

## Appendix E – Heater Kit Characteristics

| 575V THREE PHASE, 60 Hz, AUXILIARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION |                 |                       |      |                         |                                                       |                            |                                                          |                               |                                       |                              |                                                            |                                       |                                                                     |
|----------------------------------------------------------------------------------------|-----------------|-----------------------|------|-------------------------|-------------------------------------------------------|----------------------------|----------------------------------------------------------|-------------------------------|---------------------------------------|------------------------------|------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------|
| Single Power Supply for Both Unit and Heater Kit                                       |                 |                       |      |                         |                                                       |                            | Separate Power Supply for Both Unit and Heater Kit       |                               |                                       |                              |                                                            |                                       |                                                                     |
| UNIT MODEL NUMBER (-)ACGYB                                                             | Heater Kit      |                       |      | Air Conditioner         |                                                       |                            |                                                          | Heater Kit                    |                                       | Air Conditioner              |                                                            |                                       |                                                                     |
|                                                                                        | MODEL NO. RXJJ- | Rated Heater KW @ 575 | FLA  | UNIT MIN. CKT. AMPACITY | UNIT MIN. CKT. AMPACITY WITH OPTIONAL POWERED EXHAUST | MAX FUSE OR CKT. BKR. SIZE | MAX FUSE OR CKT. BKR. SIZE WITH OPTIONAL POWERED EXHAUST | HEATER KIT MIN. CKT. AMPACITY | HEATER KIT MAX FUSE OR CKT. BKR. SIZE | AIR COND. MIN. CKT. AMPACITY | AIR COND. MIN. CKT. AMPACITY WITH OPTIONAL POWERED EXHAUST | AIR COND. MAX. FUSE OR CKT. BKR. SIZE | AIR COND. MAX. FUSE OR CKT. BKR. SIZE WITH OPTIONAL POWERED EXHAUST |
| 300AYF                                                                                 | NONE*           | -                     | -    | 43                      | 46                                                    | 50                         | 50                                                       | -                             | -                                     | 43                           | 46                                                         | 50                                    | 50                                                                  |
|                                                                                        | G36KWY          | 36.0                  | 34.6 | 53                      | 57                                                    | 60                         | 60                                                       | 44                            | 45                                    | 43                           | 46                                                         | 50                                    | 50                                                                  |
|                                                                                        | G54KWY          | 54.0                  | 52.0 | 75                      | 79                                                    | 80                         | 80                                                       | 65                            | 70                                    | 43                           | 46                                                         | 50                                    | 50                                                                  |
|                                                                                        | G72KWY          | 72.0                  | 69.3 | 97                      | 100                                                   | 100                        | 100                                                      | 87                            | 90                                    | 43                           | 46                                                         | 50                                    | 50                                                                  |
| 300AYG                                                                                 | NONE*           | -                     | -    | 46                      | 49                                                    | 50                         | 60                                                       | -                             | -                                     | 46                           | 49                                                         | 50                                    | 60                                                                  |
|                                                                                        | G36KWY          | 36.0                  | 34.6 | 56                      | 60                                                    | 60                         | 60                                                       | 44                            | 45                                    | 46                           | 49                                                         | 50                                    | 60                                                                  |
|                                                                                        | G54KWY          | 54.0                  | 52.0 | 78                      | 82                                                    | 80                         | 90                                                       | 65                            | 70                                    | 46                           | 49                                                         | 50                                    | 60                                                                  |
|                                                                                        | G72KWY          | 72.0                  | 69.3 | 100                     | 103                                                   | 100                        | 110                                                      | 87                            | 90                                    | 46                           | 49                                                         | 50                                    | 60                                                                  |
| 300AYH                                                                                 | NONE*           | -                     | -    | 46                      | 49                                                    | 50                         | 60                                                       | -                             | -                                     | 46                           | 49                                                         | 50                                    | 60                                                                  |
|                                                                                        | G36KWY          | 36.0                  | 34.6 | 56                      | 60                                                    | 60                         | 60                                                       | 44                            | 45                                    | 46                           | 49                                                         | 50                                    | 60                                                                  |
|                                                                                        | G54KWY          | 54.0                  | 52.0 | 78                      | 82                                                    | 80                         | 90                                                       | 65                            | 70                                    | 46                           | 49                                                         | 50                                    | 60                                                                  |
|                                                                                        | G72KWY          | 72.0                  | 69.3 | 100                     | 103                                                   | 100                        | 110                                                      | 87                            | 90                                    | 46                           | 49                                                         | 50                                    | 60                                                                  |

# P. APPENDICES

## Appendix F – A2L Refrigerant Installation Safety Data

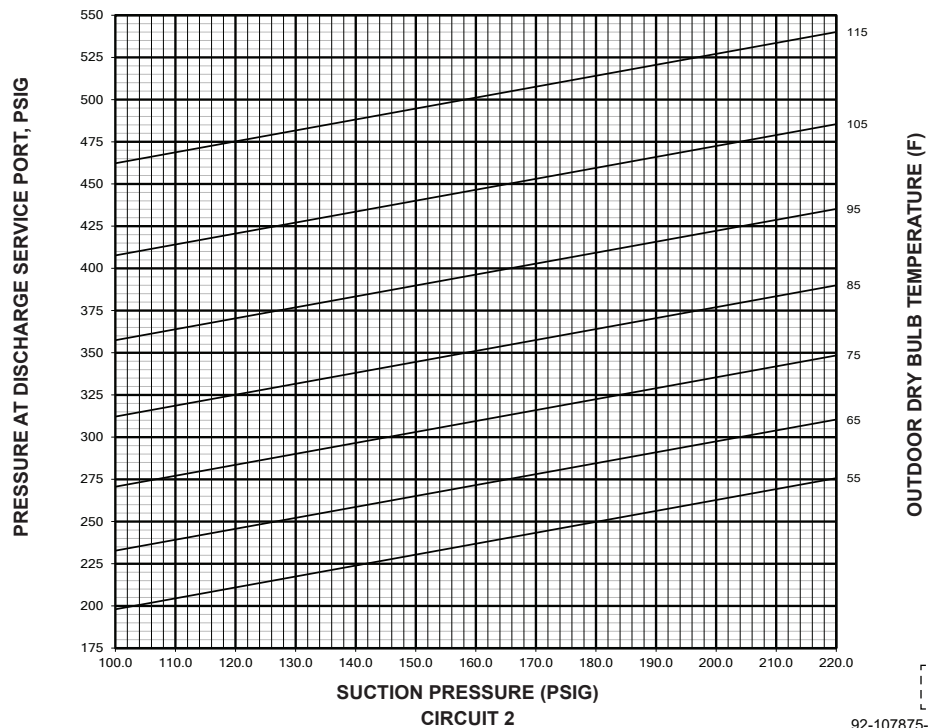
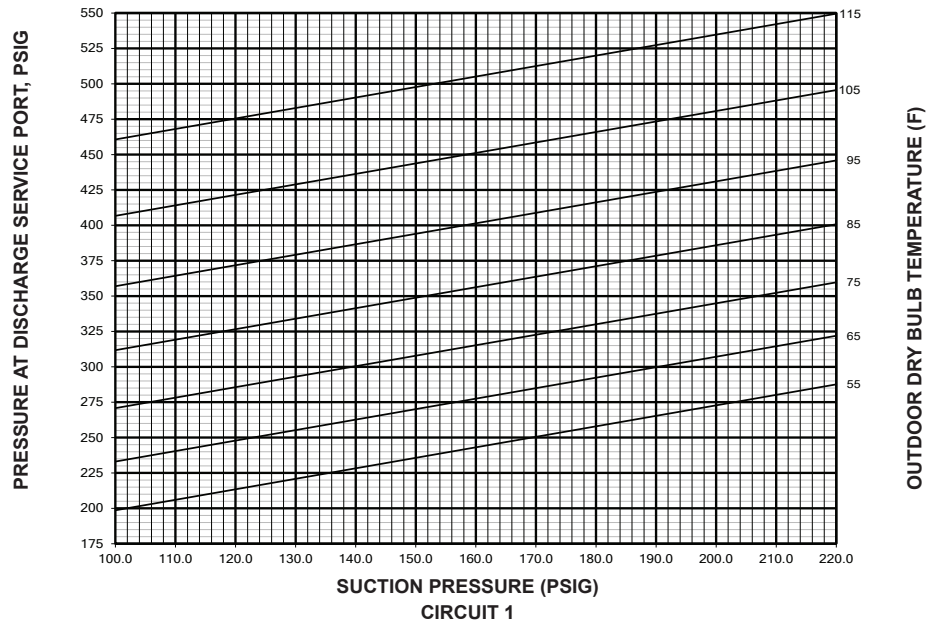
| Model                                                 |                                  | (-)ACGYB180                                         | (-)ACGYB210 | (-)ACGYB240 | (-)ACGYB300 |
|-------------------------------------------------------|----------------------------------|-----------------------------------------------------|-------------|-------------|-------------|
| Refrigerant Charge Weight (oz)<br>Circuit 1/Circuit 2 |                                  | 163/168                                             | 213/216     | 195/203     | 229/216     |
| Minimum Circulation Airflow, Qmin<br>(cfm)            |                                  | 559                                                 | 718         | 675         | 762         |
| Altitude above<br>Sea Level (ft)                      | Altitude<br>Adjustment<br>Factor | Minimum Total Space Area, T <sub>Amin</sub> (sq ft) |             |             |             |
| 0                                                     | 1.000                            | 310                                                 | 398         | 374         | 422         |
| 1000                                                  | 1.025                            | 317                                                 | 408         | 384         | 433         |
| 2000                                                  | 1.051                            | 325                                                 | 418         | 393         | 444         |
| 3000                                                  | 1.078                            | 334                                                 | 429         | 403         | 455         |
| 4000                                                  | 1.107                            | 343                                                 | 441         | 414         | 467         |
| 5000                                                  | 1.138                            | 352                                                 | 453         | 426         | 480         |
| 6000                                                  | 1.170                            | 362                                                 | 466         | 438         | 494         |
| 6500                                                  | 1.187                            | 368                                                 | 473         | 444         | 501         |

## Appendix G – Refrigerant Charging Charts

### SYSTEM CHARGE CHART - REFRIGERANT 454B 15 TON, CIRCUITS 1 & 2

CIRCUIT 1 DESIGN TARGET SUBCOOLING AT 95°F:  $16.5 \pm 0.5^\circ\text{F}$ .  
CIRCUIT 2 DESIGN TARGET SUBCOOLING AT 95°F:  $15.1 \pm 0.5^\circ\text{F}$ .

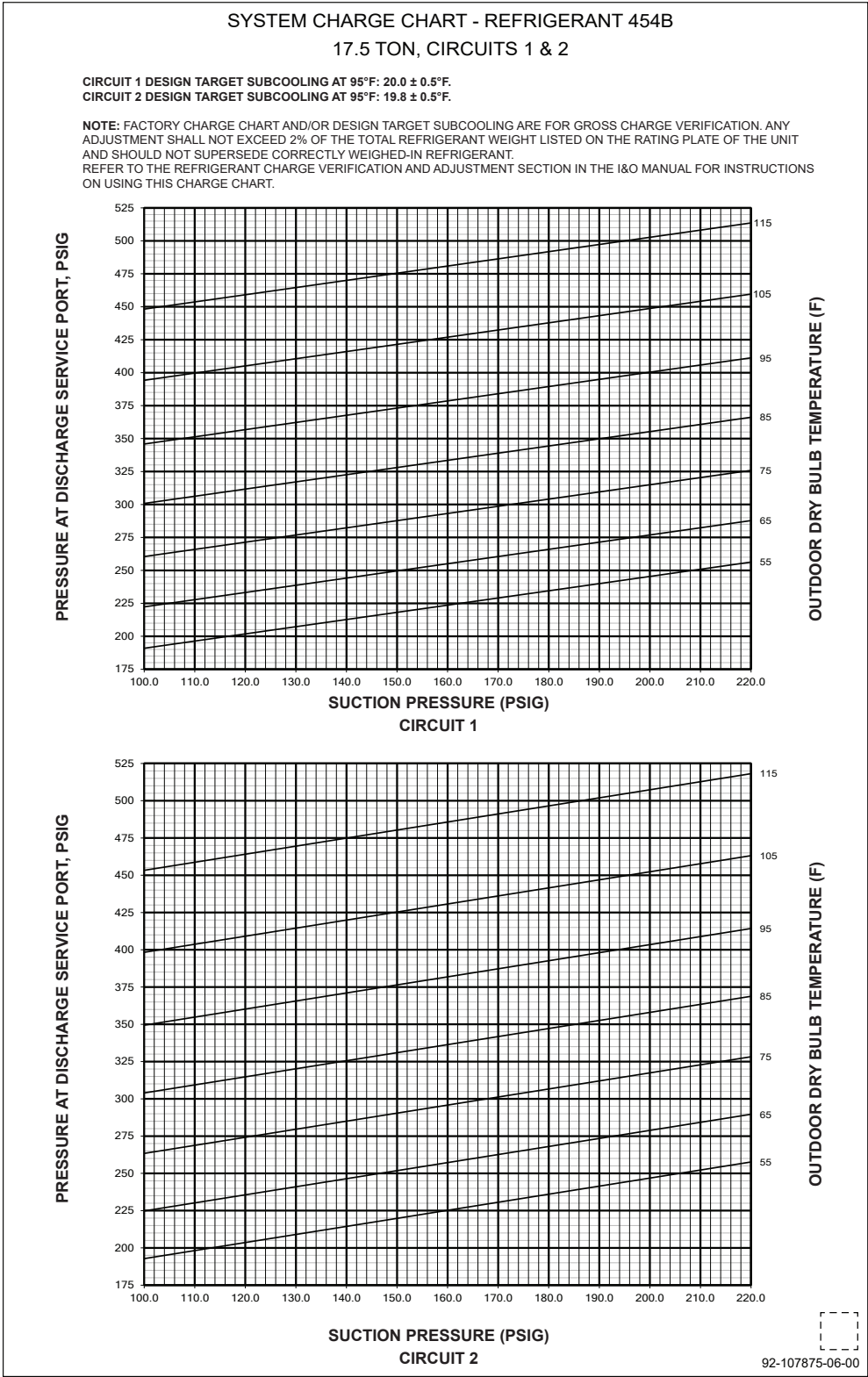
**NOTE:** FACTORY CHARGE CHART AND/OR DESIGN TARGET SUBCOOLING ARE FOR GROSS CHARGE VERIFICATION. ANY ADJUSTMENT SHALL NOT EXCEED 2% OF THE TOTAL REFRIGERANT WEIGHT LISTED ON THE RATING PLATE OF THE UNIT AND SHOULD NOT SUPERSEDE CORRECTLY WEIGHED-IN REFRIGERANT. REFER TO THE REFRIGERANT CHARGE VERIFICATION AND ADJUSTMENT SECTION IN THE I&O MANUAL FOR INSTRUCTIONS ON USING THIS CHARGE CHART.



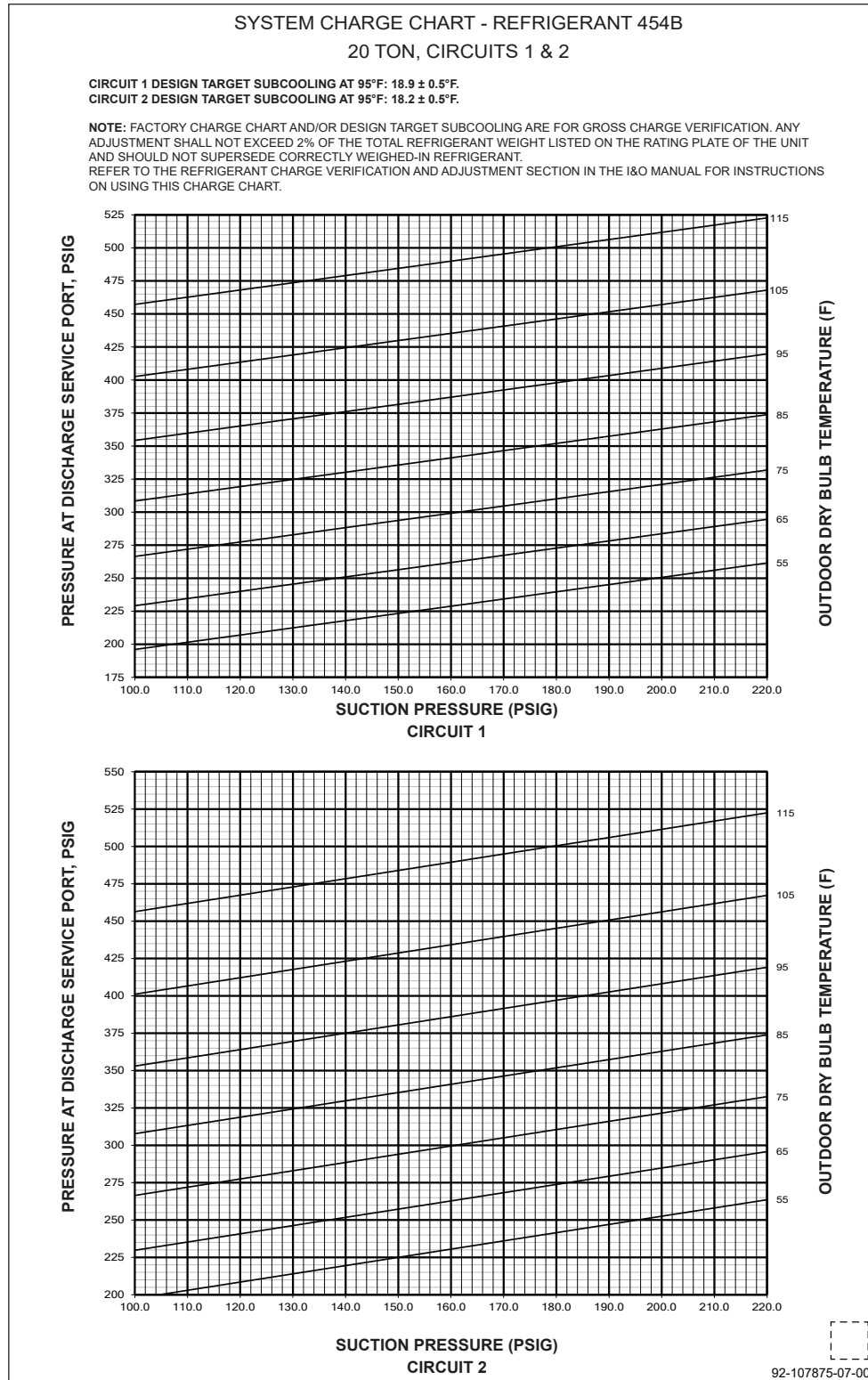
92-107875-05-00

# P. APPENDICES

## Appendix G – Refrigerant Charging Charts



## Appendix G – Refrigerant Charging Charts



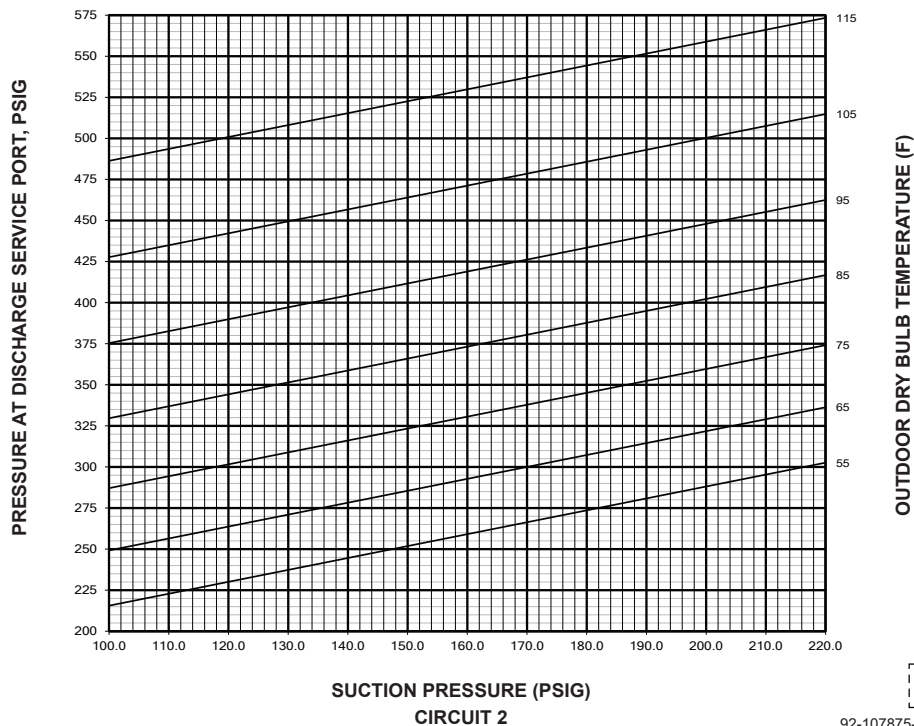
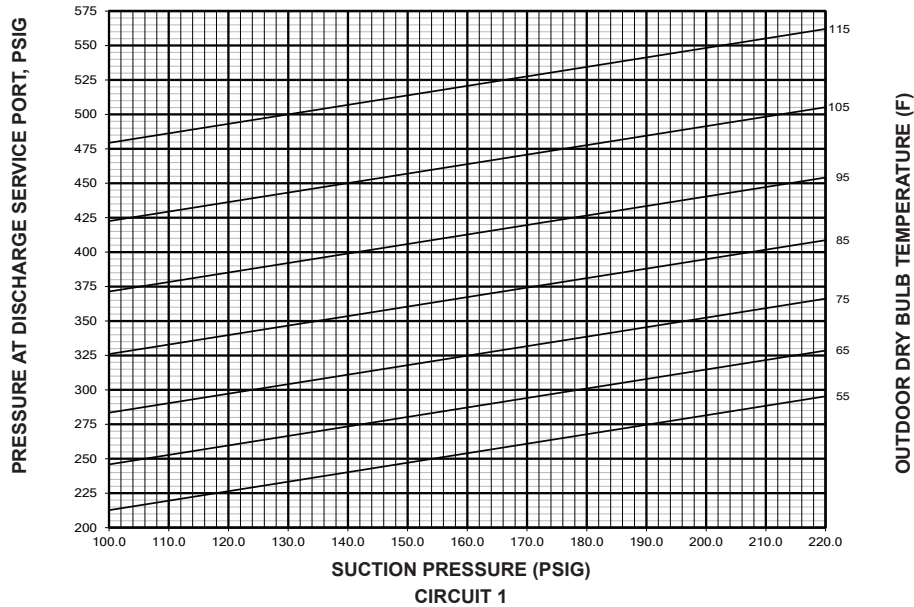
# P. APPENDICES

## Appendix G – Refrigerant Charging Charts (Cont.)

### SYSTEM CHARGE CHART - REFRIGERANT 454B 25 TON, CIRCUITS 1 & 2

CIRCUIT 1 DESIGN TARGET SUBCOOLING AT 95°F:  $20.4 \pm 0.5^\circ\text{F}$ .  
CIRCUIT 2 DESIGN TARGET SUBCOOLING AT 95°F:  $20.6 \pm 0.5^\circ\text{F}$ .

**NOTE:** FACTORY CHARGE CHART AND/OR DESIGN TARGET SUBCOOLING ARE FOR GROSS CHARGE VERIFICATION. ANY ADJUSTMENT SHALL NOT EXCEED 2% OF THE TOTAL REFRIGERANT WEIGHT LISTED ON THE RATING PLATE OF THE UNIT AND SHOULD NOT SUPERSEDE CORRECTLY WEIGHED-IN REFRIGERANT. REFER TO THE REFRIGERANT CHARGE VERIFICATION AND ADJUSTMENT SECTION IN THE I&O MANUAL FOR INSTRUCTIONS ON USING THIS CHARGE CHART.



92-107875-08-00

## Appendix G – Refrigerant Charging Charts (Cont.)

### SYSTEM CHARGE CHART FOR CIRCUIT 1 – REFRIGERANT R-454B

#### PRESSURE REQUIREMENTS – GROSS CHARGE CHECK (REFER CHARGE CHART)

| OUTDOOR DRY<br>BULB (°F) | 15-TON                       | 17.5-TON | 20-TON  | 25-TON  |
|--------------------------|------------------------------|----------|---------|---------|
|                          | LIQUID/VAPOR PRESSURE (PSIG) |          |         |         |
| 115                      | 488/137                      | 469/137  | 476/135 | 499/128 |
| 105                      | 432/134                      | 414/136  | 421/133 | 440/126 |
| 95                       | 381/132                      | 364/134  | 372/132 | 388/123 |
| 85                       | 335/131                      | 318/131  | 325/131 | 341/121 |
| 75                       | 292/129                      | 276/129  | 282/128 | 296/118 |
| 65                       | 253/127                      | 236/126  | 243/125 | 255/113 |
| 55                       | 216/124                      | 203/122  | 208/121 | 216/105 |

#### SUB COOLING REQUIREMENTS – FINAL CHARGE VERIFICATION

| OUTDOOR DRY<br>BULB (°F) | 15-TON          | 17.5-TON | 20-TON | 25-TON |
|--------------------------|-----------------|----------|--------|--------|
|                          | SUBCOOLING (°F) |          |        |        |
| 115                      | 17.5            | 19.4     | 18.9   | 21.7   |
| 105                      | 17.2            | 19.6     | 18.6   | 21.1   |
| 95                       | 16.5            | 20.0     | 18.9   | 20.4   |
| 85                       | 15.7            | 19.6     | 18.6   | 19.9   |
| 75                       | 14.8            | 19.4     | 17.6   | 20.0   |
| 65                       | 14.1            | 18.7     | 17.4   | 20.5   |
| 55                       | 14.6            | 18.5     | 17.4   | 20.8   |

# P. APPENDICES

## Appendix G – Refrigerant Charging Charts (Cont.)

### SYSTEM CHARGE CHART FOR CIRCUIT 2 – REFRIGERANT R-454B

#### PRESSURE REQUIREMENTS – GROSS CHARGE CHECK (REFER CHARGE CHART)

| OUTDOOR DRY<br>BULB (°F) | 15-TON                       | 17.5-TON | 20-TON  | 25-TON  |
|--------------------------|------------------------------|----------|---------|---------|
|                          | LIQUID/VAPOR PRESSURE (PSIG) |          |         |         |
| 115                      | 486/137                      | 473/136  | 476/136 | 506/127 |
| 105                      | 430/135                      | 416/133  | 420/135 | 446/125 |
| 95                       | 379/133                      | 366/131  | 371/132 | 392/123 |
| 85                       | 333/132                      | 319/129  | 324/130 | 345/121 |
| 75                       | 290/130                      | 278/127  | 281/127 | 300/117 |
| 65                       | 251/128                      | 237/123  | 243/124 | 259/113 |
| 55                       | 213/124                      | 204/120  | 208/119 | 220/106 |

#### SUB COOLING REQUIREMENTS – FINAL CHARGE VERIFICATION

| OUTDOOR DRY<br>BULB (°F) | 15-TON          | 17.5-TON | 20-TON | 25-TON |
|--------------------------|-----------------|----------|--------|--------|
|                          | SUBCOOLING (°F) |          |        |        |
| 115                      | 16.9            | 19.4     | 18.5   | 22.2   |
| 105                      | 16.1            | 19.5     | 18.1   | 21.4   |
| 95                       | 15.1            | 19.8     | 18.2   | 20.6   |
| 85                       | 13.8            | 19.4     | 17.8   | 19.9   |
| 75                       | 12.5            | 19.2     | 16.7   | 20.0   |
| 65                       | 11.3            | 18.5     | 16.0   | 20.6   |
| 55                       | 10.7            | 18.3     | 15.9   | 21.3   |

## Appendix G – Refrigerant Charging Charts (Cont.)

Charge verification instructions:

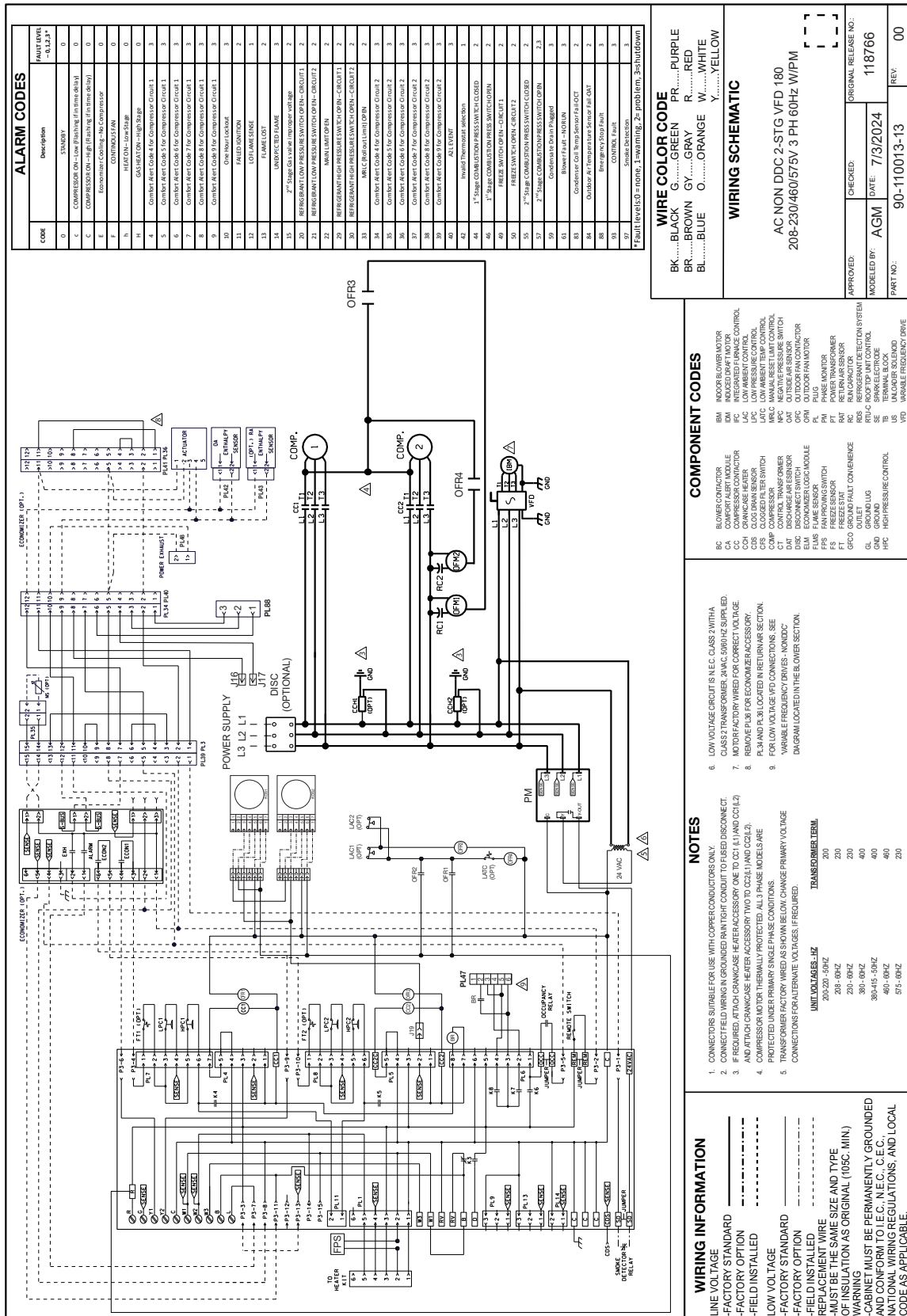
1. Allow the unit to operate for 15 minutes before checking or adjusting the charge.
2. Ensure that the contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
3. Ensure that the unit is properly grounded.
4. Return air temperature must be within comfort conditions (72°F - 82°F).
5. Remove caps from the high-side and low-side pressure service fittings.
6. Cylinders shall be kept in an upright position for the entirety of the testing and charging procedure.
7. Record the following measurements:
  - a. High-side pressure at service fitting
  - b. Liquid line temperature
8. Using R-454B refrigerant saturation T-P tables, find the corresponding refrigerant saturation temperature relative to the measured high-side pressure
9. To determine subcooling, subtract the liquid line temperature measured in Step 7 from the saturation temperature found in Step 8.
10. Compare the subcooling result from Step 9 to the subcooling table located on the unit or in the I&O manual.
11. If the subcooling value from Step 9 is more than 1°F above the value listed in the subcooling table, remove charge to match the value listed in the table,  $\pm 0.5^\circ\text{F}$ .
  - a. Take extreme care not to overfill the refrigerating system.
12. If the subcooling value from Step 9 is more than 1°F below the value listed in the subcooling table, add charge to match the value listed in the table,  $\pm 0.5^\circ\text{F}$ .
  - a. Take extreme care not to overfill the refrigerating system.

After charging is complete, a leak test must be done. Before leaving the site an additional leak test must also be done at the end of the installation. Refer to **J.1.1.3. Removal and Evacuation of Refrigerant.**

## Appendix H. Wiring Diagrams & Schematics



## Appendix H. Wiring Diagrams & Schematics



## Appendix H. Wiring Diagrams & Schematics (Cont.)



## Appendix H. Wiring Diagrams & Schematics (Cont.)



# P. APPENDICES

## J. Unit High Wind Tie-Down



ENGINEERINGEXPRESS.COM  
POSTAL ADDRESS: 401 W. ATLANTIC AVE R10 #219  
DELRAY BEACH, FL 33444

## Technical Evaluation Report

DIVISION: 23 08 00 – COMMISSIONING OF HVAC

THIS DOCUMENT CONTAINS (9) PAGES.  
ENGINEER DIGITAL OR ORIGINAL HAND SEAL REQUIRED FOR USE.  
COPIES ARE NOT VALID FOR PERMIT.

(Subject to Renew July 1, 2024 or next code cycle)

EVALUATION SUBJECT: 15-25T COMMERCIAL PACKAGE UNITS

TER-22-50302

### REPORT HOLDER:

RHEEM SALES COMPANY, INC.  
800 INTERSTATE PARK DR  
MONTGOMERY, AL 36109, USA  
(770) 351-3000 | RHEEM.COM



### SCOPE OF EVALUATION (compliance with the following codes):

**THIS IS A STRUCTURAL (WIND) PERFORMANCE EVALUATION ONLY. NO ELECTRICAL OR TEMPERATURE PERFORMANCE RATINGS OR CERTIFICATIONS ARE OFFERED OR IMPLIED HEREIN.**

This Product Evaluation Report is being issued in accordance with the requirements of the **Florida Building Code Seventh Edition (2020)** per ASCE 7, FBC Building Ch. 16, FBC Building Sections 104.11 & 1522.2, FBC Existing Building Sections 707.1 & 707.2, FBC Mechanical 301.15, FBC Residential M1202.1 & M1301.1, FS 471.025, and Broward County Administrative Provisions 107.3.4. This report is also in accordance with the **International Building & Residential Codes (2012, 2015, & 2018)**. The product noted on this report has been tested and/or evaluated as summarized herein.

**IN ACCORDANCE WITH THESE CODES EACH OF THESE REPORTS MUST BEAR THE ORIGINAL SIGNATURE & RAISED SEAL OR DIGITAL SEAL OF THE EVALUATING ENGINEER.**

### SUBSTANTIATING DATA:

#### • Product Evaluation Documents

Substantiating documentation has been submitted to provide this TER and is summarized in the sections below.

#### • Structural Engineering Calculations

Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

- Max. allowable lateral & uplift wind pressures certified herein
- Max. allowable sliding forces, uplift forces, & overturning moments (see Unit Reactions from Wind Guide on last page)
- Anchor capacity and tie-down configurations for unit attachment to concrete and steel host structures by others.
- Unit panel wind pressure connection integrity

Calculation summary is included in this TER and appears herein. NOTE: No 33% increase in allowable stress has been used in the design of this product.

### LIMITATIONS & CONDITIONS OF USE:

Use of the product(s) listed herein shall be in strict accordance with this TER as noted herein and manufacturer-provided model specifications. Installation shall conform to the minimum standards stated in the referenced building code(s) in addition to the specifications and limitations stated herein. See herein for complete limitations & conditions of use.

### OPTIONS:

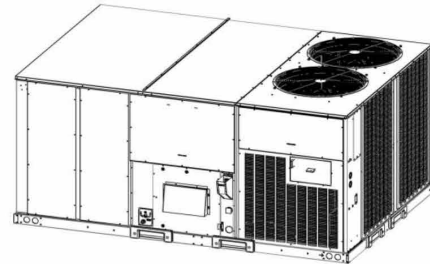
This evaluation is valid for the Rheem models described herein. Any structural changes outside of the design as described herein would void this certification.

### UNIT CASING MATERIALS:

Exterior panels and unit base rail shall be UTS = 37 ksi min. G90U galv. steel. Exterior panels shall be 0.034" min. thick. Base rail shall be 0.069" min. thick. Exterior panels shall be secured with #10 min. Ø, SAE Gr. 2 or stronger sheet metal screws with 1/2" OD washers. Please contact Report Holder for further unit construction information.

### TERMINOLOGY:

See herein for definitions of terms and abbreviations used in this report.



**NOTE: THE GRAPHICAL DEPICTIONS IN THIS REPORT ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY DIFFER IN APPEARANCE.**

### STRUCTURAL PERFORMANCE:

Models referenced herein are subject to the following design limitations:

**Maximum Rated Wind Pressures\*:**  
**± 140 psf Lateral, 111 psf Uplift**

- Required design wind pressures shall be determined according to the guide provided in the Appendix (see the last page of this report) or on a site-specific basis in accordance with ASCE 7 and applicable sections of the building code(s) being referenced in accordance with ASD methodology.
- Required design pressures shall be less than or equal to the maximum pressures listed herein.
- \*Maximum Rated Wind Pressures indicate the maximum pressures that all units listed herein are approved for. Valid for at-grade and rooftop applications. See limitations herein.
- Valid for use inside and outside the High-Velocity Hurricane Zone (HVHZ).
- Site-specific wind analysis may produce alternate limitations provided maximum rated wind pressures stated herein are not exceeded.

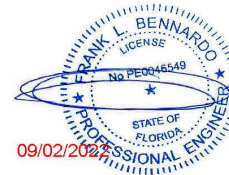
### VISIT [ECALC.IO/RHEEM](https://ecalculator.com/rheem)

FOR ENGINEER CERTIFIED ORIGINALS & MORE  
INFORMATION ABOUT THIS DOCUMENT OR SCAN  
THE QR CODE TO THE RIGHT >

VISIT [ENGINEERINGEXPRESS.COM/STORE](https://engineeringexpress.com/store) FOR  
ADDITIONAL PLANS, REPORTS & RESOURCES



**ORIGINAL SIGNATURE AND RAISED SEAL  
OR DIGITAL SEAL REQUIRED TO BE VALID PER CODE:**



**VALID ONLY FOR ZIP CODE: 00000**

**VALID ONLY FOR: Rheem Sales Company, INC**

**NOT VALID FOR PERMIT, ONLY FOR THE MANUFACTURERS RECORDS.**

**PE0046549 CA-9885**

**DIGITAL SEAL NOTICE:** IF THIS DOCUMENT IS DIGITALLY SIGNED, THIS SHEET IS PART OF A DIGITALLY SIGNED FILE. IT SHALL REMAIN IN DIGITAL FORMAT, SHALL BE VERIFIED BY ELECTRONIC MEANS, & **PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED.** VISIT [ECALC.IO/DS](https://ecalculator.com/ds) FOR MORE INFORMATION.

**PRINTED DOCUMENT NOTICE:** IF THIS DOCUMENT IS PRINTED & **DOES NOT CONTAIN AN ENGINEER'S ORIGINAL SIGNATURE & SEAL, THIS DOCUMENT IS VOID & NOT VALID FOR USE. PHOTOCOPIES ARE NOT PERMITTED FOR USE.**

Copyright © Engineering Express® All Rights Reserved

The codes referenced above define **APPROVED SOURCE** (Section 202) as: "An independent person, firm or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses." Engineering Express® professionals meet the competency requirements as defined in the codes referenced herein and can seal their work. Engineering Express® is regularly engaged in conducting and providing engineering evaluations of single-element and full-scale building systems tests.

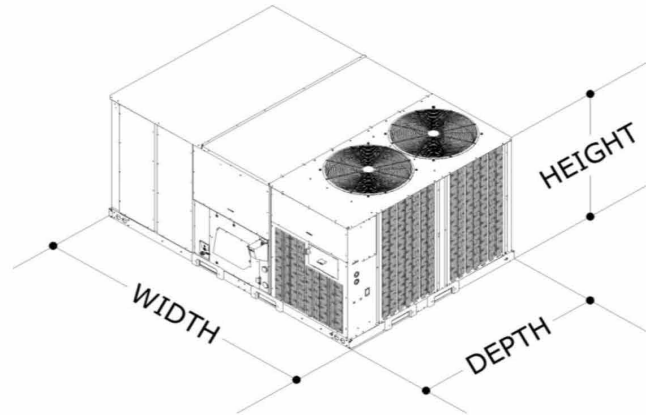
## J. Unit High Wind Tie-Down

15-25T COMMERCIAL PACKAGE UNITS

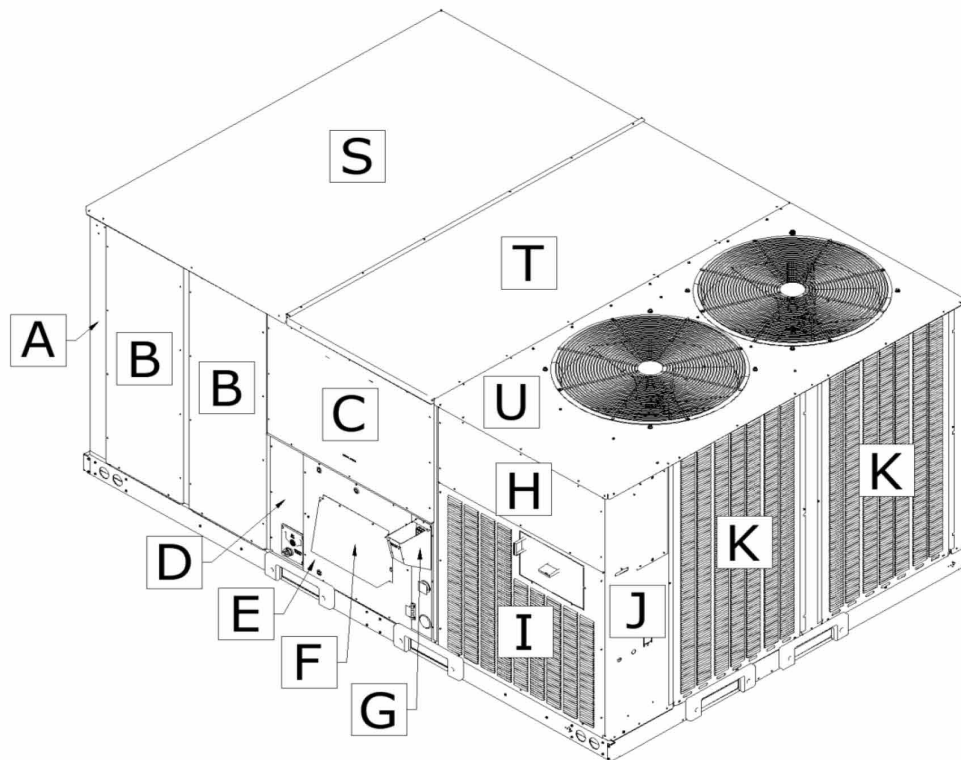
Engineering *Express*® | TER-22-50302

### MODEL INFORMATION

| Model Number | Unit Dimensions (in) |       |        |
|--------------|----------------------|-------|--------|
|              | Width                | Depth | Height |
| (-)GEG2T180  | 127                  | 86    | 58.5   |
| (-)GEG2T210  |                      |       |        |
| (-)GEG2T240  |                      |       |        |
| (-)GEG2T300  |                      |       |        |
| (-)ACG2T180  |                      |       |        |
| (-)ACG2T210  |                      |       |        |
| (-)ACG2T240  |                      |       |        |
| (-)ACG2T300  |                      |       |        |



1 UNIT DIMENSIONS  
SCALE: NTS FRONT-RIGHT ISOMETRIC VIEW



2 PANEL DESIGNATIONS  
SCALE: NTS FRONT-RIGHT ISOMETRIC VIEW

### MODEL INFORMATION NOTES

Model information listed herein is based on information provided by the Report Holder. '(-)' designates equivalent trade brands with similar cabinetry and may vary depending on the brand. Unit dimensions listed above are net dimensions (as opposed to gross, packing, or shipping dimensions) and describe the main body of the unit only (not considering extra length from hoods, fan cages, etc.). Unit net weights shall be between 1750 lb and 2350 lb, typ. See Details 1 - 6 herein for definitions of unit dimensions, unit sides (front, back, left, right), and panel designations (related to the Panel Integrity evaluation summarized herein). Additional views are shown next page. Unit appearance may vary. Please contact Report Holder for more information.

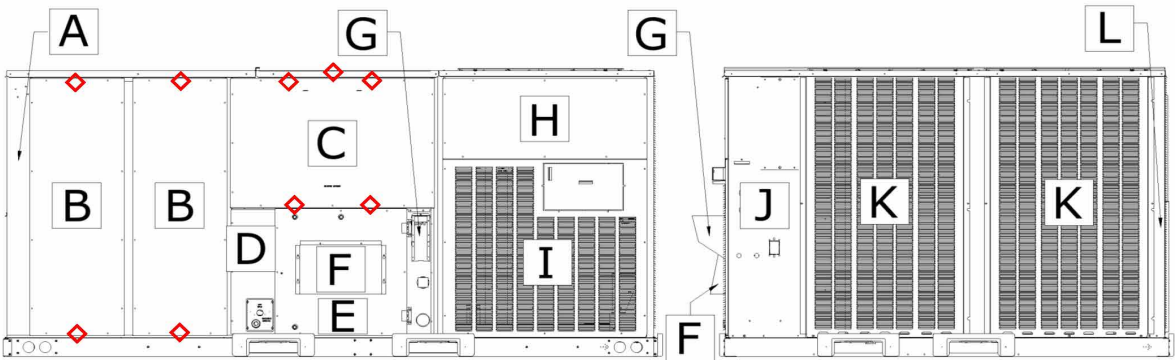
# P. APPENDICES

## J. Unit High Wind Tie-Down

15-25T COMMERCIAL PACKAGE UNITS

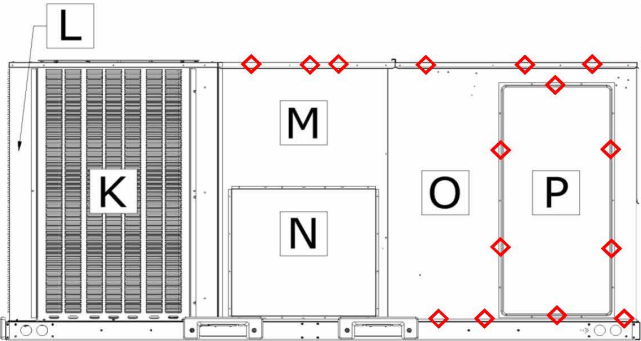
Engineering *Express*® | TER-22-50302

MODEL INFORMATION CONTINUED

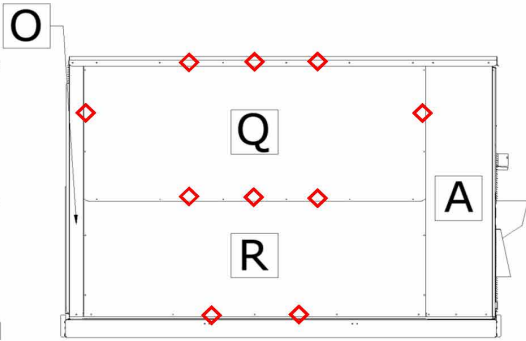


3 PANEL DESIGNATIONS  
SCALE: NTS FRONT VIEW

4 PANEL DESIGNATIONS  
SCALE: NTS RIGHT VIEW



5 PANEL DESIGNATIONS  
SCALE: NTS BACK VIEW



6 PANEL DESIGNATIONS  
SCALE: NTS LEFT VIEW

MODEL INFORMATION NOTES CONTINUED

See Details 1 - 6 herein for definitions of unit dimensions, unit sides (front, back, left, right), and panel designations (related to the Panel Integrity evaluation summarized herein). Panel layouts as designated by the boxed call-outs in Details 1 - 6 (e.g. "A", "B", etc.) apply for all unit models. Remaining exterior panels and fan cages not designated herein were considered in the panel integrity evaluation and are included in this evaluation. See Panel Integrity Summary section herein. Diamond "◇" regions in Details 3 - 6 herein illustrate approximate additional screw locations related to the Panel Integrity evaluation summarized herein on page 7. See Panel Integrity section herein for specifications.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

## J. Unit High Wind Tie-Down

15-25T COMMERCIAL PACKAGE UNITS

Engineering **Express**® | TER-22-50302

### UNIT TIE-DOWN TO CONCRETE HOST SCHEDULE

| Application          | Max. ASD Wind Pressures Lateral (Uplift) | Number of Tie-Down Clips per Long Side | Number of Tie-Down Clips per Short Side | Number of Tie-Down Clips in Total per Unit |
|----------------------|------------------------------------------|----------------------------------------|-----------------------------------------|--------------------------------------------|
| At-Grade to Concrete | ± 40 psf (0 psf)                         | 3                                      | 0                                       | 6                                          |
|                      | ± 54 psf (0 psf)                         | 2                                      | 2                                       | 8                                          |

### UNIT TIE-DOWN TO CONCRETE HOST SCHEDULE NOTES

**INTRODUCTION:** This Schedule provides direct mounting option to concrete (without curb) for at-grade applications. For rooftop and/or curb applications, see "Unit Mount to Steel Curb" Section further herein.

**TIE-DOWN SCHEDULE DIRECTIVE:** The Schedule table above is divided into maximum wind pressure tiers (each row of table). Site-specific wind pressures up to ± 40 psf lateral & 0 psf uplift shall follow, at-minimum, the tie-down specifications as stated in the ± 40 psf lateral (0 psf uplift) pressure tier row. Site-specific wind pressures greater than ± 40 psf lateral and up to ± 54 psf lateral & 0 psf uplift shall follow the tie-down specifications as stated in the ± 54 psf lateral (0 psf uplift) pressure tier row. Concrete host structure by others shall have 3000 psi minimum compressive strength. This schedule applies to all units described in this evaluation. See tie-down specifications and Details on this page.

**ANCHOR NOTES:** In all cases, the concrete host is by others. Utilize (1) anchor per tie-down clip. Anchor specifications shall be as follows:

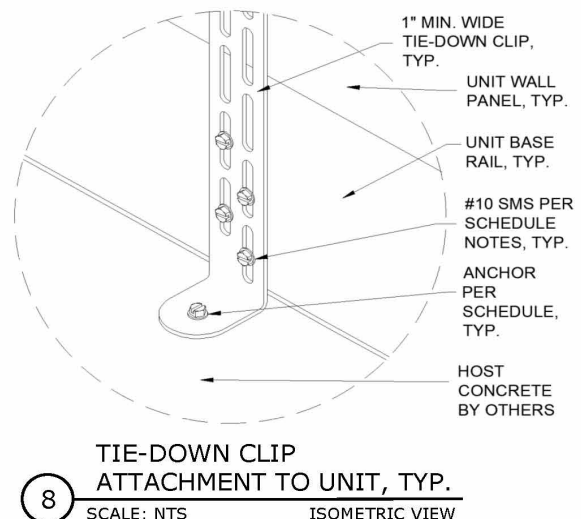
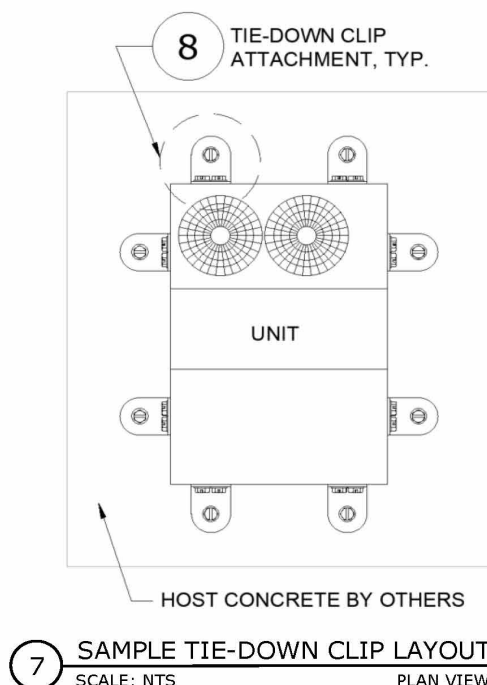
1/4" Ø ITW Tapcon or equivalent with 1-3/4" embedment, 3" min. edge distance to edge of concrete, 1/2" min. edge distance to edge of tie-down clip, and 4-1/4" min. spacing from neighboring concrete anchors, typ.

**TIE-DOWN CLIP NOTES:** Tie-down clips shall be 1" min. wide, 4" - 10" tall, 0.068" min. thick, UTS = 45 ksi min. (equiv. to ASTM A653 Gr. 33 or stronger) galv. steel. Utilize (1) anchor per tie-down clip with specifications as described in the above "Anchor Notes". Ensure anchor is placed at center of tie-down clip leg to provide 1/2" min. edge distance.

Fasten clip to unit base rail with (4) #10 min. Ø, SAE Gr. 2 min. or SS SMS, typ. Utilize (4) slots that have flush, solid contact with unit, (1) screw per slot, typ. Ensure all screws fully engage with unit. Tie-down clips shall sit flush on concrete and flush against unit.

For each unit long side (along unit width), distribute tie-down clip quantity approximately evenly-spaced. Position end clips 3" minimum away from either end of unit base rail. For scenarios in which tie-down clips are required on unit short sides (along unit depth), position tie-down clip at either corner of each unit short side, 3" minimum away from either end of unit base rail. See Details below.

### UNIT TIE-DOWN TO HOST CONCRETE DETAILS



### Unit Tie-Down to Host Concrete Details Notes

For each Detail in this section, consult the Unit Tie-Down to Host Concrete Schedule and Notes on this page for all tie-down components and specifications required.

The units and components depicted are for illustrative purposes only and may vary in quantity and/or appearance. Component sizes may be exaggerated for clarity. Tie-down system may not be depicted in full.

# P. APPENDICES

## J. Unit High Wind Tie-Down

15-25T COMMERCIAL PACKAGE UNITS

Engineering **Express**® | TER-22-50302

### UNIT MOUNT TO STEEL CURB SCHEDULE

| Application                    | Max. ASD<br>Wind Pressures<br>Lateral (Uplift) | # of<br>Curb Clips<br>per Long Side | # of<br>Curb Clips<br>per Short Side | # of<br>Curb Clips<br>Total per Unit |
|--------------------------------|------------------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|
| Rooftop Mount<br>to Steel Curb | ± 80 psf (64 psf)                              | 2                                   | 2                                    | 8                                    |
|                                | ± 110 psf (87 psf)                             | 3                                   | 2                                    | 10                                   |
|                                | ± 140 psf (111 psf)                            | 4                                   | 2                                    | 12                                   |

### UNIT MOUNT TO STEEL CURB SCHEDULE NOTES

**SCHEDULE DIRECTIVE:** The Schedule table above is divided into maximum wind pressure tiers (each row of table). Site-specific wind pressures up to ± 80 psf lateral & 64 psf uplift shall use, at-minimum, the specifications as stated in the ± 80 psf lateral (64 psf uplift) pressure tier row. Site-specific wind pressures that fall in-between pressure tiers shall use, at-minimum, the specifications as specified by the higher pressure tier. This schedule applies to all units described in this evaluation. Steel curb by others shall be 16 GA. min. thick, UTS = 45 ksi min. (equiv. to ASTM A653 Gr. 33 or stronger) galv. steel. Curb structural integrity and attachment to host structure shall be by others. Curb schedule may also be used for at-grade applications to steel curbs. See specifications and Unit Mount to Curb Details herein.

**Example:** Say you are installing a unit at a site location with site-specific wind pressures of ± 85 psf lateral and 68 psf uplift. In this case, you would need to follow, at-minimum, the specifications corresponding to the ± 110 psf (87 psf) wind pressure tier row. By consulting the Schedule table:

**CURB CLIP NOTES:** Curb clips may also be referred to as "curb brackets" or curb "hold-down brackets". Curb clips shall be 16 GA min. thick, UTS = 45 ksi min. (equiv. to ASTM A653 Gr. 33 or stronger) galv. steel. Curb clips shall be equally spaced along specified curb side (± 12" variance as needed). Position end curb clips on unit long sides 12" minimum away from either end of side edge. Position end curb clips on unit short sides towards the unit corners, 3" minimum and 12" maximum away from either end of side edge. See Unit Mount to Curb Details herein.

Fasten curb clip to curb with (4) #14, SAE Gr. 2 min. or SS SMS with 1/2" min. edge distance to edge of curb and curb clip edge, and 1" min. spacing between screws. (Note: Size #14 SMS are 1/4" Ø). Fasten curb clips to curb prior to unit placement on curb and curb clip attachment to unit. Ensure all screws fully engage with both members in contact.

Once unit is positioned on curb and the unit base rail is resting on the curb clips: Fasten curb clip to unit base rail with (4) #14, SAE Gr. 2 min. or SS SMS with 1/2" min. edge distance to edge of curb clip and unit base rail edge, and 1" min. spacing between screws. Ensure all screws fully engage with both members in contact.

**REMAINDER OF PAGE INTENTIONALLY LEFT BLANK**