

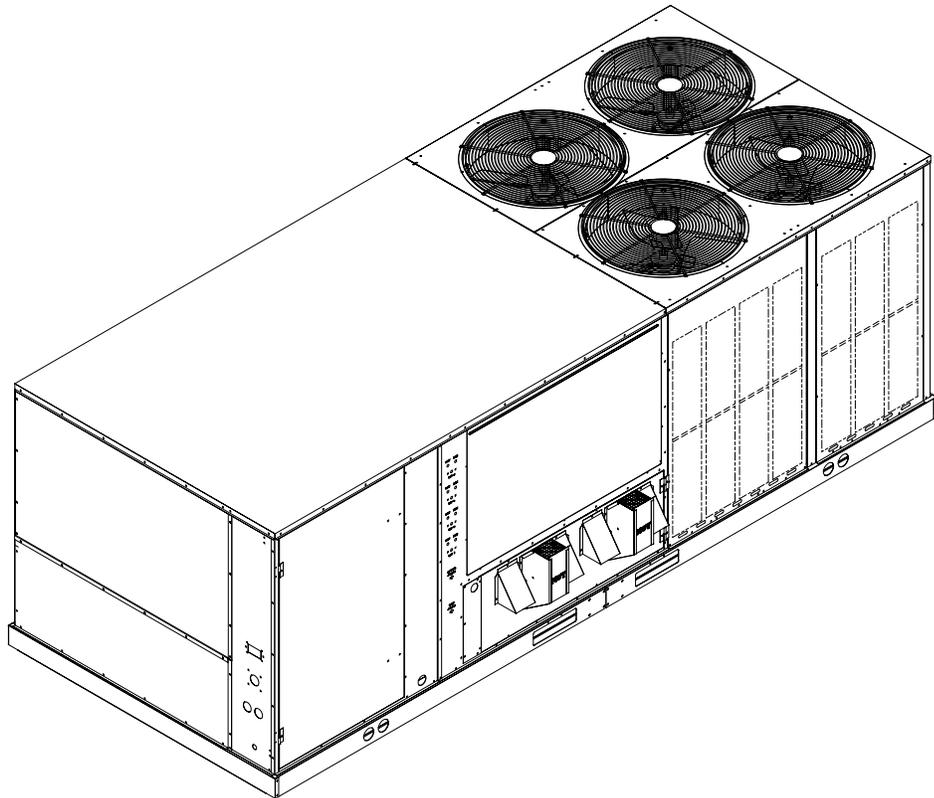
# INSTALLATION INSTRUCTIONS

## FOR COMBINATION HEATING AND COOLING ROOFTOP UNITS

RKKB SERIES 15, 20 & 25 TON [52.8, 70.3, 87.9 kW]

RKMB SERIES 15 & 20 TON [52.8, 70.3 kW]

RKNB SERIES 15 TON [52.8 kW]



RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

### ▲ WARNING

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



Accredited by  
the Dutch Council  
for Certification



ISO 9002

**DO NOT DESTROY THIS MANUAL**

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

[ ] INDICATES METRIC CONVERSIONS

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## II. INTRODUCTION

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

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

## **▲ WARNING**

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

## **▲ WARNING**

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.

## **CHECKING PRODUCT RECEIVED**

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

## **EQUIPMENT PROTECTION FROM THE ENVIRONMENT**

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 250,000 AND 350,000 BTUH heating input with nominal cooling capacity of 15 tons. 300,000 and 400,000 BTUH heating inputs are available in nominal cooling capacity of 20 & 25 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 and Figures 10 & 11.

The units are weatherized for mounting outside of the building.

### **B. MAJOR COMPONENTS**

The unit includes a hermetically-sealed refrigerating system consisting of a scroll compressor, condenser coil, evaporator coil with capillary tube assembly or TXV, a circulation air blower, a condenser fan, a heat exchanger assembly, gas burner and control assembly, combustion air motors 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.

# 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 THIS UNIT TO AN APPROVED VENT SYSTEM ONLY, AS SPECIFIED IN VENT PIPE INSTALLATION SECTION OF THESE INSTRUCTIONS.

## WARNING

NEVER TEST FOR GAS LEAKS WITH AN OPEN FLAME. USE A COMMERCIALY 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

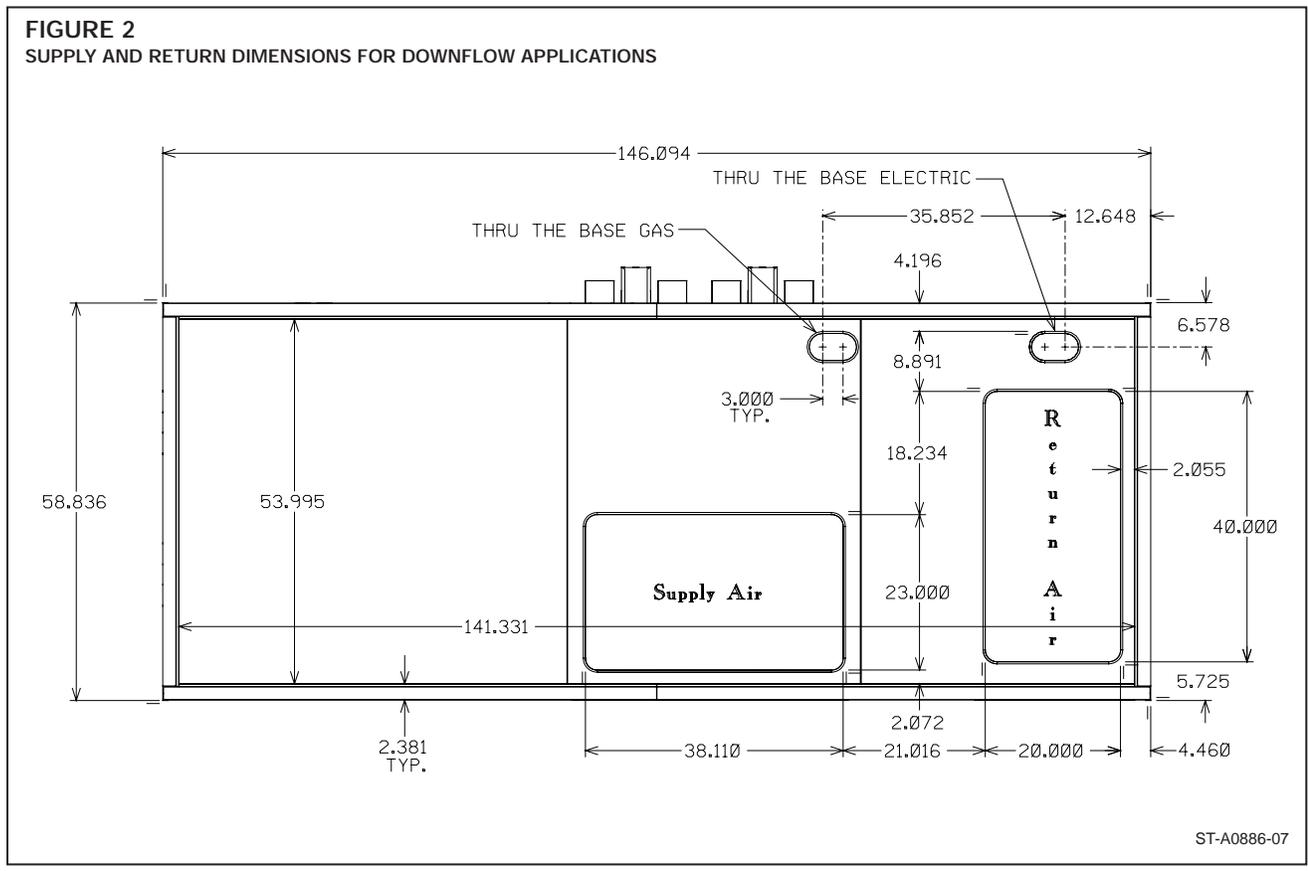
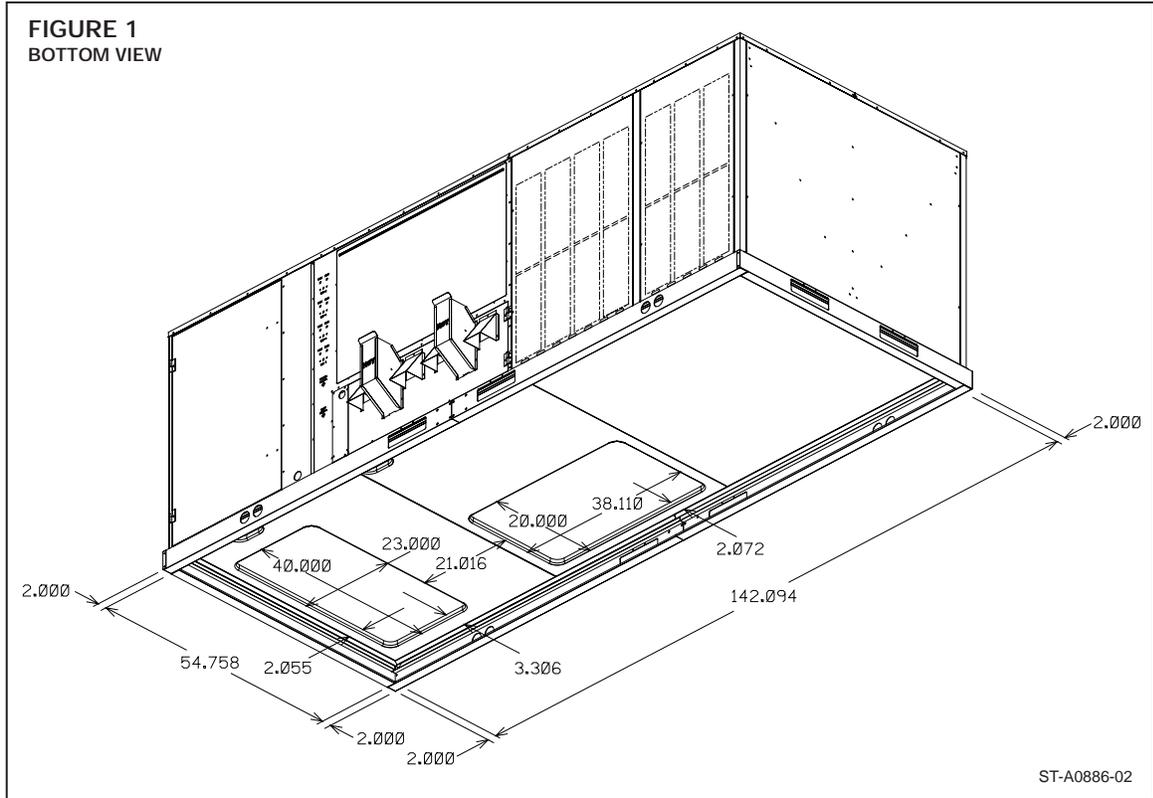
THIS UNIT MAY BE USED TO HEAT THE BUILDING OR STRUCTURE DURING CONSTRUCTION IF THE FOLLOWING INSTALLATION REQUIREMENTS ARE MET. INSTALLATION MUST COMPLY WITH ALL INSTALLATION INSTRUCTIONS INCLUDING:

- 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;
- MEANS OF PROVIDING OUTDOOR AIR REQUIRED FOR COMBUSTION;
- 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.

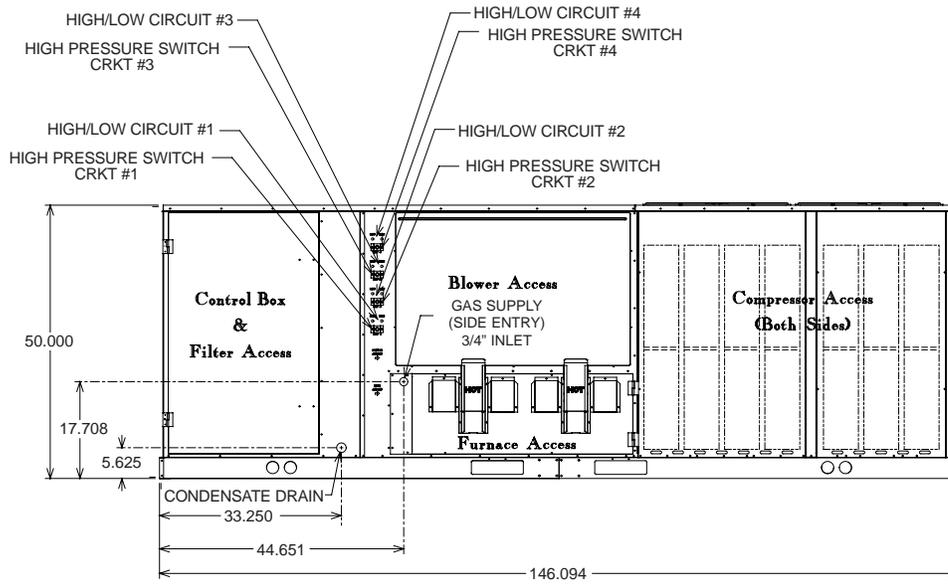
# Unit Dimensions

FOR CLEARANCES  
SEE PAGE 12, FIGURE 12.

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

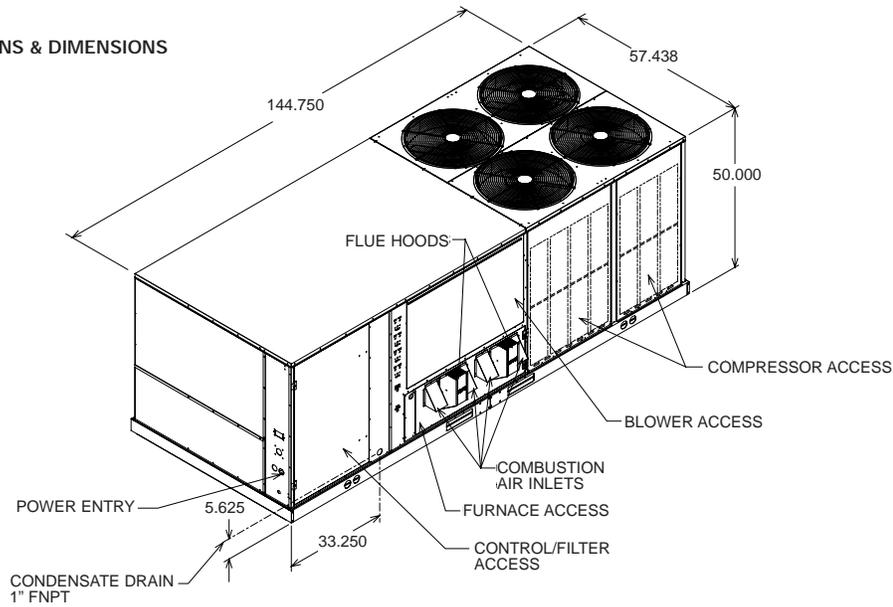


**FIGURE 3**  
COMPONENT  
LOCATIONS &  
DIMENSIONS



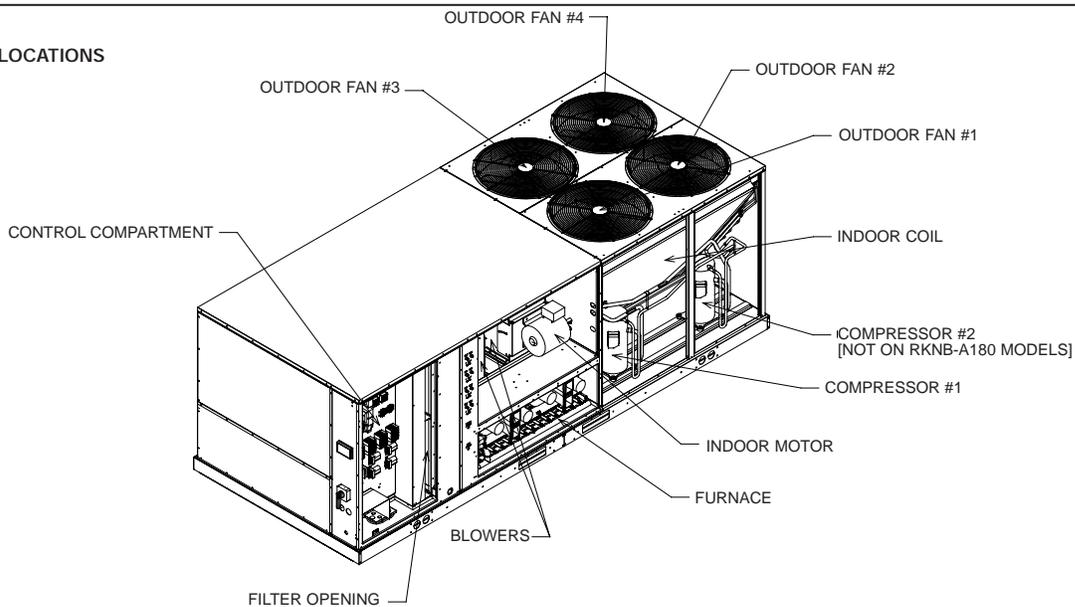
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**FIGURE 4**  
COMPONENT LOCATIONS &  
DIMENSIONS



ST-A0886-06

**FIGURE 5**  
COMPONENT LOCATIONS



ST-A0886-27



# GENERAL DATA - RKKB

| Model RKKB- Series  | A180CL25E  | A180CL35E  | A180CM25E  | A180CM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 9/NA   | 9/NA   | 9/NA   | 9/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     |
| Net Sensible Capacity Btu [kW]                                | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     |
| Net Latent Capacity Btu [kW]                                  | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 9.9  | 9.9  | 9.9  | 9.9  |
| Net System Power kW   | 20   | 20   | 20   | 20   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPCm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPCm]   | 3 / 13 [5]   | 3 / 13 [5]   | 3 / 13 [5]   | 3 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| 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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1790 [812]   | 1817 [824]   | 1820 [826]   | 1847 [838]   |
| Ship Weight lbs. [kg]   | 2010 [912]   | 2037 [924]   | 2040 [925]   | 2067 [938]   |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A180DL25E  | A180DL35E  | A180DM25E  | A180DM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED →</b>                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 9/NA   | 9/NA   | 9/NA   | 9/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     |
| Net Sensible Capacity Btu [kW]                                | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     |
| Net Latent Capacity Btu [kW]                                  | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 9.9  | 9.9  | 9.9  | 9.9  |
| Net System Power kW   | 20   | 20   | 20   | 20   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 3 / 13 [5]   | 3 / 13 [5]   | 3 / 13 [5]   | 3 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| 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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1806 [819]   | 1841 [835]   | 1836 [833]   | 1871 [849]   |
| Ship Weight lbs. [kg]   | 2026 [919]   | 2061 [935]   | 2056 [933]   | 2091 [948]   |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A180YL25E  | A180YL35E  | A180YM25E  | A180YM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 9/NA   | 9/NA   | 9/NA   | 9/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     |
| Net Sensible Capacity Btu [kW]                                | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     |
| Net Latent Capacity Btu [kW]                                  | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 9.9  | 9.9  | 9.9  | 9.9  |
| Net System Power kW   | 20   | 20   | 20   | 20   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPCm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPCm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| 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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1806 [819]   | 1817 [824]   | 1836 [833]   | 1871 [849]   |
| Ship Weight lbs. [kg]   | 2026 [919]   | 2037 [924]   | 2056 [933]   | 2091 [948]   |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A240CL30E  | A240CL40E  | A240CM30E  | A240CM40E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 242,000 [70.9]                                     | 242,000 [70.9]                                     | 242,000 [70.9]                                     | 242,000 [70.9]                                     |
| EER/SEER <sup>2</sup>   | 8.7/NA   | 8.7/NA   | 8.7/NA   | 8.7/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 228,000 [66.8]                                     | 228,000 [66.8]                                     | 228,000 [66.8]                                     | 228,000 [66.8]                                     |
| Net Sensible Capacity Btu [kW]                                | 164,000 [48.1]                                     | 164,000 [48.1]                                     | 164,000 [48.1]                                     | 164,000 [48.1]                                     |
| Net Latent Capacity Btu [kW]                                  | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 8.8  | 8.8  | 8.8  | 8.8  |
| Net System Power kW   | 26.2   | 26.2   | 26.2   | 26.2   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 12   | 14   | 12   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| Drive Type/No. Speeds   | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      |
| No. Motors  | 1  | 1  | 1  | 1  |
| Motor HP  | 5  | 5  | 7.5  | 7.5  |
| Motor RPM   | 1725   | 1725   | 1725   | 1725   |
| Motor Frame Size  | 184  | 184  | 213  | 213  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1884 [855]   | 1900 [862]   | 1906 [865]   | 1922 [872]   |
| Ship Weight lbs. [kg]   | 2104 [954]   | 2120 [962]   | 2126 [964]   | 2142 [972]   |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A240DL30E  | A240DL40E  | A240DM30E  | A240DM40E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 242,000 [70.9]                                     | 242,000 [70.9]                                     | 242,000 [70.9]                                     | 242,000 [70.9]                                     |
| EER/SEER <sup>2</sup>   | 8.7/NA   | 8.7/NA   | 8.7/NA   | 8.7/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 228,000 [66.8]                                     | 228,000 [66.8]                                     | 228,000 [66.8]                                     | 228,000 [66.8]                                     |
| Net Sensible Capacity Btu [kW]                                | 164,000 [48.1]                                     | 164,000 [48.1]                                     | 164,000 [48.1]                                     | 164,000 [48.1]                                     |
| Net Latent Capacity Btu [kW]                                  | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 8.8  | 8.8  | 8.8  | 8.8  |
| Net System Power kW   | 26.2   | 26.2   | 26.2   | 26.2   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 12   | 14   | 12   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPCm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPCm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| Drive Type/No. Speeds   | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      |
| No. Motors  | 1  | 1  | 1  | 1  |
| Motor HP  | 5  | 5  | 7.5  | 7.5  |
| Motor RPM   | 1725   | 1725   | 1725   | 1725   |
| Motor Frame Size  | 184  | 184  | 213  | 213  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1908 [865]   | 1932 [876]   | 1930 [875]   | 1954 [886]   |
| Ship Weight lbs. [kg]   | 2128 [965]   | 2152 [976]   | 2150 [975]   | 2174 [986]   |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A240YL30E  | A240YL40E  | A240YM30E  | A240YM40E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 242,000 [70.9]                                     | 242,000 [70.9]                                     | 242,000 [70.9]                                     | 242,000 [70.9]                                     |
| EER/SEER <sup>2</sup>   | 8.7/NA   | 8.7/NA   | 8.7/NA   | 8.7/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              | 7600/7400 [3586/3492]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 228,000 [66.8]                                     | 228,000 [66.8]                                     | 228,000 [66.8]                                     | 228,000 [66.8]                                     |
| Net Sensible Capacity Btu [kW]                                | 164,000 [48.1]                                     | 164,000 [48.1]                                     | 164,000 [48.1]                                     | 164,000 [48.1]                                     |
| Net Latent Capacity Btu [kW]                                  | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 8.8  | 8.8  | 8.8  | 8.8  |
| Net System Power kW   | 26.2   | 26.2   | 26.2   | 26.2   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 12   | 14   | 12   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| Drive Type/No. Speeds   | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      |
| No. Motors  | 1  | 1  | 1  | 1  |
| Motor HP  | 5  | 5  | 7.5  | 7.5  |
| Motor RPM   | 1725   | 1725   | 1725   | 1725   |
| Motor Frame Size  | 184  | 184  | 213  | 213  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  | 77/72 [2183/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1908 [865]   | 1932 [876]   | 1930 [875]   | 1954 [886]   |
| Ship Weight lbs. [kg]   | 2128 [965]   | 2152 [976]   | 2150 [975]   | 2174 [986]   |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A300CL30E  | A300CL40E  | A300CM30E  | A300CM40E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED →</b>                                 |
| Gross Cooling Capacity Btu [kW]                               | 300,000 [87.9]                                     | 300,000 [87.9]                                     | 300,000 [87.9]                                     | 300,000 [87.9]                                     |
| EER/SEER <sup>2</sup>   | 8.9/NA   | 8.9/NA   | 8.9/NA   | 8.9/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 9400/8400 [4436/3964]                              | 9400/8400 [4436/3964]                              | 9400/8400 [4436/3964]                              | 9400/8400 [4436/3964]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 282,000 [82.6]                                     | 282,000 [82.6]                                     | 282,000 [82.6]                                     | 282,000 [82.6]                                     |
| Net Sensible Capacity Btu [kW]                                | 194,000 [56.8]                                     | 194,000 [56.8]                                     | 194,000 [56.8]                                     | 194,000 [56.8]                                     |
| Net Latent Capacity Btu [kW]                                  | 88,000 [25.8]                                      | 88,000 [25.8]                                      | 88,000 [25.8]                                      | 88,000 [25.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 9  | 9  | 9  | 9  |
| Net System Power kW   | 31.7   | 31.7   | 31.7   | 31.7   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 12   | 14   | 12   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 92   | 92   | 92   | 92   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPCm]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPCm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/2 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| Drive Type/No. Speeds   | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      |
| No. Motors  | 1  | 1  | 1  | 1  |
| Motor HP  | 5  | 5  | 7.5  | 7.5  |
| Motor RPM   | 1725   | 1725   | 1725   | 1725   |
| Motor Frame Size  | 184  | 184  | 213  | 213  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 128/121 [3629/3430]                                | 128/121 [3629/3430]                                | 128/121 [3629/3430]                                | 128/121 [3629/3430]                                |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 2037 [924]   | 2053 [931]   | 2059 [934]   | 2075 [941]   |
| Ship Weight lbs. [kg]   | 2257 [1024]  | 2273 [1031]  | 2279 [1034]  | 2295 [1041]  |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A300DL30E  | A300DL40E  | A300DM30E  | A300DM40E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED →</b>                                 |
| Gross Cooling Capacity Btu [kW]                               | 300,000 [87.9]                                     | 300,000 [87.9]                                     | 300,000 [87.9]                                     | 300,000 [87.9]                                     |
| EER/SEER <sup>2</sup>   | 8.9/NA   | 8.9/NA   | 8.9/NA   | 8.9/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 9400/8400 [4436/3964]                              | 9400/8400 [4436/3964]                              | 9400/8400 [4436/3964]                              | 9400/8400 [4436/3964]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 282,000 [82.6]                                     | 282,000 [82.6]                                     | 282,000 [82.6]                                     | 282,000 [82.6]                                     |
| Net Sensible Capacity Btu [kW]                                | 194,000 [56.8]                                     | 194,000 [56.8]                                     | 194,000 [56.8]                                     | 194,000 [56.8]                                     |
| Net Latent Capacity Btu [kW]                                  | 88,000 [25.8]                                      | 88,000 [25.8]                                      | 88,000 [25.8]                                      | 88,000 [25.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 9  | 9  | 9  | 9  |
| Net System Power kW   | 31.7   | 31.7   | 31.7   | 31.7   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 12   | 14   | 12   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 92   | 92   | 92   | 92   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/2 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| Drive Type/No. Speeds   | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      |
| No. Motors  | 1  | 1  | 1  | 1  |
| Motor HP  | 5  | 5  | 7.5  | 7.5  |
| Motor RPM   | 1725   | 1725   | 1725   | 1725   |
| Motor Frame Size  | 184  | 184  | 213  | 213  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 128/121 [3629/3430]                                | 128/121 [3629/3430]                                | 128/121 [3629/3430]                                | 128/121 [3629/3430]                                |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 2061 [935]   | 2085 [946]   | 2083 [945]   | 2107 [956]   |
| Ship Weight lbs. [kg]   | 2281 [1035]  | 2305 [1046]  | 2303 [1045]  | 2327 [1056]  |

# GENERAL DATA - RKKB

| Model RKKB- Series  | A300YL30E                   | A300YL40E                    | A300YM30E                   | A300YM40E                    |
|---|-----------------------------|------------------------------|-----------------------------|------------------------------|
| <b>Cooling Performance<sup>1</sup></b>                        |                             |                              |                             |                              |
| Gross Cooling Capacity Btu [kW]                               | 300,000 [87.9]              | 300,000 [87.9]               | 300,000 [87.9]              | 300,000 [87.9]               |
| EER/SEER <sup>2</sup>   | 8.9/NA                      | 8.9/NA                       | 8.9/NA                      | 8.9/NA                       |
| Nominal CFM/ARI Rated CFM [L/s]                               | 9400/8400 [4436/3964]       | 9400/8400 [4436/3964]        | 9400/8400 [4436/3964]       | 9400/8400 [4436/3964]        |
| ARI Net Cooling Capacity Btu [kW]                             | 282,000 [82.6]              | 282,000 [82.6]               | 282,000 [82.6]              | 282,000 [82.6]               |
| Net Sensible Capacity Btu [kW]                                | 194,000 [56.8]              | 194,000 [56.8]               | 194,000 [56.8]              | 194,000 [56.8]               |
| Net Latent Capacity Btu [kW]                                  | 88,000 [25.8]               | 88,000 [25.8]                | 88,000 [25.8]               | 88,000 [25.8]                |
| Integrated Part Load Value <sup>3</sup>                       | 9                           | 9                            | 9                           | 9                            |
| Net System Power kW   | 31.7                        | 31.7                         | 31.7                        | 31.7                         |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |                             |                              |                             |                              |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]   | 200,000/400,000 [58.6/117.2] | 150,000/300,000 [44/87.9]   | 200,000/400,000 [58.6/117.2] |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2] | 162,000/324,000 [47.5/94.9]  | 121,500/243,000 [35.6/71.2] | 162,000/324,000 [47.5/94.9]  |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]              | 25-55 [13.9/30.6]            | 15-45 [8.3/25]              | 25-55 [13.9/30.6]            |
| Steady State Efficiency (%)                                   | 81                          | 81                           | 81                          | 81                           |
| No. Burners   | 12                          | 14                           | 12                          | 14                           |
| No. Stages  | 2                           | 2                            | 2                           | 2                            |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                | 0.75 [19.05]                 | 0.75 [19.05]                | 0.75 [19.05]                 |
| <b>Compressor</b>   |                             |                              |                             |                              |
| No./Type  | 4/Copeland Scroll           | 4/Copeland Scroll            | 4/Copeland Scroll           | 4/Copeland Scroll            |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  |                             |                              |                             |                              |
|   | 92                          | 92                           | 92                          | 92                           |
| <b>Outdoor Coil—Fin Type</b>                                  |                             |                              |                             |                              |
| Tube Type   | Louvered                    | Louvered                     | Louvered                    | Louvered                     |
| Tube Size in. [mm] OD   | Rifled                      | Rifled                       | Rifled                      | Rifled                       |
| Face Area sq. ft. [sq. m]                                     | 0.375 [9.5]                 | 0.375 [9.5]                  | 0.375 [9.5]                 | 0.375 [9.5]                  |
| Rows / FPI [FPCm]   | 36 [3.34]                   | 36 [3.34]                    | 36 [3.34]                   | 36 [3.34]                    |
|   | 2 / 22 [9]                  | 2 / 22 [9]                   | 2 / 22 [9]                  | 2 / 22 [9]                   |
| <b>Indoor Coil—Fin Type</b>                                   |                             |                              |                             |                              |
| Tube Type   | Louvered                    | Louvered                     | Louvered                    | Louvered                     |
| Tube Size in. [mm]  | Rifled                      | 0.75 [19.05] Rifled          | Rifled                      | Rifled                       |
| Face Area sq. ft. [sq. m]                                     | 0.375 [9.5]                 | 0.375 [9.5]                  | 0.375 [9.5]                 | 0.375 [9.5]                  |
| Rows / FPI [FPCm]   | 15.75 [1.46]                | 15.75 [1.46]                 | 15.75 [1.46]                | 15.75 [1.46]                 |
| Refrigerant Control   | 4 / 13 [5]                  | 4 / 13 [5]                   | 4 / 13 [5]                  | 4 / 13 [5]                   |
| Drain Connection No./Size in. [mm]                            | Capillary Tubes             | Capillary Tubes              | Capillary Tubes             | Capillary Tubes              |
|   | 1/1 [25.4]                  | 1/1 [25.4]                   | 1/1 [25.4]                  | 1/1 [25.4]                   |
| <b>Outdoor Fan—Type</b>                                       |                             |                              |                             |                              |
| No. Used/Diameter in. [mm]                                    | Propeller                   | Propeller                    | Propeller                   | Propeller                    |
| Drive Type/No. Speeds   | 4/24 [609.6]                | 4/24 [609.6]                 | 4/24 [609.6]                | 4/24 [609.6]                 |
| CFM [L/s]   | Direct/1                    | Direct/1                     | Direct/1                    | Direct/1                     |
| No. Motors/HP   | 16000 [7550]                | 16000 [7550]                 | 16000 [7550]                | 16000 [7550]                 |
| Motor RPM   | 4 at 1/2 HP                 | 4 at 1/2 HP                  | 4 at 1/2 HP                 | 4 at 1/2 HP                  |
|   | 1075                        | 1075                         | 1075                        | 1075                         |
| <b>Indoor Fan—Type</b>  |                             |                              |                             |                              |
| No. Used/Diameter in. [mm]                                    | FC Centrifugal              | FC Centrifugal               | FC Centrifugal              | FC Centrifugal               |
| Drive Type/No. Speeds   | 2/18x9 [457.2x228.6]        | 2/18x9 [457.2x228.6]         | 2/18x9 [457.2x228.6]        | 2/18x9 [457.2x228.6]         |
| No. Motors  | Belt/Variable               | Belt/Variable                | Belt/Variable               | Belt/Variable                |
| Motor HP  | 1                           | 1                            | 1                           | 1                            |
| Motor RPM   | 5                           | 5                            | 7.5                         | 7.5                          |
| Motor Frame Size  | 1725                        | 1725                         | 1725                        | 1725                         |
|   | 184                         | 184                          | 213                         | 213                          |
| <b>Filter—Type</b>  |                             |                              |                             |                              |
| Furnished   | Disposable                  | Disposable                   | Disposable                  | Disposable                   |
| (No.) Size Recommended in. [mm]                               | Yes                         | Yes                          | Yes                         | Yes                          |
|   | (3)2x18x18 [51x457x457]     | (3)2x18x18 [51x457x457]      | (3)2x18x18 [51x457x457]     | (3)2x18x18 [51x457x457]      |
|   | (3)2x18x24 [51x457x610]     | (3)2x18x24 [51x457x610]      | (3)2x18x24 [51x457x610]     | (3)2x18x24 [51x457x610]      |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             |                             |                              |                             |                              |
|   | 128/121 [3629/3430]         | 128/121 [3629/3430]          | 128/121 [3629/3430]         | 128/121 [3629/3430]          |
| <b>Weights</b>  |                             |                              |                             |                              |
| Net Weight lbs. [kg]  | 2061 [935]                  | 2085 [946]                   | 2083 [945]                  | 2107 [956]                   |
| Ship Weight lbs. [kg]   | 2281 [1035]                 | 2305 [1046]                  | 2303 [1045]                 | 2327 [1056]                  |

# GENERAL DATA - RKMB

| Model RKMB- Series  | A180CL25E  | A180CL35E  | A180CM25E  | A180CM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 10.2/NA  | 10.2/NA  | 10.2/NA  | 10.2/NA  |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     |
| Net Sensible Capacity Btu [kW]                                | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     |
| Net Latent Capacity Btu [kW]                                  | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 10.4   | 10.4   | 10.4   | 10.4   |
| Net System Power kW   | 17.6   | 17.6   | 17.6   | 17.6   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| 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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1790 [812]   | 1817 [824]   | 1820 [826]   | 1847 [838]   |
| Ship Weight lbs. [kg]   | 2010 [912]   | 2037 [924]   | 2040 [925]   | 2067 [938]   |

# GENERAL DATA - RKMB

| Model RKMB- Series  | A180DL25E  | A180DL35E  | A180DM25E  | A180DM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 10.2/NA  | 10.2/NA  | 10.2/NA  | 10.2/NA  |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     |
| Net Sensible Capacity Btu [kW]                                | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     |
| Net Latent Capacity Btu [kW]                                  | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 10.4   | 10.4   | 10.4   | 10.4   |
| Net System Power kW   | 17.6   | 17.6   | 17.6   | 17.6   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPCm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPCm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| 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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1806 [819]   | 1841 [835]   | 1836 [833]   | 1871 [849]   |
| Ship Weight lbs. [kg]   | 2026 [919]   | 2061 [935]   | 2056 [933]   | 2091 [948]   |

# GENERAL DATA - RKMB

| Model RKMB- Series  | A180YL25E  | A180YL35E  | A180YM25E  | A180YM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 10.2/NA  | 10.2/NA  | 10.2/NA  | 10.2/NA  |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              | 6000/6000 [2831/2831]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     | 180,000 [52.7]                                     |
| Net Sensible Capacity Btu [kW]                                | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     | 134,000 [39.3]                                     |
| Net Latent Capacity Btu [kW]                                  | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      | 46,000 [13.5]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 10.4   | 10.4   | 10.4   | 10.4   |
| Net System Power kW   | 17.6   | 17.6   | 17.6   | 17.6   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   | 1 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| 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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  | 82/72 [2325/2041]                                  |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1806 [819]   | 1841 [835]   | 1836 [833]   | 1871 [849]   |
| Ship Weight lbs. [kg]   | 2026 [919]   | 2061 [935]   | 2056 [933]   | 2091 [948]   |

# GENERAL DATA - RKMB

| Model RKMB- Series  | A240CL30E  | A240CL40E  | A240CM30E  | A240CM40E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED →</b>                                 |
| Gross Cooling Capacity Btu [kW]                               | 246,000 [72.1]                                     | 246,000 [72.1]                                     | 246,000 [72.1]                                     | 246,000 [72.1]                                     |
| EER/SEER <sup>2</sup>   | 9.7/NA   | 9.7/NA   | 9.7/NA   | 9.7/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 7700/7400 [3634/3492]                              | 7700/7400 [3634/3492]                              | 7700/7400 [3634/3492]                              | 7700/7400 [3634/3492]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 232,000 [68]                                       | 232,000 [68]                                       | 232,000 [68]                                       | 232,000 [68]                                       |
| Net Sensible Capacity Btu [kW]                                | 168,000 [49.2]                                     | 168,000 [49.2]                                     | 168,000 [49.2]                                     | 168,000 [49.2]                                     |
| Net Latent Capacity Btu [kW]                                  | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 9.9  | 9.9  | 9.9  | 9.9  |
| Net System Power kW   | 23.9   | 23.9   | 23.9   | 23.9   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 12   | 14   | 12   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| Drive Type/No. Speeds   | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      |
| No. Motors  | 1  | 1  | 1  | 1  |
| Motor HP  | 5  | 5  | 7.5  | 7.5  |
| Motor RPM   | 1725   | 1725   | 1725   | 1725   |
| Motor Frame Size  | 184  | 184  | 213  | 213  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 117/107 [3317/3033]                                | 117/107 [3317/3033]                                | 117/107 [3317/3033]                                | 117/107 [3317/3033]                                |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1972 [894]   | 1988 [902]   | 1994 [904]   | 2010 [912]   |
| Ship Weight lbs. [kg]   | 2192 [994]   | 2208 [1002]  | 2214 [1004]  | 2230 [1012]  |

# GENERAL DATA - RKMB

| Model RKMB- Series  | A240DL30E  | A240DL40E  | A240DM30E  | A240DM40E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 246,000 [72.1]                                     | 246,000 [72.1]                                     | 246,000 [72.1]                                     | 246,000 [72.1]                                     |
| EER/SEER <sup>2</sup>   | 9.7/NA   | 9.7/NA   | 9.7/NA   | 9.7/NA   |
| Nominal CFM/ARI Rated CFM [L/s]                               | 7700/7400 [3634/3492]                              | 7700/7400 [3634/3492]                              | 7700/7400 [3634/3492]                              | 7700/7400 [3634/3492]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 232,000 [68]                                       | 232,000 [68]                                       | 232,000 [68]                                       | 232,000 [68]                                       |
| Net Sensible Capacity Btu [kW]                                | 168,000 [49.2]                                     | 168,000 [49.2]                                     | 168,000 [49.2]                                     | 168,000 [49.2]                                     |
| Net Latent Capacity Btu [kW]                                  | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      | 64,000 [18.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 9.9  | 9.9  | 9.9  | 9.9  |
| Net System Power kW   | 23.9   | 23.9   | 23.9   | 23.9   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       | 150,000/300,000 [44/87.9]                          | 200,000/400,000 [58.6/117.2]                       |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        | 121,500/243,000 [35.6/71.2]                        | 162,000/324,000 [47.5/94.9]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  | 15-45 [8.3/25]                                     | 25-55 [13.9/30.6]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 12   | 14   | 12   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       | 0.75 [19.05]                                       |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  | 4/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               | 2/18x9 [457.2x228.6]                               |
| Drive Type/No. Speeds   | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      | Belt/Variable                                      |
| No. Motors  | 1  | 1  | 1  | 1  |
| Motor HP  | 5  | 5  | 7.5  | 7.5  |
| Motor RPM   | 1725   | 1725   | 1725   | 1725   |
| Motor Frame Size  | 184  | 184  | 213  | 213  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (No.) Size Recommended in. [mm]                               | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 117/107 [3317/3033]                                | 117/107 [3317/3033]                                | 117/107 [3317/3033]                                | 117/107 [3317/3033]                                |
| <b>Weights</b>  |  |  |  |  |
| Net Weight lbs. [kg]  | 1996 [905]   | 2020 [916]   | 2018 [915]   | 2042 [926]   |
| Ship Weight lbs. [kg]   | 2216 [1005]  | 2240 [1016]  | 2238 [1015]  | 2262 [1026]  |

# GENERAL DATA - RKMB

| Model RKMB- Series  | A240YL30E                   | A240YL40E                    | A240YM30E                   | A240YM40E                    |
|---|-----------------------------|------------------------------|-----------------------------|------------------------------|
| <b>Cooling Performance<sup>1</sup></b>                        |                             |                              |                             |                              |
| Gross Cooling Capacity Btu [kW]                               | 246,000 [72.1]              | 246,000 [72.1]               | 246,000 [72.1]              | 246,000 [72.1]               |
| EER/SEER <sup>2</sup>   | 9.7/NA                      | 9.7/NA                       | 9.7/NA                      | 9.7/NA                       |
| Nominal CFM/ARI Rated CFM [L/s]                               | 7700/7400 [3634/3492]       | 7700/7400 [3634/3492]        | 7700/7400 [3634/3492]       | 7700/7400 [3634/3492]        |
| ARI Net Cooling Capacity Btu [kW]                             | 232,000 [68]                | 232,000 [68]                 | 232,000 [68]                | 232,000 [68]                 |
| Net Sensible Capacity Btu [kW]                                | 168,000 [49.2]              | 168,000 [49.2]               | 168,000 [49.2]              | 168,000 [49.2]               |
| Net Latent Capacity Btu [kW]                                  | 64,000 [18.8]               | 64,000 [18.8]                | 64,000 [18.8]               | 64,000 [18.8]                |
| Integrated Part Load Value <sup>3</sup>                       | 9.9                         | 9.9                          | 9.9                         | 9.9                          |
| Net System Power kW   | 23.9                        | 23.9                         | 23.9                        | 23.9                         |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |                             |                              |                             |                              |
| Heating Input Btu [kW] (1st Stage /2nd Stage)                 | 150,000/300,000 [44/87.9]   | 200,000/400,000 [58.6/117.2] | 150,000/300,000 [44/87.9]   | 200,000/400,000 [58.6/117.2] |
| Heating Output Btu [kW] (1st Stage /2nd Stage)                | 121,500/243,000 [35.6/71.2] | 162,000/324,000 [47.5/94.9]  | 121,500/243,000 [35.6/71.2] | 162,000/324,000 [47.5/94.9]  |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]              | 25-55 [13.9/30.6]            | 15-45 [8.3/25]              | 25-55 [13.9/30.6]            |
| Steady State Efficiency (%)                                   | 81                          | 81                           | 81                          | 81                           |
| No. Burners   | 12                          | 14                           | 12                          | 14                           |
| No. Stages  | 2                           | 2                            | 2                           | 2                            |
| Gas Connection Pipe Size in. [mm]                             | 0.75 [19.05]                | 0.75 [19.05]                 | 0.75 [19.05]                | 0.75 [19.05]                 |
| <b>Compressor</b>   |                             |                              |                             |                              |
| No./Type  | 4/Copeland Scroll           | 4/Copeland Scroll            | 4/Copeland Scroll           | 4/Copeland Scroll            |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  |                             |                              |                             |                              |
|   | 91                          | 91                           | 91                          | 91                           |
| <b>Outdoor Coil—Fin Type</b>                                  |                             |                              |                             |                              |
| Tube Type   | Louvered                    | Louvered                     | Louvered                    | Louvered                     |
| Tube Size in. [mm] OD   | Rifled                      | Rifled                       | Rifled                      | Rifled                       |
| Face Area sq. ft. [sq. m]                                     | 0.375 [9.5]                 | 0.375 [9.5]                  | 0.375 [9.5]                 | 0.375 [9.5]                  |
| Rows / FPI [FPCm]   | 36 [3.34]                   | 36 [3.34]                    | 36 [3.34]                   | 36 [3.34]                    |
|   | 2 / 22 [9]                  | 2 / 22 [9]                   | 2 / 22 [9]                  | 2 / 22 [9]                   |
| <b>Indoor Coil—Fin Type</b>                                   |                             |                              |                             |                              |
| Tube Type   | Louvered                    | Louvered                     | Louvered                    | Louvered                     |
| Tube Size in. [mm]  | Rifled                      | 0.75 [19.05] Rifled          | Rifled                      | Rifled                       |
| Face Area sq. ft. [sq. m]                                     | 0.375 [9.5]                 | 0.375 [9.5]                  | 0.375 [9.5]                 | 0.375 [9.5]                  |
| Rows / FPI [FPCm]   | 15.75 [1.46]                | 15.75 [1.46]                 | 15.75 [1.46]                | 15.75 [1.46]                 |
|   | 4 / 13 [5]                  | 4 / 13 [5]                   | 4 / 13 [5]                  | 4 / 13 [5]                   |
| Refrigerant Control   | Capillary Tubes             | Capillary Tubes              | Capillary Tubes             | Capillary Tubes              |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]                  | 1/1 [25.4]                   | 1/1 [25.4]                  | 1/1 [25.4]                   |
| <b>Outdoor Fan—Type</b>                                       |                             |                              |                             |                              |
| No. Used/Diameter in. [mm]                                    | Propeller                   | Propeller                    | Propeller                   | Propeller                    |
| Drive Type/No. Speeds   | 4/24 [609.6]                | 4/24 [609.6]                 | 4/24 [609.6]                | 4/24 [609.6]                 |
| CFM [L/s]   | Direct/1                    | Direct/1                     | Direct/1                    | Direct/1                     |
| No. Motors/HP   | 16000 [7550]                | 16000 [7550]                 | 16000 [7550]                | 16000 [7550]                 |
| Motor RPM   | 4 at 1/3 HP                 | 4 at 1/3 HP                  | 4 at 1/3 HP                 | 4 at 1/3 HP                  |
|   | 1075                        | 1075                         | 1075                        | 1075                         |
| <b>Indoor Fan—Type</b>  |                             |                              |                             |                              |
| No. Used/Diameter in. [mm]                                    | FC Centrifugal              | FC Centrifugal               | FC Centrifugal              | FC Centrifugal               |
| Drive Type/No. Speeds   | 2/18x9 [457.2x228.6]        | 2/18x9 [457.2x228.6]         | 2/18x9 [457.2x228.6]        | 2/18x9 [457.2x228.6]         |
| No. Motors  | Belt/Variable               | Belt/Variable                | Belt/Variable               | Belt/Variable                |
| Motor HP  | 1                           | 1                            | 1                           | 1                            |
| Motor RPM   | 5                           | 5                            | 7.5                         | 7.5                          |
| Motor Frame Size  | 1725                        | 1725                         | 1725                        | 1725                         |
|   | 184                         | 184                          | 213                         | 213                          |
| <b>Filter—Type</b>  |                             |                              |                             |                              |
| Furnished   | Disposable                  | Disposable                   | Disposable                  | Disposable                   |
| (No.) Size Recommended in. [mm]                               | Yes                         | Yes                          | Yes                         | Yes                          |
|   | (3)2x18x18 [51x457x457]     | (3)2x18x18 [51x457x457]      | (3)2x18x18 [51x457x457]     | (3)2x18x18 [51x457x457]      |
|   | (3)2x18x24 [51x457x610]     | (3)2x18x24 [51x457x610]      | (3)2x18x24 [51x457x610]     | (3)2x18x24 [51x457x610]      |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             |                             |                              |                             |                              |
|   | 117/107 [3317/3033]         | 117/107 [3317/3033]          | 117/107 [3317/3033]         | 117/107 [3317/3033]          |
| <b>Weights</b>  |                             |                              |                             |                              |
| Net Weight lbs. [kg]  | 1996 [905]                  | 2020 [916]                   | 2018 [915]                  | 2042 [926]                   |
| Ship Weight lbs. [kg]   | 2216 [1005]                 | 2240 [1016]                  | 2238 [1015]                 | 2262 [1026]                  |

# GENERAL DATA - RKNB

| Model RKNB-Series   | A180CL25E  | A180CL35E  | A180CM25E  | A180CM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 11.5/NA  | 11.5/NA  | 11.5/NA  | 11.5/NA  |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 176,000 [51.5]                                     | 176,000 [51.5]                                     | 176,000 [51.5]                                     | 176,000 [51.5]                                     |
| Net Sensible Capacity Btu [kW]                                | 129,000 [37.8]                                     | 129,000 [37.8]                                     | 129,000 [37.8]                                     | 129,000 [37.8]                                     |
| Net Latent Capacity Btu [kW]                                  | 47,000 [13.8]                                      | 47,000 [13.8]                                      | 47,000 [13.8]                                      | 47,000 [13.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 12.1   | 12.1   | 12.1   | 12.1   |
| Net System Power kW   | 17.6   | 17.6   | 17.6   | 17.6   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage / 2nd Stage)                | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage / 2nd Stage)               | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | .75 [19.05]  | .75 [19.05]  | .75 [19.05]  | .75 [19.05]  |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/15x15 [381x381]                                  | 2/15x15 [381x381]                                  | 2/15x15 [381x381]                                  | 2/15x15 [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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (NO.) Size Recommended in. [mm x mm x mm]                     | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                |
| <b>Weights</b>  |  |  |  |  |
| Net Weights lbs. [kg]   | 1853 [841]   | 1878 [852]   | 1880 [853]   | 1904 [864]   |
| Ship Weights lbs. [kg]  | 2074 [941]   | 2098 [952]   | 2100 [953]   | 2124 [964]   |

# GENERAL DATA - RKNB

| Model RKNB-Series   | A180DL25E  | A180DL35E  | A180DM25E  | A180DM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  | <b>CONTINUED</b> →                                 |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 11.5/NA  | 11.5/NA  | 11.5/NA  | 11.5/NA  |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 176,000 [51.5]                                     | 176,000 [51.5]                                     | 176,000 [51.5]                                     | 176,000 [51.5]                                     |
| Net Sensible Capacity Btu [kW]                                | 129,000 [37.8]                                     | 129,000 [37.8]                                     | 129,000 [37.8]                                     | 129,000 [37.8]                                     |
| Net Latent Capacity Btu [kW]                                  | 47,000 [13.8]                                      | 47,000 [13.8]                                      | 47,000 [13.8]                                      | 47,000 [13.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 12.1   | 12.1   | 12.1   | 12.1   |
| Net System Power kW   | 17.6   | 17.6   | 17.6   | 17.6   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage / 2nd Stage)                | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage / 2nd Stage)               | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | .75 [19.05]  | .75 [19.05]  | .75 [19.05]  | .75 [19.05]  |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm] OD   | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   | Louvered   | Louvered   | Louvered   | Louvered   |
| Tube Type   | Rifled   | Rifled   | Rifled   | Rifled   |
| Tube Size in. [mm]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  | 0.375 [9.5]  |
| Face Area sq. ft. [sq. m]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/15x15 [381x381]                                  | 2/15x15 [381x381]                                  | 2/15x15 [381x381]                                  | 2/15x15 [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  |
| <b>Filter—Type</b>  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (NO.) Size Recommended in. [mm x mm x mm]                     | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                |
| <b>Weights</b>  |  |  |  |  |
| Net Weights lbs. [kg]   | 1853 [841]   | 1878 [852]   | 1880 [853]   | 1904 [864]   |
| Ship Weights lbs. [kg]  | 2074 [941]   | 2098 [952]   | 2100 [953]   | 2124 [964]   |

# GENERAL DATA - RKNB

| Model RKNB-Series   | A180YL25E  | A180YL35E  | A180YM25E  | A180YM35E  |
|---|--|--|--|--|
| <b>Cooling Performance<sup>1</sup></b>                        |  |  |  |  |
| Gross Cooling Capacity Btu [kW]                               | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     | 188,000 [55.1]                                     |
| EER/SEER <sup>2</sup>   | 11.5/NA  | 11.5/NA  | 11.5/NA  | 11.5/NA  |
| Nominal CFM/ARI Rated CFM [L/s]                               | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              | 6000/5500 [2831/2596]                              |
| ARI Net Cooling Capacity Btu [kW]                             | 176,000 [51.5]                                     | 176,000 [51.5]                                     | 176,000 [51.5]                                     | 176,000 [51.5]                                     |
| Net Sensible Capacity Btu [kW]                                | 129,000 [37.8]                                     | 129,000 [37.8]                                     | 129,000 [37.8]                                     | 129,000 [37.8]                                     |
| Net Latent Capacity Btu [kW]                                  | 47,000 [13.8]                                      | 47,000 [13.8]                                      | 47,000 [13.8]                                      | 47,000 [13.8]                                      |
| Integrated Part Load Value <sup>3</sup>                       | 12.1   | 12.1   | 12.1   | 12.1   |
| Net System Power kW   | 17.6   | 17.6   | 17.6   | 17.6   |
| <b>Heating Performance (Package Gas/Electric)<sup>4</sup></b> |  |  |  |  |
| Heating Input Btu [kW] (1st Stage / 2nd Stage)                | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       | 125,000/250,000 [36.6/73.2]                        | 175,000/350,000 [51.3/102.6]                       |
| Heating Output Btu [kW] (1st Stage / 2nd Stage)               | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        | 101,500/203,000 [29.7/59.5]                        | 142,000/284,000 [41.6/83.2]                        |
| Temperature Rise Range °F [°C]                                | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  | 15-45 [8.3/25]                                     | 30-60 [16.7/33.3]                                  |
| Steady State Efficiency (%)                                   | 81   | 81   | 81   | 81   |
| No. Burners   | 10   | 14   | 10   | 14   |
| No. Stages  | 2  | 2  | 2  | 2  |
| Gas Connection Pipe Size in. [mm]                             | .75 [19.05]  | .75 [19.05]  | .75 [19.05]  | .75 [19.05]  |
| <b>Compressor</b>   |  |  |  |  |
| No./Type  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  | 2/Copeland Scroll                                  |
| <b>Outdoor Sound Rating (dB)<sup>5</sup></b>                  |  |  |  |  |
|   | 91   | 91   | 91   | 91   |
| <b>Outdoor Coil—Fin Type</b>                                  |  |  |  |  |
| Tube 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]                                     | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  | 36 [3.34]  |
| Rows / FPI [FPcm]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   | 2 / 22 [9]   |
| <b>Indoor Coil—Fin Type</b>                                   |  |  |  |  |
| Tube 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]                                     | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       | 15.75 [1.46]                                       |
| Rows / FPI [FPcm]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   | 4 / 13 [5]   |
| Refrigerant Control   | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    | Capillary Tubes                                    |
| Drain Connection No./Size in. [mm]                            | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   | 1/1 [25.4]   |
| <b>Outdoor Fan—Type</b>                                       |  |  |  |  |
| Propeller   | Propeller  | Propeller  | Propeller  | Propeller  |
| No. Used/Diameter in. [mm]                                    | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       | 4/24 [609.6]                                       |
| Drive Type/No. Speeds   | Direct/1   | Direct/1   | Direct/1   | Direct/1   |
| CFM [L/s]   | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       | 16000 [7550]                                       |
| No. Motors/HP   | 4 at 1/3 HP  |
| Motor RPM   | 1075   | 1075   | 1075   | 1075   |
| <b>Indoor Fan—Type</b>  |  |  |  |  |
| FC Centrifugal  | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     | FC Centrifugal                                     |
| No. Used/Diameter in. [mm]                                    | 2/15x15 [381x381]                                  | 2/15x15 [381x381]                                  | 2/15x15 [381x381]                                  | 2/15x15 [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  |
| <b>Filter—Type</b>  |  |  |  |  |
| Disposable  | Disposable   | Disposable   | Disposable   | Disposable   |
| Furnished   | Yes  | Yes  | Yes  | Yes  |
| (NO.) Size Recommended in. [mm x mm x mm]                     | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] | (3)2x18x18 [51x457x457]<br>(3)2x18x24 [51x457x610] |
| <b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>             |  |  |  |  |
|   | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                | 211/210 [5982/5954]                                |
| <b>Weights</b>  |  |  |  |  |
| Net Weights lbs. [kg]   | 1853 [841]   | 1878 [852]   | 1880 [853]   | 1904 [864]   |
| Ship Weights lbs. [kg]  | 2074 [941]   | 2098 [952]   | 2100 [953]   | 2124 [964]   |

## 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

**IMPORTANT:** Before operating unit, remove compressor shipping supports from the compressor base. Failure to remove supports will casue noise and vibration.

### 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 water-front.
3. Shielding by a fence or shrubs may give some protection.
4. 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.
5. Regular cleaning and waxing of the cabinet with an automobile polish will provide some protection.
6. 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.**

### 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.

## **▲ 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.

## **B. OUTSIDE INSTALLATION**

(Typical outdoor slab installation is shown in Figure 9.)

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 12.
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.

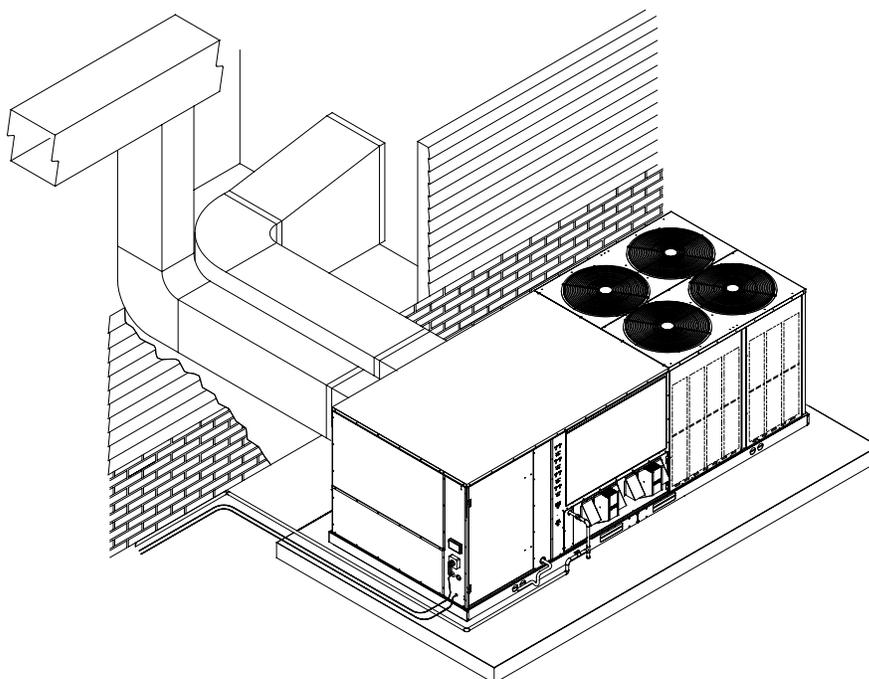
## **C. ATTACHING EXHAUST AND COMBUSTION AIR INLET HOODS**

**IMPORTANT:** Do not operate this unit without the exhaust/combustion air inlet hood properly installed. These hoods are shipped in cartons in the blower compartment inside the unit and must be attached when the unit is installed. See Figure 4.

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 3.
2. Remove exhaust/combustion air inlet hoods from the cartons, located inside the blower compartment.
3. Attach blower access panel.
4. Attach the combustion air inlet/exhaust hoods with screws. Reference Figure 4 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. The only exception is with factory approved additions.

**FIGURE 9**  
OUTSIDE SLAB INSTALLATION. CLOSET DISTRIBUTION SYSTEM.  
SLAB FLOOR CONSTRUCTION



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## D. COVER PANEL INSTALLATION/ CONVERSION PROCEDURE

### DOWNFLOW TO HORIZONTAL

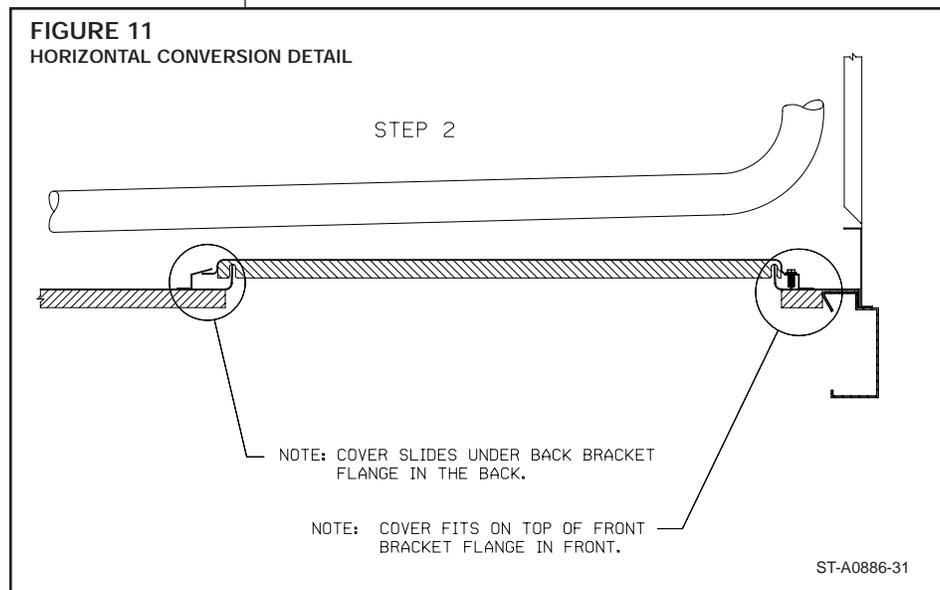
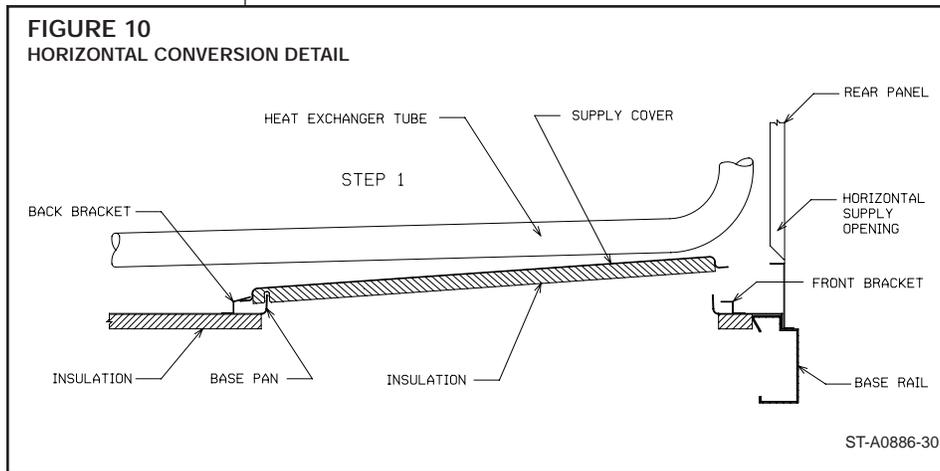
1. Remove the screws and covers from the outside of the supply and return sections. Also remove and discard cover plate. See Figure 7.
2. Install the covers over the bottom supply and return openings, painted side up, inserting the *leading flange under the bracket provided*. Place the *back flange to top of the front bracket provided*. See Figures 10 and 11.
3. Secure the return and supply cover to front bracket with two (2) screws.

## E. FILTER REPLACEMENT

This unit is provided with 3 - 18" X 18" X 2" and 3 - 18" X 24" X 2" disposable filters. When replacing filters, ensure they are inserted fully to the back to prevent bypass. See Figure 5.

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

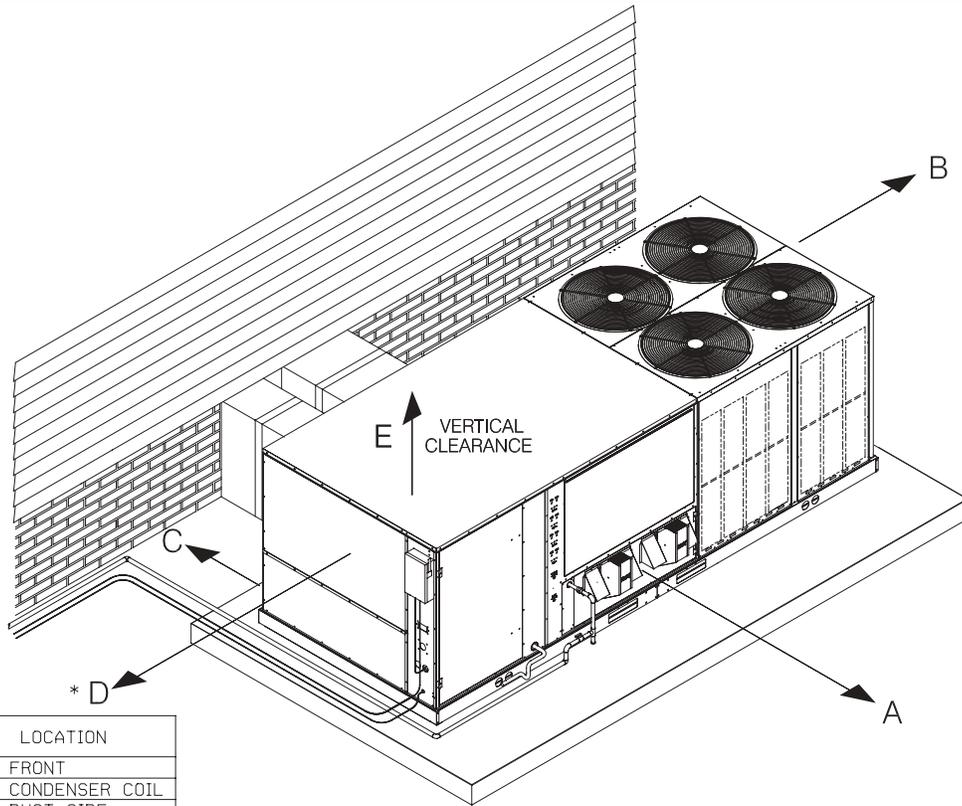
AAF International  
215 Central Avenue  
P.O. Box 35690  
Louisville, KY 40232  
Phone: 1-800-501-3146  
Part #: 54-42541-01 (18" x 18" x 2")  
54-42541-03 (18" x 24" x 2")



## E. CLEARANCES

The following minimum clearances must be observed for proper unit performance and serviceability. Reference Figure 12.

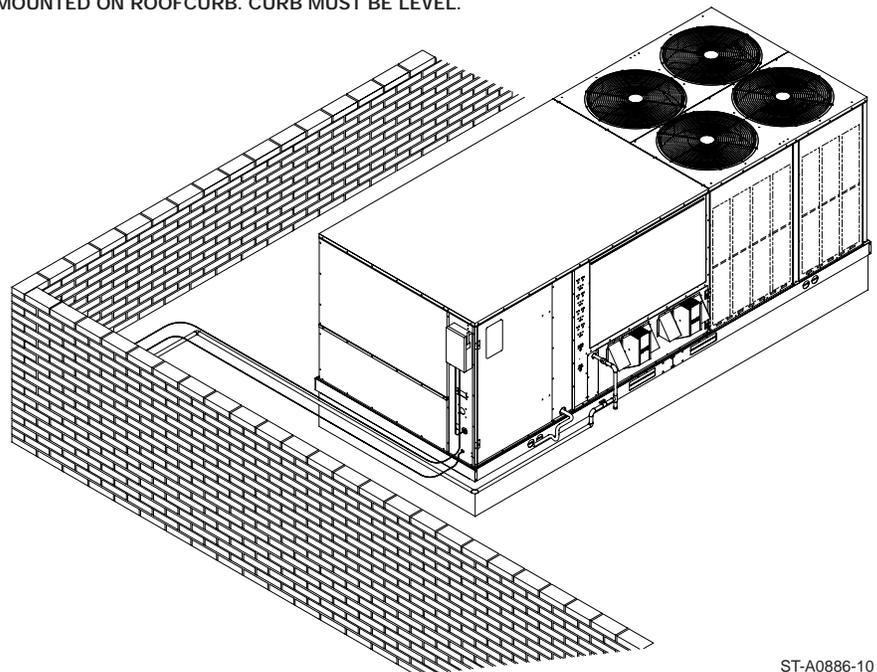
**FIGURE 12**  
CLEARANCES



| 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 |                      |

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**FIGURE 13A**  
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 14, 15 and 16.
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.

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.  $\frac{1}{2}$ " to 1" thick insulation is usually sufficient for ductwork inside the air conditioned space.

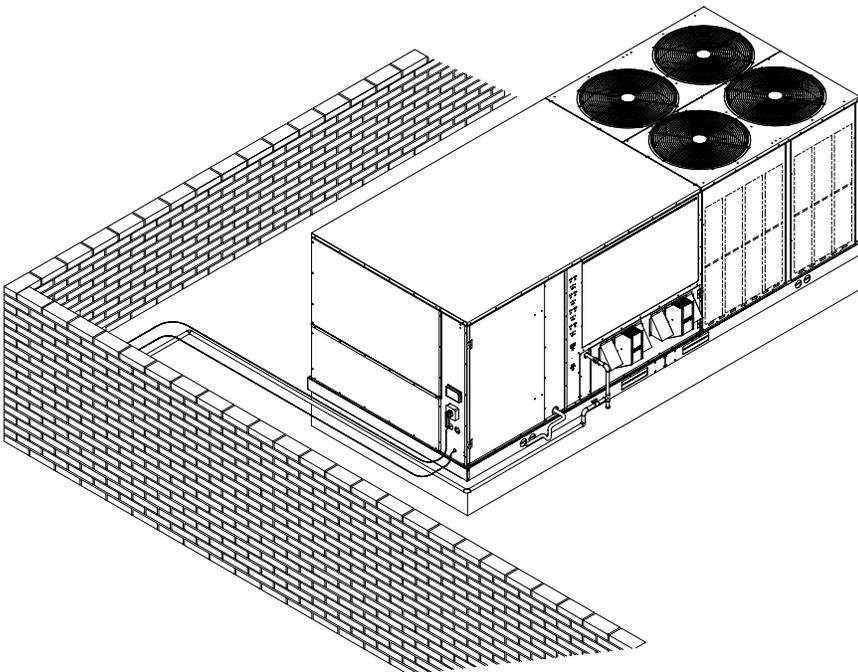
Provide balancing dampers for each branch duct in the supply system. Properly support ductwork from the structure.

**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/building owner must be informed against future changes in construction which might change this to a "confined space." Also, caution the user/building owner 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.

### **▲ WARNING**

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

**FIGURE 13B**  
FLAT ROOFTOP INSTALLATION, ATTIC OR DROP CEILING DISTRIBUTING SYSTEM.  
MOUNTED ON ROOFCURB. CURB MUST BE LEVEL.



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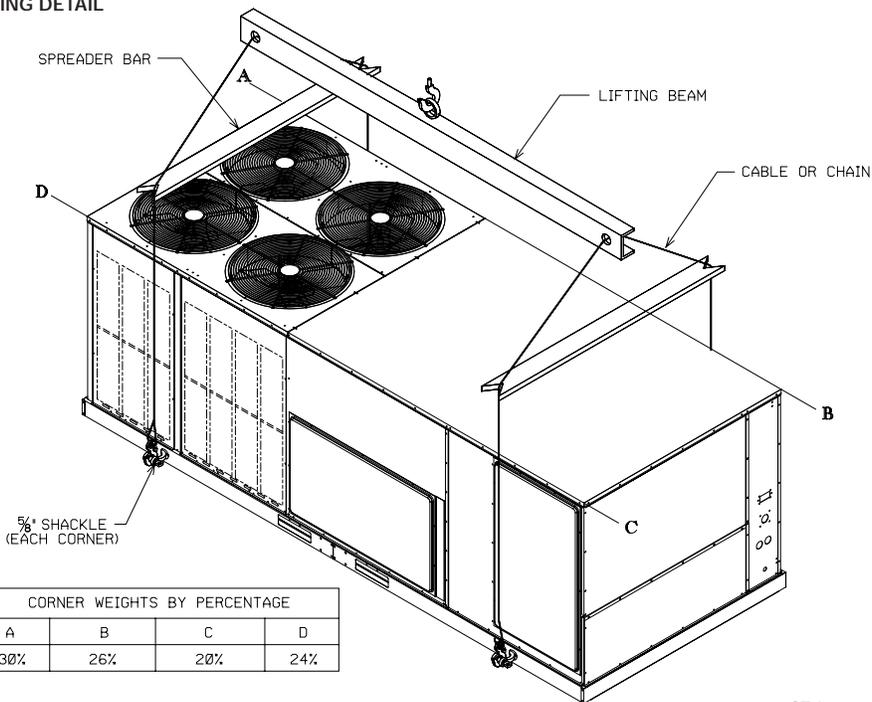
## RETURN AIR

### ⚠ 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.

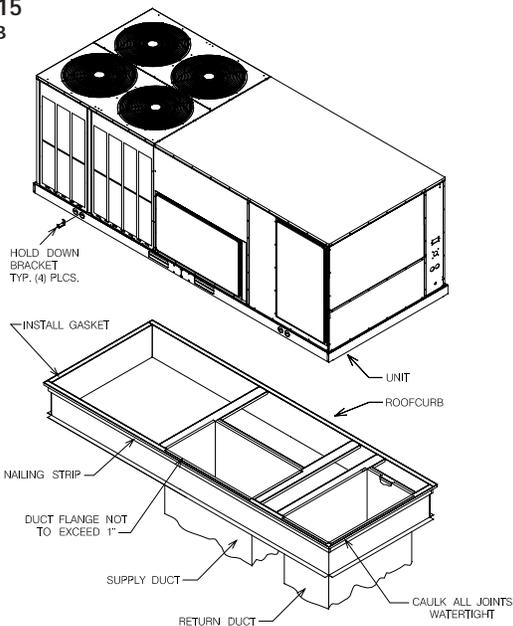
FAILURE TO PREVENT PRODUCTS OF COMBUSTION FROM BEING CIRCULATED INTO THE LIVING SPACE CAN CREATE POTENTIALLY HAZARDOUS CONDITIONS, INCLUDING CARBON MONOXIDE POISONING THAT COULD RESULT IN PERSONAL INJURY OR DEATH.

**FIGURE 14**  
LIFTING DETAIL



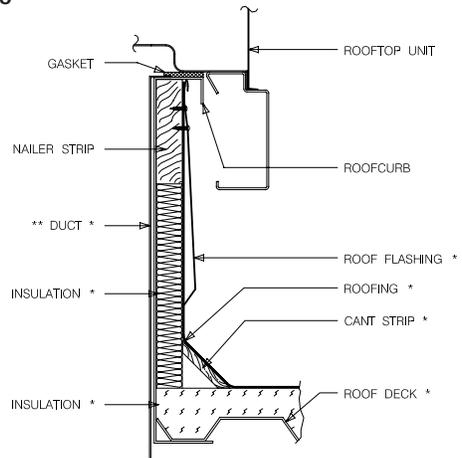
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**FIGURE 15**  
ROOFCURB



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**FIGURE 16**  
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.

ST-A0888-02

# 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 9 or 13A or 13B or through the base as shown in Figure 21.
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 17.)
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.

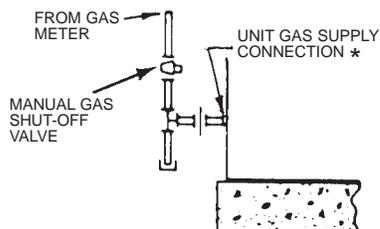
**TABLE 3**  
GAS PIPE CAPACITY TABLE (CU. FT./HR.)

| 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 |

**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.

**FIGURE 17**  
SUGGESTED GAS PIPING

### ROOF OR GROUND LEVEL INSTALLATION



\*Factory supplied grommet must be utilized.

## ▲ 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.

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

**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.

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 3.

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/FT<sup>3</sup>) may be determined by consulting the local natural gas utility or the L.P. gas supplier.

## B. LP CONVERSION

Convert the unit to use liquefied petroleum (LP) gas by replacing with the stem/spring assembly 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.

See Figure 18A for component locations.

**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.*

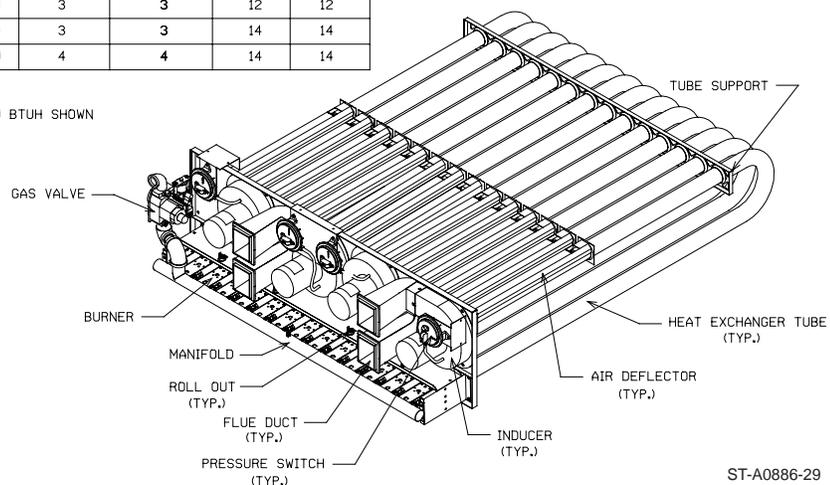
## ▲ WARNING

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.

**FIGURE 18A**  
HEAT EXCHANGER COMPONENT IDENTIFICATION

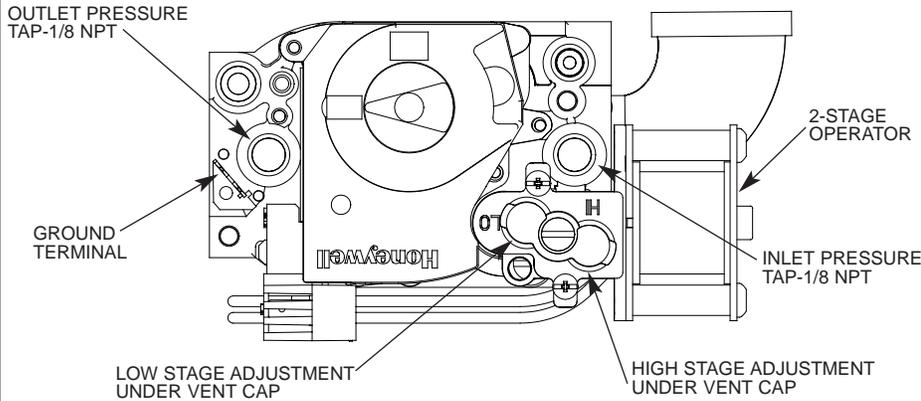
| BTUH    | NO. OF INDUCERS | NO. OF PRESSURE SWITCHES | NO. OF TUBES | NO. OF BURNERS |
|---------|-----------------|--------------------------|--------------|----------------|
| 250,000 | 2               | 2                        | 10           | 10             |
| 300,000 | 3               | 3                        | 12           | 12             |
| 350,000 | 3               | 3                        | 14           | 14             |
| 400,000 | 4               | 4                        | 14           | 14             |

400,000 BTUH SHOWN



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**FIGURE 18B**  
**HONEYWELL VR8305Q4120 TWO STAGE GAS VALVE**



**TABLE 4**  
**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<br>Iron Pipe<br>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. See Figure 18B.

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 vent cover and turn the adjustment screw clockwise to increase pressure or counterclockwise to decrease pressure. See Figure 18B. **Then replace the regulator vent cover 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.**

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

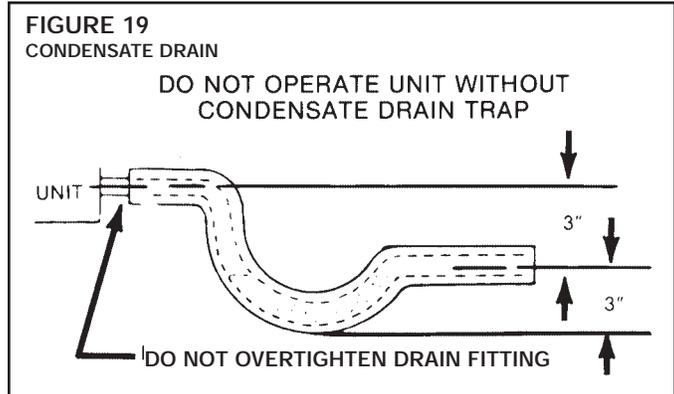
Start the furnace and measure the time required to burn one cubic foot of gas. Prior to checking the furnace input, make certain that all other gas appliances are shut off, with the exception of pilot burners. Time the meter with only the furnace in operation.

**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).**

**TABLE 5**

|              |                    | 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. |
| 250,000      | ONE TEN            | 2  | 13.0 | 2    | 14.4 | 2    | 15.0 | 2    | 15.8 | 6    | 36.0 |
| 300,000      | ONE TEN            | 1  | 10.8 | 2    | 12.0 | 2    | 12.5 | 2    | 13.2 | 5    | 30.0 |
| 350,000      | ONE TEN            | 1  | 9.3  | 1    | 10.3 | 1    | 10.7 | 1    | 1.3  | 4    | 25.7 |
| 400,000      | ONE TEN            | 1  | 8.1  | 1    | 9.0  | 1    | 9.36 | 1    | 9.9  | 3    | 22.5 |
|              |                    |  | 21   |      | 30   |      | 36   |      | 39   |      | 45   |



## D. CONDENSATE DRAIN

The condensate drain connection of the evaporator is threaded 1" -11½" NPT. **IMPORTANT:** Install a condensate trap to ensure proper condensate drainage. See Figure 19.

## IV. WIRING

### A. POWER SUPPLY

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 6 using the circuit ampacity found on the unit rating plate. Use the smallest wire size allowable from the unit disconnect to unit.
4. For through the base wiring entry reference Figure 21. All fittings and conduit are field supplied for this application. Reference the chart with Figure 21 for proper hole and conduit size.

## ⚠ 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.

**TABLE 6**

| 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                 |

**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.**

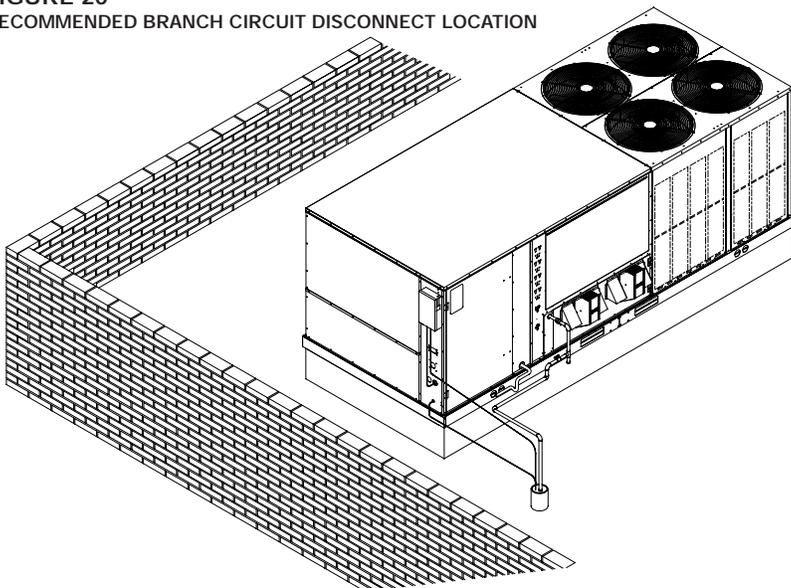
Attach a length (6" or more) of recommended size copper wire to the unit contactor terminals L1, L2 and L3 for three phase.

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.

**FIGURE 20**  
RECOMMENDED BRANCH CIRCUIT DISCONNECT LOCATION

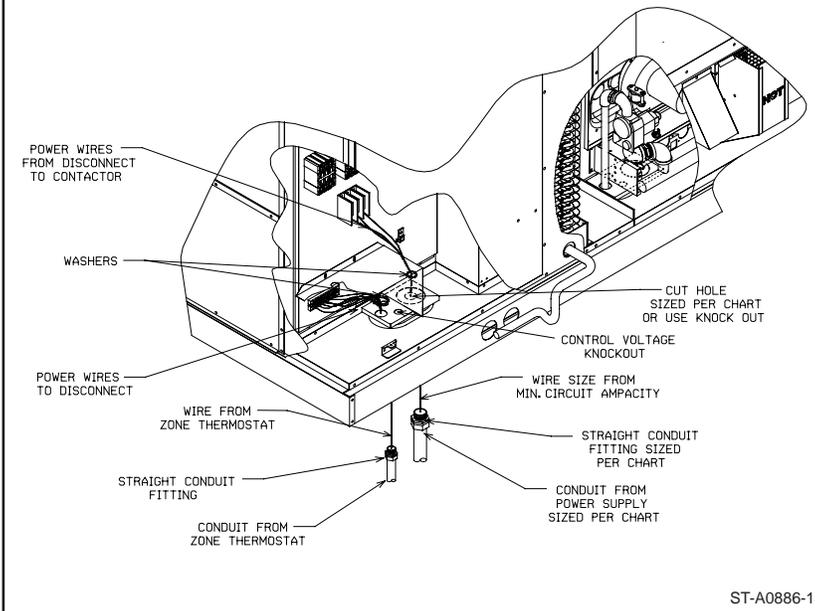


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**TABLE 7**

| UNIT<br>MCA | COPPER<br>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 | 25  |

**FIGURE 21  
BASE ENTRY LOCATIONS**



| CONDUIT SIZE | WIRE SIZE, AWG |      |      |          |          |          |          |          |          |          |          |          |
|--------------|----------------|------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|              | 14             | 12   | 10   | 8        | 6        | 4        | 3        | 2        | 1        | 0        | 00       | 000      |
| 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"       | 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" | 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 21 for location of wiring entrances.

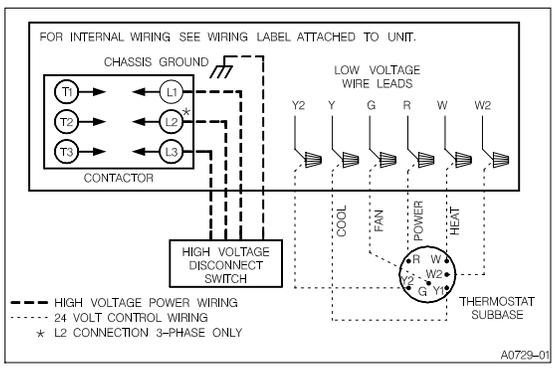
Wiring to be done in the field between the unit and devices not attached to the unit, or between separate devices which are field installed and located, shall conform with the temperature limitation for Type T wire [63°F rise (35°C)] when installed in accordance with the manufacturer's instructions.

**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.

**FIGURE 22  
TYPICAL THERMOSTAT WIRING**



| Two Stage Cool/<br>Two Stage Heat<br>W/O Economizer | Part #      |
|---|-------------|
| Robertshaw -<br>Model #09710                        | 41-32971-01 |
| Honeywell -<br>Model #T874D1959                     | 41-21444-01 |
| White Rodgers -<br>Model #1F91-7                    | 41-21015-04 |
| Honeywell -<br>Model #T7300AORB                     | 41-21615-06 |

## 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 7.

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 21) 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:

| Thermostat Load -<br>Amps |  | SOLID COPPER WIRE - AWG. |     |     |     |     |     |
|---------------------------|--|--------------------------|-----|-----|-----|-----|-----|
|                           |  | 16                       | 14  | 12  | 10  | 10  | 10  |
| 3.0                       |  | 16                       | 14  | 12  | 10  | 10  | 10  |
| 2.5                       |  | 16                       | 14  | 12  | 12  | 12  | 10  |
| 2.0                       |  | 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 unit to the thermostat and back to the unit.  
NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

## V. FURNACE SECTION CONTROLS AND IGNITION SYSTEM

### NORMAL FURNACE OPERATING SEQUENCE

This unit has a two stage gas furnace which employs an integrated furnace control with self diagnostics located in the control box. The furnace is composed of induced draft blowers, negative pressures switches, two stage gas valve, manifold orifices, inshot burners, direct spark ignitor, remote flame sense, tubular heat exchanger, high limit switch and rollout switches. See Figure 23.

#### NORMAL HEAT MODE

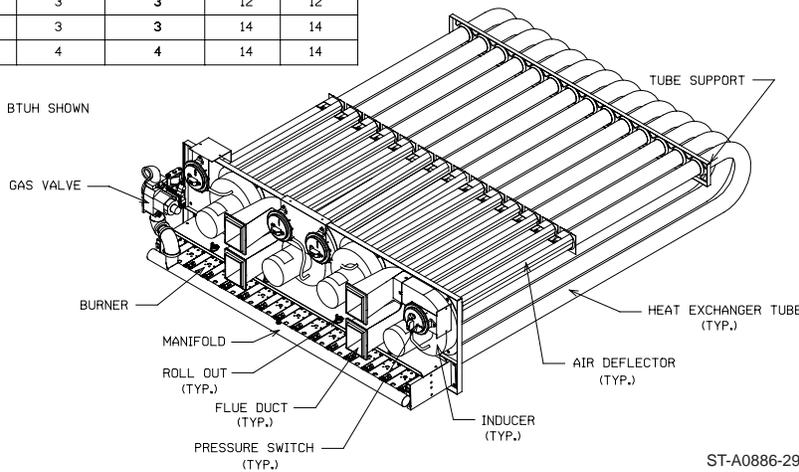
##### A. Call For First Stage (low fire) Only:

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 inducer.
5. Control checks each pressure switch for closure.
6. If each pressure switch is closed, the control starts a 30 second prepurge and energizes W2. If any pressure switch is still open, the inducers will continue to be energized until closure.
7. After prepurge timeout, control energizes W1 and continues to energize W2, initiates spark for 2 seconds minimum, 7 second maximum ignition trial, initiates 120 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 a fixed 120 seconds second stage warmup period control checks thermostat input. If only W1 is called for, W2 is de-energized and the control starts a 30 second off delay on the W2 inducer(s).
11. After fixed 30 seconds the W2 inducers is de-energized.
12. Control enters normal operating loop where all inputs are continuously checked.
13. Zone thermostat is satisfied.
14. Control de-energizes gas valve.
15. Control senses loss of flame.
16. Control initiates 5 second inducer postpurge and 90 second indoor blower delay off.
17. Control de-energizes inducer blower(s).
18. Control de-energizes indoor blower.

**FIGURE 23**

| BTUH    | NO. OF INDUCERS | NO. OF PRESSURE SWITCHES | NO. OF TUBES | NO. OF BURNERS |
|---------|-----------------|--------------------------|--------------|----------------|
| 250,000 | 2               | 2                        | 10           | 10             |
| 300,000 | 3               | 3                        | 12           | 12             |
| 350,000 | 3               | 3                        | 14           | 14             |
| 400,000 | 4               | 4                        | 14           | 14             |

400,000 BTUH SHOWN



19. Control in the stand by mode with solid red LED.

**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 verifies W2 pressure switches for normally open contacts. The control energizes the W2 inducers 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.3:**

1. Once the call for second stage is satisfied, the control starts a 30 second off delay on W2 inducers 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 inducer.
5. Control checks each pressure switch for closure.
6. If each pressure switch is closed, the control starts a 30 second prepurge and energizes W2. If either switch is still open, the inducers will continue to be energized until closure.
7. After prepurge timeout, control energizes W1 and continues to energize W2, initiates spark for 2 seconds minimum, 7 second maximum ignition trial, and initiates 120 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 a fixed 120 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.

## 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.

## 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.

## 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!

The integrated control is a three ignition system.

After a total of three 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 3 tries and then goes 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 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 three 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.

### 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.

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.

## 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.

## **▲ WARNING**

**DO NOT JUMPER THIS DEVICE!  
DO NOT RESET THE OVER-  
TEMPERATURE CONTROL WITH-  
OUT TAKING CORRECTIVE  
ACTION TO ASSURE THAT AN  
ADEQUATE SUPPLY OF COMBUS-  
TION AIR IS MAINTAINED UNDER  
ALL CONDITIONS OF OPERATION.  
FAILURE TO DO SO CAN RESULT  
IN CARBON MONOXIDE POISON-  
ING OR DEATH. REPLACE THIS  
CONTROL ONLY WITH THE IDENT-  
ICAL REPLACEMENT PART.**

## **▲ WARNING**

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

## **MANUAL RESET OVERTEMPERATURE CONTROL**

Four 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.

## **PRESSURE SWITCH**

This furnace has four pressure switches for sensing a blocked exhaust or a failed induced draft blower. They are normally open and close when the induced draft blowers start, 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.

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

# **VI. COOLING SECTION OPERATION**

## **COOLING MODE**

### **A. Call for first stage cooling**

1. Zone thermostat contacts close and a call for cooling is initiated.
2. Inputs 'Y1' and 'G' to the control are energized.
3. Control senses 'Y1' and 'G'. After 1 sec. delay, control energizes indoor blower and first stage compressor.
4. Control enters normal operating loop where all inputs are continuously checked.
5. Zone thermostat is satisfied.
6. Control de-energizes indoor blower relay after 80 second indoor blower delay off.
7. Control in the stand by mode with solid red LED.

### **B. Call for second stage cooling. After first stage cooling established: starting from A4.**

1. If a call for second stage cooling is initiated after a call for first stage cooling is established, the control energizes Y2 and energizes the second stage compressor.
2. Control enters normal operating loop where all inputs are continuously checked.

### **C. Second stage satisfied: first stage still called for: starting from B2.**

1. Y2 is de-energized and second stage compressor is de-energized.

### **D. First stage and second stage called simultaneously.**

1. Zone thermostat contacts close, a call for first and second stage cooling is initiated.
2. Inputs Y1, Y2 and G to the control are energized.
3. Control senses Y1, Y2 and G, after 1 second delay, control energizes indoor blower, first and second stage compressor are energized.

### **E. First stage and second stage removed simultaneously.**

1. Upon a loss of Y1 and Y2 each compressor is de-energized. Control either de-energizes indoor blower relay after 80 second indoor blower delay off.
2. Control in the stand by mode with solid red LED.

## **CONTINUOUS FAN MODE**

A 'G' input only indicates a zone thermostat call for continuous indoor blower operation.

# **VII. 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.

## 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.

## 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.

## 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.

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.
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 motors, 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 blowers 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.**

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.

## 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.

## **▲ 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.

## **▲ 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.

## COOLING SECTION MAINTENANCE

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.
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 condenser access end panel and/or compressor access louver 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 control cover.
2. Replace the control box cover.
3. Close the filter/control access panel and replace the blower/evaporator coil access panels.
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 24 and 25 for determining cause of unit problems.

## WIRING DIAGRAMS

Figures 26, 27, 28 and 29 are complete wiring diagrams for the unit and its power sources. Also located on back of compressor access panel.

## CHARGING

See Figures 30 and 31 for proper charging information.

# AIR-FLOW PERFORMANCE – 15 TON MODELS

## TABLE 9

15 TON PACKAGE UNIT - 60 Hz

E.S.P. - Inches of Water

| STD CFM | 15 TON PACKAGE UNIT - 60 Hz |       |     |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |   |
|---------|-----------------------------|-------|-----|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|---|
|         | 0.1                         | 0.2   | 0.3 | 0.4   | 0.5  | 0.6   | 0.7  | 0.8   | 0.9  | 1.0   | 1.1  | 1.2   | 1.3  | 1.4   | 1.5  | 1.6   | 1.7  | 1.8   | 1.9  | 2.0   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |   |
|         | RPM                         | WATTS | RPM | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |   |
| 4800    | —                           | —     | —   | 631   | 951  | 650   | 1095 | 670   | 1238 | 689   | 1382 | 709   | 1525 | 728   | 1669 | 747   | 1812 | 767   | 1956 | 786   | 2100 | 806  | 2243 | 899  | 1949 | 912  | 2128 | 924  | 2307 | 937  | 2486 | 950  | 2665 | 963  | 2844 | 976  | 3023 |      |      |      |      |   |   |
| 5000    | —                           | —     | —   | 647   | 1194 | 666   | 1338 | 686   | 1482 | 705   | 1625 | 725   | 1769 | 744   | 1912 | 764   | 2056 | 783   | 2199 | 802   | 2343 | 822  | 2487 | 908  | 2254 | 921  | 2433 | 933  | 2612 | 946  | 2791 | 959  | 2970 | 972  | 3149 | 985  | 3329 |      |      |      |      |   |   |
| 5200    | —                           | —     | —   | 644   | 1294 | 663   | 1438 | 682   | 1581 | 702   | 1725 | 721   | 1869 | 741   | 2012 | 760   | 2156 | 780   | 2299 | 799   | 2443 | 818  | 2586 | 904  | 2380 | 917  | 2559 | 929  | 2738 | 942  | 2917 | 955  | 3097 | 968  | 3276 | 981  | 3455 | 994  | 3634 |      |      |   |   |
| 5400    | —                           | —     | —   | 640   | 1394 | 660   | 1538 | 679   | 1681 | 698   | 1825 | 718   | 1968 | 737   | 2112 | 757   | 2256 | 776   | 2399 | 796   | 2543 | 815  | 2686 | 900  | 2506 | 913  | 2685 | 926  | 2864 | 936  | 3044 | 951  | 3223 | 964  | 3402 | 977  | 3581 | 990  | 3760 | 1003 | 3939 |   |   |
| 5600    | 637                         | 1494  | 656 | 1638  | 676  | 1781  | 695  | 1925  | 714  | 2068  | 734  | 2212  | 753  | 2355  | 773  | 2499  | 792  | 2643  | 812  | 2786  | 896  | 2632 | 909  | 2812 | 922  | 2991 | 935  | 3170 | 947  | 3349 | 960  | 3528 | 973  | 3707 | 986  | 3886 | 999  | 4065 | 1012 | 4245 |      |   |   |
| 5800    | 653                         | 1738  | 672 | 1881  | 692  | 2025  | 711  | 2168  | 731  | 2312  | 750  | 2455  | 769  | 2599  | 789  | 2742  | 808  | 2886  | 892  | 2759  | 905  | 2938 | 918  | 3117 | 931  | 3296 | 944  | 3475 | 956  | 3654 | 969  | 3833 | 982  | 4012 | 995  | 4192 | 1008 | 4371 | 1021 | 4550 |      |   |   |
| 6000    | 669                         | 1981  | 688 | 2125  | 708  | 2268  | 727  | 2412  | 747  | 2555  | 766  | 2699  | 785  | 2842  | 805  | 2986  | 888  | 2885  | 901  | 3064  | 914  | 3243 | 927  | 3422 | 940  | 3601 | 953  | 3780 | 965  | 3960 | 978  | 4139 | 991  | 4318 | 1004 | 4497 | 1017 | 4876 | —    | —    |      |   |   |
| 6200    | 685                         | 2224  | 704 | 2368  | 724  | 2512  | 743  | 2655  | 763  | 2799  | 782  | 2942  | 801  | 3086  | 821  | 3229  | 897  | 3190  | 910  | 3369  | 923  | 3548 | 936  | 3727 | 949  | 3907 | 962  | 4086 | 974  | 4265 | 987  | 4444 | 1000 | 4623 | 1013 | 4802 | —    | —    | —    | —    |      |   |   |
| 6400    | 701                         | 2468  | 720 | 2611  | 740  | 2755  | 759  | 2899  | 779  | 3042  | 798  | 3186  | 817  | 3329  | 893  | 3316  | 906  | 3495  | 919  | 3675  | 932  | 3854 | 945  | 4033 | 958  | 4212 | 971  | 4391 | 983  | 4570 | 996  | 4749 | 1009 | 4928 | —    | —    | —    | —    | —    |      |      |   |   |
| 6600    | 717                         | 2711  | 736 | 2855  | 756  | 2998  | 775  | 3142  | 795  | 3286  | 814  | 3429  | 889  | 3442  | 920  | 3622  | 915  | 3801  | 928  | 3980  | 941  | 4159 | 954  | 4338 | 967  | 4517 | 980  | 4696 | 992  | 4876 | 1005 | 5055 | —    | —    | —    | —    | —    | —    | —    |      |      |   |   |
| 6800    | 733                         | 2955  | 752 | 3098  | 772  | 3242  | 791  | 3385  | 811  | 3529  | 885  | 3569  | 898  | 3748  | 911  | 3927  | 924  | 4106  | 937  | 4285  | 950  | 4464 | 963  | 4643 | 976  | 4823 | 989  | 5002 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |      |   |   |
| 7000    | 749                         | 3198  | 768 | 3342  | 788  | 3485  | 807  | 3629  | 881  | 3695  | 894  | 3874  | 907  | 4053  | 902  | 4232  | 933  | 4411  | 946  | 4591  | 959  | 4770 | 972  | 4949 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | — |   |
| 7200    | 765                         | 3442  | 784 | 3585  | 804  | 3729  | 877  | 3821  | 890  | 4000  | 903  | 4179  | 916  | 4358  | 929  | 4538  | 942  | 4717  | 955  | 4896  | 968  | 5075 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | — | — |

| DRIVE PACKAGE | L      |     | M      |     |     |     |
|---------------|--------|-----|--------|-----|-----|-----|
| MOTOR HP      | 3.0    |     | 5      |     |     |     |
| BLOWER SHEAVE | BK-90  |     | BK-72  |     |     |     |
| MOTOR SHEAVE  | 1VP-44 |     | 1VP-44 |     |     |     |
| TURNS OPEN    | 1      | 2   | 3      | 4   | 5   | 6   |
| RPM           | 823    | 787 | 750    | 710 | 670 | 629 |

| DRIVE PACKAGE | M      |      |      |     |     |     |
|---------------|--------|------|------|-----|-----|-----|
| MOTOR HP      | 5      |      |      |     |     |     |
| BLOWER SHEAVE | BK-72  |      |      |     |     |     |
| MOTOR SHEAVE  | 1VP-44 |      |      |     |     |     |
| TURNS OPEN    | 1.5    | 2    | 3    | 4   | 5   | 6   |
| RPM           | 1022   | 1017 | 1006 | 933 | 860 | 786 |

| COMPONENT RESISTANCE TABLE |                   |
|----------------------------|-------------------|
| CFM                        | WET COIL DOWNFLOW |
| 4800                       | 0.020             |
| 5200                       | 0.040             |
| 5600                       | 0.060             |
| 6000                       | 0.080             |
| 6400                       | 0.100             |
| 6800                       | 0.125             |
| 7200                       | 0.150             |

- NOTES:
1. Factory sheave settings shown in bold type.
  2. Do not set 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.

# AIR-FLOW PERFORMANCE – 20 & 25 TON MODELS

## TABLE 10

| STD<br>CFM |       | 20 TON PACKAGE UNIT - 60 Hz |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------|-------|-----------------------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|            |       | E.S.P. - Inches of Water    |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|            |       | 0.1                         | 0.2   | 0.3  | 0.4   | 0.5  | 0.6   | 0.7  | 0.8   | 0.9  | 1.0   | 1.1  | 1.2   | 1.3  | 1.4   | 1.5  | 1.6   | 1.7  | 1.8   | 1.9  | 2.0   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| RPM        | WATTS | RPM                         | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS | RPM  | WATTS |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 6400       | 701   | 2468                        | 720   | 2611 | 740   | 2755 | 759   | 2899 | 779   | 3042 | 798   | 3186 | 817   | 3329 | 837   | 3473 | 856   | 3616 | 876   | 3760 | 932   | 3854 | 945  | 4033 | 958  | 4212 | 971  | 4391 | 983  | 4570 | 996  | 4749 | 1009 | 4928 | 1022 | 5108 | 1035 | 5287 | 1048 | 5466 |
| 6600       | 717   | 2711                        | 736   | 2855 | 756   | 2998 | 775   | 3142 | 795   | 3286 | 814   | 3429 | 834   | 3573 | 853   | 3716 | 872   | 3860 | 892   | 3980 | 941   | 4159 | 954  | 4338 | 967  | 4517 | 980  | 4696 | 992  | 4876 | 1005 | 5055 | 1018 | 5234 | 1031 | 5413 | 1044 | 5592 | 1057 | 5771 |
| 6800       | 733   | 2955                        | 752   | 3098 | 772   | 3242 | 791   | 3385 | 811   | 3529 | 830   | 3673 | 850   | 3816 | 869   | 3960 | 924   | 4106 | 937   | 4285 | 950   | 4464 | 963  | 4643 | 976  | 4823 | 989  | 5002 | 1001 | 5181 | 1014 | 5360 | 1027 | 5539 | 1040 | 5718 | 1053 | 5897 | 1066 | 6076 |
| 7000       | 749   | 3198                        | 768   | 3342 | 788   | 3485 | 807   | 3629 | 827   | 3772 | 846   | 3916 | 866   | 4060 | 920   | 4232 | 933   | 4411 | 946   | 4591 | 959   | 4770 | 972  | 4949 | 985  | 5128 | 998  | 5307 | 1010 | 5486 | 1023 | 5665 | 1036 | 5844 | 1049 | 6024 | 1062 | 6203 | 1075 | 6382 |
| 7200       | 765   | 3442                        | 784   | 3585 | 804   | 3729 | 823   | 3872 | 843   | 4016 | 862   | 4160 | 882   | 4303 | 929   | 4538 | 942   | 4717 | 955   | 4896 | 968   | 5075 | 981  | 5254 | 994  | 5433 | 1007 | 5612 | 1019 | 5791 | 1032 | 5971 | 1045 | 6150 | 1058 | 6329 | 1071 | 6508 | 1084 | 6687 |
| 7400       | 781   | 3685                        | 801   | 3829 | 820   | 3972 | 839   | 4116 | 859   | 4259 | 878   | 4403 | 925   | 4664 | 938   | 4843 | 951   | 5022 | 964   | 5201 | 977   | 5380 | 990  | 5559 | 1003 | 5739 | 1015 | 5918 | 1028 | 6097 | 1041 | 6276 | 1054 | 6455 | 1067 | 6634 | 1080 | 6813 | 1093 | 6992 |
| 7600       | 797   | 3929                        | 817   | 4072 | 836   | 4216 | 855   | 4359 | 875   | 4503 | 921   | 4790 | 934   | 4696 | 947   | 5148 | 960   | 5327 | 973   | 5506 | 986   | 5686 | 999  | 5865 | 1012 | 6044 | 1024 | 6223 | 1037 | 6402 | 1050 | 6581 | 1063 | 6760 | 1076 | 6940 | 1089 | 7119 | 1102 | 7298 |
| 7800       | 813   | 4172                        | 833   | 4316 | 852   | 4459 | 871   | 4603 | 917   | 4916 | 930   | 5095 | 943   | 5274 | 956   | 5454 | 969   | 5633 | 982   | 5812 | 995   | 5991 | 1008 | 6170 | 1021 | 6349 | 1033 | 6528 | 1046 | 6707 | 1059 | 6887 | 1072 | 7066 | 1085 | 7245 | 1098 | 7424 | —    | —    |
| 8000       | 829   | 4415                        | 849   | 4559 | 868   | 4703 | 913   | 5042 | 926   | 5221 | 939   | 5401 | 952   | 5580 | 965   | 5759 | 978   | 5938 | 991   | 6117 | 1004  | 6296 | 1017 | 6475 | 1030 | 6655 | 1042 | 6834 | 1055 | 7013 | 1068 | 7192 | 1081 | 7371 | —    | —    | —    | —    | —    |      |
| 8200       | 845   | 4659                        | 865   | 4802 | 910   | 5169 | 922   | 5348 | 935   | 5527 | 948   | 5706 | 961   | 5885 | 974   | 6064 | 987   | 6243 | 1000  | 6422 | 1013  | 6602 | 1026 | 6781 | 1039 | 6960 | 1051 | 7139 | 1064 | 7318 | —    | —    | —    | —    | —    | —    | —    | —    |      |      |
| 8400       | 861   | 4902                        | 881   | 5046 | 919   | 5474 | 931   | 5653 | 944   | 5832 | 957   | 6011 | 970   | 6190 | 983   | 6369 | 996   | 6549 | 1009  | 6728 | 1022  | 6907 | 1035 | 7086 | 1048 | 7265 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |      |
| 8600       | 877   | 5146                        | 915   | 5600 | 928   | 5779 | 940   | 5958 | 953   | 6137 | 966   | 6317 | 979   | 6496 | 992   | 6675 | 1005  | 6854 | 1018  | 7033 | 1031  | 7212 | 1044 | 7391 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 8800       | 911   | 5726                        | 924   | 5905 | 936   | 6084 | 949   | 6264 | 962   | 6443 | 975   | 6622 | 988   | 6801 | 1001  | 6980 | 1014  | 7159 | 1027  | 7338 | —     | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 9000       | 920   | 6032                        | 933   | 6211 | 945   | 6390 | 958   | 6569 | 971   | 6748 | 984   | 6927 | 997   | 7106 | 1010  | 7285 | —     | —    | —     | —    | —     | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 9200       | 929   | 6337                        | 942   | 6516 | 954   | 6695 | 967   | 6874 | 980   | 7053 | 993   | 7233 | 1006  | 7412 | —     | —    | —     | —    | —     | —    | —     | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 9400       | 938   | 6642                        | 951   | 6821 | 963   | 7000 | 976   | 7180 | 989   | 7359 | —     | —    | —     | —    | —     | —    | —     | —    | —     | —    | —     | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 9600       | 947   | 6948                        | 960   | 7127 | 972   | 7306 | 985   | —    | —     | —    | —     | —    | —     | —    | —     | —    | —     | —    | —     | —    | —     | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |

| DRIVE PACKAGE | L      |     |     |     |     |     |
|---------------|--------|-----|-----|-----|-----|-----|
| MOTOR HP      | 5.0    |     |     |     |     |     |
| BLOWER SHEAVE | BK-95  |     |     |     |     |     |
| MOTOR SHEAVE  | 1VP-50 |     |     |     |     |     |
| TURNS OPEN    | 1      | 2   | 3   | 4   | 5   | 6   |
| RPM           | 882    | 846 | 810 | 773 | 736 | 700 |

| DRIVE PACKAGE | M      |      |      |      |     |     |
|---------------|--------|------|------|------|-----|-----|
| MOTOR HP      | 7.5    |      |      |      |     |     |
| BLOWER SHEAVE | BK-90  |      |      |      |     |     |
| MOTOR SHEAVE  | 1VP-60 |      |      |      |     |     |
| TURNS OPEN    | 1      | 2    | 3    | 4    | 5   | 6   |
| RPM           | 1102   | 1075 | 1047 | 1006 | 964 | 922 |

| COMPONENT RESISTANCE TABLE |                   |
|----------------------------|-------------------|
| CFM                        | WET COIL DOWNFLOW |
| 6400                       | 0.100             |
| 6800                       | 0.125             |
| 7200                       | 0.150             |
| 7600                       | 0.175             |
| 8000                       | 0.200             |
| 8400                       | 0.225             |
| 8800                       | 0.250             |
| 9200                       | 0.275             |
| 9600                       | 0.300             |

- NOTES:
1. Factory sheave settings shown in bold type.
  2. Do not set 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.

# ELECTRICAL DATA - RKKB

| Model No.<br>RKKB- | Unit Information                |                             |   |   | Evaporator Fan |         |       |     |               |               |
|--------------------|---------------------------------|-----------------------------|---|---|----------------|---------|-------|-----|---------------|---------------|
|                    | Unit Operating<br>Voltage Range | Minimum Circuit<br>Ampacity | Minimum Overcurrent<br>Protection Device Size | Maximum Overcurrent<br>Protection Device Size | No.            | Volts   | Phase | HP  | Amps<br>(FLA) | Amps<br>(LRA) |
| A180CL25E          | 187-253                         | 74/74                       | 80/80   | 80/80   | 1              | 208/230 | 3     | 3   | 11.5          | 74.5          |
| A180CL35E          | 187-253                         | 74/74                       | 80/80   | 80/80   | 1              | 208/230 | 3     | 3   | 11.5          | 74.5          |
| A180CM25E          | 187-253                         | 77/77                       | 80/80   | 80/80   | 1              | 208/230 | 3     | 5   | 14.7          | 82.6          |
| A180CM35E          | 187-253                         | 77/77                       | 80/80   | 80/80   | 1              | 208/230 | 3     | 5   | 14.7          | 82.6          |
| A180DL25E          | 414-506                         | 43                          | 45  | 45  | 1              | 460     | 3     | 3   | 7             | 38.1          |
| A180DL35E          | 414-506                         | 43                          | 45  | 45  | 1              | 460     | 3     | 3   | 7             | 38.1          |
| A180DM25E          | 414-506                         | 46                          | 50  | 50  | 1              | 460     | 3     | 5   | 10            | 41.3          |
| A180DM35E          | 414-506                         | 46                          | 50  | 50  | 1              | 460     | 3     | 5   | 10            | 41.3          |
| A180YL25E          | 518-633                         | 34                          | 35  | 35  | 1              | 575     | 3     | 3   | 8             | 20            |
| A180YL35E          | 518-633                         | 34                          | 35  | 35  | 1              | 575     | 3     | 3   | 8             | 20            |
| A180YM25E          | 518-633                         | 34                          | 35  | 35  | 1              | 575     | 3     | 5   | 8             | 33            |
| A180YM35E          | 518-633                         | 34                          | 35  | 35  | 1              | 575     | 3     | 5   | 8             | 33            |
| A240CL30E          | 187-253                         | 100/100                     | 110/110                                       | 110/110                                       | 1              | 208/230 | 3     | 5   | 14.7          | 82.6          |
| A240CL40E          | 187-253                         | 100/100                     | 110/110                                       | 110/110                                       | 1              | 208/230 | 3     | 5   | 14.7          | 82.6          |
| A240CM30E          | 187-253                         | 108/108                     | 110/110                                       | 110/110                                       | 1              | 208/230 | 3     | 7.5 | 22.3          | 136           |
| A240CM40E          | 187-253                         | 108/108                     | 110/110                                       | 110/110                                       | 1              | 208/230 | 3     | 7.5 | 22.3          | 136           |
| A240DL30E          | 414-506                         | 58                          | 60  | 60  | 1              | 460     | 3     | 5   | 10            | 41.3          |
| A240DL40E          | 414-506                         | 58                          | 60  | 60  | 1              | 460     | 3     | 5   | 10            | 41.3          |
| A240DM30E          | 414-506                         | 59                          | 60  | 60  | 1              | 460     | 3     | 7.5 | 11.2          | 68            |
| A240DM40E          | 414-506                         | 59                          | 60  | 60  | 1              | 460     | 3     | 7.5 | 11.2          | 68            |
| A240YL30E          | 518-633                         | 45                          | 50  | 50  | 1              | 575     | 3     | 5   | 8             | 33            |
| A240YL40E          | 518-633                         | 45                          | 50  | 50  | 1              | 575     | 3     | 5   | 8             | 33            |
| A240YM30E          | 518-633                         | 46                          | 50  | 50  | 1              | 575     | 3     | 7.5 | 8.8           | 53.8          |
| A240YM40E          | 518-633                         | 46                          | 50  | 50  | 1              | 575     | 3     | 7.5 | 8.8           | 53.8          |
| A300CL30E          | 187-253                         | 114/114                     | 125/125                                       | 125/125                                       | 1              | 208/230 | 3     | 5   | 14.7          | 82.6          |
| A300CL40E          | 187-253                         | 114/114                     | 125/125                                       | 125/125                                       | 1              | 208/230 | 3     | 5   | 14.7          | 82.6          |
| A300CM30E          | 187-253                         | 122/122                     | 125/125                                       | 125/125                                       | 1              | 208/230 | 3     | 7.5 | 22.3          | 136           |
| A300CM40E          | 187-253                         | 122/122                     | 125/125                                       | 125/125                                       | 1              | 208/230 | 3     | 7.5 | 22.3          | 136           |
| A300DL30E          | 414-506                         | 61                          | 70  | 70  | 1              | 460     | 3     | 5   | 10            | 41.3          |
| A300DL40E          | 414-506                         | 61                          | 70  | 70  | 1              | 460     | 3     | 5   | 10            | 41.3          |
| A300DM30E          | 414-506                         | 62                          | 70  | 70  | 1              | 460     | 3     | 7.5 | 11.2          | 68            |
| A300DM40E          | 414-506                         | 62                          | 70  | 70  | 1              | 460     | 3     | 7.5 | 11.2          | 68            |
| A300YL30E          | 518-633                         | 49                          | 50  | 50  | 1              | 575     | 3     | 5   | 8             | 33            |
| A300YL40E          | 518-633                         | 49                          | 50  | 50  | 1              | 575     | 3     | 5   | 8             | 33            |
| A300YM30E          | 518-633                         | 49                          | 50  | 50  | 1              | 575     | 3     | 7.5 | 8.8           | 53.8          |
| A300YM40E          | 518-633                         | 49                          | 50  | 50  | 1              | 575     | 3     | 7.5 | 8.8           | 53.8          |

# ELECTRICAL DATA - RKKB (continued)

| Model No.<br>RKKB- | Compressor Motor |         |       |                 |      |                            |                            | Condenser Motor |         |       |                 |                            |                            |
|--------------------|------------------|---------|-------|-----------------|------|----------------------------|----------------------------|-----------------|---------|-------|-----------------|----------------------------|----------------------------|
|                    | No.              | Volts   | Phase | HP <sup>2</sup> | RPM  | Amps <sup>1</sup><br>(RLA) | Amps <sup>1</sup><br>(LRA) | No.             | Volts   | Phase | HP <sup>2</sup> | Amps <sup>1</sup><br>(FLA) | Amps <sup>1</sup><br>(LRA) |
| A180CL25E          | 4                | 200/230 | 3     | 3 1/2           | 3450 | 12.4/12.4                  | 88/88                      | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180CL35E          | 4                | 200/230 | 3     | 3 1/2           | 3450 | 12.4/12.4                  | 88/88                      | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180CM25E          | 4                | 200/230 | 3     | 3 1/2           | 3450 | 12.4/12.4                  | 88/88                      | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180CM35E          | 4                | 200/230 | 3     | 3 1/2           | 3450 | 12.4/12.4                  | 88/88                      | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180DL25E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                        | 44                         | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180DL35E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                        | 44                         | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180DM25E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                        | 44                         | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180DM35E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                        | 44                         | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180YL25E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                          | 34                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A180YL35E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                          | 34                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A180YM25E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                          | 34                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A180YM35E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                          | 34                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A240CL30E          | 4                | 200/230 | 3     | 4 3/4           | 3450 | 17.8/17.8                  | 124/124                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A240CL40E          | 4                | 200/230 | 3     | 4 3/4           | 3450 | 17.8/17.8                  | 124/124                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A240CM30E          | 4                | 200/230 | 3     | 4 3/4           | 3450 | 17.8/17.8                  | 124/124                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A240CM40E          | 4                | 200/230 | 3     | 4 3/4           | 3450 | 17.8/17.8                  | 124/124                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A240DL30E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9.3                        | 59.6                       | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A240DL40E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9.3                        | 59.6                       | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A240DM30E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9.3                        | 59.6                       | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A240DM40E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9.3                        | 59.6                       | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A240YL30E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.7                        | 49.4                       | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A240YL40E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.7                        | 49.4                       | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A240YM30E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.7                        | 49.4                       | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A240YM40E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.7                        | 49.4                       | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A300CL30E          | 4                | 200/240 | 3     | 6               | 3450 | 21/21                      | 156/156                    | 4               | 208/230 | 1     | 1/2             | 2.3                        | 5.6                        |
| A300CL40E          | 4                | 200/240 | 3     | 6               | 3450 | 21/21                      | 156/156                    | 4               | 208/230 | 1     | 1/2             | 2.3                        | 5.6                        |
| A300CM30E          | 4                | 200/240 | 3     | 6               | 3450 | 21/21                      | 156/156                    | 4               | 208/230 | 1     | 1/2             | 2.3                        | 5.6                        |
| A300CM40E          | 4                | 200/240 | 3     | 6               | 3450 | 21/21                      | 156/156                    | 4               | 208/230 | 1     | 1/2             | 2.3                        | 5.6                        |
| A300DL30E          | 4                | 460     | 3     | 6               | 3450 | 10.4                       | 75                         | 4               | 460     | 1     | 1/2             | 1.5                        | 2.9                        |
| A300DL40E          | 4                | 460     | 3     | 6               | 3450 | 10.4                       | 75                         | 4               | 460     | 1     | 1/2             | 1.5                        | 2.9                        |
| A300DM30E          | 4                | 460     | 3     | 6               | 3450 | 10.4                       | 75                         | 4               | 460     | 1     | 1/2             | 1.5                        | 2.9                        |
| A300DM40E          | 4                | 460     | 3     | 6               | 3450 | 10.4                       | 75                         | 4               | 460     | 1     | 1/2             | 1.5                        | 2.9                        |
| A300YL30E          | 4                | 575     | 3     | 6               | 3450 | 8.5                        | 54                         | 4               | 575     | 1     | 1/2             | 1                          | 2.2                        |
| A300YL40E          | 4                | 575     | 3     | 6               | 3450 | 8.5                        | 54                         | 4               | 575     | 1     | 1/2             | 1                          | 2.2                        |
| A300YM30E          | 4                | 575     | 3     | 6               | 3450 | 8.5                        | 54                         | 4               | 575     | 1     | 1/2             | 1                          | 2.2                        |
| A300YM40E          | 4                | 575     | 3     | 6               | 3450 | 8.5                        | 54                         | 4               | 575     | 1     | 1/2             | 1                          | 2.2                        |

# ELECTRICAL DATA - RKMB

| Model No.<br>RKMB- | Unit Information             |                          |  |  | Evaporator Fan |         |       |     |            |            |
|--------------------|------------------------------|--------------------------|--|--|----------------|---------|-------|-----|------------|------------|
|                    | Unit Operating Voltage Range | Minimum Circuit Ampacity | Minimum Overcurrent Protection Device Size | Maximum Overcurrent Protection Device Size | No.            | Volts   | Phase | HP  | Amps (FLA) | Amps (LRA) |
| A180CL25E          | 187-253                      | 74/74                    | 80/80                                      | 80/80                                      | 1              | 208/230 | 3     | 3   | 11.5       | 74.5       |
| A180CL35E          | 187-253                      | 74/74                    | 80/80                                      | 80/80                                      | 1              | 208/230 | 3     | 3   | 11.5       | 74.5       |
| A180CM25E          | 187-253                      | 77/77                    | 80/80                                      | 80/80                                      | 1              | 208/230 | 3     | 5   | 14.7       | 82.6       |
| A180CM35E          | 187-253                      | 77/77                    | 80/80                                      | 80/80                                      | 1              | 208/230 | 3     | 5   | 14.7       | 82.6       |
| A180DL25E          | 414-506                      | 43                       | 45   | 45   | 1              | 460     | 3     | 3   | 7          | 38.1       |
| A180DL35E          | 414-506                      | 43                       | 45   | 45   | 1              | 460     | 3     | 3   | 7          | 38.1       |
| A180DM25E          | 414-506                      | 46                       | 50   | 50   | 1              | 460     | 3     | 5   | 10         | 41.3       |
| A180DM35E          | 414-506                      | 46                       | 50   | 50   | 1              | 460     | 3     | 5   | 10         | 41.3       |
| A180YL25E          | 518-633                      | 34                       | 35   | 35   | 1              | 575     | 3     | 3   | 8          | 20         |
| A180YL35E          | 518-633                      | 34                       | 35   | 35   | 1              | 575     | 3     | 3   | 8          | 20         |
| A180YM25E          | 518-633                      | 34                       | 35   | 35   | 1              | 575     | 3     | 5   | 8          | 33         |
| A180YM35E          | 518-633                      | 34                       | 35   | 35   | 1              | 575     | 3     | 5   | 8          | 33         |
| A240CL30E          | 187-253                      | 99/99                    | 110/110                                    | 110/110                                    | 1              | 208/230 | 3     | 5   | 14.7       | 82.6       |
| A240CL40E          | 187-253                      | 99/99                    | 110/110                                    | 110/110                                    | 1              | 208/230 | 3     | 5   | 14.7       | 82.6       |
| A240CM30E          | 187-253                      | 107/107                  | 110/110                                    | 110/110                                    | 1              | 208/230 | 3     | 7.5 | 22.3       | 136        |
| A240CM40E          | 187-253                      | 107/107                  | 110/110                                    | 110/110                                    | 1              | 208/230 | 3     | 7.5 | 22.3       | 136        |
| A240DL30E          | 414-506                      | 57                       | 60   | 60   | 1              | 460     | 3     | 5   | 10         | 41.3       |
| A240DL40E          | 414-506                      | 57                       | 60   | 60   | 1              | 460     | 3     | 5   | 10         | 41.3       |
| A240DM30E          | 414-506                      | 58                       | 60   | 60   | 1              | 460     | 3     | 7.5 | 11.2       | 68         |
| A240DM40E          | 414-506                      | 58                       | 60   | 60   | 1              | 460     | 3     | 7.5 | 11.2       | 68         |
| A240YL30E          | 518-633                      | 43                       | 45   | 45   | 1              | 575     | 3     | 5   | 8          | 33         |
| A240YL40E          | 518-633                      | 43                       | 45   | 45   | 1              | 575     | 3     | 5   | 8          | 33         |
| A240YM30E          | 518-633                      | 43                       | 45   | 50   | 1              | 575     | 3     | 7.5 | 8.8        | 53.8       |
| A240YM40E          | 518-633                      | 43                       | 45   | 50   | 1              | 575     | 3     | 7.5 | 8.8        | 53.8       |

| Model No.<br>RKMB- | Compressor Motor |         |       |                 |      |                         |                         | Condenser Motor |         |       |                 |                         |                         |
|--------------------|------------------|---------|-------|-----------------|------|-------------------------|-------------------------|-----------------|---------|-------|-----------------|-------------------------|-------------------------|
|                    | No.              | Volts   | Phase | HP <sup>2</sup> | RPM  | Amps <sup>1</sup> (RLA) | Amps <sup>1</sup> (LRA) | No.             | Volts   | Phase | HP <sup>2</sup> | Amps <sup>1</sup> (FLA) | Amps <sup>1</sup> (LRA) |
| A180CL25E          | 4                | 200/240 | 3     | 3 1/2           | 3450 | 12.4/12.4               | 88/88                   | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A180CL35E          | 4                | 200/240 | 3     | 3 1/2           | 3450 | 12.4/12.4               | 88/88                   | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A180CM25E          | 4                | 200/240 | 3     | 3 1/2           | 3450 | 12.4/12.4               | 88/88                   | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A180CM35E          | 4                | 200/240 | 3     | 3 1/2           | 3450 | 12.4/12.4               | 88/88                   | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A180DL25E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                     | 44                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A180DL35E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                     | 44                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A180DM25E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                     | 44                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A180DM35E          | 4                | 460     | 3     | 3 1/2           | 3450 | 6.4                     | 44                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A180YL25E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                       | 34                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |
| A180YL35E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                       | 34                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |
| A180YM25E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                       | 34                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |
| A180YM35E          | 4                | 575     | 3     | 3 1/2           | 3450 | 5                       | 34                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |
| A240CL30E          | 4                | 200/240 | 3     | 4 3/4           | 3450 | 17.5/17.5               | 123/123                 | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A240CL40E          | 4                | 200/240 | 3     | 4 3/4           | 3450 | 17.5/17.5               | 123/123                 | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A240CM30E          | 4                | 200/240 | 3     | 4 3/4           | 3450 | 17.5/17.5               | 123/123                 | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A240CM40E          | 4                | 200/240 | 3     | 4 3/4           | 3450 | 17.5/17.5               | 123/123                 | 4               | 208/230 | 1     | 1/3             | 2.4                     | 4.7                     |
| A240DL30E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9                       | 62                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A240DL40E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9                       | 62                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A240DM30E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9                       | 62                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A240DM40E          | 4                | 460     | 3     | 4 3/4           | 3450 | 9                       | 62                      | 4               | 460     | 1     | 1/3             | 2                       | 2.4                     |
| A240YL30E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.1                     | 50                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |
| A240YL40E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.1                     | 50                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |
| A240YM30E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.1                     | 50                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |
| A240YM40E          | 4                | 575     | 3     | 4 3/4           | 3450 | 7.1                     | 50                      | 4               | 575     | 1     | 1/3             | 1                       | 1.5                     |

# ELECTRICAL DATA - RKNB

| Model No.<br>RKNB- | Compressor Motor |         |       |                 |      |                            |                            | Condenser Motor |         |       |                 |                            |                            |
|--------------------|------------------|---------|-------|-----------------|------|----------------------------|----------------------------|-----------------|---------|-------|-----------------|----------------------------|----------------------------|
|                    | No.              | Volts   | Phase | HP <sup>2</sup> | RPM  | Amps <sup>1</sup><br>(RLA) | Amps <sup>1</sup><br>(LRA) | No.             | Volts   | Phase | HP <sup>2</sup> | Amps <sup>1</sup><br>(FLA) | Amps <sup>1</sup><br>(LRA) |
| A180CL25E          | 2                | 200/240 | 3     | 6 3/4           | 3450 | 22.4/22.4                  | 164/164                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180CL35E          | 2                | 200/240 | 3     | 6 3/4           | 3450 | 22.4/22.4                  | 164/164                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180CM25E          | 2                | 200/240 | 3     | 6 3/4           | 3450 | 22.4/22.4                  | 164/164                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180CM35E          | 2                | 200/240 | 3     | 6 3/4           | 3450 | 22.4/22.4                  | 164/164                    | 4               | 208/230 | 1     | 1/3             | 2.4                        | 4.7                        |
| A180DL25E          | 2                | 460     | 3     | 6 3/4           | 3450 | 11.8                       | 100                        | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180DL35E          | 2                | 460     | 3     | 6 3/4           | 3450 | 11.8                       | 100                        | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180DM25E          | 2                | 460     | 3     | 6 3/4           | 3450 | 11.8                       | 100                        | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180DM35E          | 2                | 460     | 3     | 6 3/4           | 3450 | 11.8                       | 100                        | 4               | 460     | 1     | 1/3             | 2                          | 2.4                        |
| A180YL25E          | 2                | 575     | 3     | 6 3/4           | 3450 | 10.2                       | 78                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A180YL35E          | 2                | 575     | 3     | 6 3/4           | 3450 | 10.2                       | 78                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A180YM25E          | 2                | 575     | 3     | 6 3/4           | 3450 | 10.2                       | 78                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |
| A180YM35E          | 2                | 575     | 3     | 6 3/4           | 3450 | 10.2                       | 78                         | 4               | 575     | 1     | 1/3             | 1                          | 1.5                        |

| Model No.<br>RKNB- | Unit Information                |                             |   |   | Evaporator Fan |         |       |    |               |               |
|--------------------|---------------------------------|-----------------------------|---|---|----------------|---------|-------|----|---------------|---------------|
|                    | Unit Operating<br>Voltage Range | Minimum Circuit<br>Ampacity | Minimum Overcurrent<br>Protection Device Size | Maximum Overcurrent<br>Protection Device Size | No.            | Volts   | Phase | HP | Amps<br>(FLA) | Amps<br>(LRA) |
| A180CL25E          | 187-253                         | 72/72                       | 80/80   | 90/90   | 1              | 208/230 | 3     | 3  | 11.5          | 74.5          |
| A180CL35E          | 187-253                         | 72/72                       | 80/80   | 90/90   | 1              | 208/230 | 3     | 3  | 11.5          | 74.5          |
| A180CM25E          | 187-253                         | 75/75                       | 80/80   | 90/90   | 1              | 208/230 | 3     | 5  | 14.7          | 82.6          |
| A180CM35E          | 187-253                         | 75/75                       | 80/80   | 90/90   | 1              | 208/230 | 3     | 5  | 14.7          | 82.6          |
| A180DL25E          | 414-506                         | 42                          | 45  | 50  | 1              | 460     | 3     | 3  | 7             | 38.1          |
| A180DL35E          | 414-506                         | 42                          | 45  | 50  | 1              | 460     | 3     | 3  | 7             | 38.1          |
| A180DM25E          | 414-506                         | 45                          | 45  | 50  | 1              | 460     | 3     | 5  | 10            | 41.3          |
| A180DM35E          | 414-506                         | 45                          | 45  | 50  | 1              | 460     | 3     | 5  | 10            | 41.3          |
| A180YL25E          | 518-632                         | 35                          | 35  | 45  | 1              | 575     | 3     | 3  | 8             | 20            |
| A180YL35E          | 518-632                         | 35                          | 35  | 45  | 1              | 575     | 3     | 3  | 8             | 20            |
| A180YM25E          | 518-632                         | 35                          | 35  | 45  | 1              | 575     | 3     | 5  | 8             | 33            |
| A180YM35E          | 518-632                         | 35                          | 35  | 45  | 1              | 575     | 3     | 5  | 8             | 33            |

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

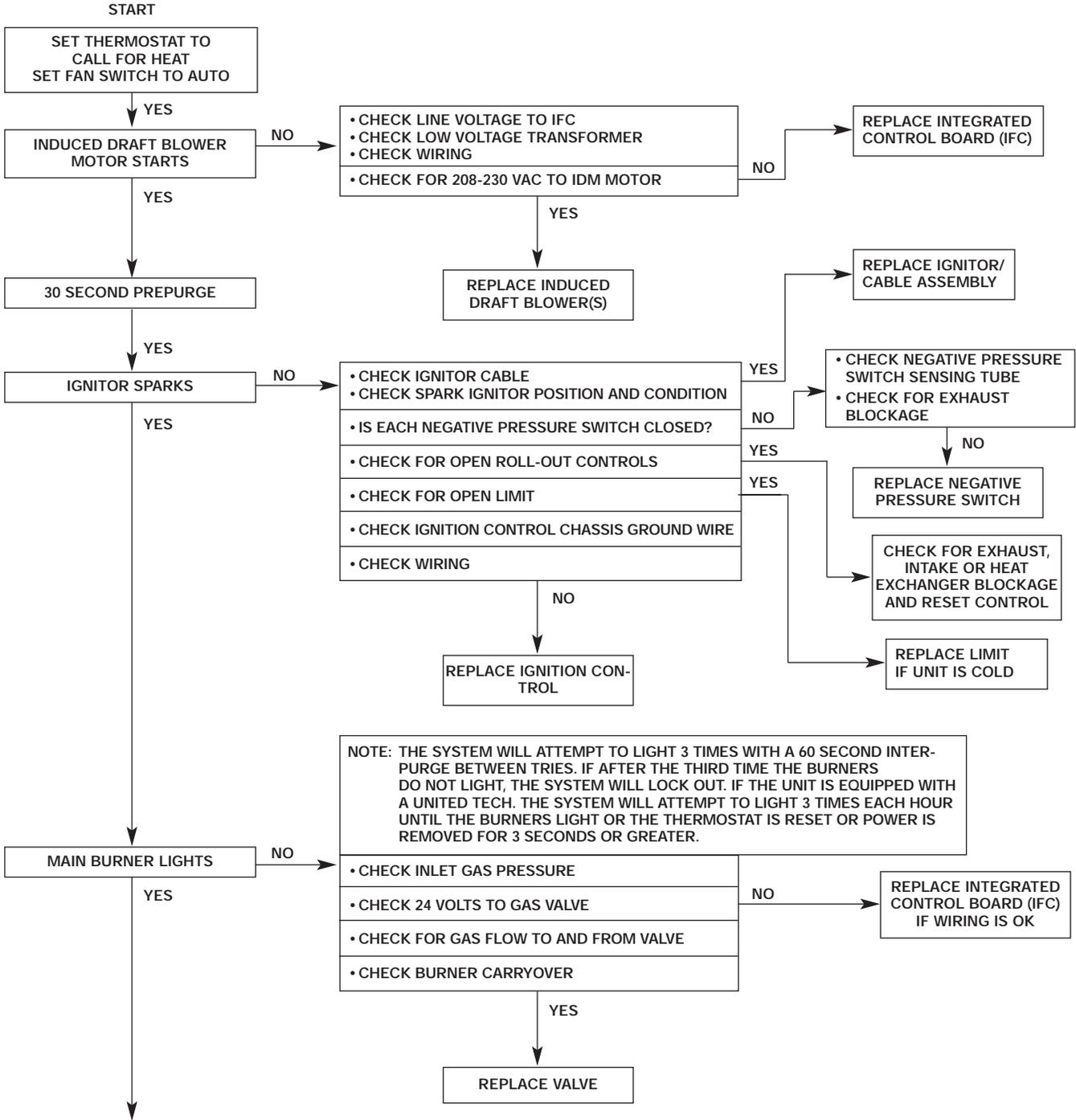
**FIGURE 25**  
**FURNACE TROUBLESHOOTING GUIDE**  
 (COMBINATION HEATING AND COOLING UNITS WITH DIRECT SPARK IGNITION)

**⚠ WARNING**

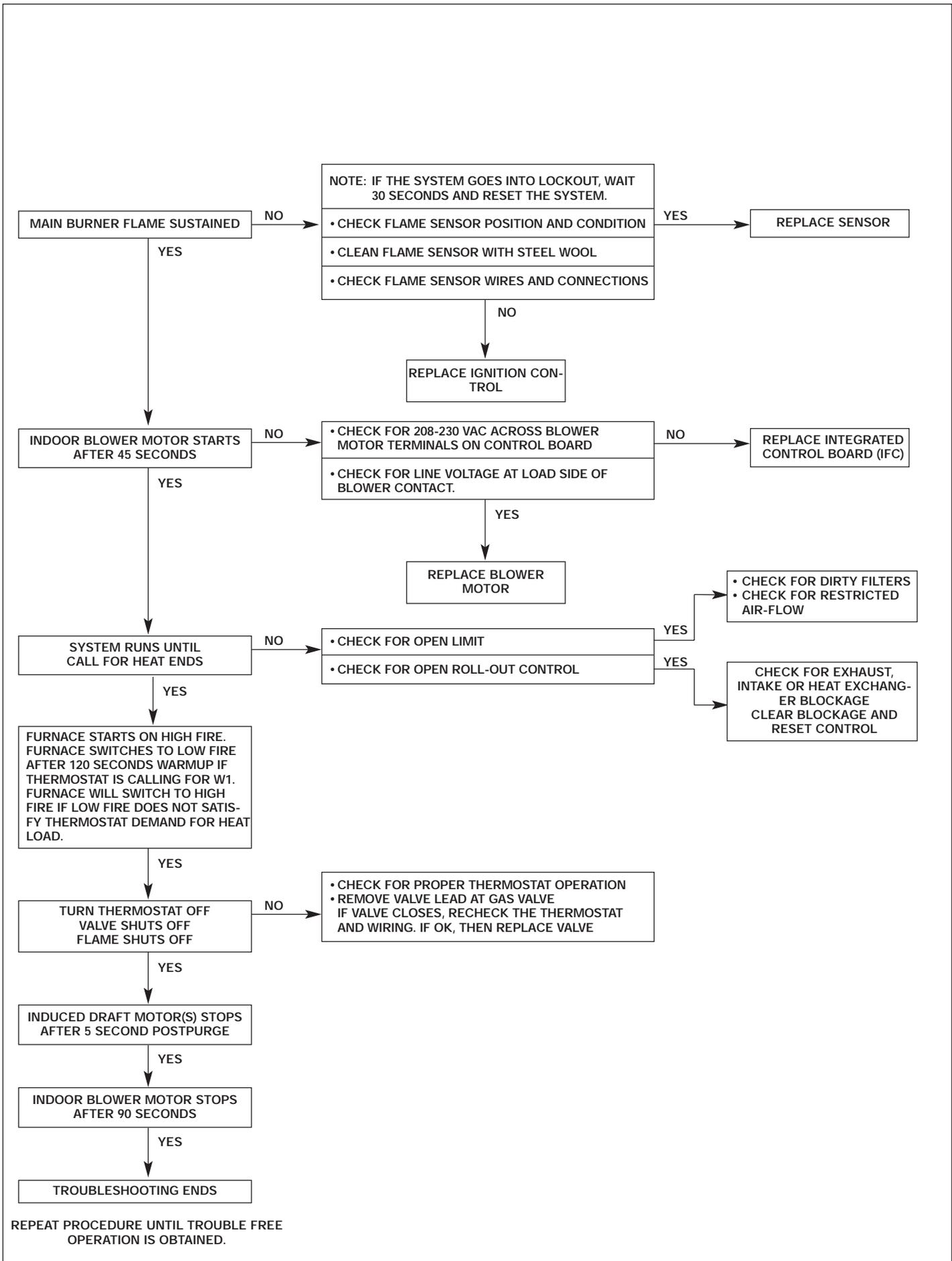


**HAZARDOUS VOLTAGE**  
 LINE VOLTAGE CON-  
 NECTIONS

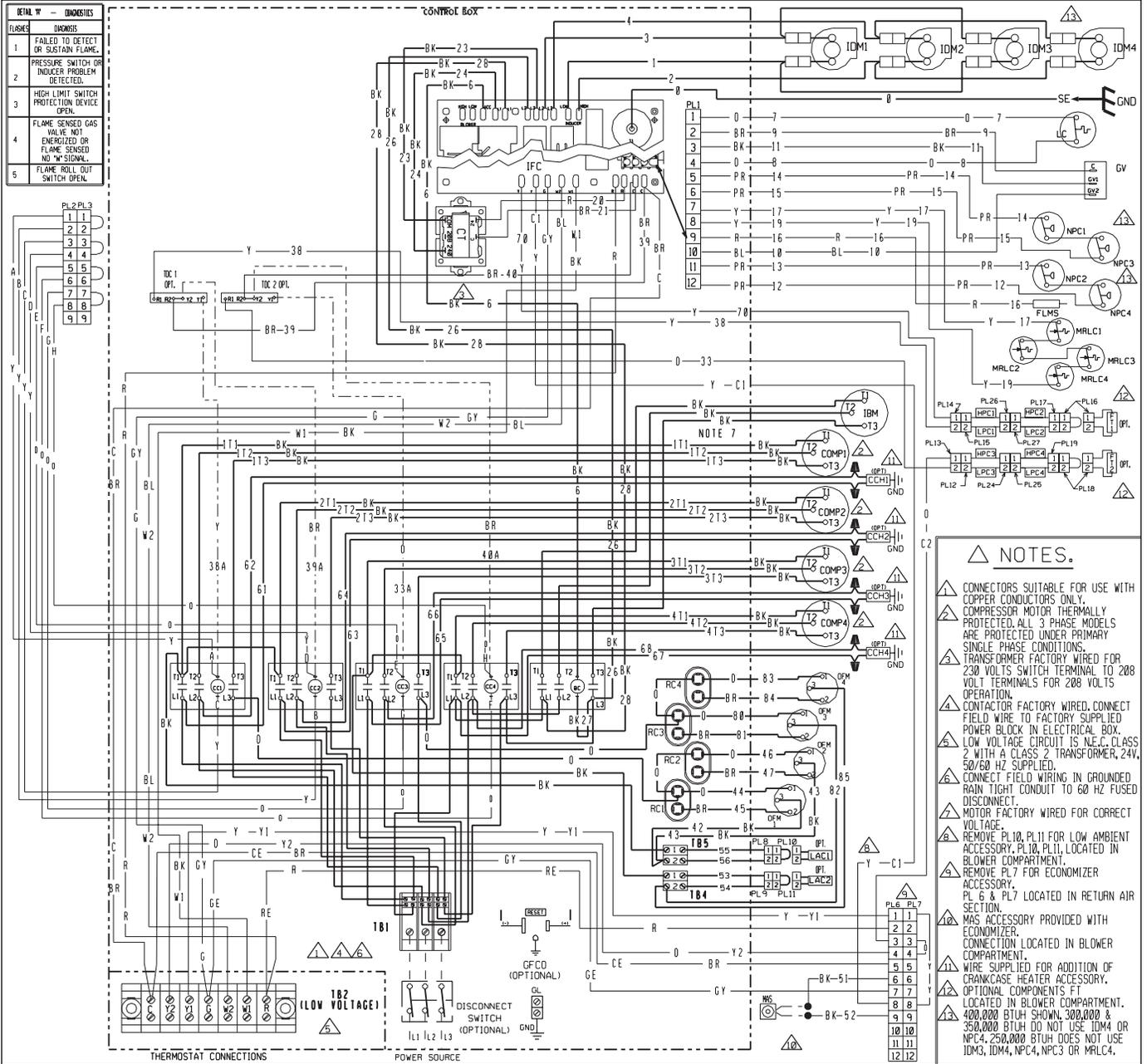
**DISCONNECT POWER BEFORE**  
 SERVICING.  
**SERVICE MUST BE BY A TRAINED,**  
**QUALIFIED SERVICE TECHNICIAN.**



FLOW CHART CONTINUED ON NEXT PAGE



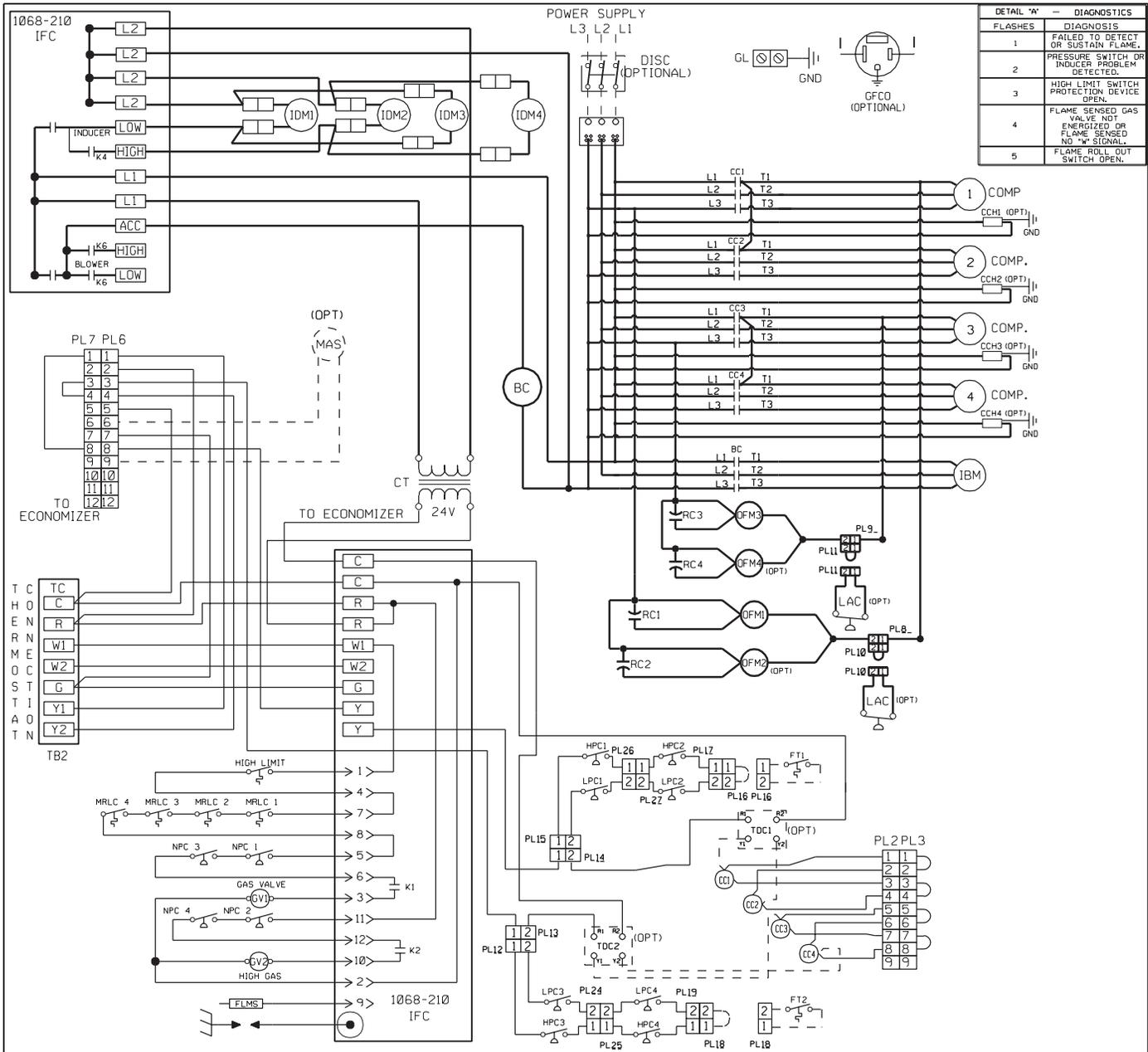
**FIGURE 26**  
RKKB / RKMB SERIES



- NOTES.**
- 1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
  - 2. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
  - 3. TRANSFORMER FACTORY WIRING FOR 230 VOLTS SWITCH TERMINAL TO 208 VOLT TERMINALS FOR 208 VOLTS OPERATION.
  - 4. FACTORY WIRING WIRE, CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
  - 5. LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
  - 6. CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO 60 HZ FUSED DISCONNECT.
  - 7. MOTOR FACTORY WIRING FOR CORRECT VOLTAGE.
  - 8. REMOVE PL10, PL11 FOR LOW AMBIENT ACCESSORY, PL10, PL11, LOCATED IN BLOWER COMPARTMENT.
  - 9. REMOVE PL7 FOR ECONOMIZER ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
  - 10. MAS ACCESSORY PROVIDED WITH ECONOMIZER CONNECTION LOCATED IN BLOWER COMPARTMENT.
  - 11. WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY. OPTIONAL COMPONENTS FT LOCATED IN BLOWER COMPARTMENT.
  - 12. 400,000 BTUH SHOWN, 300,000 & 350,000 BTUH DO NOT USE IDM4 OR NPC4. 250,000 BTUH DOES NOT USE IDM3, IDM4, NPC4, NPC3 OR MRLC4.
  - 13.

|                                |  |  |  |   |
|--------------------------------|--|--|--|---|
| <p>DWG. NO. 90-42517-11-04</p> | <p><b>COMPONENT CODE</b></p> <p>BC BLOWER CONTACTOR<br/>CC COMPRESSOR CONTACTOR<br/>CCH CRANKCASE HEATER<br/>COMP COMPRESSOR<br/>CT CONTROL TRANSFORMER<br/>DISC DISCONNECT SWITCH<br/>FLMS FLAME SENSOR<br/>FT FREEZE STAT<br/>GFCO GROUND FAULT CONVENIENCE OUTLET<br/>GL GROUND LUG<br/>GND GROUND<br/>GV GAS VALVE<br/>HPC HIGH PRESSURE CONTROL<br/>IBM INDOOR BLOWER MOTOR BELT DRIVE<br/>IDM INDUCED DRAFT MOTOR<br/>IFC INTEGRATED FURNACE CONTROL<br/>LAC LOW AMBIENT COOLING CONTROL<br/>LC LIMIT CONTROL<br/>LPC LOW PRESSURE CONTROL</p> | <p>MAS MIX AIR SENSOR<br/>MRLC MANUAL RESET LIMIT CONTROL<br/>NPC NEGATIVE PRESSURE CONTROL<br/>OFC OUTDOOR FAN MOTOR<br/>RC RUN CAPACITOR<br/>SE SPARK ELECTRODE<br/>TB TERMINAL BLOCK<br/>TDC TIME DELAY CONTROL<br/>PL PLUG<br/>PT POWER TRANSFORMER<br/>WIRE NUT</p> | <p><b>WIRING INFORMATION</b></p> <p>LINE VOLTAGE<br/>-FACTORY STANDARD<br/>-FACTORY OPTION<br/>-FIELD INSTALLED</p> <p>LOW VOLTAGE<br/>-FACTORY STANDARD<br/>-FACTORY OPTION<br/>-FIELD INSTALLED</p> <p>REPLACEMENT WIRE<br/>-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)</p> <p>WARNING<br/>-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.</p> | <p><b>WIRE COLOR CODE</b></p> <p>BK BLACK<br/>BR BROWN<br/>BL BLUE<br/>G GREEN<br/>GY GRAY</p> <p>O ORANGE<br/>PR PURPLE<br/>R RED<br/>W WHITE<br/>Y YELLOW</p> |
|                                | <p><b>WIRING DIAGRAM</b></p> <p>208-230, 3 PH, 60 HZ. &amp;<br/>200-220, 3 PH, 50HZ. VOLTAGES<br/>ROOFTOP</p>  |  |  | <p>DR. BY JHB<br/>APP. BY<br/>DATE 10-1-99<br/>DWG. NO. 90-42517-11-04<br/>REV 04</p>   |

**FIGURE 27**  
**RKKB / RKMB SERIES**



| 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                     |
| 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            | INTERGRATED 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               |
| RC             | RUN CAPACITOR                   |
| SE             | SPARK ELECTRODE                 |
| TB             | TERMINAL BLOCK                  |
| TDC            | TIME DELAY CONTROL              |
| PL             | PLUG                            |

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

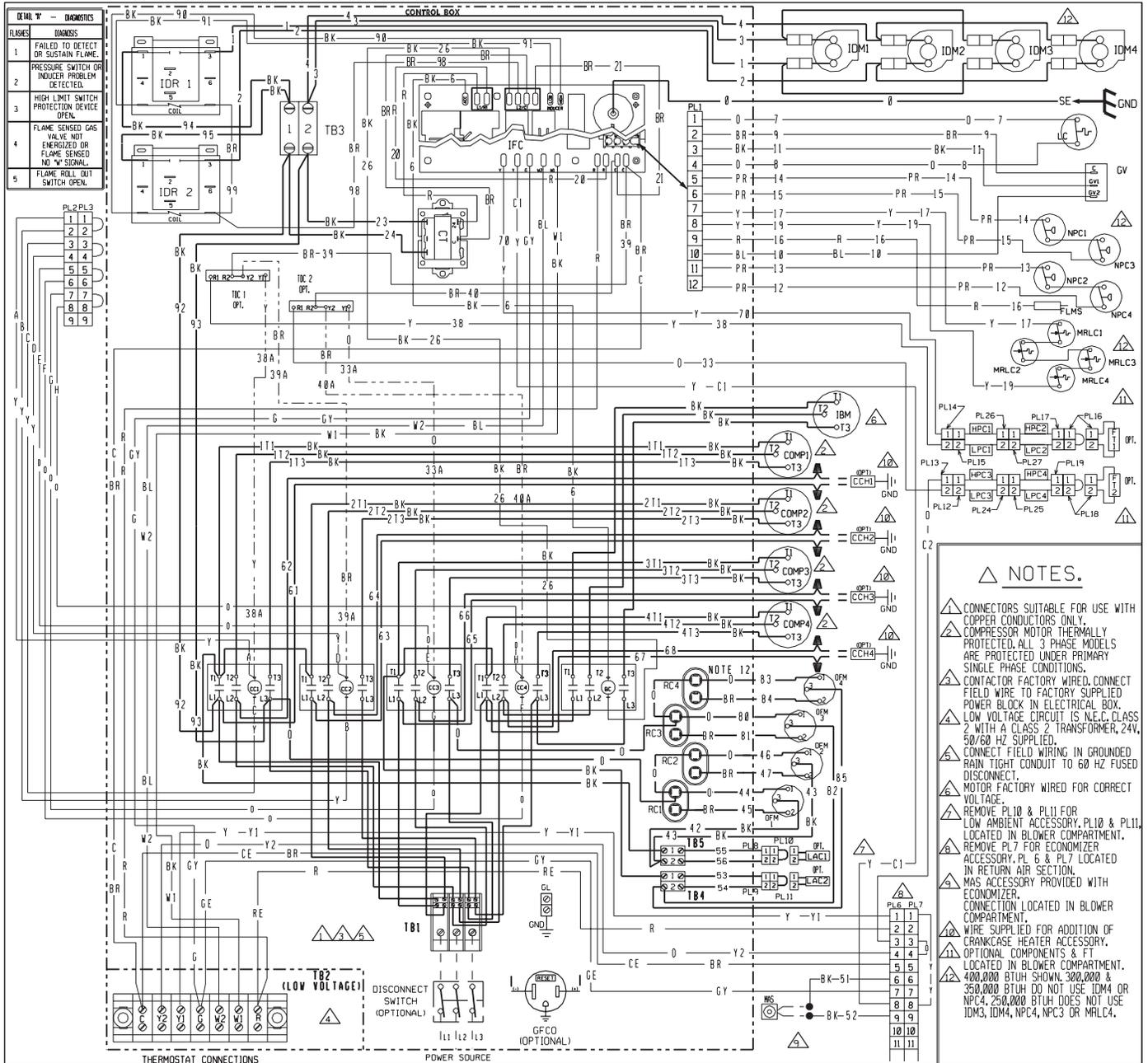
| WIRE COLOR CODE |            |
|-----------------|------------|
| BK__BLACK       | O__ORANGE  |
| BR__BROWN       | PR__PURPLE |
| BL__BLUE        | R__RED     |
| G__GREEN        | W__WHITE   |
| GY__GRAY        | Y__YELLOW  |

| WIRING SCHEMATIC         |  |
|--------------------------|--|
| 208 - 230, 3 PH, 60 HZ.& |  |
| 200 - 220, 3 PH, 50 HZ.  |  |
| ROOFTOP                  |  |

| DR. BY | APP. BY | DATE    | DWG. NO.    | REV |
|--------|---------|---------|-------------|-----|
| JHB    |         | 10-1-99 | 90-42517-12 | 04  |

**FIGURE 28**  
RKKB / RKMB SERIES



**NOTES.**

- △ CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
- △ COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
- △ CONTACTOR FACTORY WIRED. 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 60 HZ FUSED DISCONNECT.
- △ MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
- △ REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11 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. OPTIONAL COMPONENTS & FT LOCATED IN BLOWER COMPARTMENT.
- △ 400,000 BTUH SHOWN. 300,000 & 350,000 BTUH DO NOT USE IDM4 OR NPC4. 250,000 BTUH DOES NOT USE IDM3, IDM4, NPC4, NPC3 OR MRLC4.

**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                     |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL   | GROUND LUG                      |
| GND  | GROUND                          |
| GV   | GAS VALVE                       |
| HPC  | HIGH PRESSURE CONTROL           |
| IDM  | INDOOR BLOWER MOTOR BELT DRIVE  |
| IDR  | INDUCED DRAFT MOTOR             |
| IDR  | INDUCED DRAFT RELAY             |
| IFC  | INTERGRATED 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       |
| ODFM | OUTDOOR FAN MOTOR               |
| RC   | RUN CAPACITOR                   |
| SE   | SPARK ELECTRODE                 |
| TB   | TERMINAL BLOCK                  |
| TDC  | TIME DELAY CONTROL              |
| PL   | PLUG                            |
| W    | WIRE NUT                        |

**WIRING INFORMATION**

LINE VOLTAGE  
 -FACTORY STANDARD  
 -FACTORY OPTION  
 -FIELD INSTALLED

LOW VOLTAGE  
 -FACTORY STANDARD  
 -FACTORY OPTION  
 -FIELD INSTALLED

REPLACEMENT WIRE  
 -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)

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

**WIRE COLOR CODE**

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

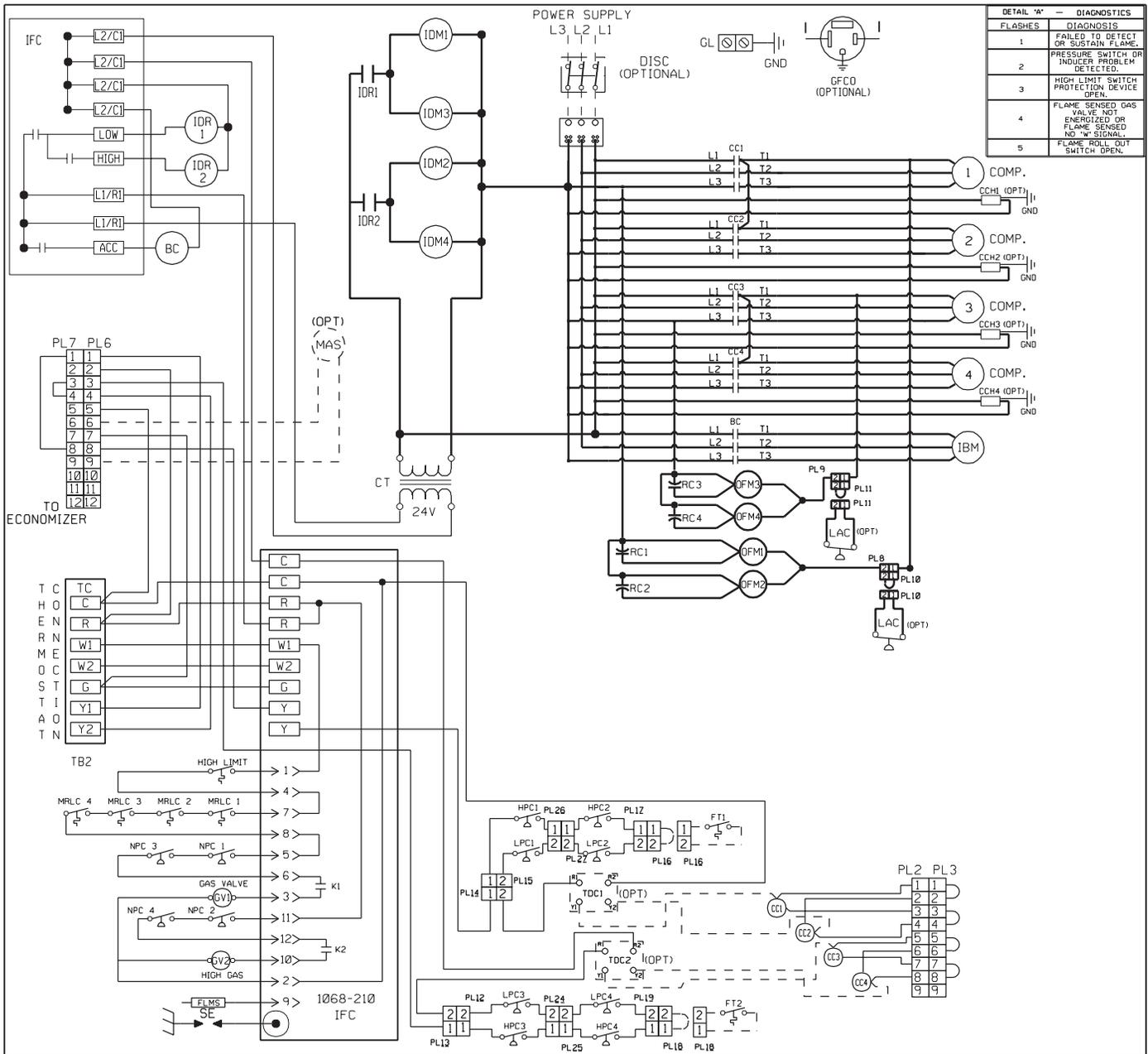
**WIRING DIAGRAM**

460V, 3 PH, 60 HZ. &  
 380-415V, 3 PH, 50 HZ.

DWG. NO. 90-42517-17  
 REV 01

|        |     |         |  |      |         |          |             |     |    |
|--------|-----|---------|--|------|---------|----------|-------------|-----|----|
| DR. BY | JHB | APP. BY |  | DATE | 2-28-01 | DWG. NO. | 90-42517-17 | REV | 01 |
|--------|-----|---------|--|------|---------|----------|-------------|-----|----|

**FIGURE 29**  
RKKB / RKMB SERIES



| FLASHES | DIAGNOSTICS   |
|---------|---|
| 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.   |

| 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                     |
| 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             |
| IDR            | INDUCED DRAFT RELAY             |
| IFC            | INTERGRATED 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               |
| RC             | RUN CAPACITOR                   |
| SE             | SPARK ELECTRODE                 |
| TB             | TERMINAL BLOCK                  |
| TDC            | TIME DELAY CONTROL              |
| PL             | PLUG                            |

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

| WIRE COLOR CODE |       |     |        |
|-----------------|-------|-----|--------|
| BK_             | BLACK | O_  | ORANGE |
| BR_             | BROWN | PR_ | PURPLE |
| BL_             | BLUE  | R_  | RED    |
| G_              | GREEN | W_  | WHITE  |
| GY_             | GRAY  | Y_  | YELLOW |

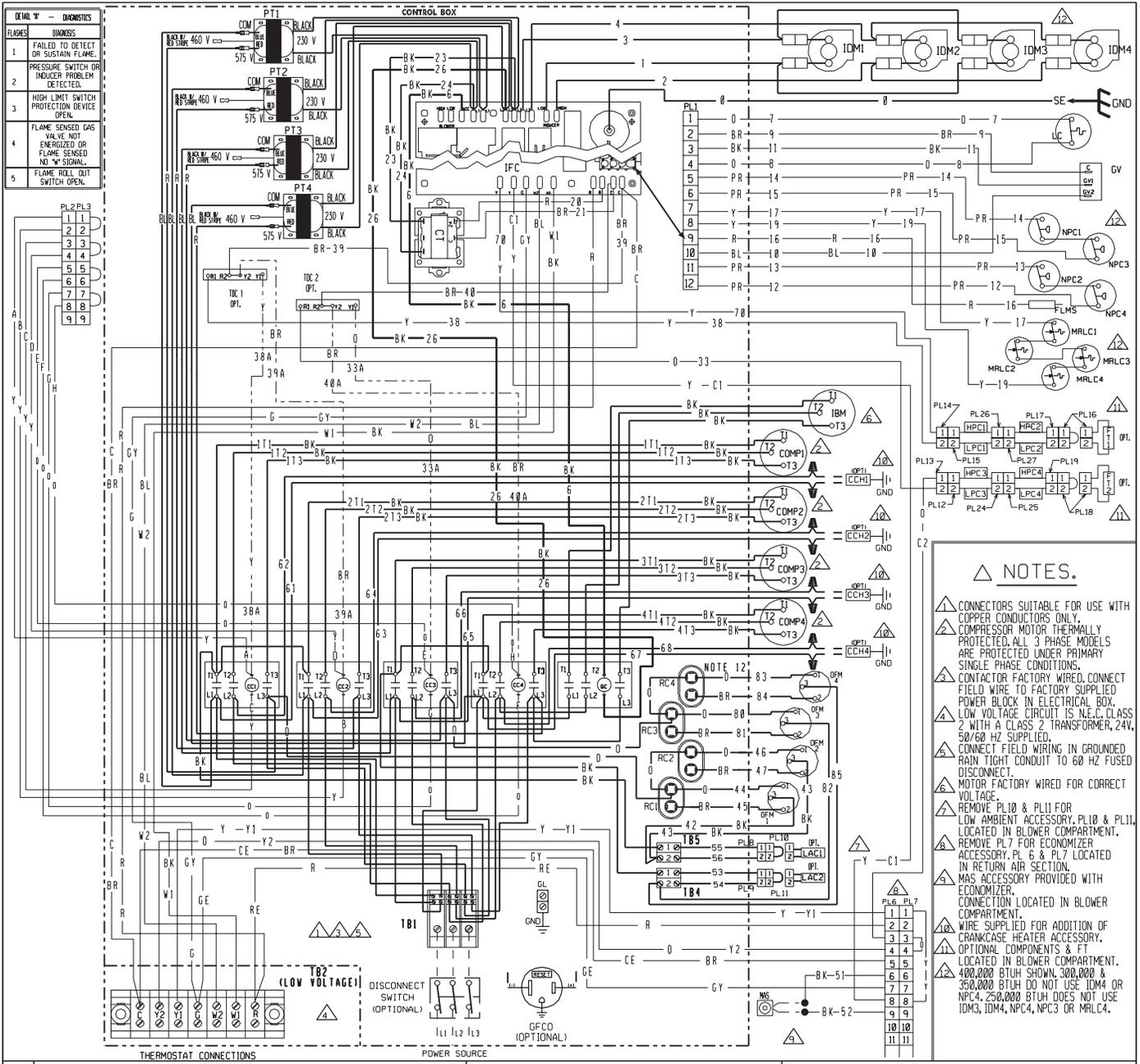
  

| WIRING SCHEMATIC       |  |
|------------------------|--|
| 460, V 3 PH, 60 HZ.,   |  |
| 380-415V, 3 PH, 50 HZ. |  |

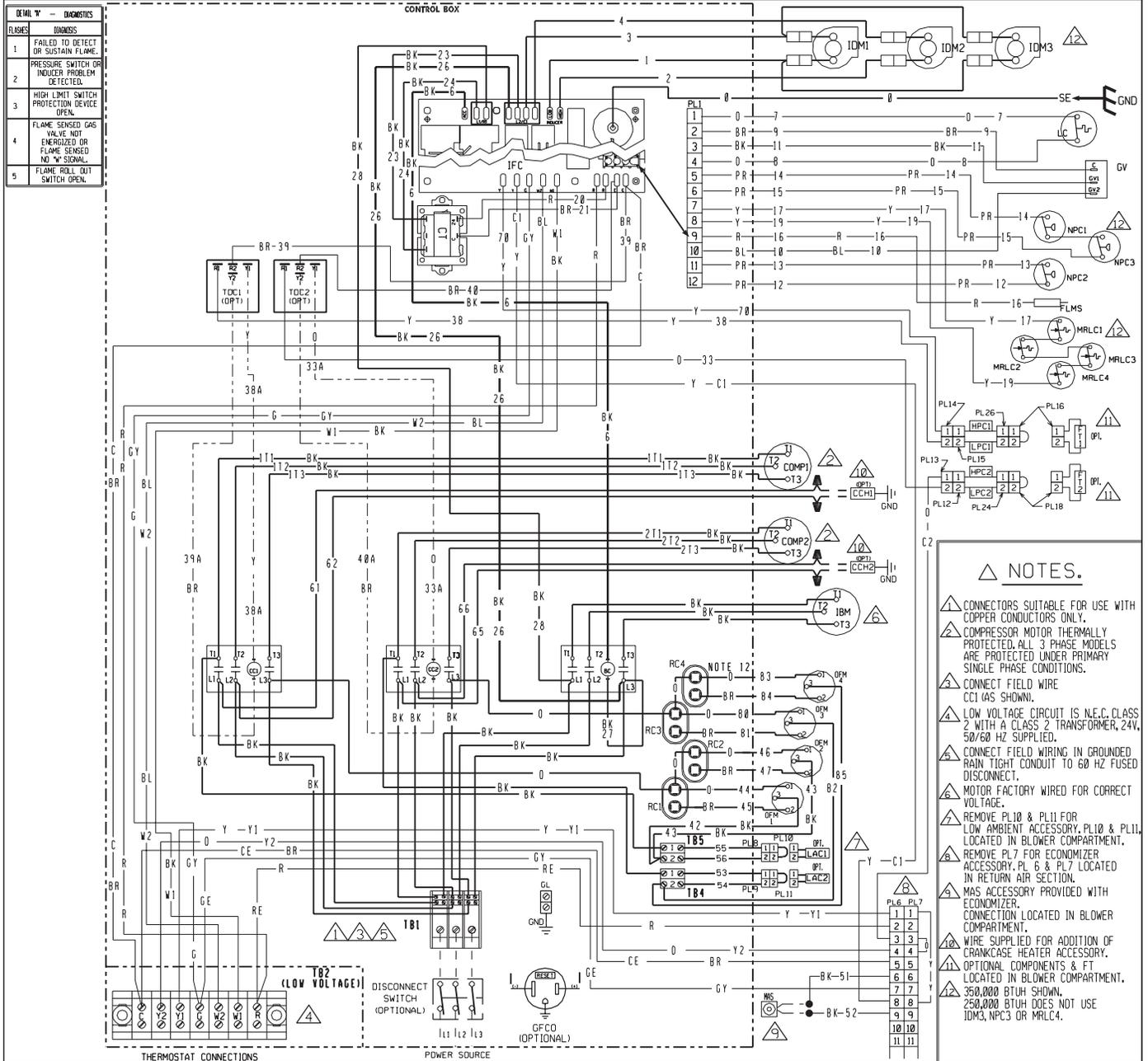
| DR. BY | APP. BY | DATE    | DWG. NO.    | REV |
|--------|---------|---------|-------------|-----|
| JHB    |         | 2-28-01 | 90-42517-18 | 02  |

**FIGURE 30**  
RKKB / RKMB SERIES





**FIGURE 32**  
**RKNB SERIES**



| DIAGNOSTIC | SYMPTOM   |
|------------|---|
| 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.
  - △ CONNECT FIELD WIRE CCI (AS SHOWN).
  - △ 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 60 HZ FUSED DISCONNECT.
  - △ MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
  - △ REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11 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.
  - △ OPTIONAL COMPONENTS & FT LOCATED IN BLOWER COMPARTMENT.
  - △ 350,000 BTUH SHOWN. 250,000 BTUH DOES NOT USE IDM3, NPC3 OR MRLC4.

| COMPONENT CODE | DESCRIPTION                     |
|----------------|---------------------------------|
| 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            | INTERGRADED 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               |
| RC             | RUN CAPACITOR                   |
| SE             | SPARK ELECTRODE                 |
| TB             | TERMINAL BLOCK                  |
| TDC            | TIME DELAY CONTROL              |
| PL             | PLUG                            |
| PT             | POWER TRANSFORMER               |
| 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.

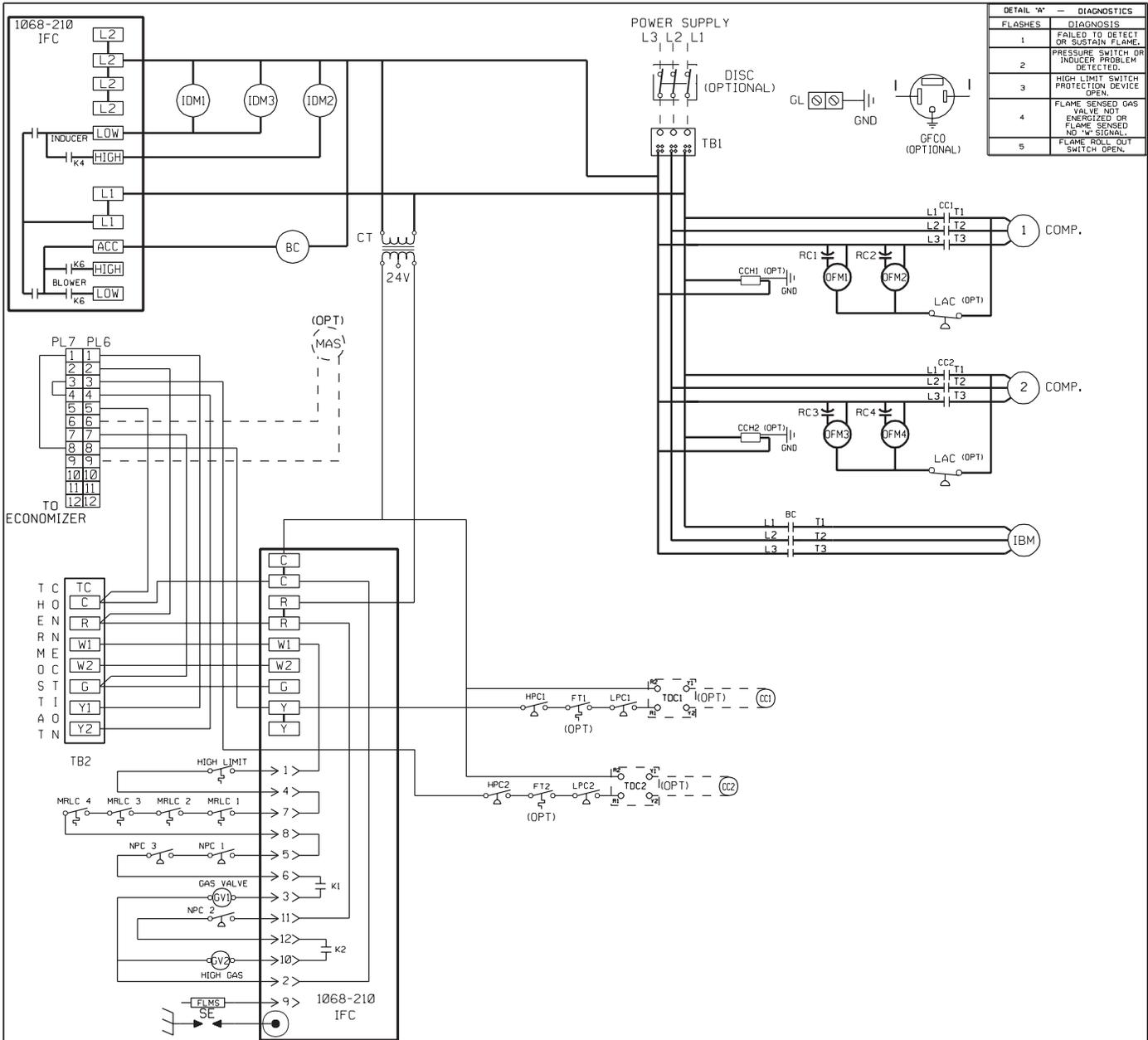
| WIRE COLOR CODE |        |
|-----------------|--------|
| BK              | BLACK  |
| BR              | BROWN  |
| BL              | BLUE   |
| G               | GREEN  |
| GY              | GRAY   |
| O               | ORANGE |
| PR              | PURPLE |
| R               | RED    |
| W       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

**WIRING DIAGRAM**  
**RKNB-A180**  
 208-230V 3 PH, 60 HZ.  
 ROOFTOP

|        |         |          |             |     |
|--------|---------|----------|-------------|-----|
| DR. BY | APP. BY | DATE     | DWG. NO.    | REV |
| JRJ    |         | 11-12-03 | 90-42517-26 | 02  |

DWG. NO. 90-42517-26  
 REV 02

**FIGURE 33**  
**RKNB SERIES**



**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
- 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
- LC LIMIT CONTROL
- LPC LOW PRESSURE CONTROL
- MAS MIX AIR SENSOR

- MRLC MANUAL RESET LIMIT CONTROL
- NPC NEGATIVE PRESSURE CONTROL
- OFM OUTDOOR FAN MOTOR
- RC RUN CAPACITOR
- SE SPARK ELECTRODE
- TB TERMINAL BLOCK
- TDC TIME DELAY CONTROL
- PL PLUG

**WIRING INFORMATION**

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

**WIRE COLOR CODE**

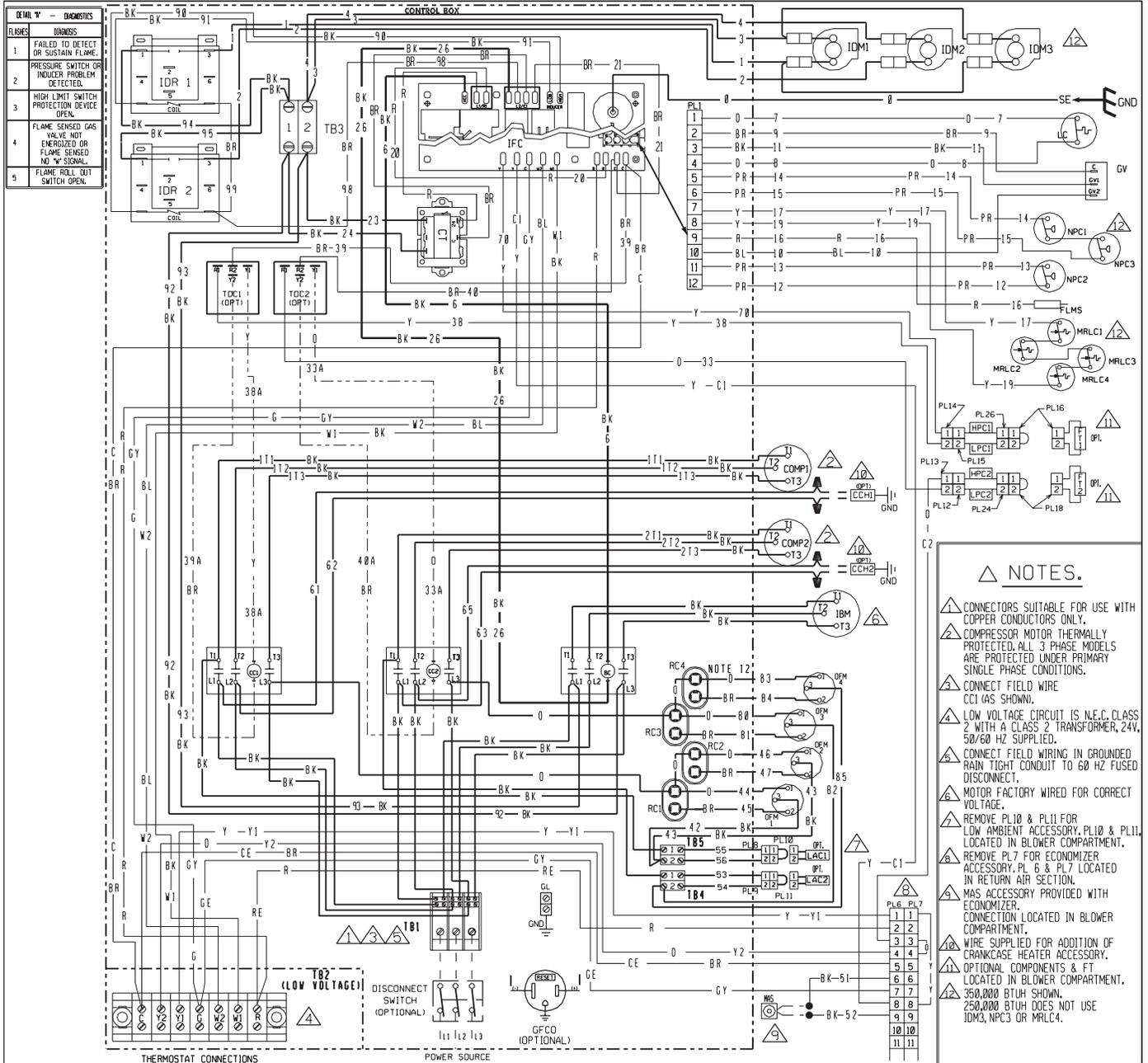
- BK\_\_BLACK            O\_\_\_ORANGE
- BR\_\_BROWN        PR\_\_PURPLE
- BL\_\_BLUE           R\_\_\_RED
- G\_\_\_GREEN        W\_\_\_WHITE
- GY\_\_GRAY         Y\_\_\_YELLOW

**WIRING SCHEMATIC**

**RKNB-A180**  
 208-230V, 3 PH, 60 HZ.  
 ROOFTOP

|        |         |          |             |     |
|--------|---------|----------|-------------|-----|
| DR. BY | APP. BY | DATE     | DWG. NO.    | REV |
| JRJ    |         | 12-29-03 | 90-42517-25 | 01  |

**FIGURE 34**  
**RKNB SERIES**



DWG. NO. 90-42517-23  
REV 01

**COMPONENT CODE**

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

**WIRING INFORMATION**

LINE VOLTAGE  
 -FACTORY STANDARD  
 -FACTORY OPTION  
 -FIELD INSTALLED

LOW VOLTAGE  
 -FACTORY STANDARD  
 -FACTORY OPTION  
 -FIELD INSTALLED

REPLACEMENT WIRE  
 -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)

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

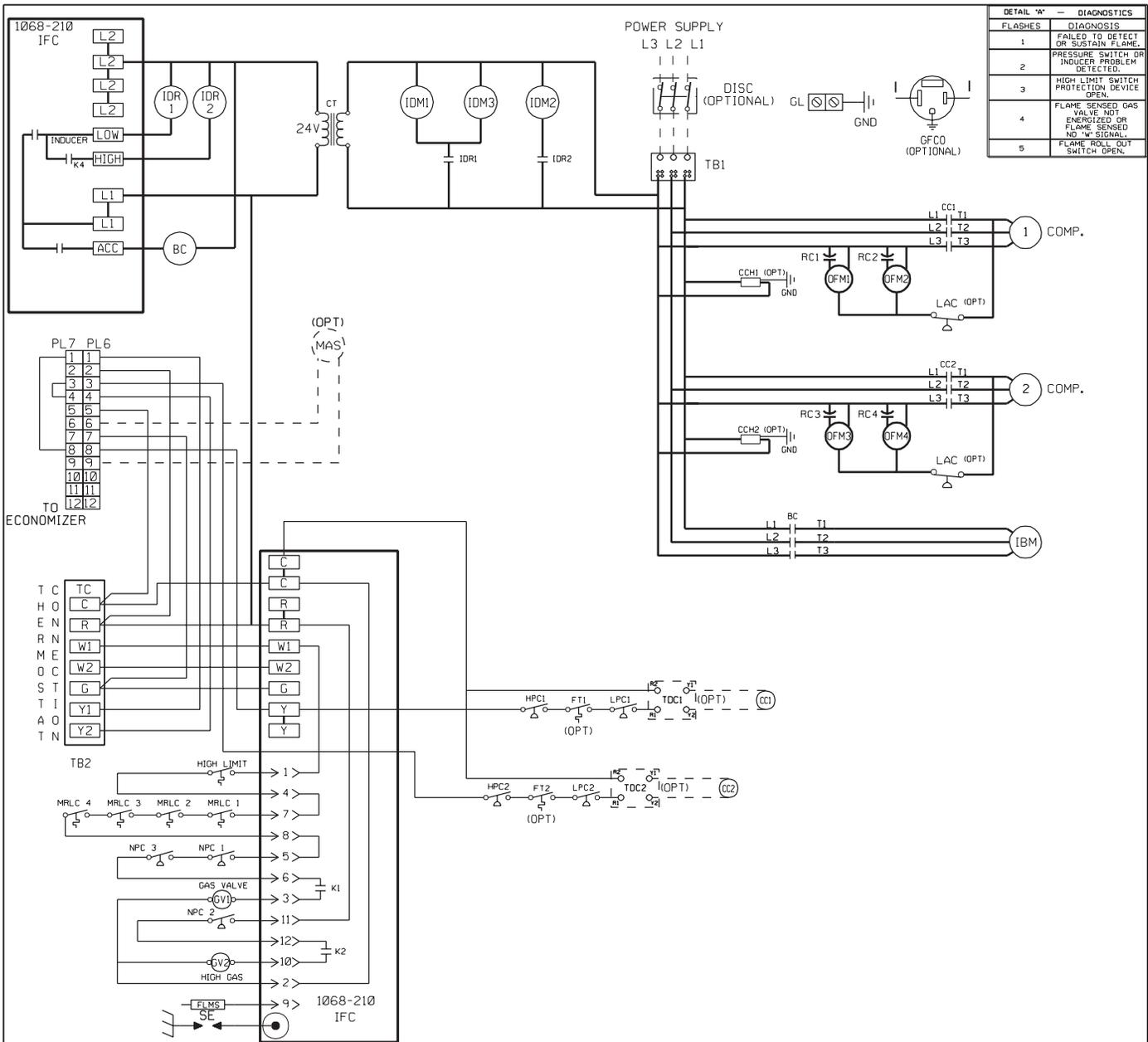
**WIRE COLOR CODE**

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

**WIRING DIAGRAM**  
**RKNB-A180**  
460V 3 PH, 60 HZ.  
ROOFTOP

DR. BY APP. BY DATE DWG. NO. REV  
 JRJ 12-29-03 90-42517-23 01

**FIGURE 35**  
**RKNB SERIES**



| 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                     |
| 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             |
| IDR            | INDUCED DRAFT MOTOR RELAY       |
| IFC            | INTERGRATED 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               |
| RC             | RUN CAPACITOR                   |
| SE             | SPARK ELECTRODE                 |
| PL             | PLUG                            |
| TDC            | TIME DELAY CONTROL              |

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

| WIRE COLOR CODE |            |
|-----------------|------------|
| BK__BLACK       | O___ORANGE |
| BR__BROWN       | PR__PURPLE |
| BL__BLUE        | R___RED    |
| G___GREEN       | W___WHITE  |
| GY__GRAY        | Y___YELLOW |

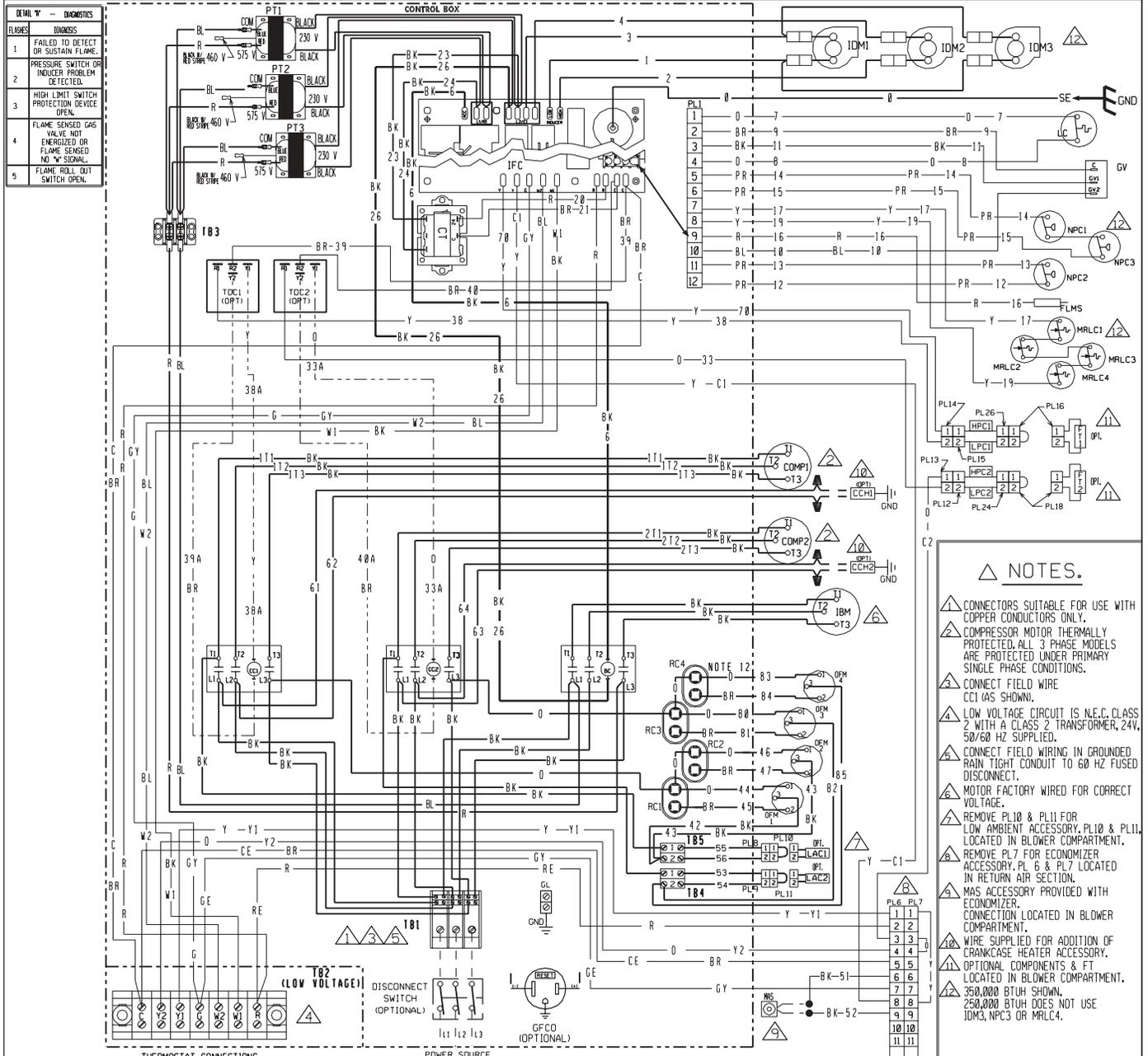
  

| WIRING SCHEMATIC   |  |
|--------------------|--|
| RKNB-A180          |  |
| 460V, 3 PH, 60 HZ. |  |
| ROOFTOP            |  |

| DR. BY | APP. BY | DATE   | DWG. NO.    | REV |
|--------|---------|--------|-------------|-----|
| JRJ    |         | 1-5-03 | 90-42517-24 | 01  |

**FIGURE 36**  
**RKNB SERIES**



- NOTES.**
- △ CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
  - △ COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
  - △ CONNECT FIELD WIRE CCI (AS SHOWN).
  - △ 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 60 HZ FUSED DISCONNECT.
  - △ MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
  - △ REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11 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.
  - △ OPTIONAL COMPONENTS & FT LOCATED IN BLOWER COMPARTMENT.
  - △ 350,000 BTUH SHOWN. 250,000 BTUH DOES NOT USE IDM3, NPC3 OR MRLC4.

**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                     |
| 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  | INTERGRADED 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          |
| RC   | RUN CAPACITOR              |
| SE   | SPARK ELECTRODE            |
| TB   | TERMINAL BLOCK             |
| TDC  | TIME DELAY CONTROL         |
| PL   | PLUG                       |
| PT   | POWER TRANSFORMER          |
| 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**

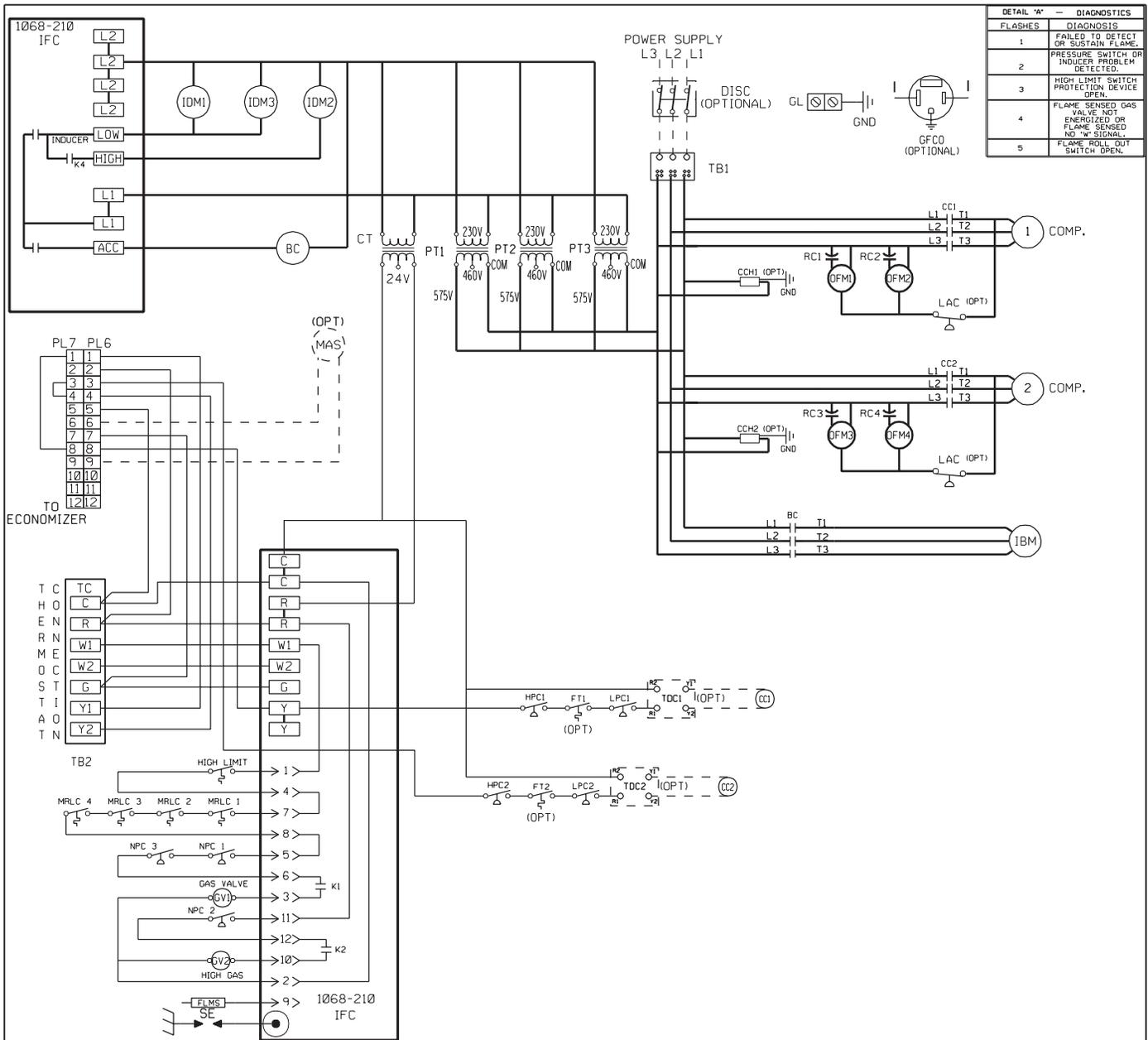
|    |       |    |        |
|----|-------|----|--------|
| BK | BLACK | O  | ORANGE |
| BR | BROWN | PR | PURPLE |
| BL | BLUE  | R  | RED    |
| G  | GREEN | W  | WHITE  |
| GY | GRAY  | Y  | YELLOW |

**WIRING DIAGRAM**  
**RKNB-A180**  
**575V 3 PH, 60 HZ.**  
**ROOFTOP**

|        |         |          |             |     |
|--------|---------|----------|-------------|-----|
| DR. BY | APP. BY | DATE     | DWG. NO.    | REV |
| JRJ    |         | 11-12-03 | 90-42517-21 | 01  |

DWG. NO. 90-42517-21 REV 01

**FIGURE 37**  
**RKNB SERIES**



| DETAIL 'W' -- 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.   |

| 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                     |
| 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            | INTERGRATED 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               |
| RC             | RUN CAPACITOR                   |
| SE             | SPARK ELECTRODE                 |
| TB             | TERMINAL BLOCK                  |
| TDC            | TIME DELAY CONTROL              |
| PL             | PLUG                            |

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

| WIRE COLOR CODE |            |
|-----------------|------------|
| BK__BLACK       | O___ORANGE |
| BR__BROWN       | PR__PURPLE |
| BL__BLUE        | R___RED    |
| G___GREEN       | W___WHITE  |
| GY__GRAY        | Y___YELLOW |

| WIRING SCHEMATIC   |  |
|--------------------|--|
| RKNB-A180          |  |
| 575V, 3 PH, 60 HZ. |  |
| ROOFTOP            |  |

| DR. BY | APP. BY | DATE     | DWG. NO.    | REV |
|--------|---------|----------|-------------|-----|
| JRJ    |         | 12-29-03 | 90-42517-22 | 01  |

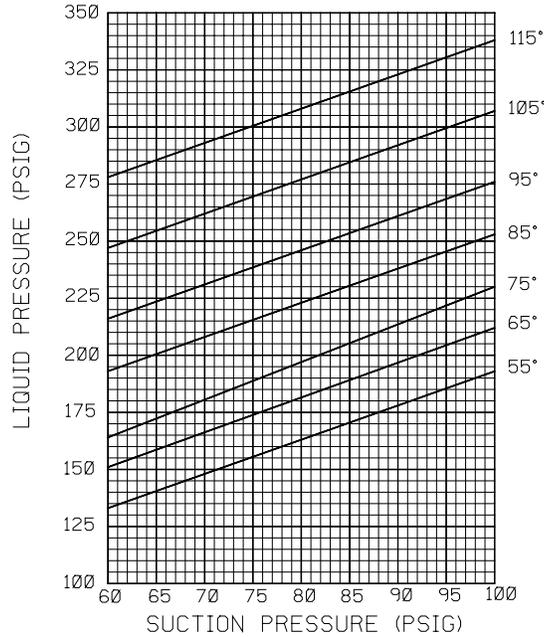
FIGURE 38

# RKKB SYSTEM CHARGE CHARTS

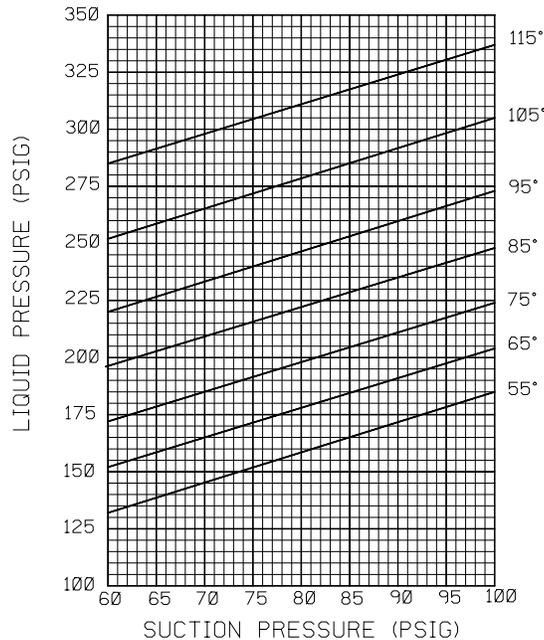
## SYSTEM CHARGE CHART - REFRIGERANT 22 15 TON, STAGE 1 & 2

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 SUCTION AND LIQUID PRESSURES AT SERVICE ACCESS PORTS.  
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 STEP 3.  
5. IF (X) IS ABOVE OUTDOOR LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 1.



## 15 TON, CIRCUIT 1 & 2 STAGE 1



## 15 TON, CIRCUIT 3 & 4 STAGE 2

\*CONDENSER FANS OPERATING, MAY REQUIRE JUMPERING OF HEAD PRESSURE CONTROL.

92-42530-15-00

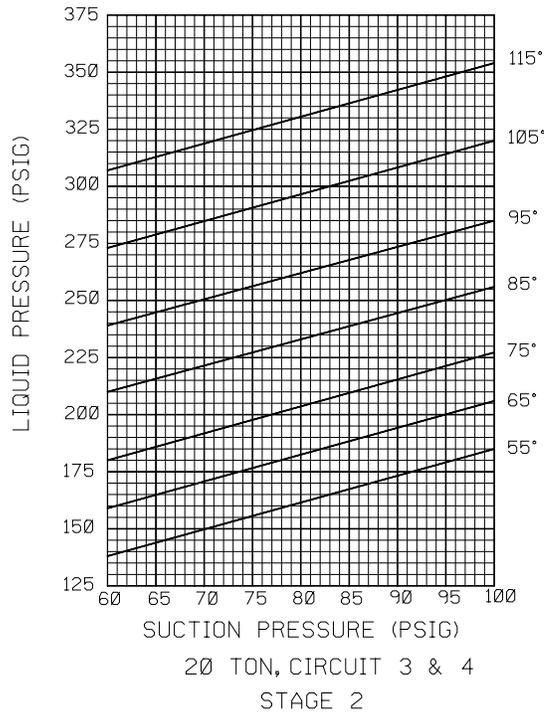
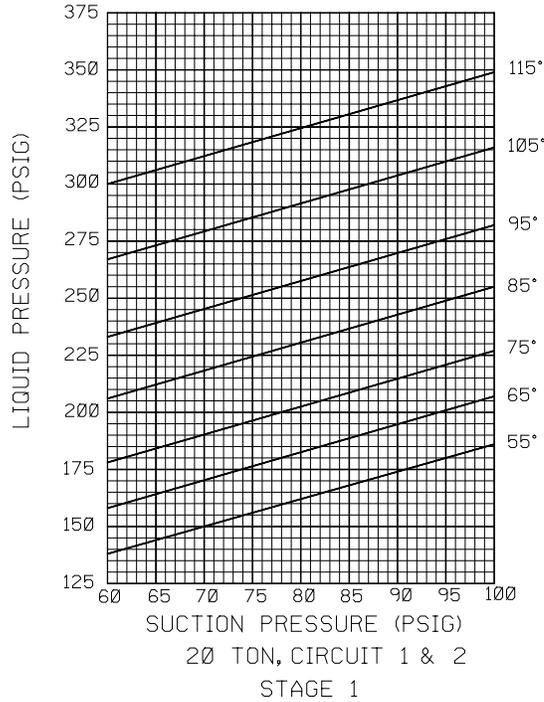
FIGURE 39

# RKKB SYSTEM CHARGE CHARTS

## SYSTEM CHARGE CHART - REFRIGERANT 22 20 TON, STAGE 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 SUCTION AND LIQUID PRESSURES AT SERVICE ACCESS PORTS.  
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 STEP 3.  
5. IF (X) IS ABOVE OUTDOOR LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 1.



\*CONDENSER FANS OPERATING, MAY REQUIRE JUMPERING OF HEAD PRESSURE CONTROL.

92-42530-19-00

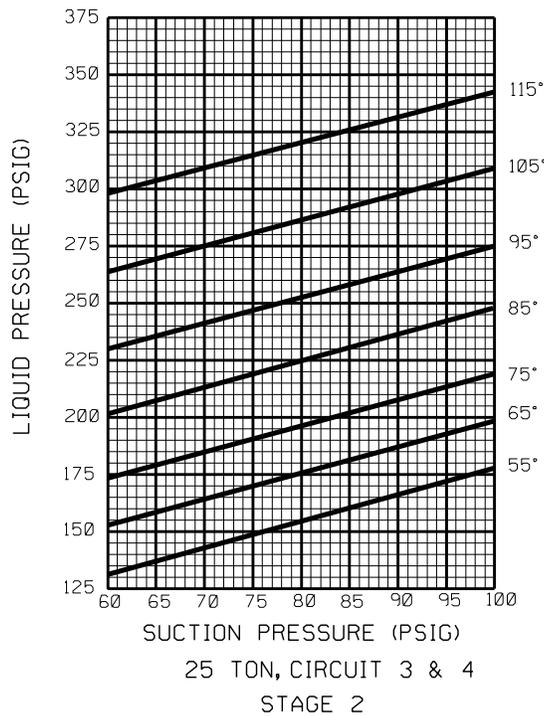
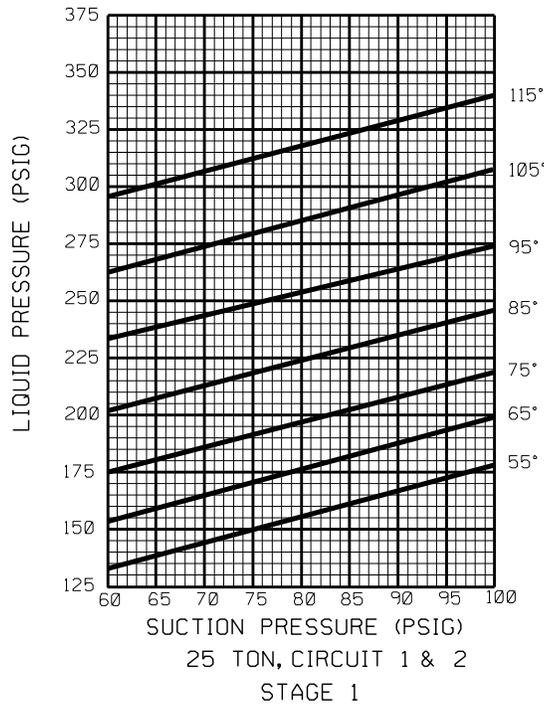
FIGURE 40

# RKKB SYSTEM CHARGE CHARTS

## SYSTEM CHARGE CHART - REFRIGERANT 22 25 TON, STAGE 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 SUCTION AND LIQUID PRESSURES AT SERVICE ACCESS PORTS.  
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 STEP 3.  
5. IF (X) IS ABOVE OUTDOOR LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 1.



\*CONDENSER FANS OPERATING, MAY REQUIRE JUMPING OF HEAD PRESSURE CONTROL.

92-42530-23-00

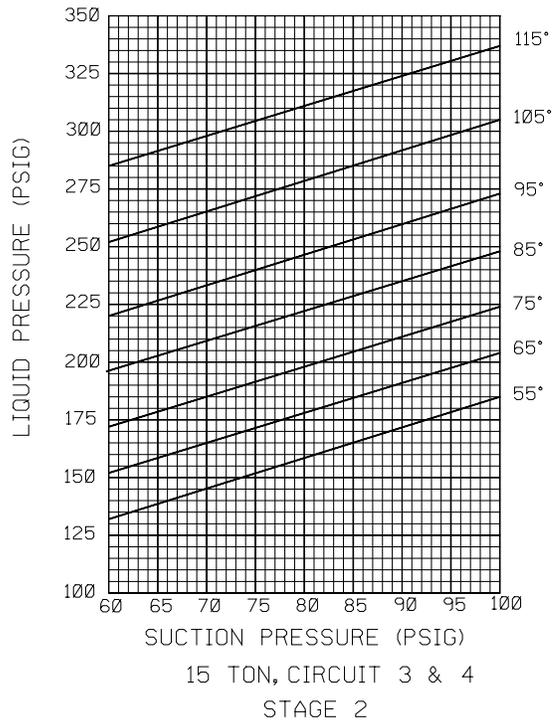
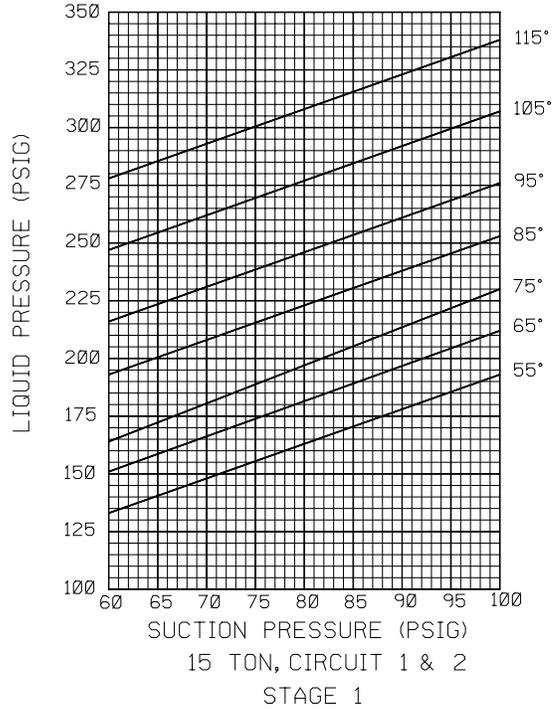
FIGURE 41

# RKMB SYSTEM CHARGE CHARTS

## SYSTEM CHARGE CHART - REFRIGERANT 22 15 TON, STAGE 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 SUCTION AND LIQUID PRESSURES AT SERVICE ACCESS PORTS.  
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 STEP 3.  
5. IF (X) IS ABOVE OUTDOOR LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 1.



\*CONDENSER FANS OPERATING, MAY REQUIRE JUMPERING OF HEAD PRESSURE CONTROL.

92-42530-15-00

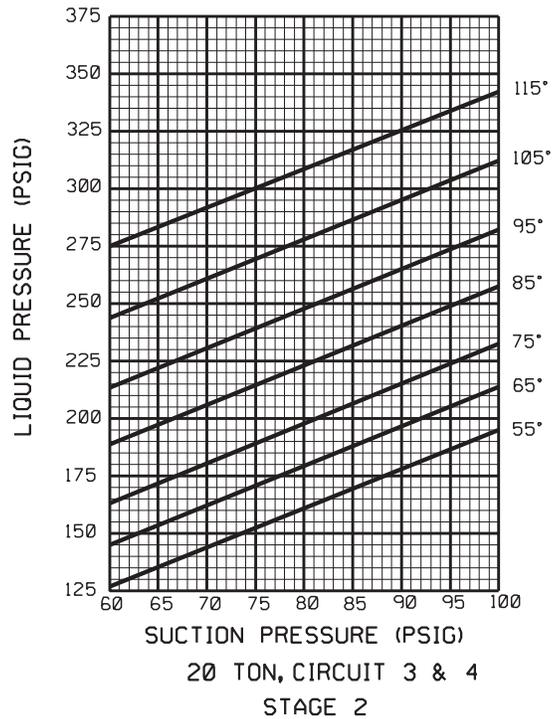
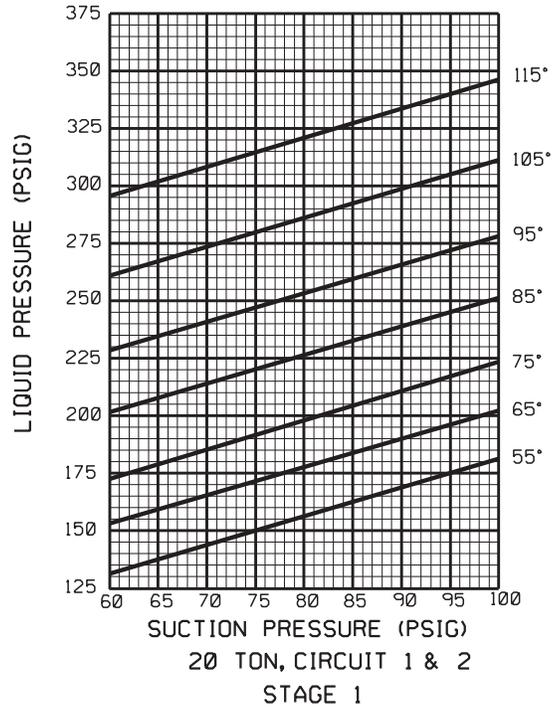
FIGURE 42

# RKMB SYSTEM CHARGE CHARTS

## SYSTEM CHARGE CHART - REFRIGERANT 22 20 TON, STAGE 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 SUCTION AND LIQUID PRESSURES AT SERVICE ACCESS PORTS.  
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 STEP 3.  
5. IF (X) IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 1.



\*CONDENSER FANS OPERATING, MAY REQUIRE JUMPERING OF HEAD PRESSURE CONTROL.

92-42530-13-02

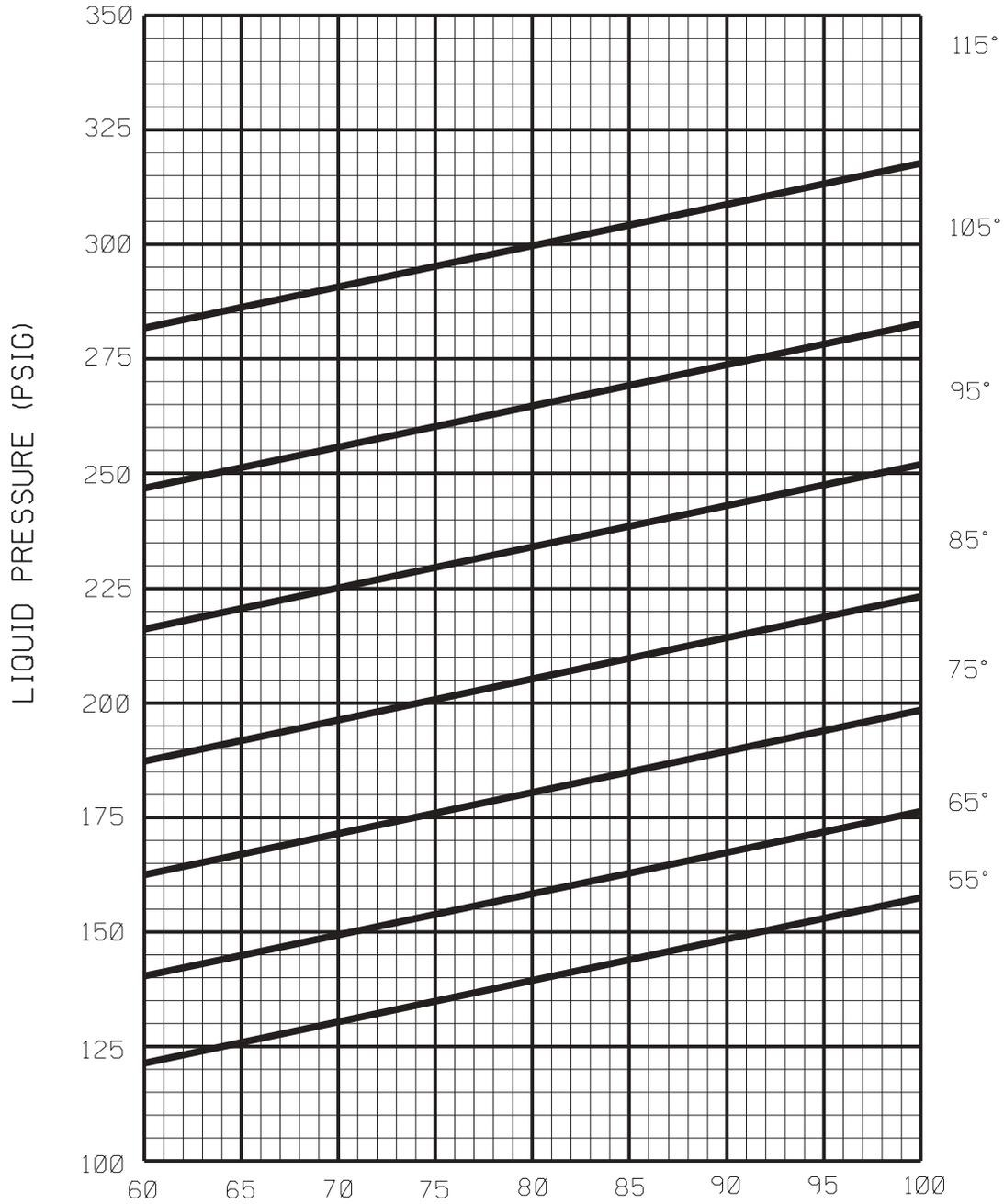
FIGURE 43

# RKNB SYSTEM CHARGE CHARTS

## SYSTEM CHARGE CHART - REFRIGERANT 22 15 TON, SYSTEM 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 SUCTION AND LIQUID PRESSURES AT SERVICE ACCESS PORTS.  
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 STEP 3.  
5. IF (X) IS ABOVE OUTDOOR LINE, RECOVER EXCESS CHARGE AND REPEAT STEP 1.



SUCTION PRESSURE (PSIG)

\*CONDENSER FAN OPERATING, MAY REQUIRE JUMPERING OF HEAD PRESSURE CONTROL.

92-42530-30-00



