	3600 [1699]
	Resistance—Inches Water [kPa]						
Wet Coil	0.047 [0.012]	0.051 [0.013]	0.055 [0.014]	0.060 [0.015]	0.065 [0.016]	0.071 [0.018]	0.076 [0.019]
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	DNA	.017 [0.042]	.020 [0.050]	.025 [0.062]	.031 [0.077]	.037 [0.092]	DNA
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	DNA	.017 [0.042]
Economizer 100% R.A. Damper Open	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.022]	0.10 [0.025]	0.11 [0.027]
Horizontal Economizer 100% R.A. Damper Open	0.03 [0.007]	0.04 [0.009]	0.04 [0.010]	0.05 [0.011]	0.05 [0.012]	0.06 [0.014]	0.06 [0.015]
Horizontal Economizer 100% O.A. Damper Open	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.10 [0.024]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]

NOTE: Add component resistance to duct resistance to determine total external static pressure.
DNA = Data not Available.

TABLE 18 - AIR-FLOW PERFORMANCE – 8.5 TON RKNL B102/C102 MODELS

Air Flow CFM [L/s]	Capacity 8.5 Ton [29.9 kW]		External Static Pressure—Inches of Water [kPa]																																										
	0.1 [0.02]		0.2 [0.05]		0.3 [0.07]		0.4 [0.10]		0.5 [0.12]		0.6 [0.15]		0.7 [0.17]		0.8 [0.20]		0.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [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	RPM	W	RPM	W			
2700 [127.4]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2800 [132.1]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2900 [136.9]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000 [141.6]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3100 [146.3]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3200 [151.0]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3300 [155.7]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3400 [160.5]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3500 [165.2]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600 [169.9]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700 [174.6]	672	1361	700	1435	727	1510	755	1584	782	1659	810	1733	837	1808	865	1882	933	1896	953	1956	973	2070	993	2183	1002	2297	1030	2410	1054	2524	1075	2637	1111	2751	1140	2864	—	—	—	—	—	—	—	—	
3800 [179.3]	686	1443	713	1518	741	1592	768	1667	796	1741	823	1816	851	1890	878	1965	940	2003	960	2075	981	2189	1001	2302	1016	2416	1043	2529	1062	2643	1082	2756	1119	2870	1147	2983	—	—	—	—	—	—	—	—	
3900 [184.1]	699	1526	727	1601	754	1675	782	1750	809	1824	837	1899	864	1973	927	2015	948	2080	968	2194	988	2307	1008	2421	1029	2534	1057	2648	1069	2761	1090	2875	1127	2988	—	—	—	—	—	—	—	—	—	—	—
4000 [188.8]	713	1609	740	1683	768	1758	795	1832	823	1907	850	1981	878	2056	935	2085	955	2199	975	2312	996	2426	1016	2539	1043	2653	1070	2767	1077	2880	1097	2994	1135	3107	—	—	—	—	—	—	—	—	—	—	—
4100 [193.5]	726	1692	754	1766	781	1841	809	1915	836	1990	864	2064	922	2091	942	2204	963	2318	983	2431	1003	2545	1024	2658	1056	2772	1084	2885	1084	2999	1105	3112	1144	3226	—	—	—	—	—	—	—	—	—	—	—

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

Drive Package	L												M											
Motor H.P. [W]	2.0 [1491.4]												3.0 [2237.1]											
Blower Sheave	BK90												BK65											
Motor Sheave	1VP-44												1VP-44											
Turns Open	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
RPM	860	824	791	757	723	690	1148	1098	1049	999	949	899	1148	1098	1049	999	949	899	1148	1098	1049	999	949	899

- NOTES: 1. Factory sheave settings are shown in bold print.
2. Re-adjustment of sheave required to achieve rated airflow at ARI minimum E.S.P.
3. Do not operate above blower RPM shown as motor overloading will occur.
4. Do not set motor sheave below one turn open.

COMPONENT AIR RESISTANCE, IWC
8.5 TON [29.9 kW]

Component	Standard Indoor Airflow—CFM [L/s]												Resistance—Inches Water [kPa]											
	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1604]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]															
Wet Coil	0.051 [0.013]	0.055 [0.014]	0.060 [0.015]	0.065 [0.016]	0.071 [0.018]	0.076 [0.019]	0.082 [0.020]	0.087 [0.022]	0.093 [0.023]															
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	0.17 [0.042]	0.20 [0.050]	0.25 [0.062]	0.31 [0.077]	0.37 [0.092]	DNA	DNA	DNA	DNA															
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	DNA	0.17 [0.042]	0.21 [0.052]	0.24 [0.060]															
Economizer 100% R.A. Damper Open	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.022]	0.10 [0.025]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.14 [0.035]															
Horizontal Economizer 100% R.A. Damper Open	0.04 [0.009]	0.04 [0.010]	0.05 [0.011]	0.05 [0.012]	0.06 [0.014]	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.021]															
Horizontal Economizer 100% O.A. Damper Open	0.08 [0.020]	0.08 [0.020]	0.10 [0.024]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.15 [0.036]	0.16 [0.040]	0.18 [0.044]															

NOTE: Add component resistance to duct resistance to determine total external static pressure.
DNA = Data not Available.

AIRFLOW CORRECTION FACTORS
8.5 TON [29.9 kW]

ACTUAL—CFM [L/s]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1605]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]
TOTAL MBH	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04
SENSIBLE MBH	0.88	0.91	0.94	0.97	1.00	1.03	1.05	1.07	1.09
POWER kW	0.99	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03

- NOTES: 1. Multiply correction factor times gross performance data.
2. Resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

TABLE 19 - AIR-FLOW PERFORMANCE – 10 TON RKNL B120/C120 MODELS

Air Flow CFM [L/s]	Capacity 10 Ton [35.2 kW]										External Static Pressure—Inches of Water [kPa]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	0.1 [0.02]		0.2 [0.05]		0.3 [0.07]		0.4 [0.10]		0.5 [0.12]		0.6 [0.15]		0.7 [0.17]		0.8 [0.20]		0.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [0.50]		2.1 [0.52]		2.2 [0.55]		2.3 [0.57]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	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	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
3200 [1510]	—	—	—	—	—	—	657 [1170]	715 [1245]	742 [1319]	770 [1394]	797 [1468]	825 [1543]	852 [1617]	880 [1692]	906 [1767]	932 [1841]	958 [1916]	984 [1991]	1010 [2066]	1036 [2141]	1062 [2216]	1088 [2291]	1114 [2366]	1140 [2441]	1166 [2516]	1192 [2591]	1218 [2666]	1244 [2741]	1270 [2816]	1296 [2891]	1322 [2966]	1348 [3041]	1374 [3116]	1400 [3191]	1426 [3266]	1452 [3341]	1478 [3416]	1504 [3491]	1530 [3566]	1556 [3641]	1582 [3716]	1608 [3791]	1634 [3866]	1660 [3941]	1686 [4016]	1712 [4091]	1738 [4166]	1764 [4241]	1790 [4316]	1816 [4391]	1842 [4466]	1868 [4541]	1894 [4616]	1920 [4691]	1946 [4766]	1972 [4841]	1998 [4916]	2024 [4991]	2050 [5066]	2076 [5141]	2102 [5216]	2128 [5291]	2154 [5366]	2180 [5441]	2206 [5516]	2232 [5591]	2258 [5666]	2284 [5741]	2310 [5816]	2336 [5891]	2362 [5966]	2388 [6041]	2414 [6116]	2440 [6191]	2466 [6266]	2492 [6341]	2518 [6416]	2544 [6491]	2570 [6566]	2596 [6641]	2622 [6716]	2648 [6791]	2674 [6866]	2700 [6941]	2726 [7016]	2752 [7091]	2778 [7166]	2804 [7241]	2830 [7316]	2856 [7391]	2882 [7466]	2908 [7541]	2934 [7616]	2960 [7691]	2986 [7766]	3012 [7841]	3038 [7916]	3064 [7991]	3090 [8066]	3116 [8141]	3142 [8216]	3168 [8291]	3194 [8366]	3220 [8441]	3246 [8516]	3272 [8591]	3298 [8666]	3324 [8741]	3350 [8816]	3376 [8891]	3402 [8966]	3428 [9041]	3454 [9116]	3480 [9191]	3506 [9266]	3532 [9341]	3558 [9416]	3584 [9491]	3610 [9566]	3636 [9641]	3662 [9716]	3688 [9791]	3714 [9866]	3740 [9941]	3766 [10016]	3792 [10091]	3818 [10166]	3844 [10241]	3870 [10316]	3896 [10391]	3922 [10466]	3948 [10541]	3974 [10616]	4000 [10691]	4026 [10766]	4052 [10841]	4078 [10916]	4104 [10991]	4130 [11066]	4156 [11141]	4182 [11216]	4208 [11291]	4234 [11366]	4260 [11441]	4286 [11516]	4312 [11591]	4338 [11666]	4364 [11741]	4390 [11816]	4416 [11891]	4442 [11966]	4468 [12041]	4494 [12116]	4520 [12191]	4546 [12266]	4572 [12341]	4598 [12416]	4624 [12491]	4650 [12566]	4676 [12641]	4702 [12716]	4728 [12791]	4754 [12866]	4780 [12941]	4806 [13016]	4832 [13091]	4858 [13166]	4884 [13241]	4910 [13316]	4936 [13391]	4962 [13466]	4988 [13541]	5014 [13616]	5040 [13691]	5066 [13766]	5092 [13841]	5118 [13916]	5144 [13991]	5170 [14066]	5196 [14141]	5222 [14216]	5248 [14291]	5274 [14366]	5300 [14441]	5326 [14516]	5352 [14591]	5378 [14666]	5404 [14741]	5430 [14816]	5456 [14891]	5482 [14966]	5508 [15041]	5534 [15116]	5560 [15191]	5586 [15266]	5612 [15341]	5638 [15416]	5664 [15491]	5690 [15566]	5716 [15641]	5742 [15716]	5768 [15791]	5794 [15866]	5820 [15941]	5846 [16016]	5872 [16091]	5898 [16166]	5924 [16241]	5950 [16316]	5976 [16391]	6002 [16466]	6028 [16541]	6054 [16616]	6080 [16691]	6106 [16766]	6132 [16841]	6158 [16916]	6184 [16991]	6210 [17066]	6236 [17141]	6262 [17216]	6288 [17291]	6314 [17366]	6340 [17441]	6366 [17516]	6392 [17591]	6418 [17666]	6444 [17741]	6470 [17816]	6496 [17891]	6522 [17966]	6548 [18041]	6574 [18116]	6600 [18191]	6626 [18266]	6652 [18341]	6678 [18416]	6704 [18491]	6730 [18566]	6756 [18641]	6782 [18716]	6808 [18791]	6834 [18866]	6860 [18941]	6886 [19016]	6912 [19091]	6938 [19166]	6964 [19241]	6990 [19316]	7016 [19391]	7042 [19466]	7068 [19541]	7094 [19616]	7120 [19691]	7146 [19766]	7172 [19841]	7198 [19916]	7224 [19991]	7250 [20066]	7276 [20141]	7302 [20216]	7328 [20291]	7354 [20366]	7380 [20441]	7406 [20516]	7432 [20591]	7458 [20666]	7484 [20741]	7510 [20816]	7536 [20891]	7562 [20966]	7588 [21041]	7614 [21116]	7640 [21191]	7666 [21266]	7692 [21341]	7718 [21416]	7744 [21491]	7770 [21566]	7796 [21641]	7822 [21716]	7848 [21791]	7874 [21866]	7900 [21941]	7926 [22016]	7952 [22091]	7978 [22166]	8004 [22241]	8030 [22316]	8056 [22391]	8082 [22466]	8108 [22541]	8134 [22616]	8160 [22691]	8186 [22766]	8212 [22841]	8238 [22916]	8264 [22991]	8290 [23066]	8316 [23141]	8342 [23216]	8368 [23291]	8394 [23366]	8420 [23441]	8446 [23516]	8472 [23591]	8498 [23666]	8524 [23741]	8550 [23816]	8576 [23891]	8602 [23966]	8628 [24041]	8654 [24116]	8680 [24191]	8706 [24266]	8732 [24341]	8758 [24416]	8784 [24491]	8810 [24566]	8836 [24641]	8862 [24716]	8888 [24791]	8914 [24866]	8940 [24941]	8966 [25016]	8992 [25091]	9018 [25166]	9044 [25241]	9070 [25316]	9096 [25391]	9122 [25466]	9148 [25541]	9174 [25616]	9200 [25691]	9226 [25766]	9252 [25841]	9278 [25916]	9304 [25991]	9330 [26066]	9356 [26141]	9382 [26216]	9408 [26291]	9434 [26366]	9460 [26441]	9486 [26516]	9512 [26591]	9538 [26666]	9564 [26741]	9590 [26816]	9616 [26891]	9642 [26966]	9668 [27041]	9694 [27116]	9720 [27191]	9746 [27266]	9772 [27341]	9798 [27416]	9824 [27491]	9850 [27566]	9876 [27641]	9902 [27716]	9928 [27791]	9954 [27866]	9980 [27941]	10006 [28016]	10032 [28091]	10058 [28166]	10084 [28241]	10110 [28316]	10136 [28391]	10162 [28466]	10188 [28541]	10214 [28616]	10240 [28691]	10266 [28766]	10292 [28841]	10318 [28916]	10344 [28991]	10370 [29066]	10396 [29141]	10422 [29216]	10448 [29291]	10474 [29366]	10500 [29441]	10526 [29516]	10552 [29591]	10578 [29666]	10604 [29741]	10630 [29816]	10656 [29891]	10682 [29966]	10708 [30041]	10734 [30116]	10760 [30191]	10786 [30266]	10812 [30341]	10838 [30416]	10864 [30491]	10890 [30566]	10916 [30641]	10942 [30716]	10968 [30791]	10994 [30866]	11020 [30941]	11046 [31016]	11072 [31091]	11098 [31166]	11124 [31241]	11150 [31316]	11176 [31391]	11202 [31466]	11228 [31541]	11254 [31616]	11280 [31691]	11306 [31766]	11332 [31841]	11358 [31916]	11384 [31991]	11410 [32066]	11436 [32141]	11462 [32216]	11488 [32291]	11514 [32366]	11540 [32441]	11566 [32516]	11592 [32591]	11618 [32666]	11644 [32741]	11670 [32816]	11696 [32891]	11722 [32966]	11748 [33041]	11774 [33116]	11800 [33191]	11826 [33266]	11852 [33341]	11878 [33416]	11904 [33491]	11930 [33566]	11956 [33641]	11982 [33716]	12008 [33791]	12034 [33866]	12060 [33941]	12086 [34016]	12112 [34091]	12138 [34166]	12164 [34241]	12190 [34316]	12216 [34391]	12242 [34466]	12268 [34541]	12294 [34616]	12320 [34691]	12346 [34766]	12372 [34841]	12398 [34916]	12424 [34991]	12450 [35066]	12476 [35141]	12502 [35216]	12528 [35291]	12554 [35366]	12580 [35441]	12606 [35516]	12632 [35591]	12658 [35666]	12684 [35741]	12710 [35816]	12736 [35891]	12762 [35966]	12788 [36041]	12814 [36116]	12840 [36191]	12866 [36266]	12892 [36341]	12918 [36416]	12944 [36491]	12970 [36566]	12996 [36641]	13022 [36716]	13048 [36791]	13074 [36866]	13100 [36941]	13126 [37016]	13152 [37091]	13178 [37166]	13204 [37241]	13230 [37316]	13256 [37391]	13282 [37466]	13308 [37541]	13334 [37616]	13360 [37691]	13386 [37766]	13412 [37841]	13438 [37916]	13464 [37991]	13490 [38066]	13516 [38141]	13542 [38216]	13568 [38291]	13594 [38366]	13620 [38441]	13646 [38516]	13672 [38591]	13698 [38666]	13724 [38741]	13750 [38816]	13776 [38891]	13802 [38966]	13828 [39041]	13854 [39116]	13880 [39191]	13906 [39266]	13932 [39341]	13958 [39416]	13984 [39491]	14010 [39566]	14036 [39641]	14062 [39716]	14088 [39791]	14114 [39866]	14140 [39941]	14166 [40016]	14192 [40091]	14218 [40166]	14244 [40241]	14270 [40316]	14296 [40391]	14322 [40466]	14348 [40541]	14374 [40616]	14400 [40691]	14426 [40766]	14452 [40841]	14478 [40916]	14504 [40991]	14530 [41066]	14556 [41141]	14582 [41216]	14608 [41291]	14634 [41366]	14660 [41441]	14686 [41516]	14712 [41591]	14738 [41666]	14764 [41741]	14790 [41816]	14816 [41891]	14842 [41966]	14868 [42041]	14894 [42116]	14920 [42191]	14946 [42266]	14972 [42341]	14998 [42416]	15024 [42491]	15050 [42566]	15076 [42641]	15102 [42716]	15128 [42791]	15154 [42866]	15180 [42941]	15206 [43016]	15232 [43091]	15258 [43166]	15284 [43241]	15310 [43316]	15336 [43391]	15362 [43466]	15388 [43541]	15414 [43616]	15440 [43691]	15466 [43766]	15492 [43841]	15518 [43916]	15544 [43991]	15570 [44066]	15596 [44141]	15622 [44216]	15648 [44291]	15674 [44366]	15700 [44441]	15726 [44516]	15752 [44591]	15778 [44666]	15804 [44741]	15830 [44816]	15856 [44891]	15882 [44966]	15908 [45041]	15934 [45116]	15960 [45191]	15986 [45266]	16012 [45341]	16038 [45416]	16064 [45491]	16090 [45566]	16116 [45641]	16142 [45716]	16168 [45791]	16194 [45866]	16220 [45941]	16246 [46016]	16272 [46091]	16298 [46166]	16324 [46241]	16350 [46316]	16376 [46391]	16402 [46466]	16428 [46541]	16454 [46616]	16480 [46691]	16506 [46766]	16532 [46841]	16558 [46916]	16584 [46991]	16610 [47066]	16636 [47141]	16662 [47216]	16688 [47291]	16714 [47366]	16740 [47441]	16766 [47516]	16792 [47591]	16818 [47666]	16844 [47741]	16870 [47816]	16896 [47891]	16922 [47966]	16948 [48041]	16974 [48116]	16999 [48191]	17025 [48266]	17051 [48341]	17077 [48416]	17103 [48491]	17129 [48566]	17155 [48641]	17181 [48716]	17207 [48791]	17233 [48866]	17259 [48941]	17285 [49016]	17311 [49091]	17337 [49166]	17363 [49241]	17389 [49316]	17415 [49391]	17441 [49466]	17467 [49541]	17493 [49616]	17519 [49691]	17545 [49766]	17571 [49841]	17597 [49916]	17623 [49991]	17649 [50066]	17675 [50141]	17701 [50216]	17727 [50291]	17753 [50366]	17779 [50441]	17805 [50516]	17831 [50591]	17857 [50666]	17883 [50741]	17909 [50816]	17935 [50891]	17961 [50966]	17987 [51041]	18013 [51116]	18039 [51191]	18065 [51266]	18091 [51341]	18117 [51416]	18143 [51491]	18169 [51566]	18195 [51641]	18221 [51716]	18247 [51791]	18273 [51866]	18299 [51941]	18325 [52016]	18351 [52091]	18377 [52166]	18403 [52241]	18429 [52316]	18455 [52391]	18481 [52466]	18507 [52541]	18533 [52616]	18559 [52691]	18585 [52766]	18611 [52841]	18637 [52916]	18663 [52991]	18689 [53066]	18715 [53141]	18741 [53216]	18767 [53291]	18793 [53366]	18819 [53441]	18845 [53516]	18871 [53591]	18897 [53666]	18923 [53741]	18949 [53816]	18975 [53891]	19001 [53966]	19027 [54041]	19053 [54116]	19079 [54191]	19105 [54266]	19131 [54341]	19157 [54416]	19183 [54491]	19209 [54566]	19235 [54641]	19261 [54716]	19287 [54791]	19313 [54866]	19339 [54941]	19365 [55016]	19391 [55091]	19417 [55166]	19443 [55241]	19469 [55316]	19495 [55391]	19521 [55466]	19547 [55541]	19573 [55616]	19599 [55691]	19625 [55766]	19651 [55841]	19677 [55916]	19703 [55991]	19729 [56066]	19755 [56141]	19781 [56216]	19807 [56291]	19833 [56366]	19859 [56441]	19885 [56516]	19911 [56591]	19937 [56666]	19963 [56741]	19989 [56816]	20015 [56891]	20041 [56966]	20067 [57041]	20093 [57116]	20119 [57191]	20145 [57266]	20171 [57341]	20197 [57416]	20223 [57491]	20249 [57566]	20275 [57641]	20301 [57716]	20327 [57

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

Drive Package	L						M					
Motor H.P. [W]	2.0 [1491.4]						3.0 [2237.1]					
Blower Sheave	BK90						BK65					
Motor Sheave	1VP-44						1VP-44					
Turns Open	1	2	3	4	5	6	1	2	3	4	5	6
RPM	845	810	775	739	704	669	1138	1089	1041	992	943	894

- NOTES: 1. Factory sheave settings are shown in bold print.
2. Re-adjustment of sheave required to achieve rated airflow at ARI minimum E.S.P.
3. Do not operate above blower RPM shown as motor overloading will occur.
4. Do not set motor sheave below one turn open.

AIRFLOW CORRECTION FACTORS 10 TON [35.2 kW]

ACTUAL—CFM [L/s]	3200 [1510]	3400 [1605]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]	4400 [2077]	4600 [2171]	4800 [2265]
TOTAL MBH	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04
SENSIBLE MBH	0.91	0.93	0.95	0.97	1.00	1.02	1.05	1.07	1.09
POWER kW	0.98	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.01

- NOTES: 1. Multiply correction factor times gross performance data.
2. Resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

COMPONENT AIR RESISTANCE, IWC 10 TON [35.2 kW]

Component	Standard Indoor Airflow—CFM [L/s]																Resistance—Inches Water [kPa]																																														
	3200 [1510]	3400 [1604]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]	4400 [2076]	4600 [2171]	4800 [2265]																																																						
	Wet Coil	0.065 [0.016]	0.071 [0.018]	0.076 [0.019]	0.082 [0.020]	0.087 [0.022]	0.093 [0.023]	0.099 [0.025]	0.105 [0.026]	0.110 [0.027]	Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	0.31 [0.077]	0.37 [0.092]	DNA	DNA	DNA	DNA	DNA	DNA	DNA	Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	DNA	DNA	Concentric Diffuser RXRN-AA66 or AA76 & Transition RXMC-CF06	DNA	DNA	DNA	DNA	DNA	DNA	Economizer	0.09 [0.022]	0.10 [0.025]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.14 [0.035]	0.15 [0.037]	0.16 [0.040]	0.17 [0.042]	Horizontal Economizer	0.05 [0.012]	0.06 [0.014]	0.07 [0.017]	0.08 [0.020]	0.09 [0.021]	0.10 [0.022]	0.10 [0.024]	0.10 [0.025]	100% R.A. Damper Open	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.15 [0.036]	0.16 [0.040]	0.18 [0.044]	0.19 [0.047]	0.20 [0.50]

TABLE 20 - AIR-FLOW PERFORMANCE – 12.5 TON RKNL B150/C150 MODELS

Model RKNL-B150/C150		External Static Pressure — Inches of Water [kPa]																																														
Voltage 208/230, 460, 575 — 3 phase		0.1 [0.2]		0.2 [0.05]		0.3 [0.07]		0.4 [0.10]		0.5 [0.12]		0.6 [0.15]		0.7 [0.17]		0.8 [0.20]		0.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]		1.5 [0.37]		1.6 [0.40]		1.7 [0.42]		1.8 [0.45]		1.9 [0.47]		2.0 [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	RPM	W	RPM	W	RPM	W					
3800 [1793]	—	—	—	—	—	—	—	—	—	—	—	834	1660	861	1743	888	1826	914	1909	939	1992	965	2075	990	2158	1014	2241	1038	2324	1062	2407	1082	2416	1104	2516	1125	2616	1146	2717	1167	2817	1196	1247	1280	1310	1340		
3900 [1840]	—	—	—	—	—	—	—	—	—	—	—	820	1647	847	1734	874	1821	900	1908	926	1995	951	2082	976	2169	1001	2256	1025	2343	1049	2430	1073	2517	1091	2516	1112	2619	1134	2722	1155	2824	1176	2927	1207	1258	1290		
4000 [1888]	—	—	—	—	—	—	—	—	—	—	—	833	1726	860	1817	887	1908	913	1999	938	2090	963	2181	988	2272	1013	2363	1037	2454	1060	2545	1079	2519	1100	2624	1122	2729	1143	2834	1164	2939	1184	3044	1215	1266	1298		
4100 [1935]	—	—	—	—	—	—	—	—	—	—	—	820	1717	847	1812	873	1907	900	2002	925	2097	951	2192	976	2287	1000	2382	1024	2477	1048	2572	1072	2668	1089	2631	1110	2739	1131	2846	1152	2953	1173	3060	1193	3167	1226	1259	
4200 [1982]	—	—	—	—	—	—	—	—	—	—	—	834	1808	860	1907	887	2006	913	2106	938	2205	963	2304	988	2473	1012	2502	1036	2601	1060	2700	1077	2641	1098	2751	1120	2860	1140	2969	1161	3079	1182	3188	1202	3298	1259		
4300 [2029]	—	—	—	—	—	—	—	—	—	—	—	900	2114	926	2217	951	2320	976	2423	1001	2527	1025	2630	1048	2733	1072	2836	1087	2765	1108	2877	1129	2989	1150	3100	1171	3212	1191	3324	1211	3435	1241	3546	1257	1288	1319		
4400 [2076]	—	—	—	—	—	—	—	—	—	—	—	914	2230	939	2337	964	2445	989	2552	1013	2659	1037	2766	1061	2873	1077	2782	1098	2896	1119	3010	1139	3124	1160	3238	1180	3352	1201	3466	1221	3580	1236	3694	1249	3809	1259		
4500 [2123]	—	—	—	—	—	—	—	—	—	—	—	823	1910	880	2021	876	2133	902	2244	928	2355	953	2466	978	2577	1002	2688	1026	2800	1050	2911	1073	3022	1087	2917	1108	3034	1129	3150	1150	3266	1170	3382	1190	3499	1210	3615	1230
4600 [2171]	812	1912	838	2027	865	2142	891	2258	917	2373	942	2488	967	2603	991	2718	1015	2834	1039	2949	1063	3064	1077	2941	1098	3060	1119	3178	1140	3297	1160	3415	1180	3534	1200	3653	1220	3771	1240	3890	1250	4009	1260	4128	1270			
4700 [2218]	827	2034	854	2153	880	2272	906	2391	931	2510	956	2630	981	2749	1005	2868	1029	2987	1066	3273	1079	3119	1100	3243	1121	3366	1141	3489	1162	3612	1182	3735	1202	3858	1221	3981	1241	4104	1260	4227	1280	4350	1290	4473	1300			
4800 [2265]	842	2163	869	2287	895	2410	920	2533	946	2656	970	2780	995	2903	1019	3026	1043	3149	1066	3327	1079	3119	1100	3243	1121	3366	1141	3489	1162	3612	1182	3735	1202	3858	1221	3981	1241	4104	1260	4227	1280	4350	1290	4473	1300			
4900 [2312]	858	2302	884	2429	910	2556	935	2684	960	2811	985	2938	1009	3065	1033	3193	1056	3320	1070	3153	1091	3278	1112	3403	1132	3529	1153	3654	1173	3779	1193	3905	1212	4030	1232	4155	1251	4281	1270	4406	1280	4531	1290	4656	1300			
5000 [2359]	874	2449	900	2580	926	2711	951	2843	975	2974	1000	3105	1024	3236	1047	3368	1070	3499	1082	3316	1103	3444	1124	3571	1144	3699	1164	3827	1184	3954	1204	4082	1223	4209	1243	4337	1262	4465	1281	4592	1290	4719	1300	4846	1310			
5100 [2407]	890	2604	916	2739	941	2875	966	3010	990	3145	1015	3281	1038	3416	1062	3551	1074	3357	1095	3486	1115	3616	1136	3746	1156	3876	1176	4006	1196	4136	1215	4266	1235	4396	1254	4525	1273	4655	1280	4784	1290	4913	1300	5042	1310			
5200 [2454]	906	2768	932	2907	957	3046	982	3186	1006	3325	1030	3465	1053	3604	1076	3743	1087	3532	1107	3664	1128	3796	1148	3928	1168	4060	1188	4192	1207	4324	1227	4457	1246	4589	1265	4721	1284	4853	1290	4985	1300	5117	1310	5249	1320			
5300 [2501]	923	2940	948	3083	973	3227	997	3370	1021	3514	1045	3657	1068	3800	1079	3579	1100	3713	1120	3848	1140	3982	1160	4112	1180	4251	1200	4385	1219	4520	1239	4654	1258	4789	1276	4923	1280	5057	1290	5191	1300	5325	1310	5459	1320			
5400 [2548]	939	3121	964	3268	989	3416	1013	3563	1037	3710	1060	3858	1072	3829	1092	3766	1113	3902	1133	4039	1153	4176	1173	4312	1193	4449	1212	4586	1232	4722	1251	4859	1269	4996	1276	5133	1280	5270	1290	5413	1300	5554	1310	5695	1320			
5500 [2595]	956	3310	981	3461	1005	3613	1029	3764	1053	3916	1076	4067	1085	3820	1106	3959	1126	4098	1146	4237	1166	4376	1186	4515	1205	4654	1225	4793	1244	4932	1251	5071	1269	5210	1276	5349	1280	5488	1290	5627	1300	5766	1310	5905	1320			
5600 [2643]	973	3508	998	3663	1022	3819	1045	3974	1068	4130	1079	3877	1099	4018	1120	4159	1140	4301	1160	4442	1179	4583	1199	4724	1218	4866	1237	5007	1244	4932	1251	5071	1269	5210	1276	5349	1280	5488	1290	5627	1300	5766	1310	5905	1320			
5700 [2690]	990	3714	1014	3873	1038	4033	1062	4192	1072	4336	1093	4080	1113	4223	1134	4367	1153	4510	1173	4654	1193	4797	1212	4941	1218	5084	1237	5227	1244	5370	1251	5513	1269	5656	1276	5799	1280	5942	1290	6085	1300	6228	1310	6371	1320			
5800 [2737]	1007	3928	1031	4092	1055	4255	1078	4419	1087	4144	1107	4290	1128	4435	1148	4581	1167	4727	1187	4873	1206	5018	1212	5163	1218	5308	1237	5453	1244	5598	1251	5743	1269	5888	1276	6033	1280	6178	1290	6323	1300	6468	1310	6613	1320			

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

Drive Package	L (B-51)						M (B-58)					
Motor H.P. [W]	3.0 [2237.1]						5.0 [3728.5]					
Blower Sheave	BK72H						BK85H					
Motor sheave	1VP-44						1VP-65					
Turns Open	1	2	3	4	5	6	1	2	3	4	5	6
RPM	1058	1022	978	932	861	813	1278	1245	1206	1167	1138	1097

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 E.S.P.
4. Drive data shown is for horizontal airflow with dry coil. add component resistance to duct resistance to determine total E.S.P.

AIRFLOW CORRECTION FACTORS
12.5 TON [44 kW]

ACTUAL—CFM [L/s]	3800 [1793]	4000 [1888]	4200 [2077]	4400 [2265]	4600 [2454]	4800 [2643]	5000 [2832]	5200 [3021]	5400 [3210]	5600 [3399]	5800 [3588]
TOTAL MBH	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04	1.05
SENSIBLE MBH	0.85	0.88	0.91	0.94	0.97	1.00	1.03	1.05	1.07	1.09	1.11
POWER kW	0.98	0.98	0.99	0.99	1.00	1.00	1.01	1.02	1.02	1.03	1.03

NOTES: 1. Multiply correction factor times gross performance data.
2. Resulting sensible capacity cannot exceed total capacity.

[] Designates Metric Conversions

COMPONENT AIR RESISTANCE, IWC 12.5 TON [44 kW]

Component	Standard Indoor Airflow—CFM [L/s]																							
	3800	4000	4200	4400	4600	4800	5000	5200	5400	5600	5800	Resistance—Inches Water [kPa]												
	[1793]	[1888]	[1982]	[2076]	[2171]	[2265]	[2359]	[2454]	[2548]	[2643]	[2737]													
Wet Coil	0.082 [0.020]	0.087 [0.022]	0.093 [0.023]	0.099 [0.025]	0.105 [0.026]	0.110 [0.027]	0.115 [0.029]	0.120 [0.030]	0.125 [0.031]	0.131 [0.033]	0.136 [0.034]													
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	0.18 [0.045]	0.21 [0.052]	0.24 [0.060]	0.27 [0.067]	DNA	DNA	DNA	DNA	DNA	DNA	DNA													
Concentric Diffuser RXRN-AA66 or AA76 & Transition RXMC-CF06	DNA	DNA	DNA	DNA	0.31 [0.077]	0.32 [0.080]	0.34 [0.085]	0.36 [0.090]	0.39 [0.097]	DNA	DNA													
Economizer	0.12 [0.030]	0.13 [0.032]	0.14 [0.035]	0.15 [0.037]	0.16 [0.040]	0.17 [0.042]	0.18 [0.045]	0.19 [0.047]	0.20 [0.050]	0.21 [0.052]	0.22 [0.055]													
100% R.A. Damper Open	0.07 [0.017]	0.08 [0.020]	0.09 [0.021]	0.09 [0.022]	0.10 [0.024]	0.10 [0.025]	0.10 [0.026]	0.09 [0.024]	0.10 [0.022]	0.10 [0.020]	0.12 [0.030]													
Horizontal Economizer	0.15 [0.036]	0.16 [0.040]	0.18 [0.044]	0.19 [0.047]	0.20 [0.050]	0.21 [0.052]	0.21 [0.052]	0.21 [0.052]	0.22 [0.055]	0.23 [0.057]	0.24 [0.060]													
100% O.A. Damper Open																								

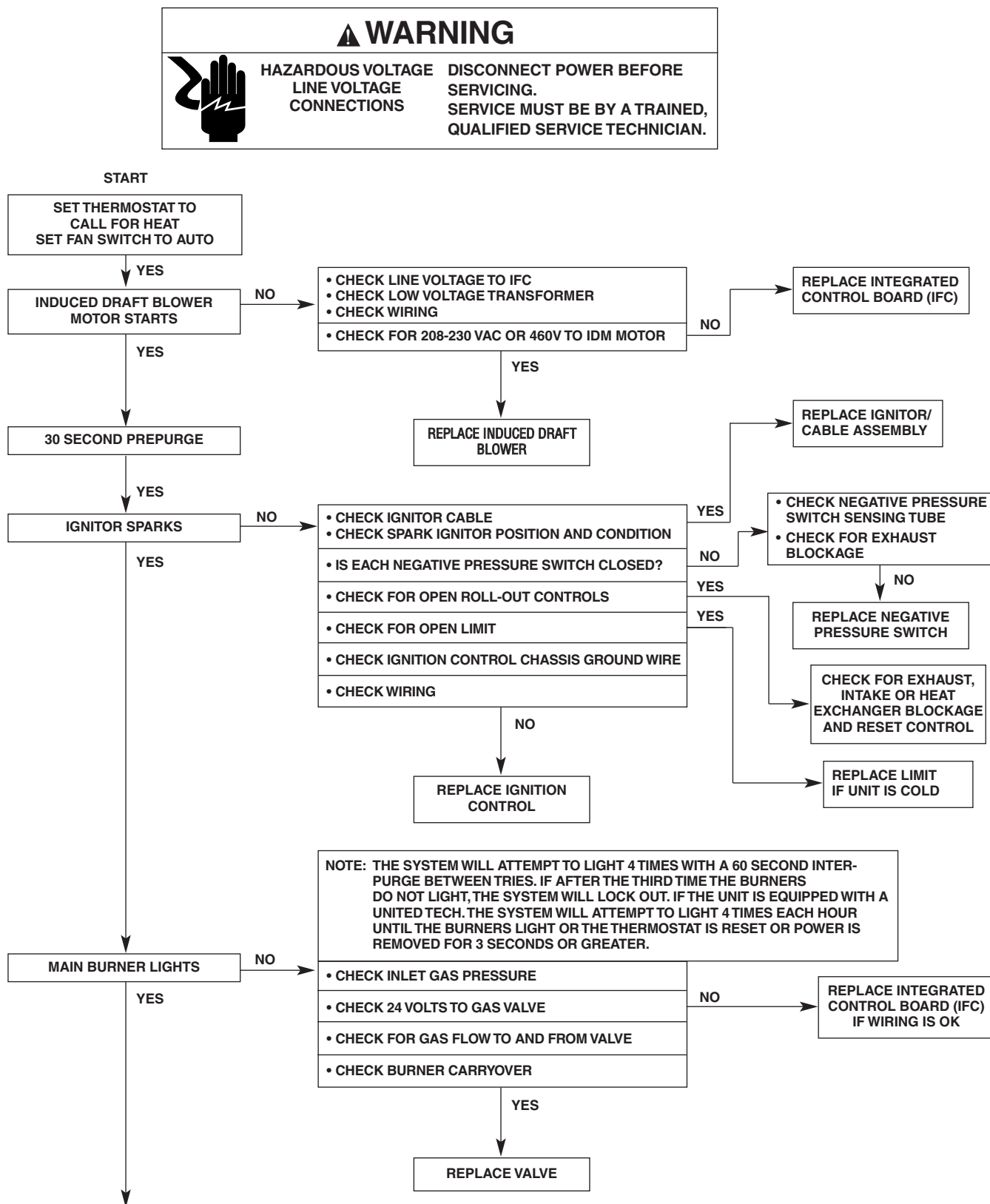
FIGURE 19 COOLING TROUBLE SHOOTING CHART

⚠ WARNING

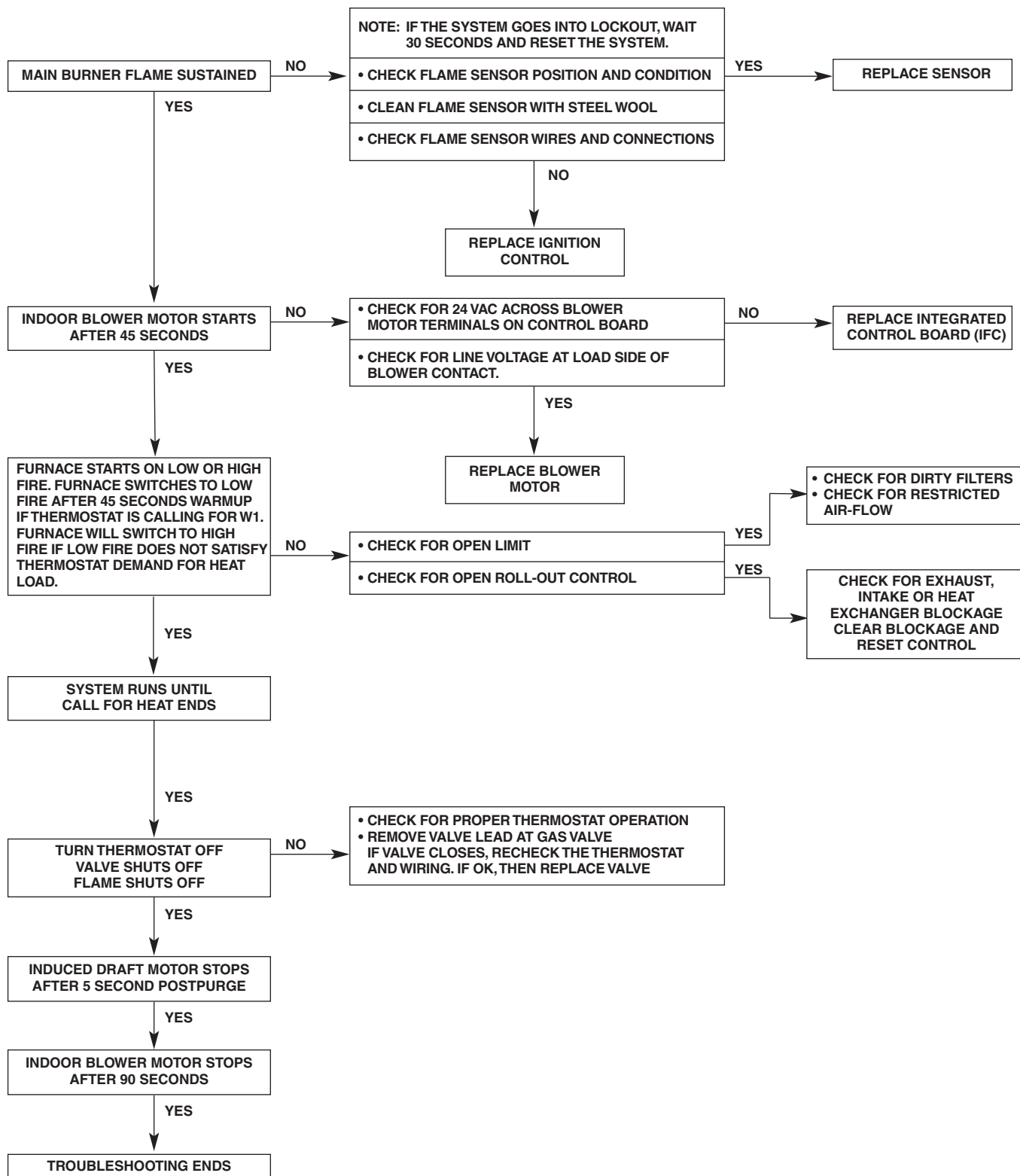
DISCONNECT ALL POWER TO UNIT BEFORE SERVICING. CONTACTOR MAY BREAK ONLY ONE SIDE. FAILURE TO SHUT OFF POWER CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR DEATH.

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

FIGURE 20
FURNACE TROUBLESHOOTING GUIDE
 (COMBINATION HEATING AND COOLING UNITS WITH DIRECT SPARK IGNITION)

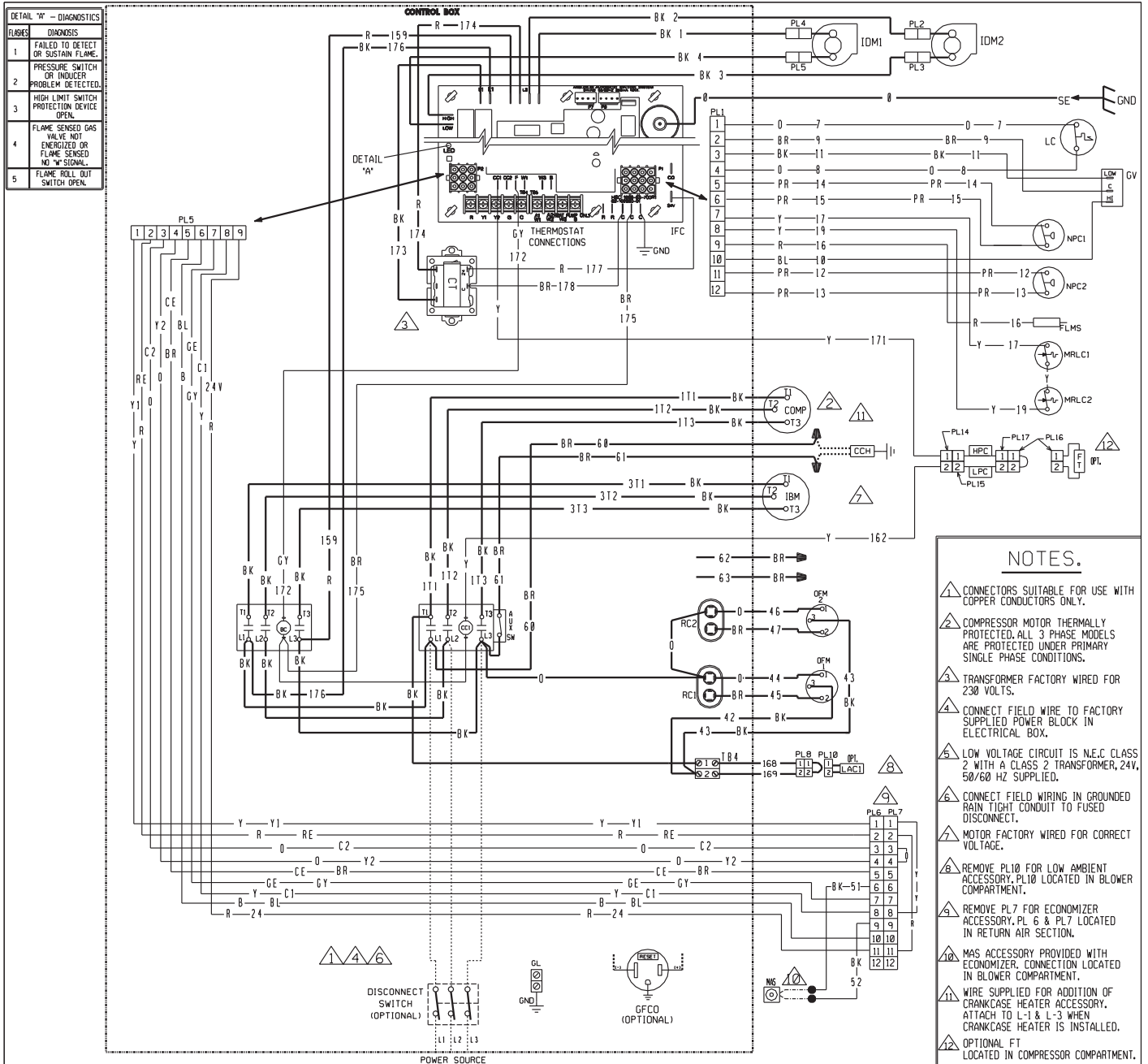


FLOW CHART CONTINUED ON NEXT PAGE



REPEAT PROCEDURE UNTIL TROUBLE FREE OPERATION IS OBTAINED.

FIGURE 21



- NOTES.**
- CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
 - COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
 - TRANSFORMER FACTORY WIRING FOR 230 VOLTS.
 - CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
 - LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
 - CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
 - MOTOR FACTORY WIRING FOR CORRECT VOLTAGE.
 - REMOVE PL10 FOR LOW AMBIENT ACCESSORY. PL10 LOCATED IN BLOWER COMPARTMENT.
 - REMOVE PL7 FOR ECONOMIZER ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
 - MAS ACCESSORY PROVIDED WITH ECONOMIZER. CONNECTION LOCATED IN BLOWER COMPARTMENT.
 - WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY. ATTACH TO L-1 & L-3 WHEN CRANKCASE HEATER IS INSTALLED.
 - OPTIONAL FT LOCATED IN COMPRESSOR COMPARTMENT.

COMPONENT CODE

AUX SW AUXILIARY SWITCH
BC BLOWER CONTACTOR
CC COMPRESSOR CONTACTOR
ECH CRANKCASE HEATER
COMP COMPRESSOR
CT CONTROL TRANSFORMER
DISC DISCONNECT SWITCH
FLMS FLAME SENSOR
FT FREEZE STAT
GFCO GROUND FAULT CONVENIENCE OUTLET
GL GROUND LUG
GND GROUND
GV GAS VALVE
HPC HIGH PRESSURE CONTROL
IBM INDOOR BLOWER MOTOR BELT DRIVE
IDM INDUCED DRAFT MOTOR

IFC INTEGRATED FURNACE CONTROL
LAC LOW AMBIENT COOLING CONTROL
IFC INTEGRATED FURNACE CONTROL
LAC LOW AMBIENT COOLING CONTROL
LC LIMIT CONTROL
LPC LOW PRESSURE CONTROL
MAS MIX AIR SENSOR
MRLC MANUAL RESET LIMIT CONTROL
NPC NEGATIVE PRESSURE CONTROL
OFM OUTDOOR FAN MOTOR
PL PLUG
RC RUN CAPACITOR
SE SPARK ELECTRODE
TB TERMINAL BLOCK
WN 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.

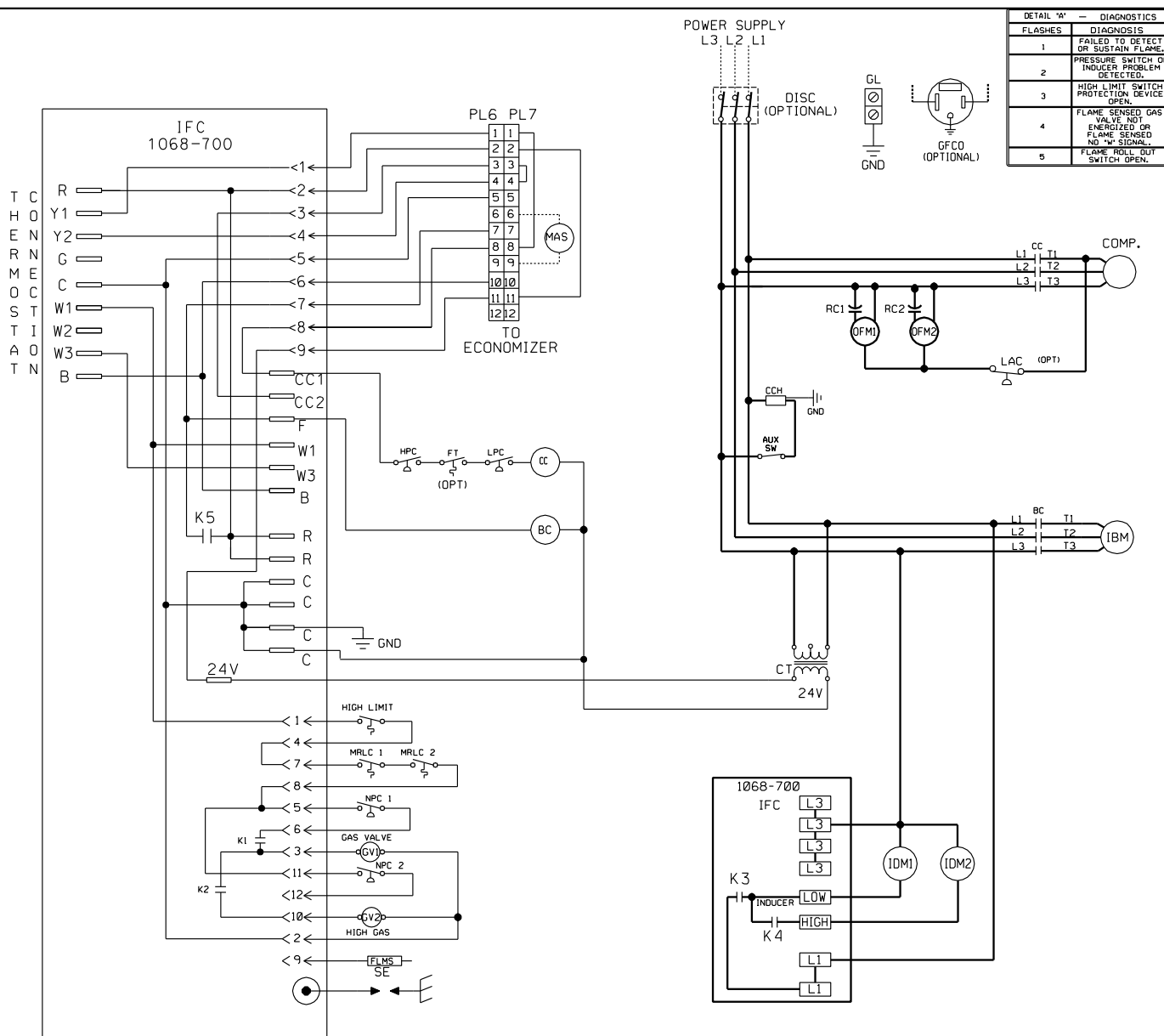
WIRE COLOR CODE

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

WIRING DIAGRAM
(-)KNL-B072/085

208-230/460V 3 PH, 60 HZ.
200-220/380-415V, 3 PH, 50 HZ

DR. BY MGR APP. BY DATE 5-19-08 DWG. NO. 90-102890-03 REV 04

FIGURE 22

COMPONENT CODE

AUX SW	AUXILIARY SWITCH	IDM	INDUCED DRAFT MOTOR
BC	BLOWER CONTACTOR	IFC	INTEGRATED FURNACE CONTROL
CC	COMPRESSOR CONTACTOR	LC	LIMIT CONTROL
CCH	CRANKCASE HEATER	LP	LOW PRESSURE CONTROL
COMP	COMPRESSOR	MAS	MIX AIR SENSOR
CT	CONTROL TRANSFORMER	MRLC	MANUAL RESET LIMIT CONTROL
DISC	DISCONNECT SWITCH	NPC	NEGATIVE PRESSURE CONTROL
FLMS	FLAME SENSOR	OFM	OUTDOOR FAN MOTOR
FT	FREEZE STAT	PL	PLUG
GFCO	GROUND FAULT	RC	RUN CAPACITOR
	CONVENIENCE OUTLET	SE	SPARK ELECTRODE
GL	GROUND LUG	TB	TERMINAL BLOCK
GND	GROUND		
GV	GAS VALVE		
HPC	HIGH PRESSURE CONTROL		
IBM	INDOOR BLOWER MOTOR		
	BELT DRIVE		

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 GROUNDING 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	

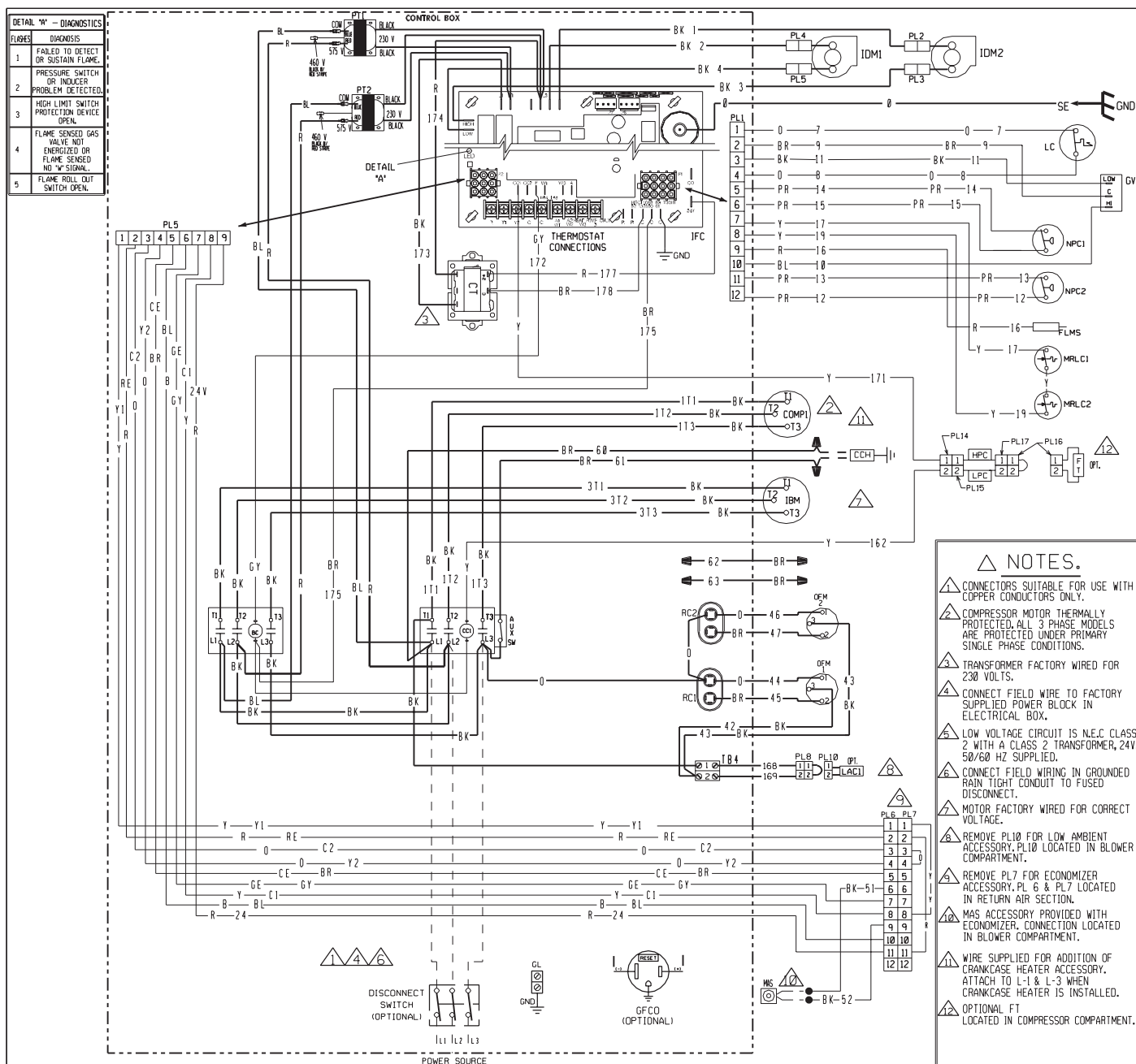
WIRING SCHEMATIC

(-)KNL-B072/085

208-230/460V, 3 PH, 60 HZ.

200-220/380-415V, 3 PH, 50 HZ

DR. BY	APP. BY	DATE	DWG. NO.	REV.
MGR		5 22 00	90-102891-03	02

FIGURE 23


DWG. NO.	<u>COMPONENT CODE</u>		<u>WIRING INFORMATION</u>		<u>WIRE COLOR CODE</u>	
	AUX SW BC CCH COMP CT DISC FLMS GFCO GL GND GV HPC IBM IDM IPC LAC	AUXILIARY SWITCH BLOWER CONTACTOR COMPRESSOR CONTACTOR CRANKCASE HEATER COMPRESSOR CONTROL TRANSFORMER DISCONNECT SWITCH FLAME SENSOR FREEZE STAT GROUND FAULT CONVENIENCE OUTLET GROUND LUG GROUND GAS VALVE HIGH PRESSURE CONTROL INDOOR BLOWER MOTOR BELT DRIVE INDUCED DRAFT MOTOR INTEGRATED FURNACE CONTROL LOW AMBIENT COOLING CONTROL	LC LPC MAS MRLC NPC OFM PL PT RC RE TB 	LIMIT CONTROL LOW PRESSURE CONTROL MIX AIR SENSOR MANUAL RESET LIMIT CONTROL NEGATIVE PRESSURE CONTROL OUTDOOR FAN MOTOR PLUG POWER TRANSFORMER RUN CAPACITOR SPARK ELECTRODE TERMINAL BLOCK WIRE NUT	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.	BK BR BL G GY O PR R W Y ORANGE PURPLE RED WHITE YELLOW
90-102890-04					<u>WIRING DIAGRAM</u> RKNL-B072/085 575V 3 PH, 60 HZ. ROOFTOP	
	REV 02				DR. BY MGR	APP. BY DATE 5-19-08 DWG. NO. 90-102890-04 REV 02

FIGURE 24

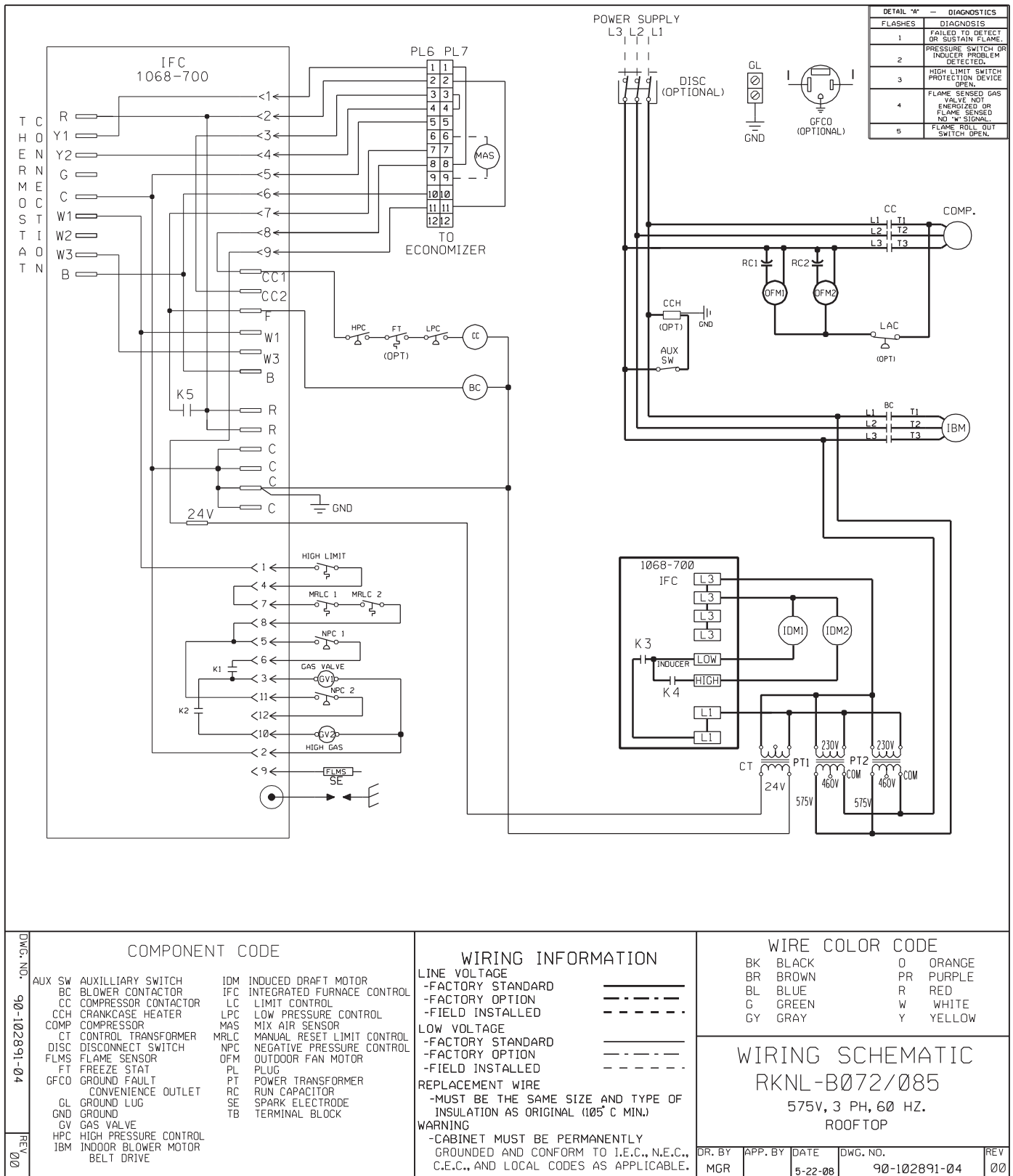
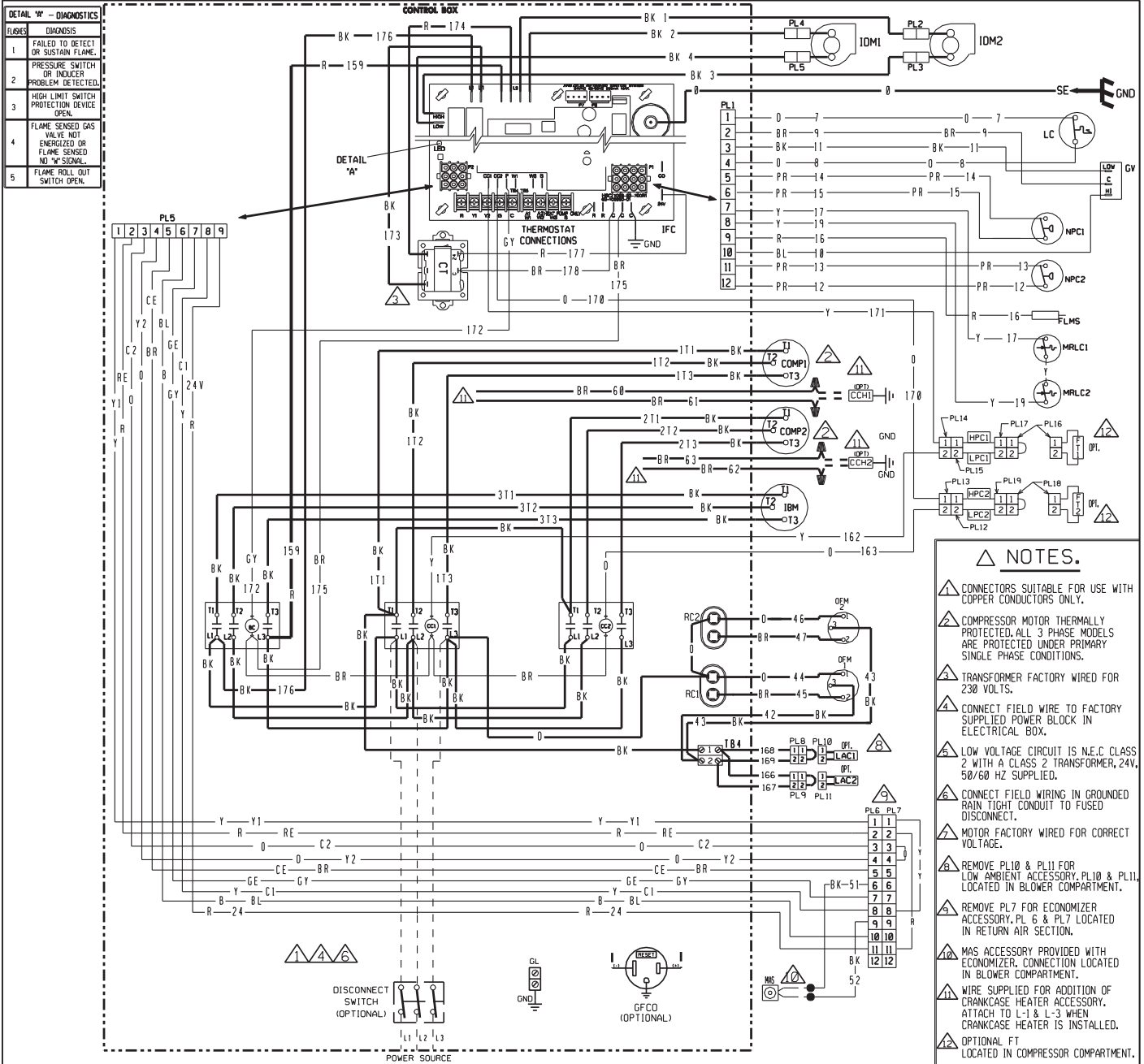


FIGURE 25



COMPONENT CODE

BC BLOWER CONTACTOR
CC COMPRESSOR CONTACTOR
CCH CRANKCASE HEATER
COMP COMPRESSOR
CT CONTROL TRANSFORMER
DISC DISCONNECT SWITCH
FLMS FLAME SENSOR
FT FREEZE STAT
GFCD GROUND FAULT CONVENIENCE OUTLET
GL GROUND LUG
GND GROUND
GV GAS VALVE
HPC HIGH PRESSURE CONTROL
IBM INDOOR BLOWER MOTOR BELT DRIVE
IDM INDUCED DRAFT MOTOR
IFC INTEGRATED FURNACE CONTROL

LAC LOW AMBIENT COOLING CONTROL
LC LIMIT CONTROL
LPC LOW PRESSURE CONTROL
MAS MIX AIR SENSOR
MRLC MANUAL RESET LIMIT CONTROL
NPC NEGATIVE PRESSURE CONTROL
OFM OUTDOOR FAN MOTOR
PL PLUG
RC RUN CAPACITOR
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

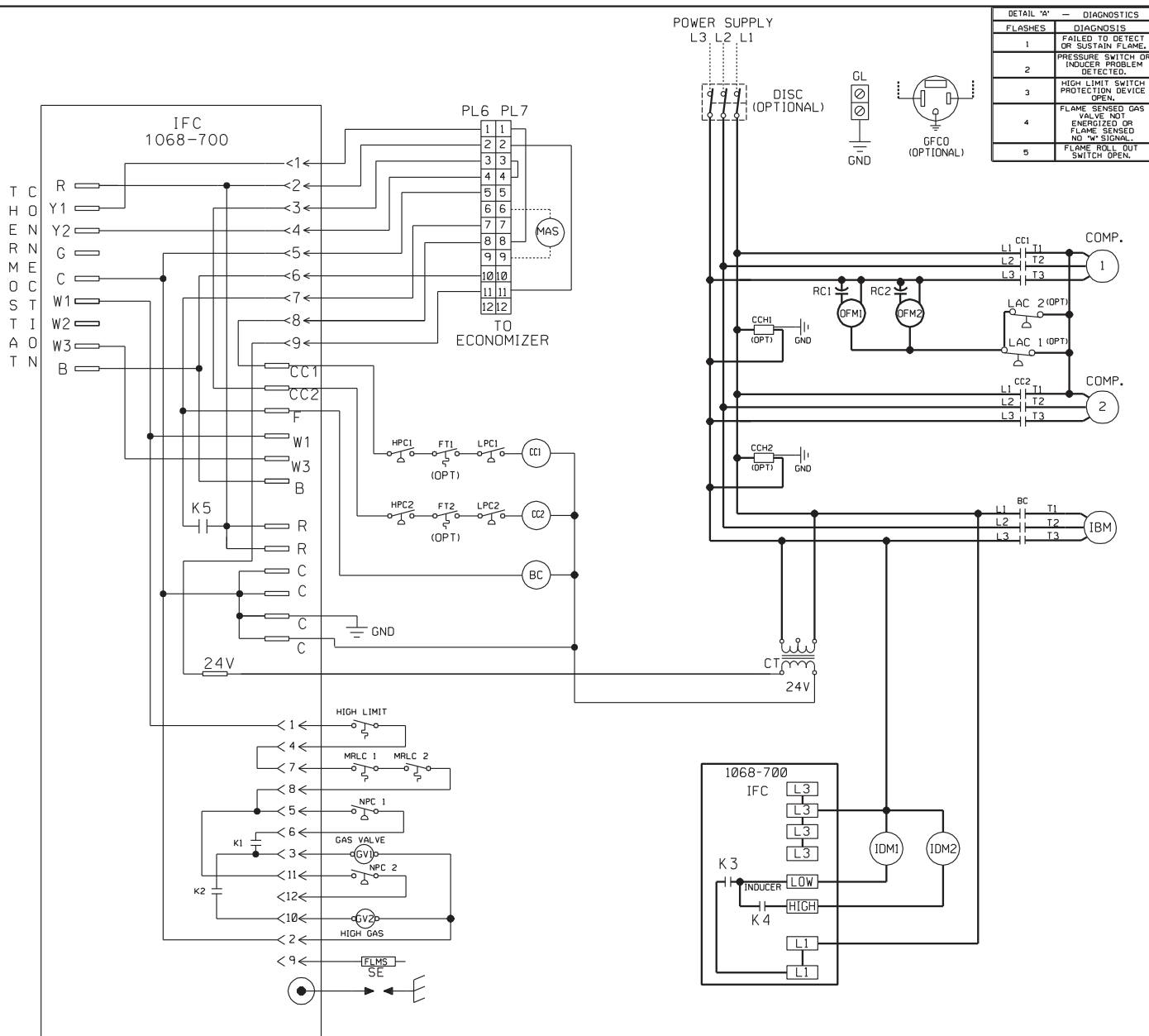
BK BLACK
BR BROWN
BL BLUE
G GREEN
GY GRAY
O ORANGE
PR PURPLE
R RED
W WHITE
Y YELLOW

WIRING DIAGRAM

(-)KNL-B090/102/120/150
208-230/460V 3 PH, 60 HZ.
200-220/380-415V 3 PH, 50 HZ

DR. BY APP. BY DATE DWG. NO. REV
MGR 5-19-08 90-102890-01 03

FIGURE 26

COMPONENT CODE

BC	BLOWER CONTACTOR	IDM	INDUCED DRAFT MOTOR
CC	COMPRESSOR CONTACTOR	IFC	INTEGRATED FURNACE CONTROL
CCCH	CRANKCASE HEATER	LC	LIMIT CONTROL
COMP	COMPRESSOR	LPC	LOW PRESSURE CONTROL
CT	CONTROL TRANSFORMER	MAS	MIX AIR SENSOR
DISC	DISCONNECT SWITCH	MRLC	MANUAL RESET LIMIT CONTROL
FLMS	FLAME SENSOR	NPC	NEGATIVE PRESSURE CONTROL
FT	FREEZE STAT	OFM	OUTDOOR FAN MOTOR
GFCO	GROUND FAULT	PL	PLUG
	CONVENIENCE OUTLET	PT	POWER TRANSFORMER
GL	GROUND LUG	RC	RUN CAPACITOR
GND	GROUND	SE	SPARK ELECTRODE
GV	GAS VALVE	TB	TERMINAL BLOCK
HPC	HIGH PRESSURE CONTROL		
IBM	INDOOR BLOWER MOTOR		
	BELT DRIVE		

WIRING INFORMATION

LINE VOLTAGE

-FACTORY STANDARD

-FACTORY OPTION

-FIELD INSTALLED

LOW VOLTAGE

-FACTORY STANDARD

-FACTORY OPTION

-FIELD INSTALLED

REPLACEMENT WIRE

REPLACEMENT WIRE
-MUST BE THE SAME

INSULATION AS ORIGINAL

WARNING

-CABINET MUST BE

GROUNDING AND CON

C.E.C., AND LOCAL C

C.E.C., AND LOCAL C

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

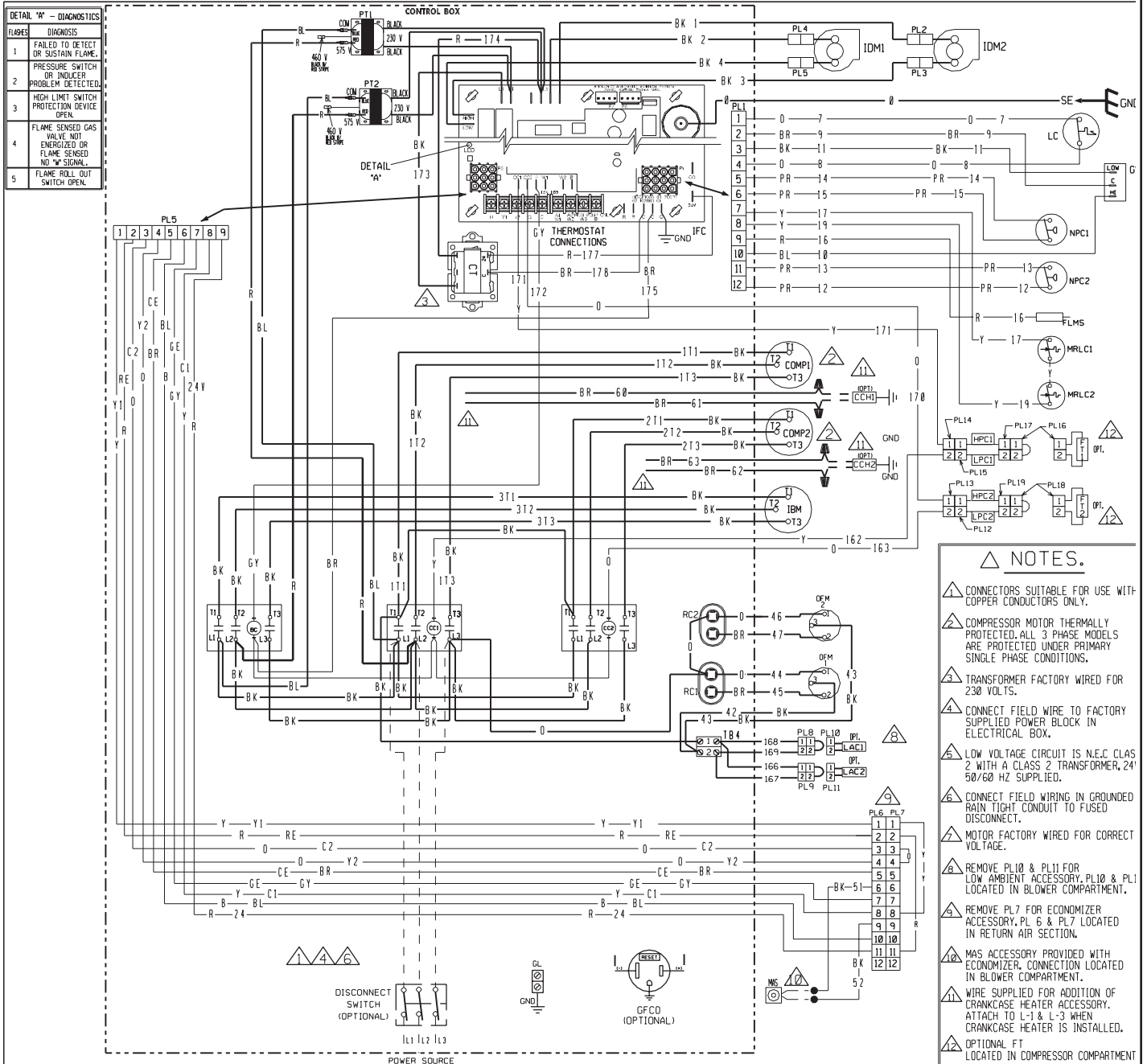
(-)KNL-B090/102/120/150

208-230/460V, 3 PH, 60 HZ.

200-220/380-415V, 3 PH, 50 HZ

DR. BY	APP. BY	DATE	DWG. NO.	REV
MGR		5-22-08	90-102891-01	02

FIGURE 27

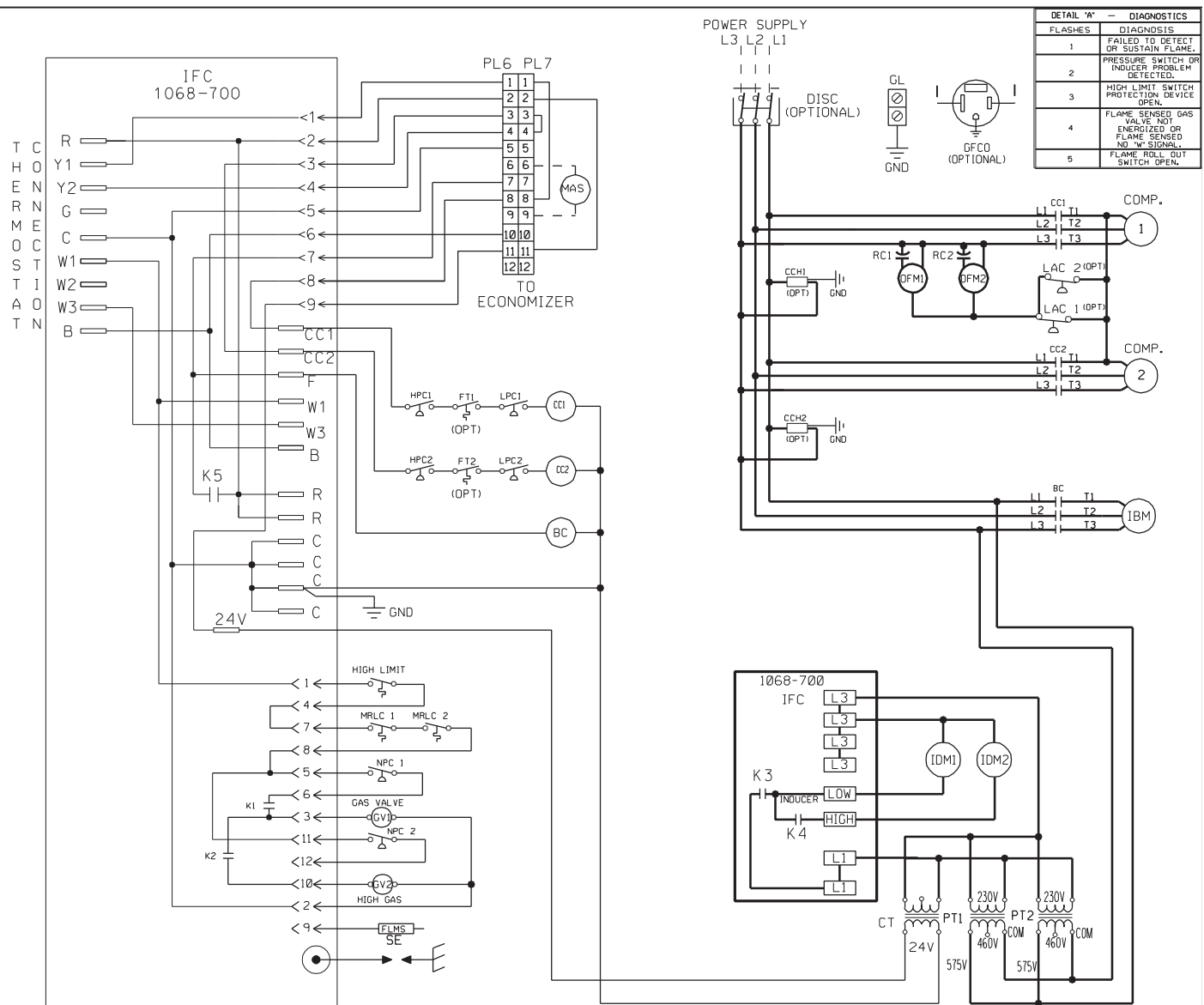


DWG. NO. 90-102890-02 REV 02	COMPONENT CODE		WIRING INFORMATION		WIRE COLOR CODE	
	BC BLOWER CONTACTOR CC COMPRESSOR CONTACTOR CCH CRANKCASE HEATER COMP COMPRESSOR CT CONTROL TRANSFORMER DISC DISCONNECT SWITCH FLMS FLAME SENSOR FT FREEZE STAT GFCO GROUND FAULT CONVENIENCE OUTLET GL GROUND LUG GND GROUND GV GAS VALVE HPC HIGH PRESSURE CONTROL IBM INDOOR BLOWER MOTOR BELT DRIVE IDM INDUCED DRAFT MOTOR IFC INTEGRATED FURNACE CONTROL LAC LOW AMBIENT COOLING CONTROL	LC LIMIT CONTROL LPC LOW PRESSURE CONTROL MAS MIX AIR SENSOR MRLC MANUAL RESET LIMIT CONTROL NPC NEGATIVE PRESSURE CONTROL OFM OUTDOOR FAN MOTOR PLUG PLUG PT POWER TRANSFORMER RC RUN CAPACITOR SE SPARK ELECTRODE TB TERMINAL BLOCK WIRE NUT	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.		BK BLACK BR BROWN BL BLUE G GREEN GY GRAY	O ORANGE PR PURPLE R RED W WHITE Y YELLOW

WIRING DIAGRAM
RKNL-B090/102/120/150
575V 3 PH, 60 HZ.
ROOFTOP

DR. BY APP. BY DATE DWG. NO. REV
MGR 5-19-08 90-102890-02 02

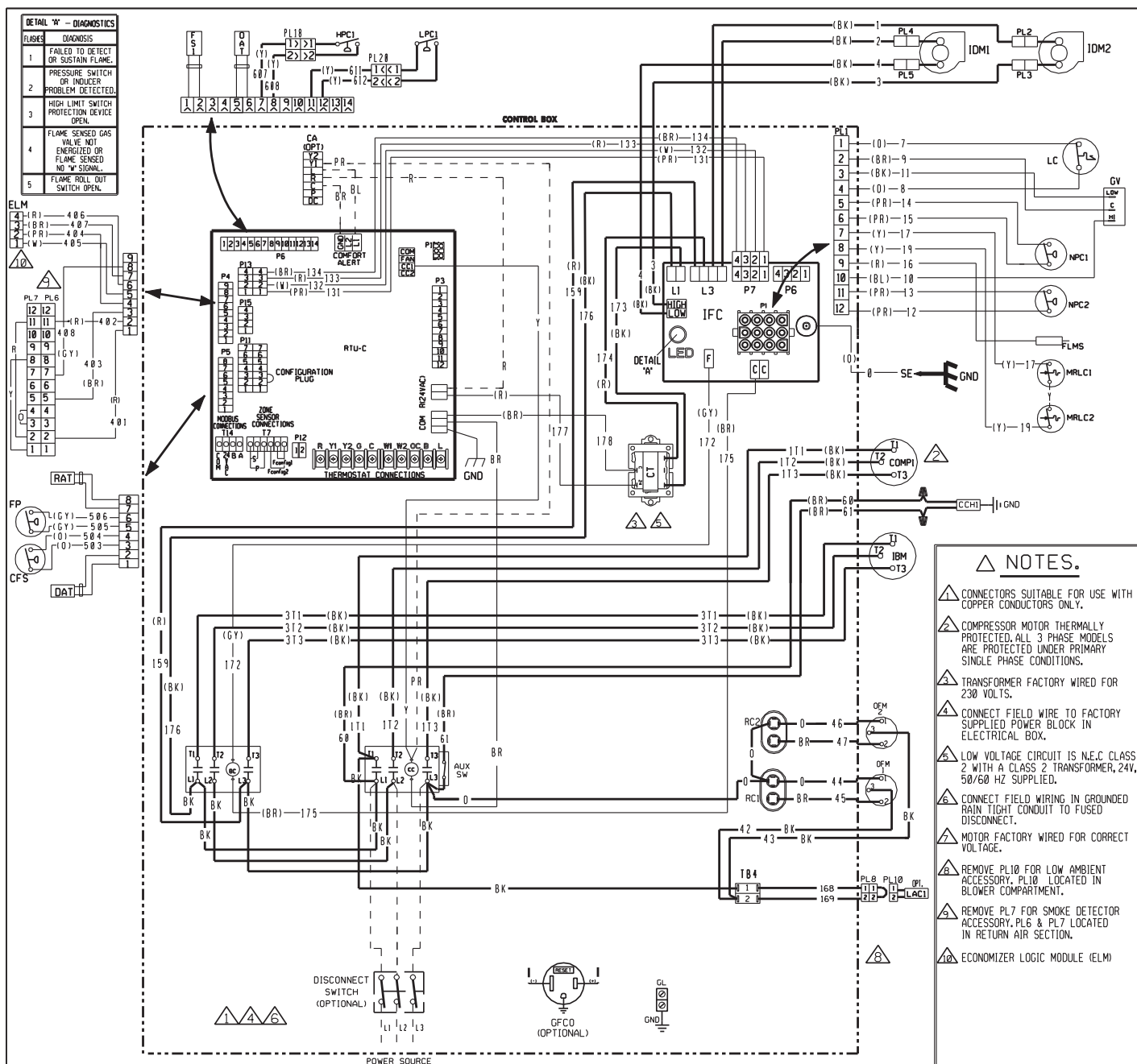
FIGURE 28



DETAIL 'A' -- DIAGNOSTICS	
FLASHES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO "W" SIGNAL.
5	FLAME ROLL OUT SWITCH OPEN.

DWG. NO. 90-102891-02 REV 00	COMPONENT CODE		WIRING INFORMATION		WIRE COLOR CODE	
	BC BLOWER CONTACTOR CC COMPRESSOR CONTACTOR CCH CRANKCASE HEATER COMP COMPRESSOR CT CONTROL TRANSFORMER DISC DISCONNECT SWITCH FLMS FLAME SENSOR FT FREEZE STAT GFCO GROUND FAULT GL GROUND LUG GND GROUND GV GAS VALVE HPC HIGH PRESSURE CONTROL IBM INDOOR BLOWER MOTOR BELT DRIVE	IDM INDUCED DRAFT MOTOR IFC INTEGRATED FURNACE CONTROL LC LIMIT CONTROL LPC LOW PRESSURE CONTROL MAS MIX AIR SENSOR MRLC MANUAL RESET LIMIT CONTROL NPC NEGATIVE PRESSURE CONTROL OFM OUTDOOR FAN MOTOR PL PLUG PT POWER TRANSFORMER RC RUN CAPACITOR SE SPARK ELECTRODE TB TERMINAL BLOCK	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.		BK BLACK BR BROWN BL BLUE G GREEN GY GRAY O ORANGE PR PURPLE R RED W WHITE Y YELLOW	WIRING SCHEMATIC RKNL-B090/102/120/150 575V, 3 PH, 60 HZ. ROOFTOP DR. BY APP. BY DATE DWG. NO. REV MGR 5-22-88 90-102891-02 00

FIGURE 29



DWG. NO. 90-103089-05	<u>COMPONENT CODE</u>			<u>WIRING INFORMATION</u>			<u>WIRE COLOR CODE</u>				
	BC	BLOWER CONTACTOR	IDM	INDUCED DRAFT MOTOR	LINE VOLTAGE		BK	BLACK	O	ORANGE	
	CA	COMFORT ALERT MODULE	IFC	INTEGRATED FURNACE CONTROL	-FACTORY STANDARD	=====	BR	BROWN	PR	PURPLE	
	CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT COOLING CONTROL	-FACTORY OPTION	-----	BL	BLUE	R	RED	
	CCH	CRANKCASE HEATER	LC	LIMIT CONTROL	-FIELD INSTALLED	-----	G	GREEN	W	WHITE	
	CFS	CLOGGED FILTER SWITCH	LPC	LOW PRESSURE CONTROL	LOW VOLTAGE		GY	GRAY	Y	YELLOW	
	COMP	COMPRESSOR	MRLC	MANUAL RESET LIMIT CONTROL	-FACTORY STANDARD	=====					
	CT	CONTROL TRANSFORMER	NPC	NEGATIVE PRESSURE CONTROL	-FACTORY OPTION	-----					
	DAT	DISCHARGE AIR SENSOR	OAT	OUTSIDE AIR SENSOR	-FIELD INSTALLED	-----					
	DISC	DISCONNECT SWITCH	OFM	OUTDOOR FAN MOTOR	REPLACEMENT WIRE						
	FLMS	FLAME SENSOR	PLUG	PLUG	-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)						
	FP	FAN PROVING	PT	POWER TRANSFORMER	WARNING						
	FS	FREEZE SENSOR	RAT	RETURN AIR SENSOR	-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.						
	GFCD	GROUND FAULT CONVENIENCE OUTLET	RC	RUN CAPACITOR							
	GL	GROUND LUG	RTU-C	ROOFTOP UNIT CONTROL							
	GND	GROUND	SE	SPARK ELECTRODE							
	GV	GAS VALVE	TB	TERMINAL BLOCK							
	HPC	HIGH PRESSURE CONTROL		WIRE NUT							
	IBM	INDOOR BLOWER MOTOR BELT DRIVE									
	REV 01							DR. BY MGR	APP. BY	DATE 4-16-09	DWG. NO. 90-103089-05

FIGURE 30

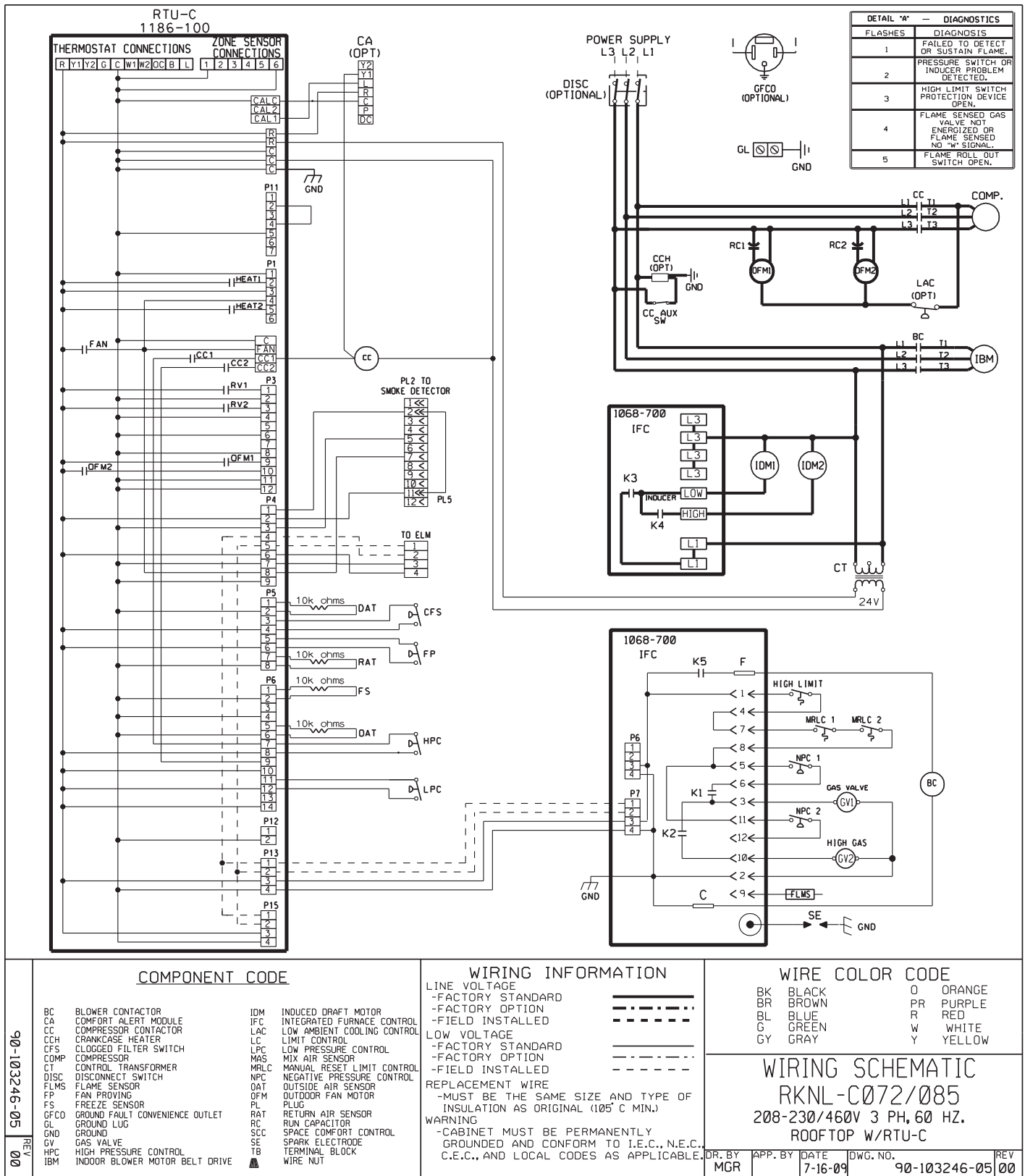
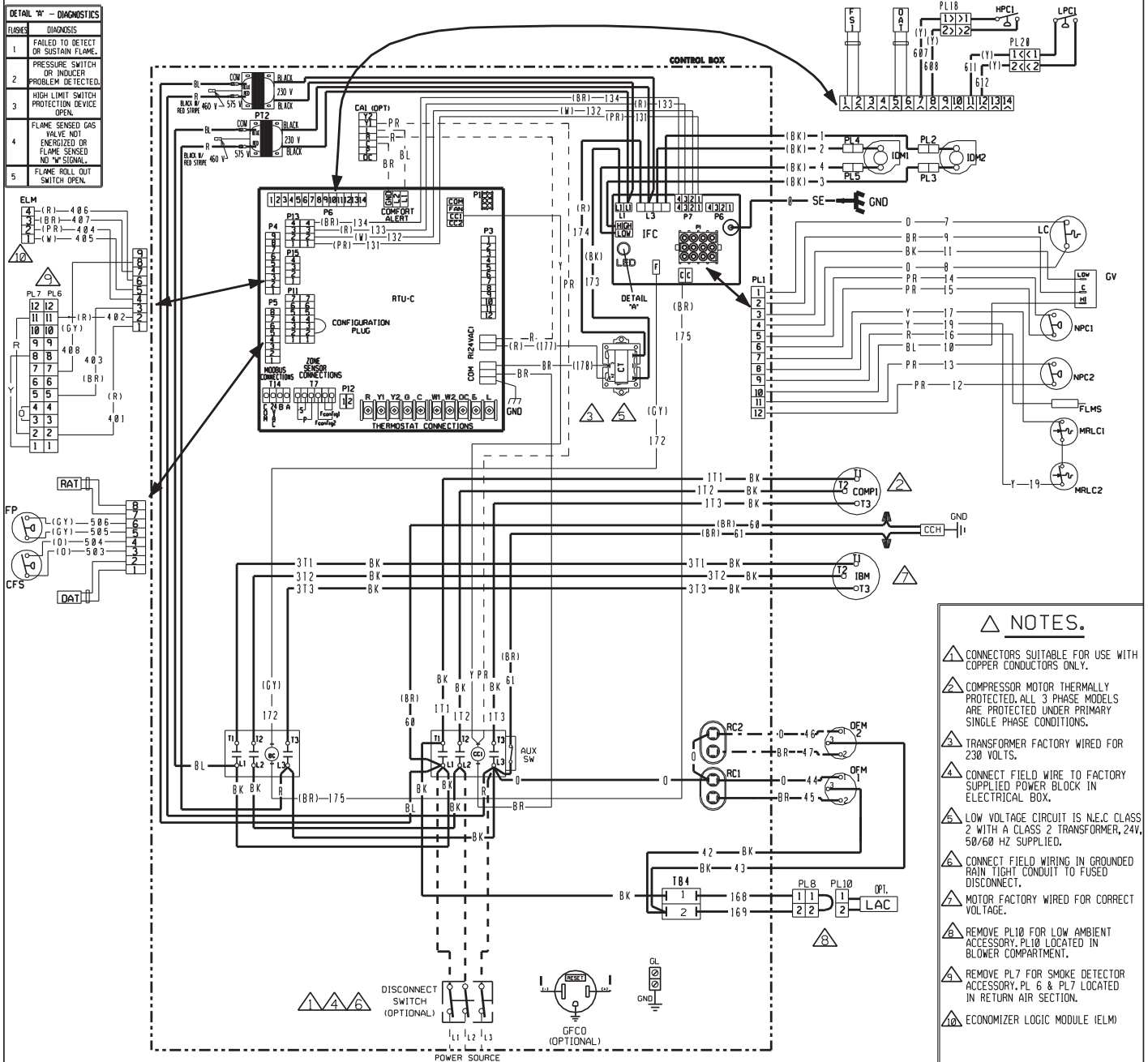


FIGURE 31



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
FLMS FLAME SENSOR
FP FAN PROVING
FS FREEZE SENSOR
GFCO GROUND FAULT CONVENIENCE OUTLET
GL GROUND LUG
GND GROUND
GV GAS VALVE
HPC HIGH PRESSURE CONTROL
IBM INDOOR BLOWER MOTOR BELT DRIVE

IDM INDUCED DRAFT MOTOR
IFC INTEGRATED FURNACE CONTROL
LAC LOW AMBIENT COOLING CONTROL
LC LIMIT CONTROL
LPC LOW PRESSURE CONTROL
MRLC MANUAL RESET LIMIT CONTROL
NPC NEGATIVE PRESSURE CONTROL
OAT OUTSIDE AIR SENSOR
OFM OUTDOOR FAN MOTOR
PL PLUG
PT POWER TRANSFORMER
RC RETURN AIR SENSOR
RTU-C ROOFTOP UNIT 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
BR BROWN
BL BLUE
G GREEN
GY GRAY
O ORANGE
PR PURPLE
R RED
W WHITE
Y YELLOW

WIRING DIAGRAM

RKNL-C072/085

575V 3 PH, 60 HZ.

ROOFTOP W/RTU-C

DR. BY MGR APP. BY DATE 4-13-09 DWG. NO. 90-103089-01 REV 01

FIGURE 32

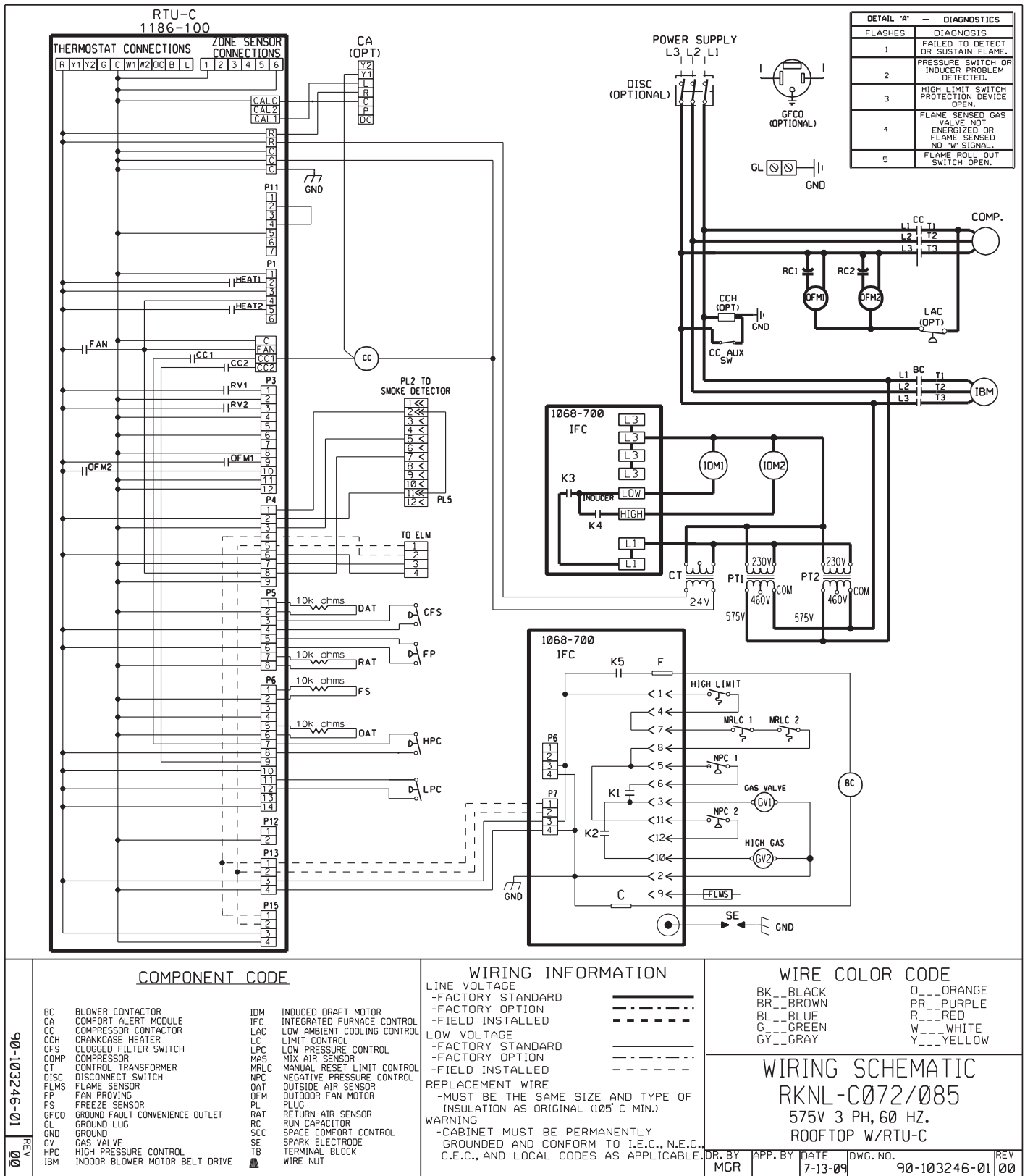
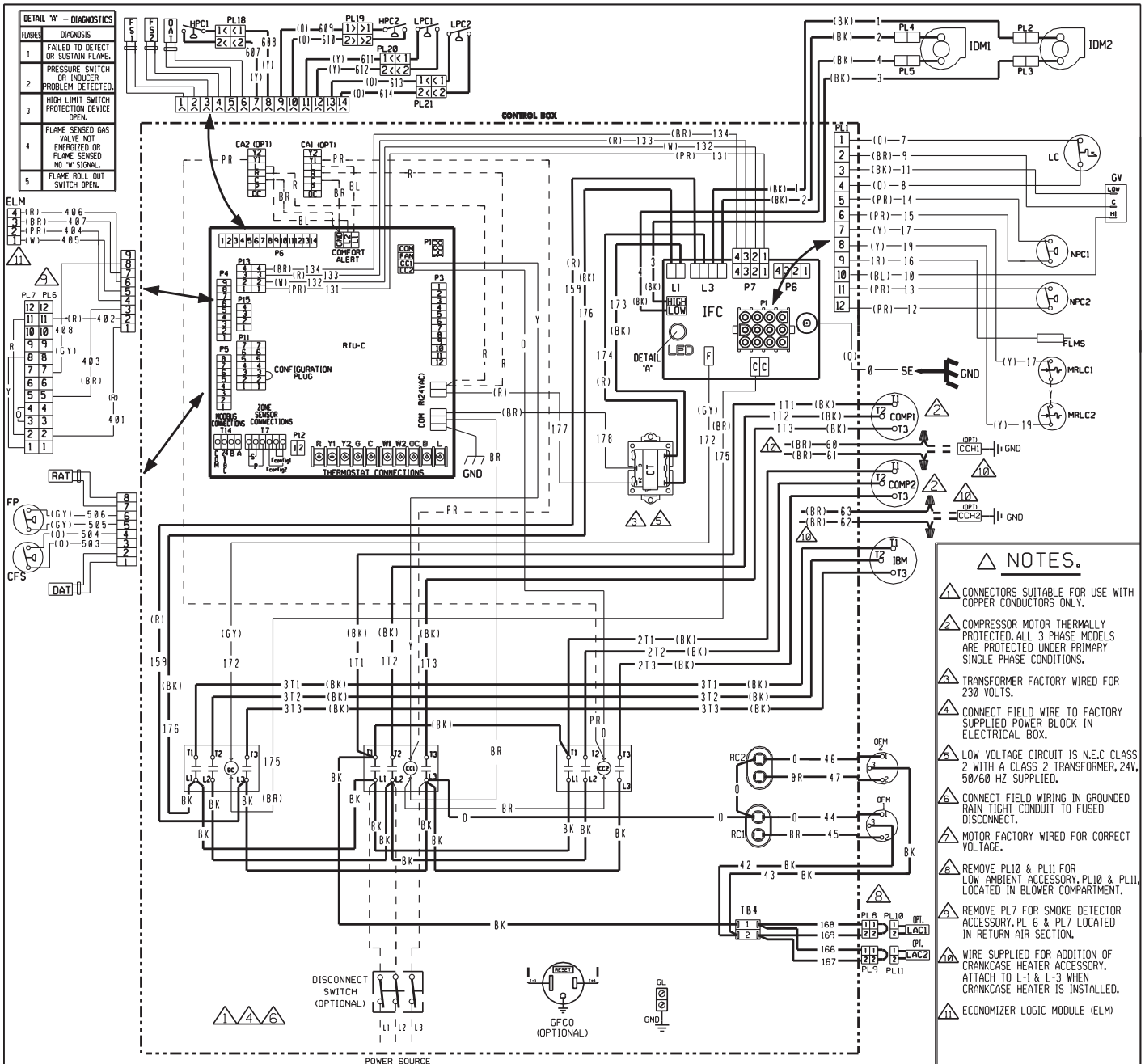


FIGURE 33



COMPONENT CODE		WIRING INFORMATION		WIRE COLOR CODE	
BC	BLOWER CONTACTOR	LINE VOLTAGE		BK	BLACK
CA	COMFORT ALERT MODULE	-FACTORY STANDARD	---	BR	BROWN
CC	COMPRESSOR CONTACTOR	-FACTORY OPTION	---	BL	BLUE
CCH	CRANKCASE HEATER	-FIELD INSTALLED	---	G	GREEN
CFS	CLOGGED FILTER SWITCH			GY	GRAY
COMP	COMPRESSOR	LOW VOLTAGE			
CT	CONTROL TRANSFORMER	-FACTORY STANDARD	---		
DAT	DISCHARGE AIR SENSOR	-FACTORY OPTION	---		
DISC	DISCONNECT SWITCH	-FIELD INSTALLED	---		
FLMS	FLAME SENSOR	REPLACEMENT WIRE			
FP	FAN PROVING	-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)			
FS	FREEZE SENSOR	WARNING			
GFCO	GROUND FAULT CONVENIENCE OUTLET	-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.			
GL	GROUND LUG				
GND	GROUND				
GV	GAS VALVE				
HPC	HIGH PRESSURE CONTROL				
IBM	INDOOR BLOWER MOTOR BELT DRIVE				
IDM	INDUCED DRAFT MOTOR				
IFC	INTEGRATED FURNACE CONTROL				
LAC	LOW AMBIENT COOLING CONTROL				
LC	LIMIT CONTROL				
LPC	LOW PRESSURE CONTROL				
MRLC	MANUAL RESET LIMIT CONTROL				
NPC	NEGATIVE PRESSURE CONTROL				
OAT	OUTSIDE AIR SENSOR				
OFM	OUTDOOR FAN MOTOR				
PL	PLUG				
PT	POWER TRANSFORMER				
RAT	RETURN AIR SENSOR				
RC	RUN CAPACITOR				
RTU-C	ROOF-TOP UNIT CONTROL				
SE	SPARK ELECTRODE				
TB	TERMINAL BLOCK				
W	WIRE NUT				

0	ORANGE
PR	PURPLE
R	RED
W	WHITE
Y	YELLOW

WIRING DIAGRAM			
RKNL-C090/102/120/150			
208-230/460V 3 PH, 60 HZ.			
ROOFTOP W/RTU-C			
DR. BY	APP. BY	DATE	DWG. NO.
MGR		4-14-09	90-103089-02 01

FIGURE 34

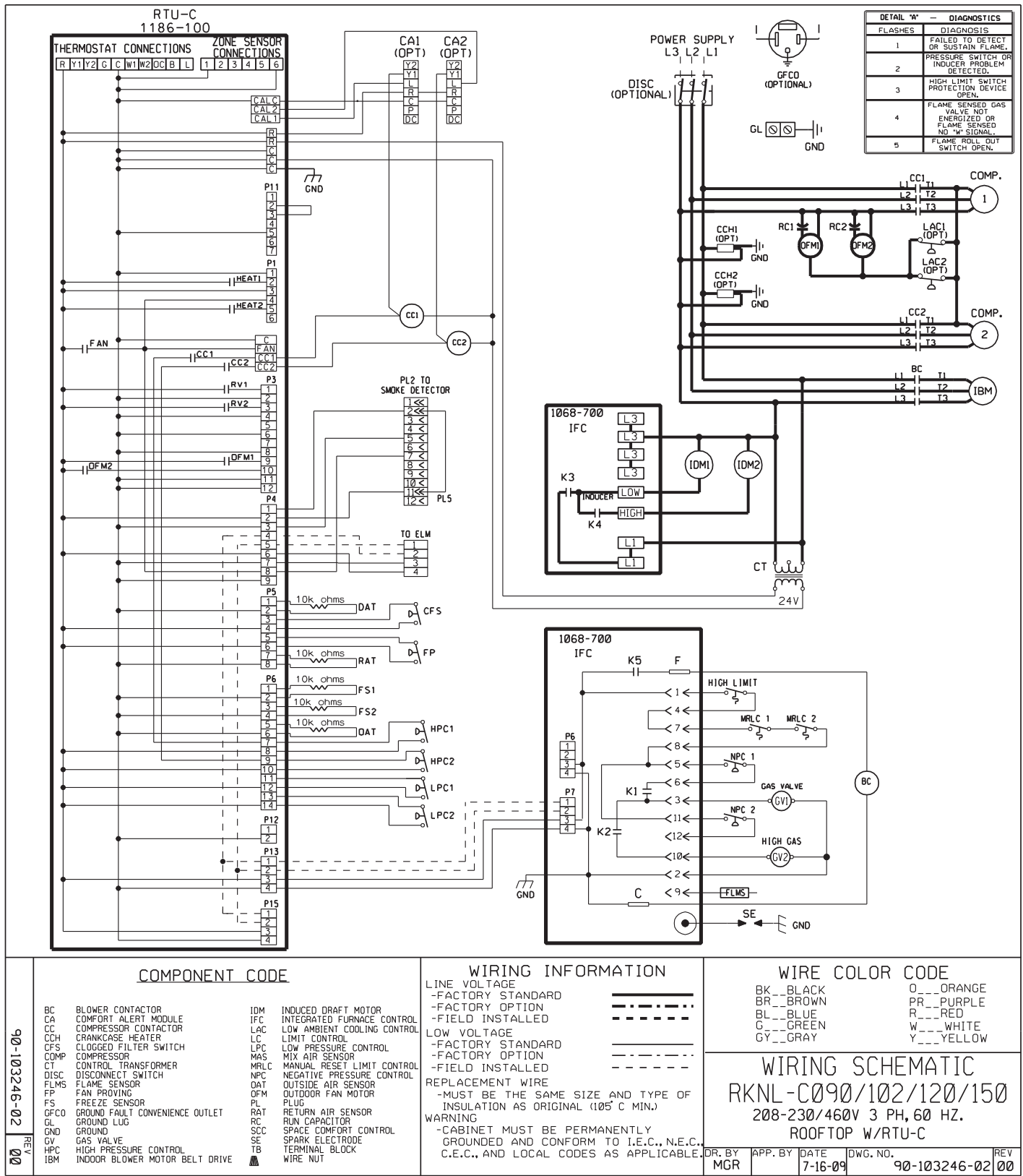
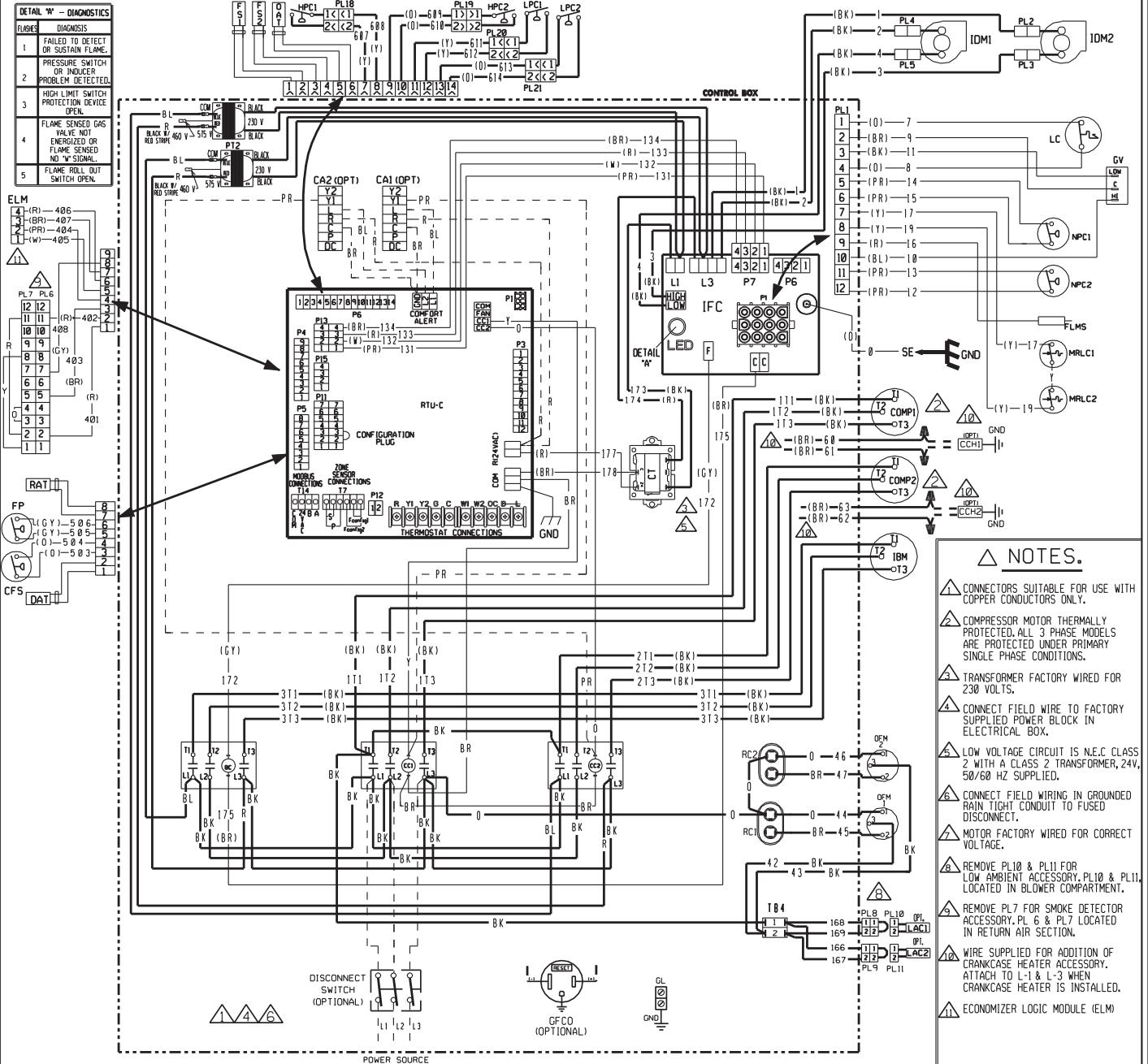


FIGURE 35

FLASHES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO "W" SIGNAL.
5	FLAME ROLL OUT SWITCH OPEN.



- NOTES.**
- CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
 - COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
 - TRANSFORMER FACTORY WIRING FOR 230 VOLTS.
 - CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
 - LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
 - CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
 - MOTOR FACTORY WIRING FOR CORRECT VOLTAGE.
 - REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11 LOCATED IN BLOWER COMPARTMENT.
 - REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
 - WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY. ATTACH TO L-1 & L-3 WHEN CRANKCASE HEATER IS INSTALLED.
 - ECONOMIZER LOGIC MODULE (ELM)

COMPONENT CODE		WIRING INFORMATION		WIRE COLOR CODE	
BC	BLOWER CONTACTOR	LINE VOLTAGE		BK	BLACK
CA	COMFORT ALERT MODULE	-FACTORY STANDARD	---	BR	BROWN
CC	COMPRESSOR CONTACTOR	-FACTORY OPTION	---	BL	BLUE
CCH	CRANKCASE HEATER	-FIELD INSTALLED	---	G	GREEN
CFS	CLOGGED FILTER SWITCH	LOW VOLTAGE		GY	GRAY
COMP	COMPRESSOR	-FACTORY STANDARD	---		
CT	CONTROL TRANSFORMER	-FACTORY OPTION	---		
DAT	DISCHARGE AIR SENSOR	-FIELD INSTALLED	---		
DISC	DISCONNECT SWITCH	REPLACEMENT WIRE			
FLMS	FLAME SENSOR	-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)			
FP	FAN PROVING	WARNING			
FS	FREEZE SENSOR	-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.			
GFCO	GROUND FAULT CONVENIENCE OUTLET				
GL	GROUND LUG				
GND	GROUND				
GV	GAS VALVE				
HPC	HIGH PRESSURE CONTROL				
IBM	INDOOR BLOWER MOTOR BELT DRIVE				
IDM	INDUCED DRAFT MOTOR				
IFC	INTEGRATED FURNACE CONTROL				
LAC	LOW AMBIENT COOLING CONTROL				
LC	LIMIT CONTROL				
LPC	LOW PRESSURE CONTROL				
MAN	MANUAL RESET LIMIT CONTROL				
MRLC	NEGATIVE PRESSURE CONTROL				
NPC	OUTSIDE AIR SENSOR				
OAT	OUTDOOR FAN MOTOR				
OFM	PLUG				
PT	POWER TRANSFORMER				
RAT	RETURN AIR SENSOR				
RC	ROOFTOP UNIT CONTROL				
RTU-C	SE				
SP	SPARK ELECTRODE				
TER	TERMINAL BLOCK				
WIRE	WIRE NUT				

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

WIRING INFORMATION		WIRE COLOR CODE	
LINE VOLTAGE		BK	BLACK
-FACTORY STANDARD	---	BR	BROWN
-FACTORY OPTION	---	BL	BLUE
-FIELD INSTALLED	---	G	GREEN
LOW VOLTAGE		GY	GRAY
-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.			

DWG. NO.		COMPONENT CODE		WIRING INFORMATION		WIRE COLOR CODE				
90-103089-06	BC	BLOWER CONTACTOR	IDM	INDUCED DRAFT MOTOR	LINE VOLTAGE	BK	BLACK	O	ORANGE	
	CA	COMFORT ALERT MODULE	IFC	INTEGRATED FURNACE CONTROL	-FACTORY STANDARD	BR	BROWN	PR	PURPLE	
	CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT COOLING CONTROL	-FACTORY OPTION			R	RED	
	CCH	CRANKCASE HEATER	LPC	LIMIT CONTROL	-FIELD INSTALLED					
	CFS	CLOGGED FILTER SWITCH	LPL	LOW PRESSURE CONTROL	LOW VOLTAGE	G	GREEN	W	WHITE	
	COMP	COMPRESSOR	MLC	MANUAL RESET LIMIT CONTROL	-FACTORY STANDARD	GY	GRAY	Y	YELLOW	
	CT	CONTROL TRANSFORMER	NPC	NEGATIVE PRESSURE CONTROL	-FACTORY OPTION	WIRING DIAGRAM RKNL-C090/102/120/150 575V 3 PH, 60 HZ. ROOFTOP W/RTU-C				
	DISC	DISCHARGE AIR SENSOR	OAT	OUTSIDE AIR SENSOR	-FIELD INSTALLED					
	FLMS	DISCONNECT SWITCH	OFM	OUTDOOR FAN MOTOR	REPLACEMENT WIRE					
	FLMS	FLAME SENSOR	PL	PLUG	-MUST BE THE SAME SIZE AND TYPE OF					
	FS	FREZE SENSOR	PT	POWER TRANSFORMER	INSULATION AS ORIGINAL (105° C MIN.)					
	GFCD	GROUND FALT CONVENIENCE OUTLET	RAT	RETURN AIR SENSOR	WARNING	DR. BY	APP. BY	DATE	DWG. NO.	REV
	GL	GROUND LUG	RC	RUN CAPACITOR	-CABINET MUST BE PERMANENTLY	MGR		4-14-09	90-103089-06	01
	GND	GROUND	RTU-C	ROOFTOP UNIT CONTROL	GROUNDING AND CONFORM TO I.E.C., N.E.C.,					
	GV	GAS VALVE	SE	SPARK ELECTRODE	C.E.C., AND LOCAL CODES AS APPLICABLE.					
HPC	HIGH PRESSURE CONTROL	TB	TERMINAL BLOCK							
IBM	INDOOR BLOWER MOTOR BELT DRIVE	W	WIRE NUT							

FIGURE 36

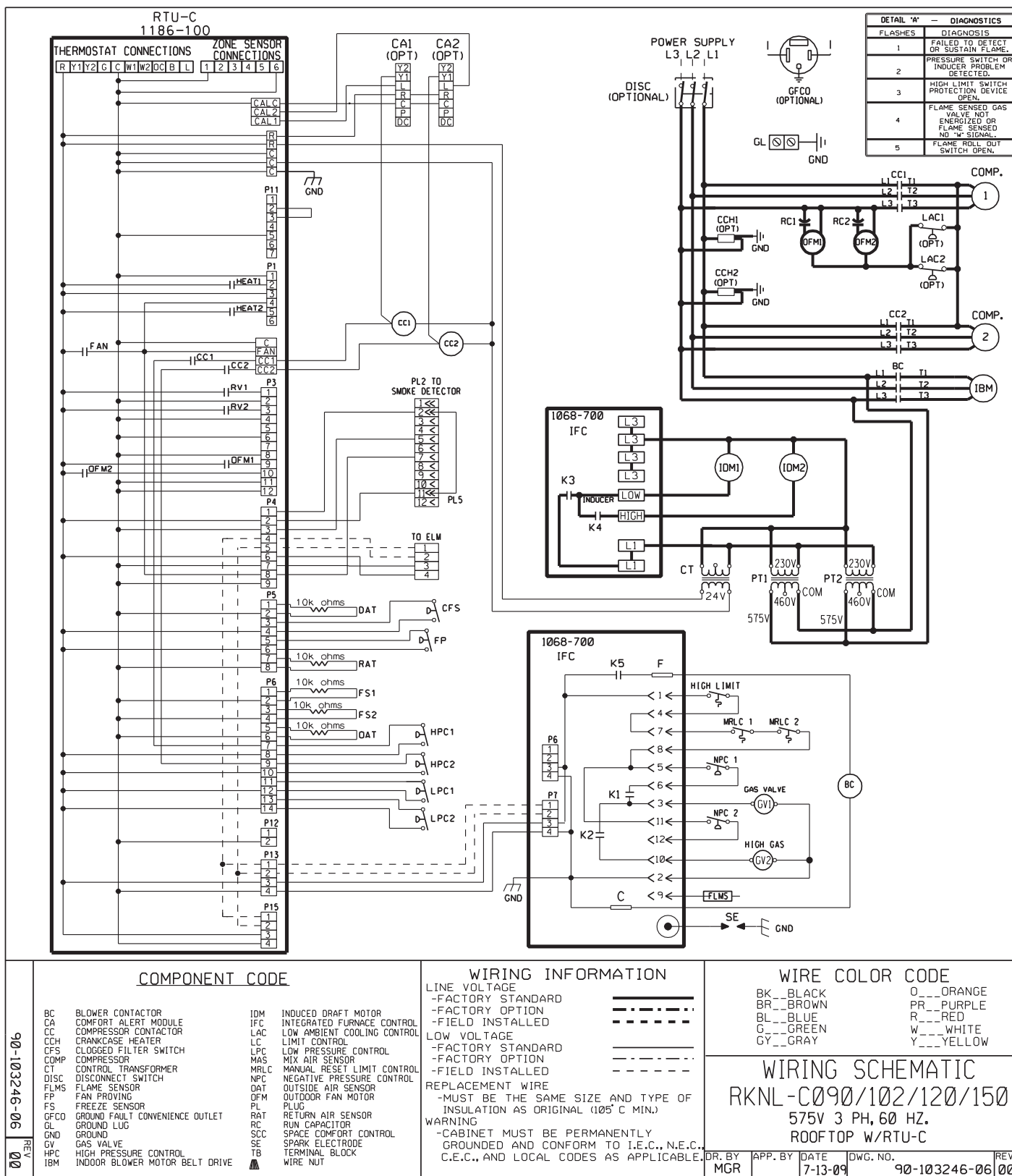


FIGURE 37

RKNL SYSTEM CHARGE CHARTS

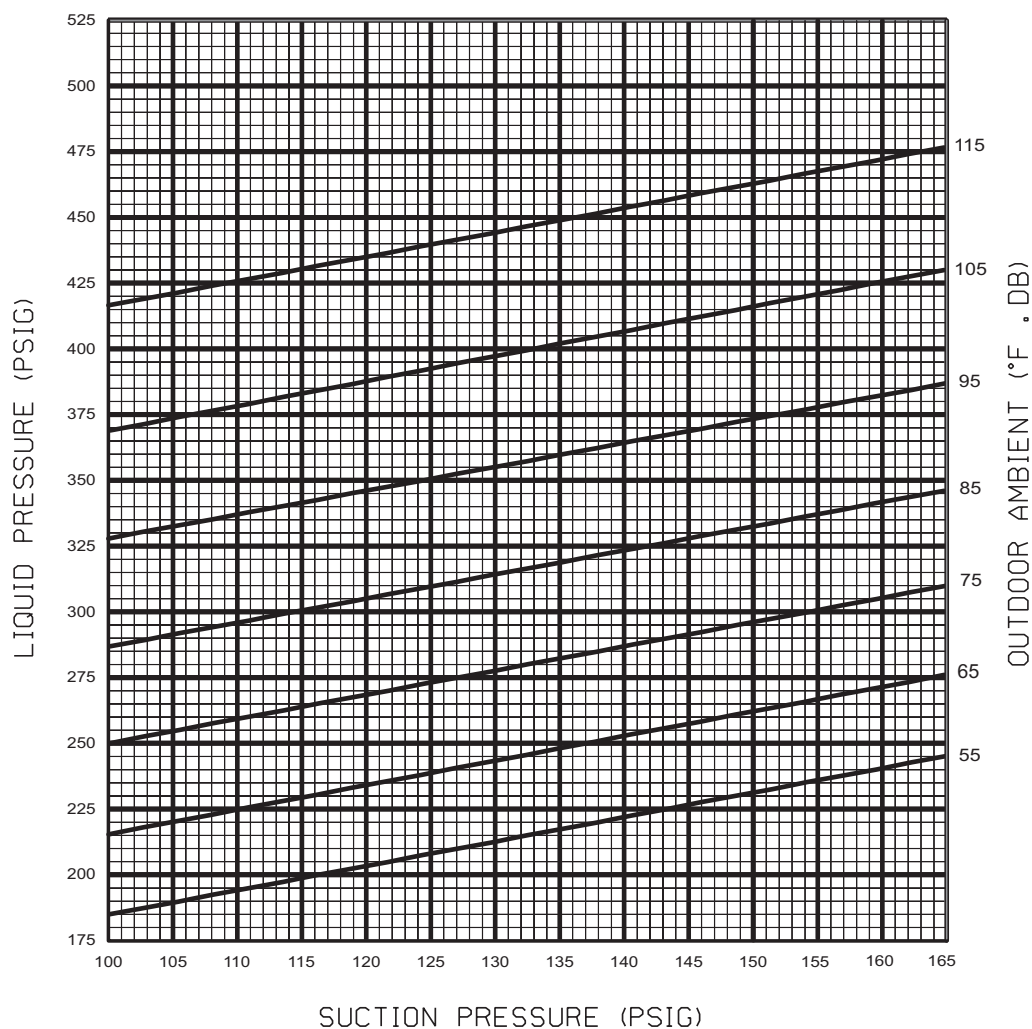
SYSTEM CHARGE CHART - REFRIGERANT 410A 6 TON, CIRCUIT 1

CAUTION:

1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:

1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND LIQUID 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.



92-102259-06-01

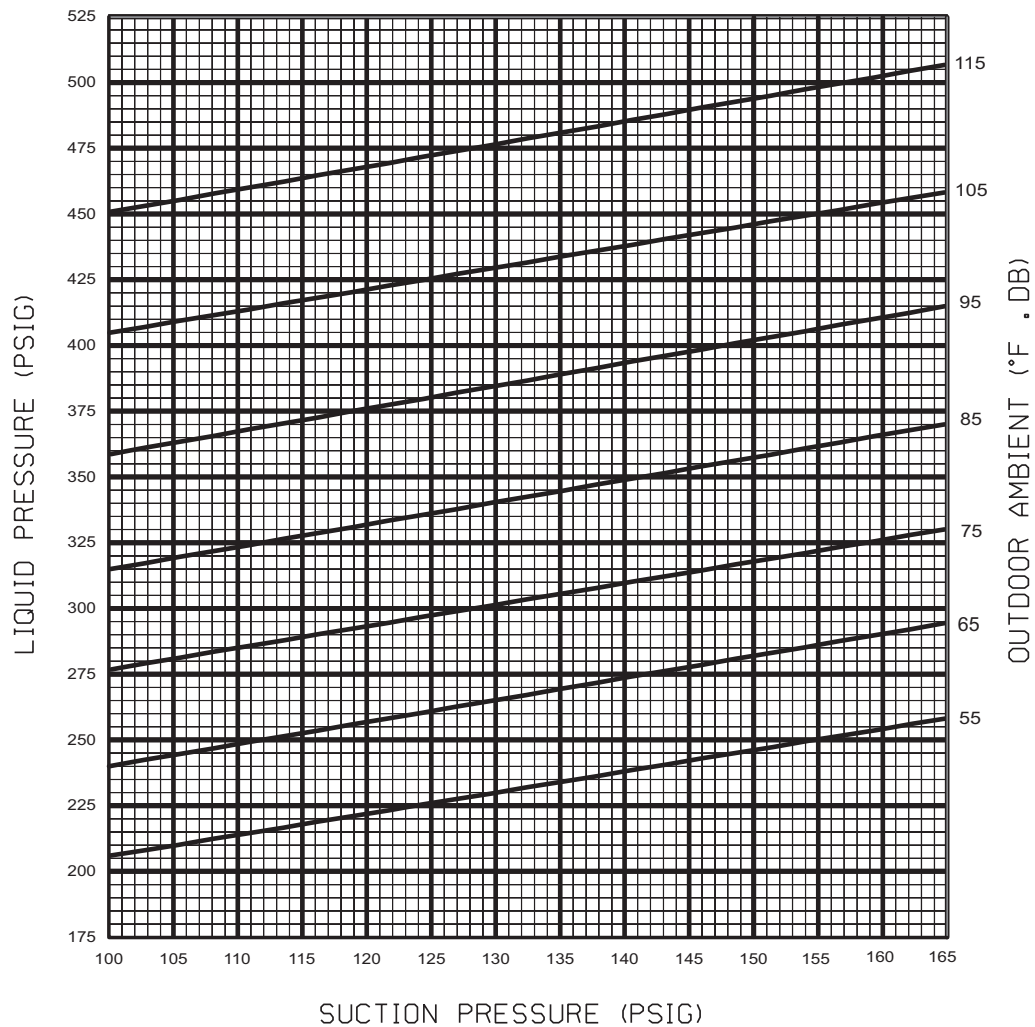
FIGURE 38

RKNL SYSTEM CHARGE CHARTS

SYSTEM CHARGE CHART - REFRIGERANT 410A 7 TON, CIRCUIT 1

CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS: 1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND LIQUID 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.



92-102259-07-01

FIGURE 39

RKNL SYSTEM CHARGE CHARTS

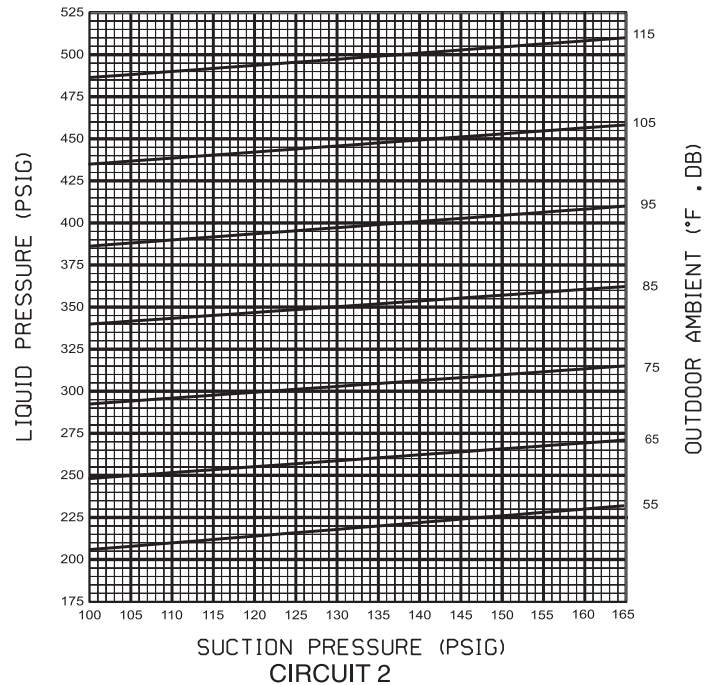
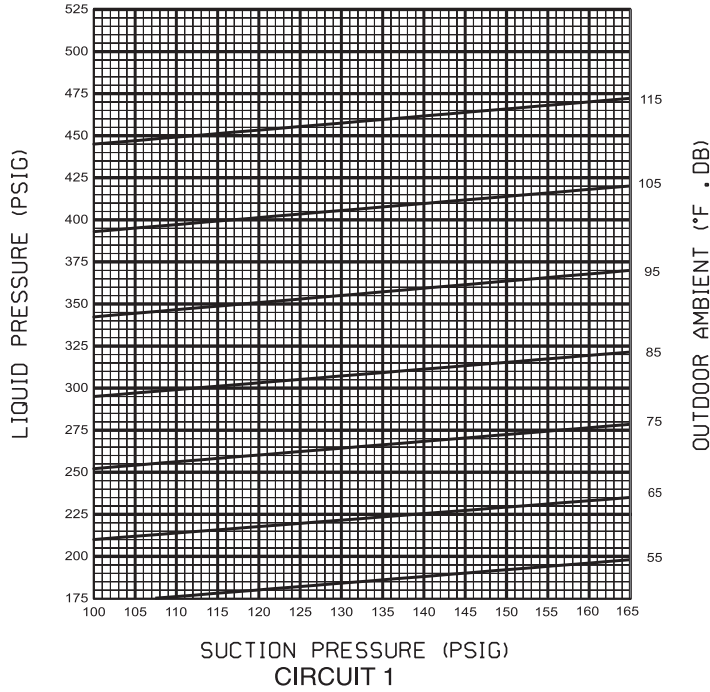
SYSTEM CHARGE CHART - REFRIGERANT 410A 7-1/2 TON, CIRCUITS 1 & 2

CAUTION:

1. BOTH COMPRESSORS MUST BE OPERATING BEFORE CHECKING REFRIGERANT CHARGE.

INSTRUCTIONS:

2. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND LIQUID 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.



92-102259-08-01

FIGURE 40

RKNL SYSTEM CHARGE CHARTS

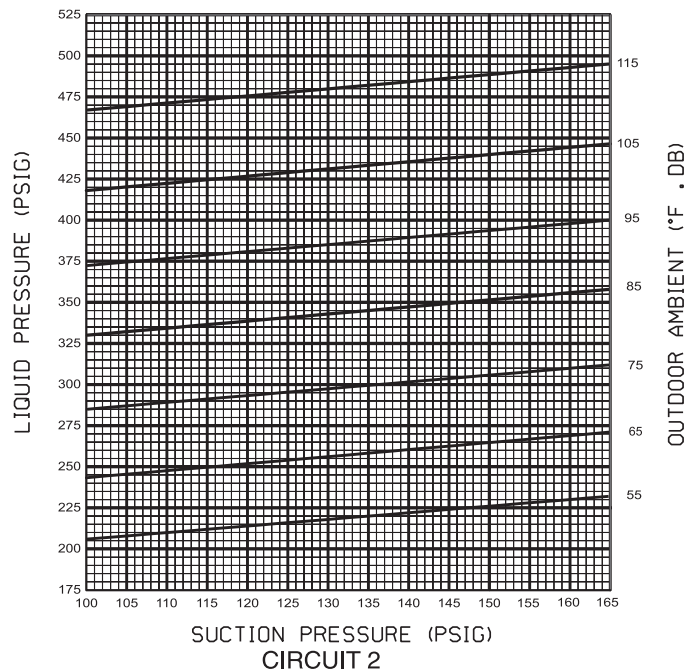
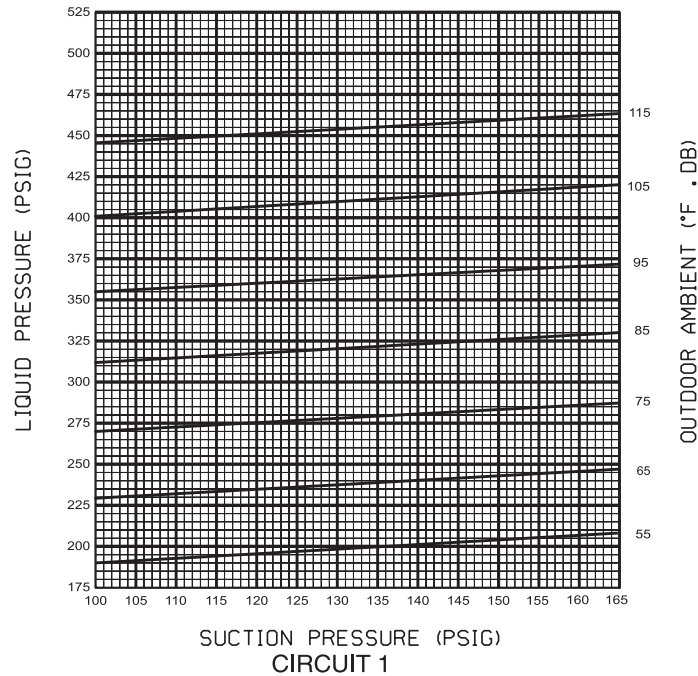
SYSTEM CHARGE CHART - REFRIGERANT 410A 8-1/2 TON, CIRCUITS 1 & 2

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 LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND LIQUID 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.



92-102259-09-01

FIGURE 41

RKNL SYSTEM CHARGE CHARTS

SYSTEM CHARGE CHART - REFRIGERANT 410A 10 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 LIQUID.
 - 2. MEASURE OUTDOOR AMBIENT TO UNIT.
 - 3. PLACE (X) ON CHART WHERE SUCTION AND LIQUID 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.

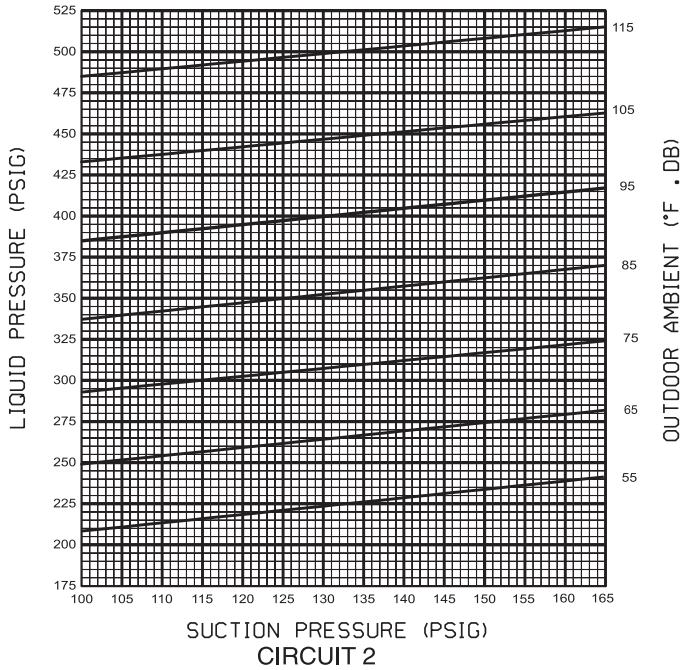
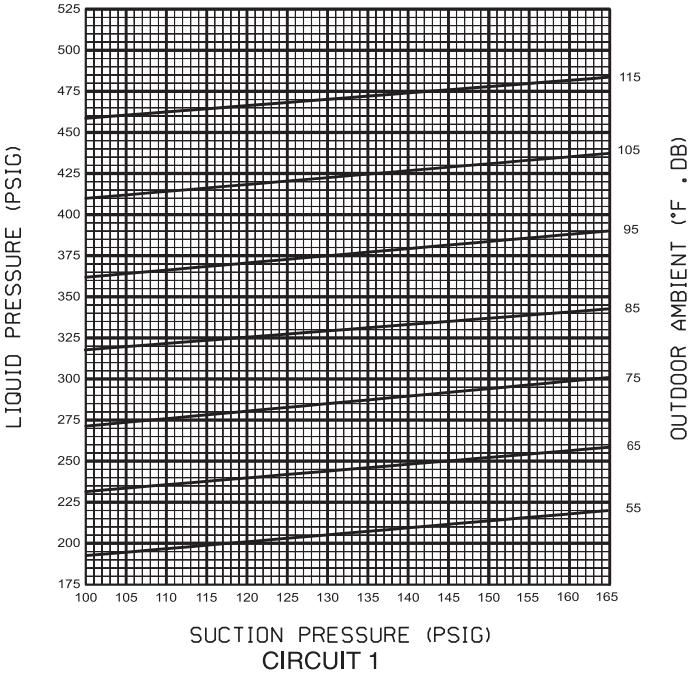


FIGURE 42

RKNL SYSTEM CHARGE CHARTS

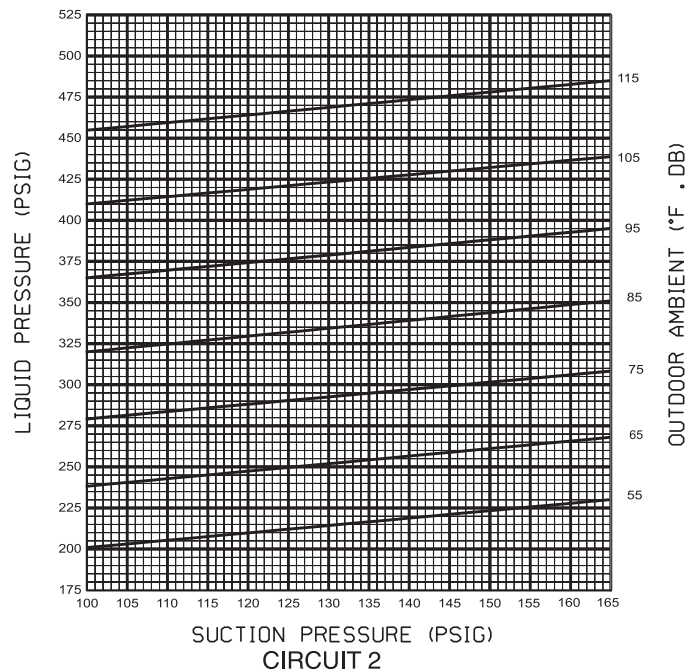
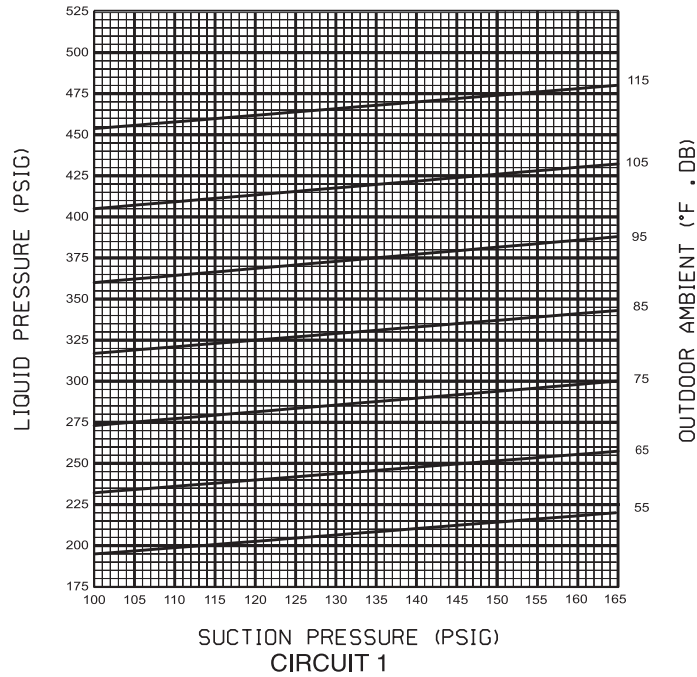
SYSTEM CHARGE CHART - REFRIGERANT 410A 12-1/2 TON, CIRCUITS 1 & 2

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 LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND LIQUID 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.



92-102259-11-01

