

# Outdoor Heat Pump for Manufactured Housing

## User's Information/Installation Instructions

### 13 SEER R-410A High Efficiency Split System

These units have been designed and tested for capacity and efficiency in accordance with A.R.I. Standards. Split System Heat Pump units are designed for use with a wide variety of fossil fuel furnaces, electric furnaces, air handlers, and evaporator coil combinations.

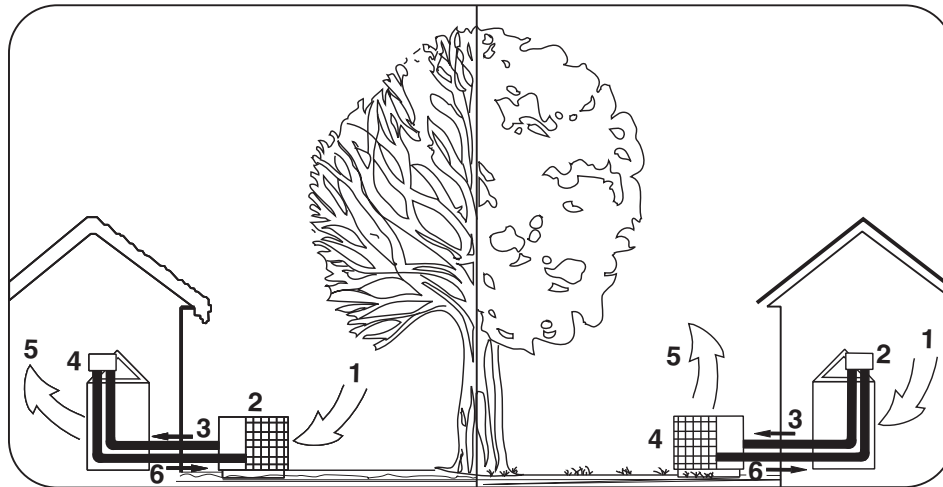
These instructions are primarily intended to assist qualified individuals experienced in the proper installation of heating and/or air conditioning appliances. Some local codes require licensed installation/service personnel for this type of equipment. Read all instructions carefully before starting the installation.

## USER'S INFORMATION

### IMPORTANT

Read this owner information to become familiar with the capabilities and use of your appliance. Keep this with literature on other appliances where you have easy access to it in the future. If a problem occurs, check the instructions and follow recommendations given. If these suggestions don't eliminate your problem, call your servicing contractor.

### Heat Pump Principle of Operation



#### WINTER HEATING

1. Outdoor air enters heat pump.
2. Cold, heat-transfer section (outdoor coil) extracts heat from outdoor air as refrigerant evaporates from a liquid to a gas.
3. Refrigerant, compressed to a hot gas by heat pump, carries the heat to the hot heat-transfer section (indoor coil).
4. Hot, heat-transfer section (indoor coil) releases the heat to indoor air as refrigerant condenses from a gas to a liquid.
5. Air handler circulates the heat throughout the home.
6. Refrigerant returns to outdoor coil and evaporates once again to absorb more heat.

#### SUMMER COOLING

1. Indoor air enters the air handler section.
2. Cold, heat-transfer section (indoor coil) extracts heat from indoor air as refrigerant evaporates from a liquid to a cold gas.
3. Refrigerant, drawn to heat pump and compressed to a hot gas by heat pump, carries the heat outdoors.
4. Hot, heat-transfer section (outdoor coil) releases the heat as refrigerant condenses from a gas to a liquid.
5. Heat pump (outdoor fan) discharges the heat to outside air.
6. Refrigerant returns to indoor coil and evaporates once again to absorb more heat.

## OPERATING INSTRUCTIONS

### TO OPERATE YOUR HEAT PUMP FOR COOLING —

1. Set the thermostat system switch to COOL and the thermostat fan switch to AUTO. (See Figure 1)
2. Set the thermostat temperature to the desired temperature level using the temperature selector. Please refer to the separate detailed thermostat user's manual for complete instructions regarding thermostat programming. The outdoor unit and indoor blower will both cycle on and off to maintain the indoor temperature at the desired cooling level.

**NOTE:** If the thermostat temperature level is re-adjusted, or the thermostat system switch is repositioned, the outdoor unit may not start immediately. The outdoor unit contains a protective timer circuit which holds the unit off for approximately five minutes following a previous operation, or the interruption of the main electrical power.

### TO OPERATE YOUR HEAT PUMP FOR HEATING —

1. Set the thermostat system switch to HEAT and the thermostat fan switch to AUTO. (See Figure 1)

2. Set the thermostat temperature to the desired temperature level using the temperature selector. Please refer to the separate detailed thermostat user's manual for complete instructions regarding thermostat programming. The outdoor unit and indoor blower will both cycle on and off to maintain the indoor temperature at the desired heating level.

**NOTE:** If the thermostat temperature level is re-adjusted, or the thermostat system switch is repositioned, the outdoor unit may not start immediately. The outdoor unit contains a protective timer circuit which holds the unit off for approximately five minutes following a previous operation, or the interruption of the main electrical power.

#### Emergency Heat:

The thermostat includes a system switch position termed EM. HT. This is a back-up heating mode to be used only if there is a suspected problem with the outdoor unit. With the system switch set to EM. HT. the outdoor unit will be locked off, and supplemental heat (typically electric resistance heating) will be used as a source of heat. Sustained use of electric resistance heat in place of the heat pump will result in an increase in electric utility costs.

#### Defrost:

During cold weather heating operation, the outdoor unit will develop a coating

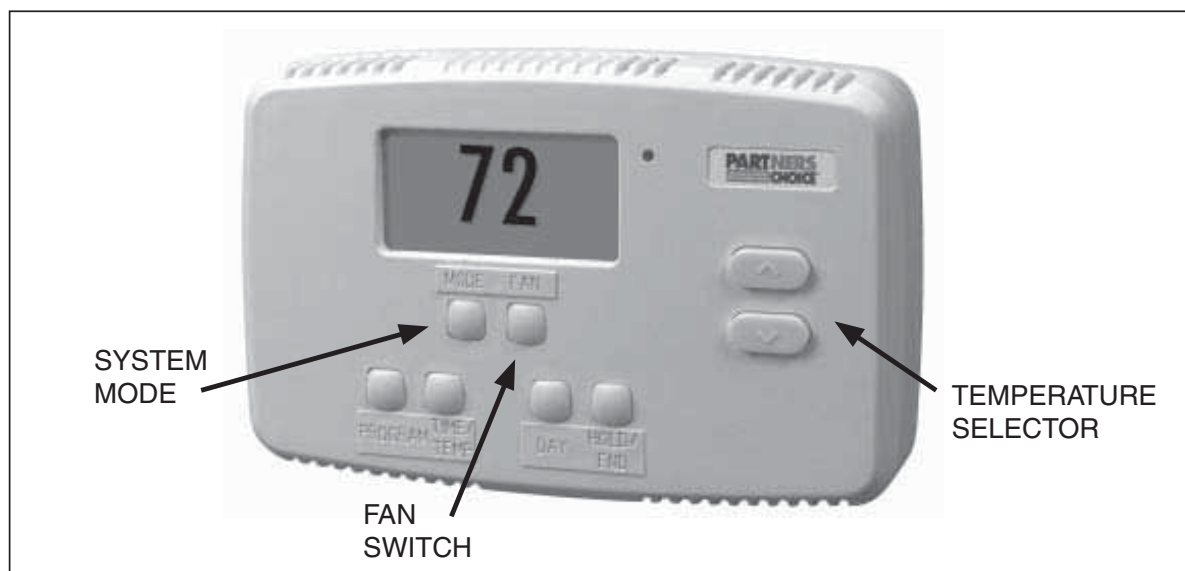


Figure 1. Typical Thermostat

of snow and ice on the heat transfer coil. This is normal, and the unit will periodically defrost itself. During the defrost cycle, the outdoor fan will stop, and the compressor will continue to run and heat the outdoor coil, causing the snow and ice to melt. After the snow and ice have melted, some steam may rise from the outdoor unit as the warm coil causes some melted frost to evaporate.

## TO OPERATE YOUR HEAT PUMP FOR AUTOMATIC COOLING AND HEATING —

1. Set the thermostat system switch to AUTO and the thermostat fan switch to AUTO. (See **Figure 1**)

Note: Thermostats will vary. Some models will not include the AUTO mode, and others will have the AUTO in place of the HEAT and COOL, and some will include all three.

2. Set the thermostat temperature to the desired heating and cooling temperature level(s). The outdoor unit and the indoor blower will then cycle on and off in either the heating or cooling mode of operation as required to automatically maintain the indoor temperature within the desired limits.

## TO SHUT OFF YOUR HEAT PUMP —

Set the thermostat system switch to OFF and the thermostat fan switch to AUTO. (See **Figure 1**) The system will not operate, regardless of the thermostat temperature selector(s) setting.

## TO OPERATE THE INDOOR BLOWER CONTINUOUSLY —

Set the thermostat fan switch to ON (See **Figure 1**). The indoor blower will start immediately, and will run continually until the fan switch is reset to AUTO.

The continuous indoor blower operation can be obtained with the thermostat system switch set in any position, including OFF.

The continuous indoor blower operation is typically used to circulate the indoor air to equalize a temperature unbalance due to a sun load, cooking, or fireplace operation.

## TO MAINTAIN YOUR HEAT PUMP —



### CAUTION:

**Be certain the electrical power to the outdoor unit and the furnace/air handler is disconnected before doing the following recommended maintenance.**

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#### 1. Regularly:

- a. Clean or replace the indoor air filter at the start of each heating and cooling season, and when an accumulation of dust and dirt is visible on the air filter. Inspect the filter monthly.
- b. Remove any leaves and grass clippings from the coil in the outdoor unit, being careful not to damage the aluminum fins.
- c. Check for any obstruction such as twigs, sticks, etc.



### CAUTION:

**Do not over-oil, or oil motors not factory-equipped with oil tubes. The compressor is hermetically “sealed” and does not require lubrication.**

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#### 2. Before Calling a Service Technician, Be Certain:

- a. The unit thermostat is properly set — see “To Operate Your Heat Pump for Cooling” and “To Operate Your Heat Pump for Heating.”
- b. The unit disconnect fuses are in good condition, and the electrical power to the unit is turned on.

#### Read Your Warranty

Please read the separate warranty document completely. It contains valuable information about your system.

## GENERAL INFORMATION

Read the following instructions completely before performing the installation.



### CAUTION:

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**This unit uses refrigerant R-410A. DO NOT under any circumstances use any other refrigerant besides R-410A in this unit. Use of another refrigerant will damage this unit.**

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**Outdoor Unit Section** — Each outdoor unit is shipped with a refrigerant charge adequate to operate the outdoor section with an indoor matching coil or air handler. Units with brazed connections include the proper amount of refrigerant for an additional 15 ft. of refrigerant lines the same size as the valve fittings.

**NOTE:** DO NOT USE ANY PORTION OF THE CHARGE FOR PURGING OR LEAK TESTING.

Matching coils and air handlers may be shipped with a small holding charge to pressurize them to keep out contaminants. To release the pressure, read the indoor section installation instructions carefully.

**Liquid and Suction Lines** — Fully annealed, refrigerant grade copper tubing should be used when installing the system. Refrigerant suction line tubing should be fully insulated.

**Field Connections for Electrical Power Supply** — All wiring must comply with current provisions of the “National Electrical Code” (ANSI/NFPA 70) and with applicable local codes having jurisdiction. The minimum size of electrical conductors and circuit protection must be in compliance with information listed on the outdoor unit data label.

## SAFETY CONSIDERATIONS

**Pressures within the System** — Split system heat pump equipment contains liquid and gaseous refrigerant under pressure. Installation and servicing of this equipment should be accomplished by qualified, trained personnel thoroughly familiar with this type of equipment. Under no circumstances should the Homeowner attempt to install and/or service the equipment.

**Labels, Tags, Precautions** — When working with this equipment, follow all precautions in the literature, on tags, and on labels provided with the equipment. Read and thoroughly understand the instructions provided with the equipment prior to performing the installation and operational checkout of the equipment.

**Brazing Operations** — Installation of equipment may require brazing operations. Safety codes must be complied with. Safety equipment (e.g.; safety glasses, work gloves, fire extinguisher, etc.) must be used when performing brazing operations.



### WARNING:

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**Ensure all electrical power to the unit is off prior to installing or servicing the equipment. Failure to do so may cause personal injury or death.**

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## SITE PREPARATION

**Unpacking Equipment** — Remove the cardboard carton and User's Manual from the equipment. Take care to not damage tubing connections when removing from the carton.

**Inspect for Damage** — Inspect the equipment for damage prior to installing the equipment at the job site. Ensure coil fins are straight and, if necessary, comb fins to remove flattened and bent fins.

**Preferred Location of the Outdoor Unit at the Job Site** — Conduct a survey of the job site to determine the optimum location for mounting the outdoor unit. Overhead obstructions, poorly ventilated areas, and areas subject to accumulation of debris should be avoided. The

outdoor unit must be installed in such a manner that airflow through the coil is not obstructed and that the unit can be serviced.

**Facility Prerequisites** — Electrical power supplied must be adequate for proper operation of the equipment. The system must be wired and provided with circuit protection in accordance with local building codes and the National Electrical Code.

## INSTALLING THE OUTDOOR UNIT

**Slab Mount** — The site selected for a slab mount installation requires a stable foundation and one not subject to erosion. The slab should be level and anchored (if necessary) prior to placing the equipment on the slab.

**Cantilever Mount** — The cantilever mount should be designed with adequate safety factor to support the weight of the equipment, and for loads subjected to the mount during operation. Installed equipment should be adequately secured to the cantilever mount and levelled prior to operation of the equipment.

## INSTALLING THE INDOOR UNIT

The indoor section should be installed before proceeding with routing of refrigerant piping. Consult the Installation Instructions of the indoor unit (i.e.: air handler, furnace, etc.) for details regarding installation.

## CONNECTING REFRIGERANT TUBING BETWEEN THE INDOOR AND OUTDOOR UNIT



### CAUTION:

**This system utilizes R-410A refrigerant with POE oil. When servicing, cover or seal openings to minimize the exposure of the refrigerant system to air to prevent accumulation of moisture and other contaminants.**

**General** — Once outdoor and indoor unit placement has been determined, route refrigerant tubing between the equipment in accordance with sound installation practices. Refrigerant tubing should be routed in a manner that minimizes the length of tubing and the number of bends in the tubing. Refrigerant tubing should be supported in a manner that the tubing will not vibrate or abrade during system operation. Tubing should be kept clean of foreign debris during installation. Every effort should be made by the installer to ensure that the field installed, refrigerant containing components of the system have been installed in accordance with these instructions and sound installation practices so as to insure reliable system operation and longevity.

These units are equipped with single shot quick connect couplings. Together with the indoor section and line set, only four coupling connections are required to provide a 100% sealed system.

- Route the suction line and liquid line between indoor and outdoor sections, remove protector caps and plugs
- lubricate entire surface of the diaphragm “O” ring and threads of the male coupling using the lubricant supplied with the line set and a small brush.
- Ensure that coupling halves are held in proper alignment with each other prior to starting the threads of female coupling nut onto the male half. Thread coupling halves together by hand until a definite resistance is felt.
- Using a marker, mark a line from the coupling union nut to the bulkhead then tighten an addition wrench flat (60°). See table for torque values. Repeat for all couplings.

| Coupling Size | Torque                  | Male Coupling | Female Coupling Nut | Female Coupling Body |
|---------------|-------------------------|---------------|---------------------|----------------------|
| 3/8" (10mm)   | 10-12 Ft-Lbs (14-16 Nm) | 3/4"          | 11/16"              | 5/8"                 |
| 3/4" (19mm)   | 35-45 Ft-Lbs (47-61 Nm) | 1-1/8"        | 1-5/16"             | 1"                   |
| 7/8" (22mm)   | 10-12 Ft-Lbs (14-16 Nm) | 1-1/8"        | 1-5/16"             | 1"                   |

**Table 1. Torque Values**

**Optional Equipment** — Optional equipment (e.g.: liquid line solenoid valves, etc.) should be installed in strict accordance with the manufacturer’s installation instructions.



## ELECTRICAL CONNECTIONS

### **WARNING:**

**Turn off all electrical power at the main circuit box before wiring electrical power to the outdoor unit. Failure to comply may cause severe personnel injury or death.**

**Wiring Diagram/Schematic**— A wiring diagram/schematic is located on the inside cover of the electrical box of the outdoor unit. The installer should become familiar with the wiring diagram/schematic before making any electrical connections to the outdoor unit.

**Outdoor Unit Connections** — The outdoor unit requires both power and control circuit electrical connections. Refer to the unit wiring diagram/schematic for identification and location of outdoor unit field wiring interfaces.

**Control Circuit Wiring** — The outdoor unit is designed to operate from a 24 VAC Class II control circuit. Control circuit wiring must comply with the current provisions of the “National Electrical Code” (ANSI/NFPA 70) and with applicable local codes having jurisdiction.

Thermostat connections should be made in accordance with the instructions supplied with the thermostat, and with the instructions supplied with the indoor equipment. A typical residential installation with a heat pump thermostat and air handler are shown below.

**Electrical Power Wiring** — Electrical power wiring must comply with the current provisions of the “National Electrical Code” (ANSI/NFPA 70) and with applicable local codes having

jurisdiction. Use of rain tight conduit is recommended. Electrical conductors shall have minimum circuit ampacity in compliance with the outdoor unit rating label. The facility shall employ electrical circuit protection at a current rating no greater than that indicated on the outdoor unit rating label. Refer to the unit wiring diagram for connection details.

**Minimum Circuit Ampacity** — Electrical wiring to the equipment must be compatible and in compliance with the minimum circuit ampacity listed on the outdoor unit data label.

**Maximum Fuse/Circuit Breaker Size** — Circuit protection for the outdoor unit must be compatible with the maximum fuse/circuit breaker size listed on the outdoor unit data label.

**Disconnect Switch** — An electrically compatible disconnect switch must be within line of sight of the outdoor unit. This switch shall be capable of electrically de-energizing the outdoor unit.

**Optional Equipment** — Optional equipment requiring connection to the power or control circuits must be wired in strict accordance with current provisions of the “National Electrical Code” (ANSI/NFPA 70), with applicable local codes having jurisdiction, and the installation instructions provided with the equipment. Optional Equipment (e.g.: liquid line solenoid valves, hard start kits, low suction pressure cutout switch kit, high pressure cutout switch kit, refrigerant compressor crankcase heater, etc.) should be installed in strict accordance with the manufacturer’s installation instructions.

## STARTUP AND CHECKOUT

### **WARNING:**

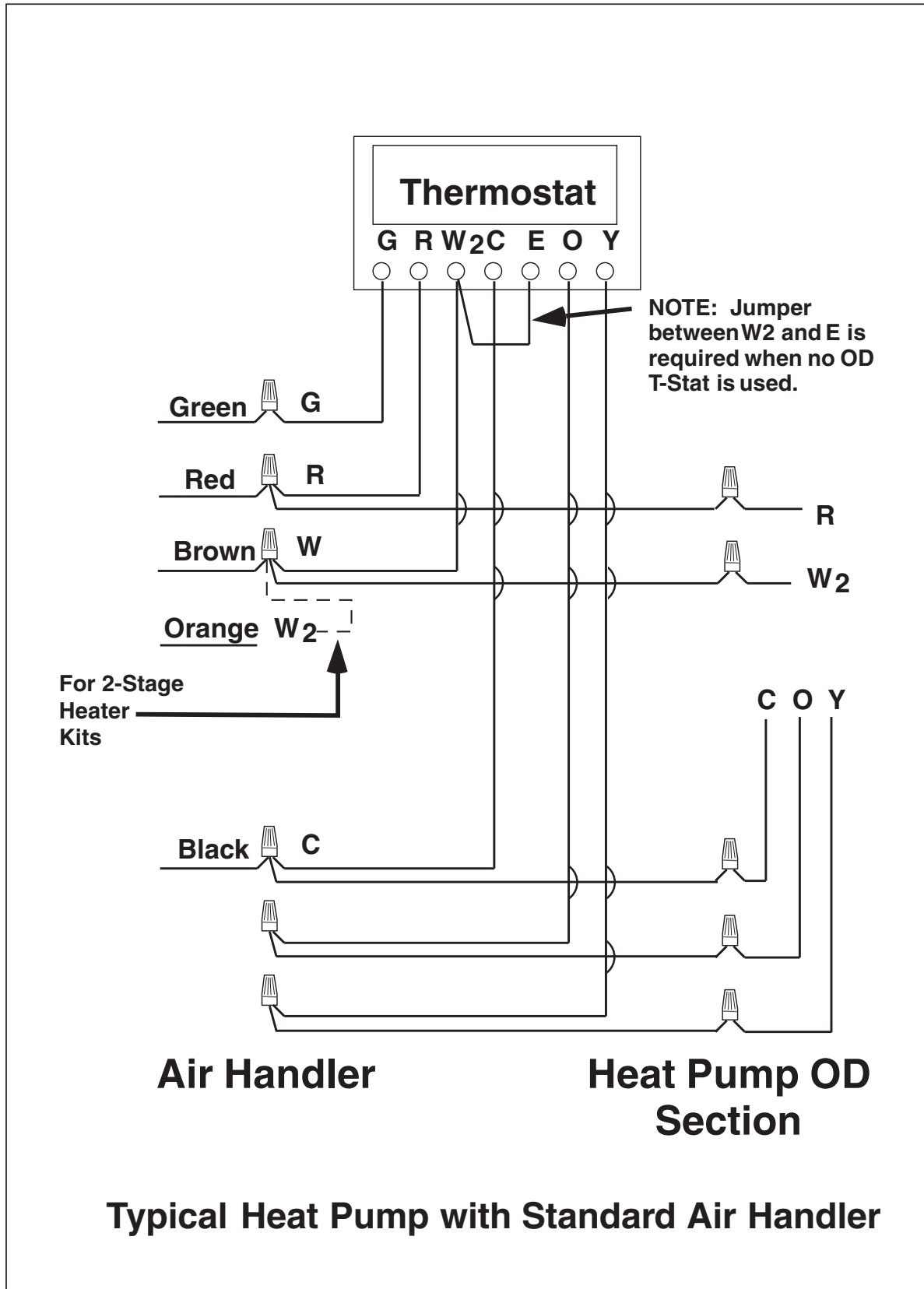
**Ensure electrical power to the unit is off prior to performing the following steps. Failure to do so may cause personal injury or death.**

**Air Filters** — Ensure air filters are clean and in place prior to operating the equipment.

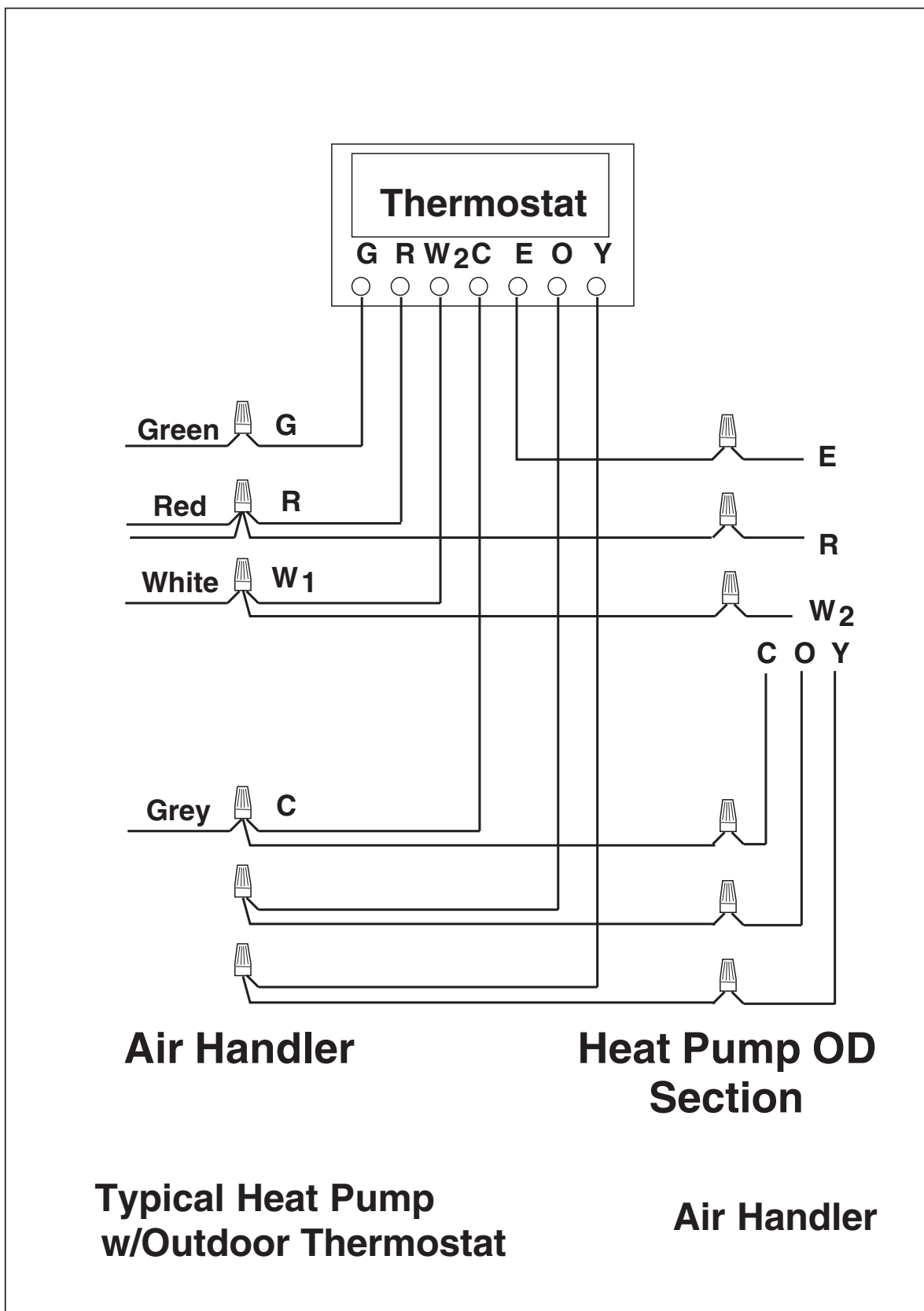
**Thermostat** — Set the room thermostat function switch to OFF, fan switch to AUTO, and adjust the temperature setpoint to its highest setting.

| COPPER WIRE SIZE — AWG<br>(1% Voltage Drop) |     |     |    |                            |
|---|-----|-----|----|----------------------------|
| Supply Wire Length-Feet                     |     |     |    | Supply Circuit<br>Ampacity |
| 200   | 150 | 100 | 50 |                            |
| 6   | 8   | 10  | 14 | 15                         |
| 4   | 6   | 8   | 12 | 20                         |
| 4   | 6   | 8   | 10 | 25                         |
| 4   | 4   | 6   | 10 | 30                         |
| 3   | 4   | 6   | 8  | 35                         |
| 3   | 4   | 6   | 8  | 40                         |
| 2   | 3   | 4   | 6  | 45                         |
| 2   | 3   | 4   | 6  | 50                         |

Wire Size based on N.E.C. for 60° type copper conductors.



A typical installation with a heat pump thermostat, air handler, and heat pump with an outdoor thermostat.





Prior to applying electrical power to the outdoor unit, ensure that the unit has been properly and securely grounded, and that power supply connections have been made at both the facility power interface and outdoor unit.

**Outdoor Unit** — Ensure the outdoor coil and top of the unit are free from obstructions and debris, and all equipment access/control panels are in place.

Using extreme caution, apply power to the unit and inspect the wiring for evidence of open, shorted, and/or improperly wired circuits.

## Functional Checkout:



## CAUTION:

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**If equipped with a compressor crankcase heater, wait 24 hours prior to performing a function checkout to allow for heating of the compressor crankcase. Failure to comply may result in damage and could cause premature failure of the system.**

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**Indoor Blower** — Set the thermostat function switch to COOLING and the fan switch to ON. Verify that the indoor blower is operating and that airflow is not restricted. Set the fan switch back to AUTO.

**Blower Time Delay Relay (Select Models):** A time delay relay may be provided with the unit and must be installed in the indoor section. The relay will keep the indoor blower running an additional 40 seconds for increased cooling efficiency after the outdoor unit shuts off. The relay has four terminals and one mounting hole. Connect terminal “1” to load side of blower relay. Connect terminal: “2” to terminal “R” of T’sat. Connect terminal “3” to common terminal at blower relay or transformer. Connect terminal “4” to terminal “G” on T’sat.

**Low-Pressure Switch (Select Models)** — A low-pressure switch is factory-installed in select models only. If provided, this switch is located in the suction line internal to the outdoor unit. The switch is designed to protect the compressor from a loss of charge. Under normal conditions, the switch is closed. If the suction pressure falls below 5 psig, then the switch will open and de-energize the outdoor unit. The switch will close again once the suction pressure increases above

20 psig. Please note that the switch interrupts the thermostat inputs to the unit. Thus, when the switch opens and then closes, there will be a 5 minute short cycling delay before the outdoor unit will energize.

**High-Pressure Switch** — A high-pressure switch is factory-installed and located in the compressor discharge line internal to the outdoor unit. The switch is designed to de-energize the system when very high pressures occur during abnormal conditions. Under normal conditions, the switch is closed. If the discharge pressure rises above 575 psig, then the switch will open and de-energize the outdoor unit. The switch will close again once the discharge pressure decreases to 460 psig. Please note that the switch interrupts the thermostat inputs to the unit. Thus, when the switch opens and then closes, there will be a 5 minute short cycling delay before the outdoor unit will energize.

**Short Cycle Protection** — With the system operating in COOLING mode, note the setpoint temperature setting of the thermostat, and gradually raise the setpoint temperature until the outdoor unit and indoor blower de-energize. Immediately lower the setpoint temperature of the thermostat to its original setting and verify that the indoor blower is energized and that the outdoor unit remains de-energized. Verify that, after approximately 5 minutes, the outdoor unit energizes and that the temperature of the air supplied to the facility is cooler than ambient temperature.

**Cooling** — Gradually lower the thermostat temperature setpoint below the actual room temperature and observe that the outdoor unit and indoor blower energize. Feel the air being circulated by the indoor blower and verify that it is cooler than ambient temperature. Listen for any unusual noises. If present, locate and determine the source of the noise and correct as necessary.

**Heating** — Lower the thermostat setpoint temperature to the lowest obtainable setting and set the thermostat function switch to HEATING. The indoor blower and outdoor unit should stop running. After a minimum of five minutes, increase the setpoint temperature of the thermostat to the maximum setting. Verify that the outdoor unit and indoor blower have energized. Feel the air being circulated by the indoor blower and verify that it is warmer than ambient temperature. Listen for any unusual noises. If present, locate and determine the source of the noise and correct as necessary.

## OUTDOOR THERMOSTAT (if supplied)

The outdoor thermostat prevents the electrical auxiliary heat (if used) from operating above 40°F outdoor ambient temperature.

**Defrost Cycle Timer** — The defrost cycle timer controls the time interval of the hot gas defrost after the defrost sensor closes. It is located in the lower left corner of the defrost control board. Three interval settings are available: 30 minutes, 60 minutes, and 90 minutes. Time setting selection is dependent on the climate where the unit is being installed.

Example 1. Dry climate of Southern Arizona. A 90 minute setting is recommended.

Example 2. Moist climate of Seattle, Washington. A 30 minute setting is recommended.

To set the cycle timer, place the timing pin on the defrost control board to the desired time interval post.

**Note:** All units are shipped from the factory with the default time setting of 30 minutes. Maximum heating performance can be achieved by setting the time to 90 minutes.

## DEFROST CONTROL BOARD OPERATION AND TESTING

1. Terminals "R"-"C" must have 24±V present between them in order for the time delay and defrost sequences to be operational.
2. Jumper the "T2"-"DFT" test pins. This will indicate to the board that the defrost T-stat is closed (if the compressor is running). Defrost T-stat is closed at 32° or below and is open at 68° or above. But its state is unknown if the temperature is between 32°F and 68°F. The defrost thermostat tells the board whether a defrost cycle needs to be started or terminated. With the DFT closed the unit will run for 30/60/90 minutes in heat mode and then defrost the outdoor coil. The defrost will turn off the outdoor fan, turn on the compressor and raise the coil temperature to 68°F. This will open the DFT and terminate the defrost. If the DFT does not open the defrost will end after 10 minutes.
3. Defrost board speed-up. With compressor running in heat mode, next jump the "Test"

pin to "C" on terminal strip. This will initiate a defrost test in 5, 10 or 15 seconds (This is determined by the 30, 60 or 90 minute defrost pin settings. The factory setting will be 30 minutes). Note that this will bypass the compressor off delay when the unit goes into defrost test and if left in defrost test, the delay will be bypassed when the test is terminated by the processor. If the jumper is removed before the test is over the processor will perform the remainder of a normal defrost. See step 2 above.

4. Remove the jumpers.

**Note:** The delay/no-delay pin concerns compressor operation during defrosts. The default setting is delay. Reciprocating compressors should only use this setting in conjunction with an approved hard start kit. Scroll compressors that have noise issues while going into or coming out of defrost should use this 30 second delay to reduce the defrost noise. To switch from no-delay to delay remove the pin from the "no-delay" pin location and shift it to the "delay" pin location.

Speed up changes:

Manually initiating a defrost will cause the compressor to run continually when entering defrost.

Normal defrost operation:

To test normal defrost operation when the temperature is above 35°F, jumper "R" to "DFT" on the board and allow the unit to run for 30 minutes. Defrost will continue until the "R" to "DFT" jumper is removed or for 10 minutes. Remove the jumper.

## Defrost Test Procedure

1. Jumper "T2" to "DFT" at the test terminals.
2. With unit running in heat mode, short the "TEST" terminal to the common terminal near it. This will speed up the board and cause it to enter defrost mode in 5/10/15 seconds depending on the defrost time selection. Compressor delay will not function during speed-up.
3. This test will end in 5 seconds if the "TEST"-common short is not removed.
4. Remove both the short and the "T2" to "DFT" jumper to terminate the defrost cycle. The 30 second compressor delay should operate normally.
5. Test is complete, reset thermostat to home owner preference.

### Anti Short Cycle Timer Test

The 5 minute time delay feature can be bypassed or shortened to 1 second by jumping the “Test” to “C” terminal.

**Note:** If jumper is left on the “Test” to “common” pins permanently, the defrost cycle will become inoperable.

**Optional Equipment** — A functional checkout should be performed in accordance with the checkout procedures supplied with the equipment.

### Adjustment of Refrigerant Charge:



## CAUTION:

**Split system heat pump equipment contains liquid and gaseous refrigerant under pressure. Adjustment of refrigerant charge should only be attempted by qualified, trained personnel thoroughly familiar with the equipment. Under no circumstances should the homeowner attempt to install and/or service this equipment. Failure to comply with this warning could result in equipment damage, personal injury, or death.**

**NOTE:** The following Refrigerant Charging Charts are applicable to listed assemblies of equipment and at listed airflows for the indoor coil. Assemblies of indoor coils and outdoor units not listed are not recommended.

## 13 SEER SPLIT SYSTEM HEAT PUMP ORIFICE USAGE

| Model<br>Number *T4QD | Restrictor Bore Size (in.) |         | System Charge<br>R-410A (oz.) |
|-----------------------|----------------------------|---------|-------------------------------|
|                       | Indoor (1)                 | Outdoor |                               |
| 018K                  | .050                       | .042    | 112                           |
| 024K                  | .055                       | .045    | 138                           |
| 030K                  | .065                       | .048    | 145                           |
| 036K                  | .073                       | .052    | 168                           |
| 042K                  | .077                       | .055    | 243                           |
| 048K                  | .080                       | .058    | 248                           |
| 060K                  | .089                       | .062    | 248                           |


(1) For indoor coils equipped with restrictors.

# Refrigerant Charging Tables for Cooling Mode of Operation

## 13 SEER Split System Matched with Restrictor Equipped Indoor Coils

### REFRIGERANT CHARGING CHARTS LEGEND FOR COOLING/HEATING MODES OF OPERATION

\*Note: All pressures are listed in psig. and all temperatures in deg. F.

 - Shaded boxes indicate flooded conditions

 - Rated design values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicates a refrigerant undercharge.

#### 018K

| 018K        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             | OUTDOOR TEMPERATURE ( deg. F ) |             |            |             |            |             |            |  |  |  |  |  |
|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|--------------------------------|-------------|------------|-------------|------------|-------------|------------|--|--|--|--|--|
| 70          |             |            | 75          |            |             | 80         |             |            | 85          |            |             | 90         |             |            | 95          |                                |             | 100        |             |            | 105         |            |  |  |  |  |  |
| Suc. Press. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp.                     | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. |  |  |  |  |  |
| 133         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |
| 135         | 232         | 89         |             |            |             |            |             |            |             |            |             |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |
| 137         | 233         | 100        | 251         | 99         |             |            |             |            |             |            |             |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |
| 139         | 235         | 112        | 253         | 109        |             |            |             | 107        |             |            |             |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |
| 141         | 236         | 120        | 255         | 119        |             |            | 273         | 116        |             | 308        | 118         |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |
| 143         | 237         | 137        | 258         | 128        |             | 277        | 120         | 125        | 312         | 125        | 124         |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |
| 145         |             |            | 259         | 142        |             | 279        | 133         | 134        | 315         | 134        | 333         | 131        |             |            | 350         | 130                            |             |            |             |            |             |            |  |  |  |  |  |
| 147         |             |            |             |            |             | 281        | 147         | 137        | 320         | 137        | 337         | 138        |             |            | 354         | 136                            |             |            |             |            |             |            |  |  |  |  |  |
| 149         |             |            |             |            |             |            |             | 152        | 322         | 146        | 342         | 141        |             |            | 359         | 142                            |             |            |             |            |             |            |  |  |  |  |  |
| 151         |             |            |             |            |             |            |             |            | 325         | 157        | 344         | 151        |             |            | 364         | 147                            |             |            |             |            |             |            |  |  |  |  |  |
| 153         |             |            |             |            |             |            |             |            |             |            | 347         | 161        |             |            | 366         | 156                            |             |            |             |            |             |            |  |  |  |  |  |
| 155         |             |            |             |            |             |            |             |            |             |            |             |            |             |            | 368         | 166                            |             |            |             |            |             |            |  |  |  |  |  |
| 157         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |
| 159         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |                                |             |            |             |            |             |            |  |  |  |  |  |

## Refrigerant Charging Tables for Cooling Mode of Operation

[illegible][illegible]

# Refrigerant Charging Tables for Cooling Mode of Operation

## 13 SEER Split System Matched with Restrictor Equipped Indoor Coils

| OUTDOOR TEMPERATURE ( deg. F ) |             |            |             |            |             |            |             |            |             |            |             |            |
|--------------------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
| 036K                           |             |            |             |            |             |            |             |            |             |            |             |            |
|                                | 70          |            | 75          |            | 80          |            | 85          |            | 90          |            | 95          |            |
| Suc. Press.                    | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. |
| 131                            |             |            |             |            |             |            |             |            |             |            |             | 105        |
| 133                            | 250         | 91         |             |            |             |            |             |            |             |            |             |            |
| 135                            | 251         | 103        | 270         | 102        |             |            |             |            |             |            |             |            |
| 137                            | 252         | 114        | 272         | 112        | 290         | 110        |             |            |             |            |             |            |
| 139                            | 254         | 124        | 274         | 122        | 293         | 118        | 312         | 118        | 330         | 120        |             |            |
| 141                            | 254         | 141        | 276         | 132        | 297         | 123        | 315         | 124        | 334         | 127        |             |            |
| 143                            |             |            | 277         | 146        | 299         | 137        | 319         | 128        | 338         | 136        | 352         | 126        |
| 145                            |             |            |             |            | 300         | 151        | 321         | 141        | 342         | 141        | 356         | 133        |
| 147                            |             |            |             |            |             |            | 323         | 155        | 344         | 149        | 360         | 139        |
| 149                            |             |            |             |            |             |            |             |            | 346         | 160        | 364         | 145        |
| 151                            |             |            |             |            |             |            |             |            |             |            | 367         | 155        |
| 153                            |             |            |             |            |             |            |             |            |             |            | 369         | 165        |
| 155                            |             |            |             |            |             |            |             |            |             |            |             |            |
| 157                            |             |            |             |            |             |            |             |            |             |            | 387         | 151        |
|                                |             |            |             |            |             |            |             |            |             |            | 389         | 160        |
|                                |             |            |             |            |             |            |             |            |             |            | 392         | 169        |
|                                |             |            |             |            |             |            |             |            |             |            | 397         | 138        |
|                                |             |            |             |            |             |            |             |            |             |            | 401         | 143        |
|                                |             |            |             |            |             |            |             |            |             |            | 406         | 149        |
|                                |             |            |             |            |             |            |             |            |             |            | 410         | 156        |
|                                |             |            |             |            |             |            |             |            |             |            | 412         | 165        |
|                                |             |            |             |            |             |            |             |            |             |            | 415         | 174        |

| OUTDOOR TEMPERATURE ( deg. F ) |             |            |             |            |             |            |             |            |             |            |             |            |
|--------------------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
| 042K                           |             |            |             |            |             |            |             |            |             |            |             |            |
|                                | 70          |            | 75          |            | 80          |            | 85          |            | 90          |            | 95          |            |
| Suc. Press.                    | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. |
| 132                            |             |            |             |            |             |            |             |            |             |            |             | 105        |
| 134                            | 241         | 132        |             |            |             |            |             |            |             |            |             |            |
| 136                            | 242         | 144        | 262         | 133        |             |            |             |            |             |            |             |            |
| 138                            | 243         | 155        | 264         | 143        | 283         | 132        |             |            |             |            |             |            |
| 140                            | 243         | 180        | 266         | 152        | 286         | 141        | 304         | 135        | 320         | 131        |             |            |
| 142                            | 243         | 197        | 267         | 172        | 288         | 152        | 307         | 141        | 324         | 138        |             |            |
| 144                            |             |            | 268         | 186        | 289         | 165        | 310         | 148        | 328         | 147        | 340         | 133        |
| 146                            |             |            |             |            | 291         | 179        | 312         | 160        | 332         | 153        | 344         | 139        |
| 148                            |             |            |             |            |             |            | 314         | 175        | 334         | 161        | 349         | 146        |
| 150                            |             |            |             |            |             |            |             |            | 336         | 172        | 353         | 150        |
| 152                            |             |            |             |            |             |            |             |            |             |            | 356         | 160        |
| 154                            |             |            |             |            |             |            |             |            |             |            | 358         | 170        |
| 156                            |             |            |             |            |             |            |             |            |             |            | 377         | 160        |
| 158                            |             |            |             |            |             |            |             |            |             |            | 380         | 169        |
|                                |             |            |             |            |             |            |             |            |             |            | 385         | 143        |
|                                |             |            |             |            |             |            |             |            |             |            | 389         | 149        |
|                                |             |            |             |            |             |            |             |            |             |            | 397         | 150        |
|                                |             |            |             |            |             |            |             |            |             |            | 399         | 159        |
|                                |             |            |             |            |             |            |             |            |             |            | 402         | 168        |

# Refrigerant Charging Tables for Cooling Mode of Operation

## 13 SEER Split System Matched with Restrictor Equipped Indoor Coils

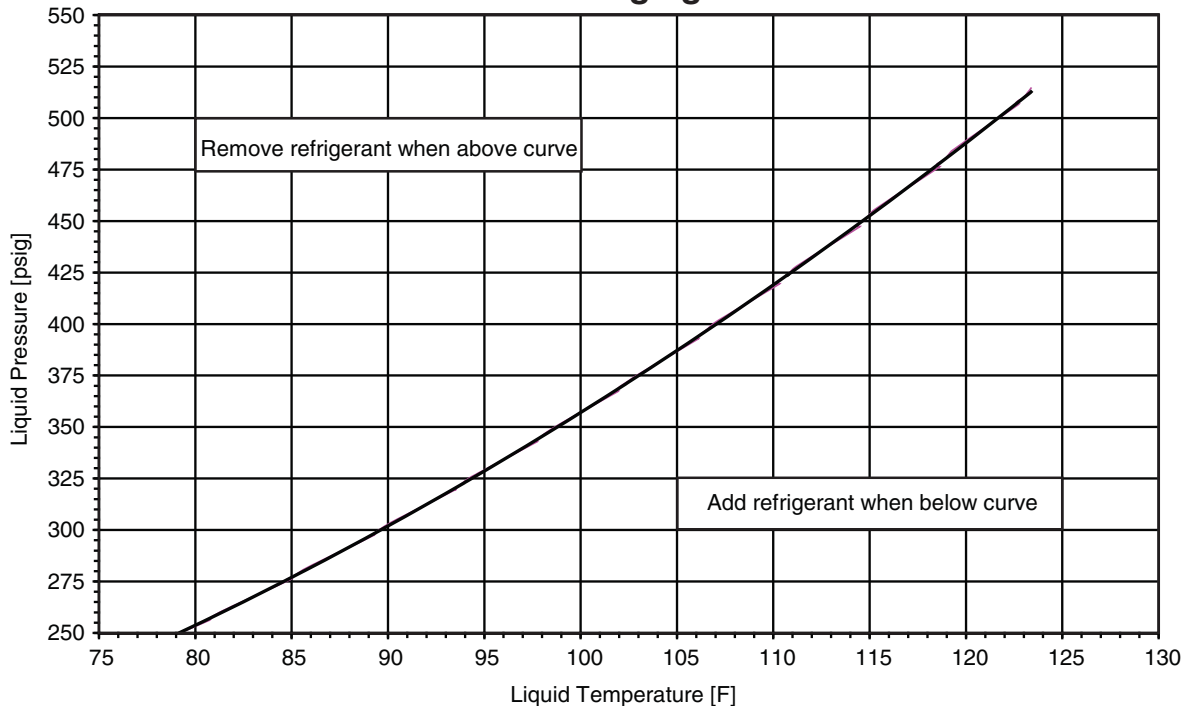
| OUTDOOR TEMPERATURE ( deg. F ) |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
|--------------------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|--|--|--|--|--|-----|--|--|--|--|--|-----|--|--|--|--|--|
| 70                             |             |            |             |            |             | 75         |             |            |             |            |             | 80         |             |            |             |            |             | 85         |             |            |             |            |             | 90         |             |            |             |            |             | 95         |  |  |  |  |  | 100 |  |  |  |  |  | 105 |  |  |  |  |  |
| Suc. Press.                    | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 130                            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 132                            | 246         | 144        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 134                            | 248         | 155        |             | 143        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 136                            | 249         | 166        |             | 153        | 290         | 142        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 138                            | 248         | 196        |             | 163        | 293         | 151        |             |            |             |            | 311         | 144        | 329         | 140        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 140                            | 249         | 213        |             | 185        | 294         | 164        |             |            |             |            | 315         | 150        | 332         | 147        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 142                            |             |            |             | 199        | 296         | 178        |             |            |             |            | 317         | 159        | 336         | 155        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 144                            |             |            |             |            | 297         | 191        |             |            |             |            | 318         | 172        | 339         | 163        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 146                            |             |            |             |            |             |            |             |            |             |            | 320         | 186        | 341         | 172        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 148                            |             |            |             |            |             |            |             |            |             |            |             |            | 343         | 183        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 150                            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 152                            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 154                            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |
| 156                            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |  |  |  |  |     |  |  |  |  |  |     |  |  |  |  |  |

| 060K        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  | OUTDOOR TEMPERATURE ( deg. F ) |  |  |  |  |  |  |  |  |  |  |  |
|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|--|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| 70          |             |            | 75          |            |             | 80         |             |            | 85          |            |             | 90         |             |            | 95          |            |             | 100        |             |            | 105         |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| Suc. Press. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. | Liq. Press. | Dis. Temp. |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 124         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 126         | 260         | 140        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 128         | 261         | 151        |             | 142        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 130         | 263         | 162        |             | 152        | 304         | 144        |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 132         | 262         | 186        |             | 162        | 307         | 153        |             |            | 327         | 148        | 345         | 146        |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 134         | 263         | 202        |             | 181        | 309         | 164        |             |            | 330         | 154        | 349         | 154        |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 136         |             |            |             | 195        | 311         | 177        |             |            | 333         | 162        | 353         | 162        |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 138         |             |            |             |            | 312         | 191        |             |            | 334         | 175        | 356         | 169        |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 140         |             |            |             |            |             |            |             |            | 336         | 189        | 358         | 178        |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 142         |             |            |             |            |             |            |             |            |             |            | 360         | 188        |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 144         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 146         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 148         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |
| 150         |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |             |            |  |                                |  |  |  |  |  |  |  |  |  |  |  |

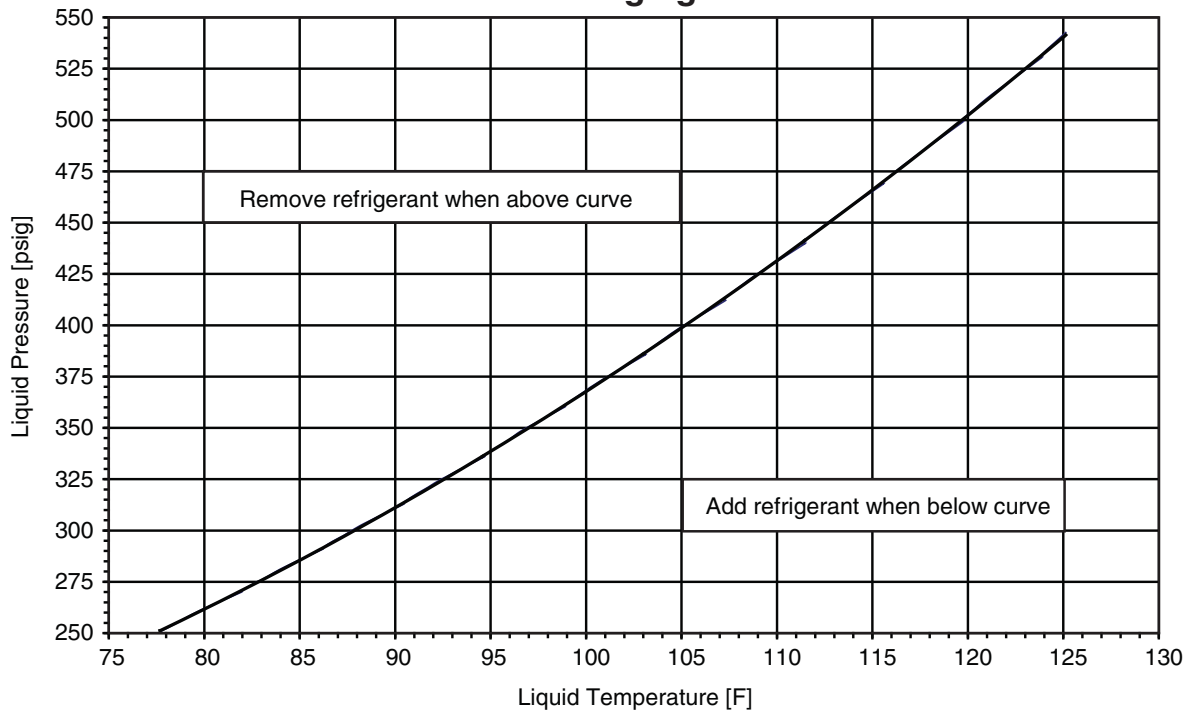


# Refrigerant Charging Charts for Cooling Mode of Operation 13 SEER Split System Matched with TXV Equipped Indoor Coils

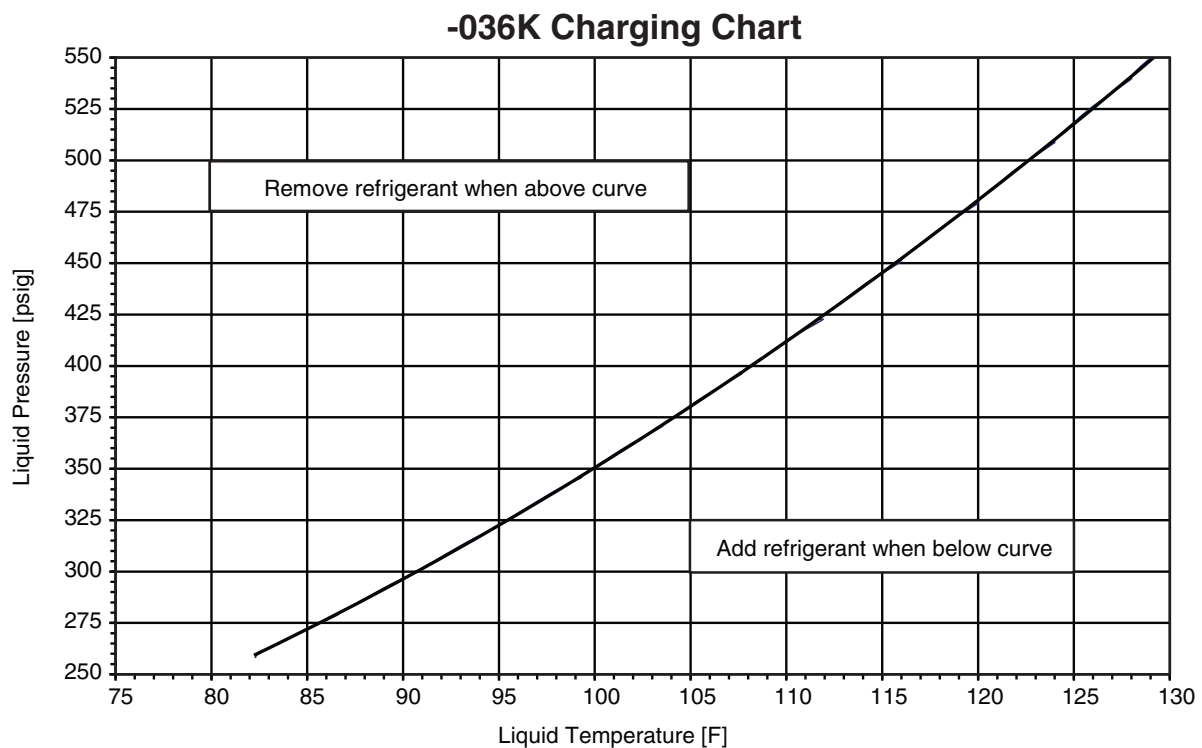
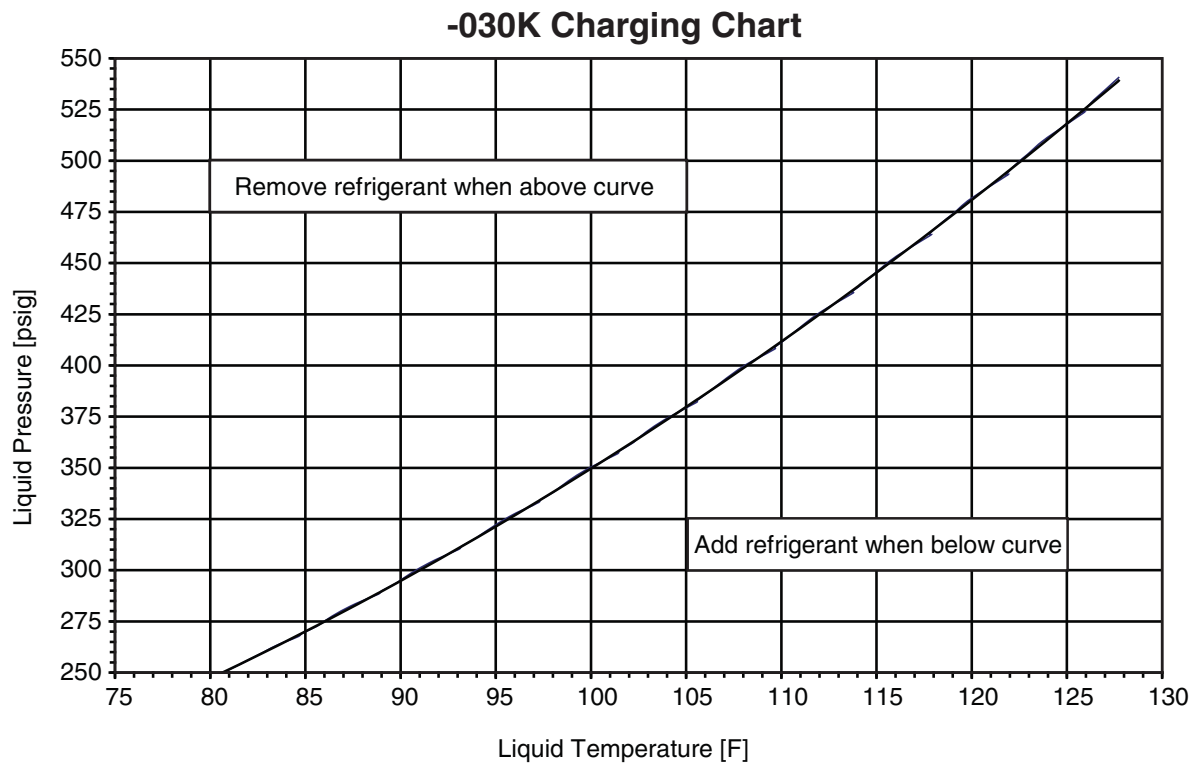
## -018K Charging Chart



## -024K Charging Chart

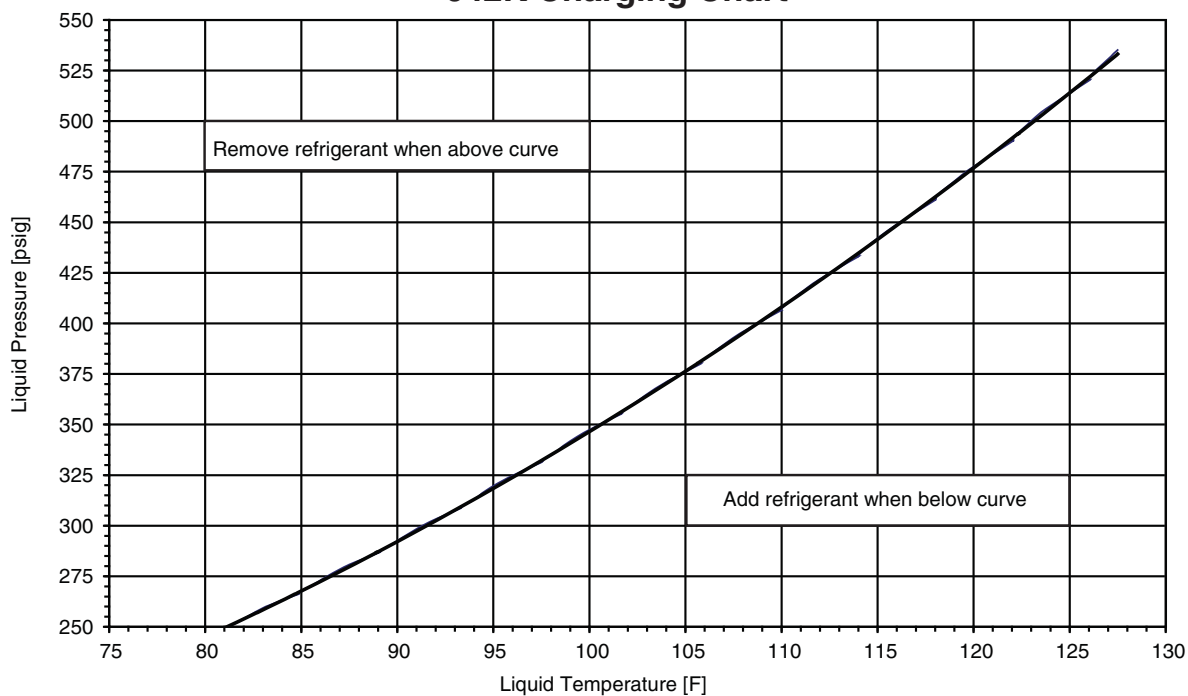


# Refrigerant Charging Charts for Cooling Mode of Operation 13 SEER Split System Matched with TXV Equipped Indoor Coils (Continued)

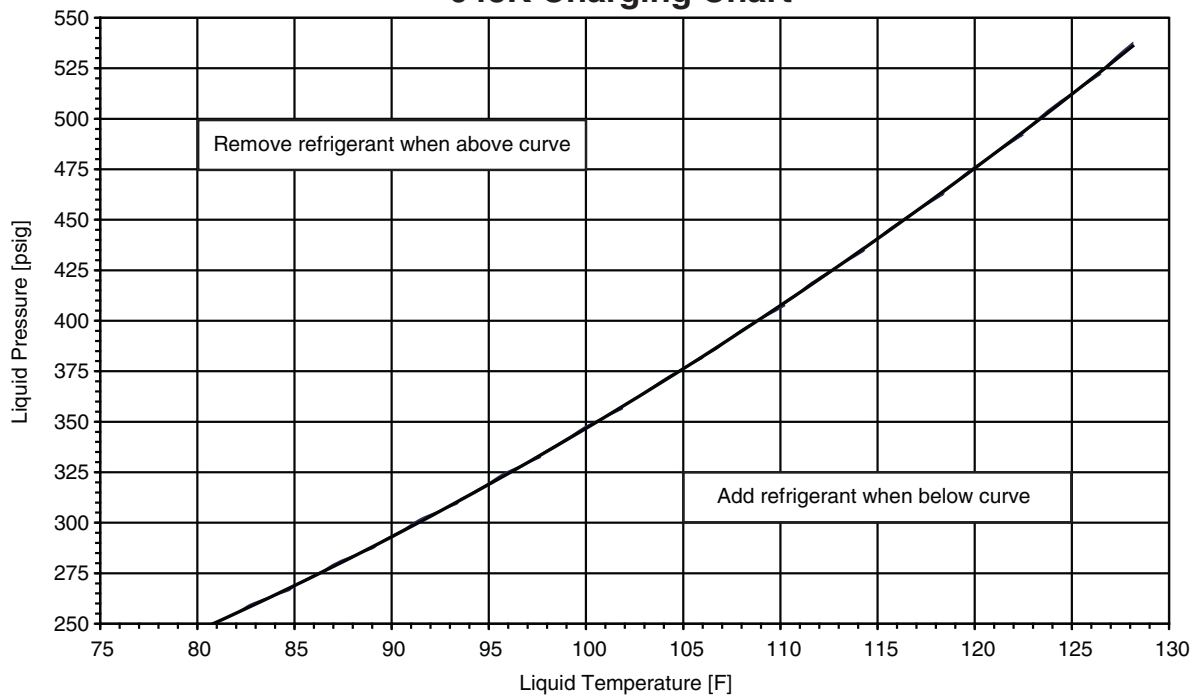


## Refrigerant Charging Charts for Cooling Mode of Operation 13 SEER Split System Matched with TXV Equipped Indoor Coils (Continued)

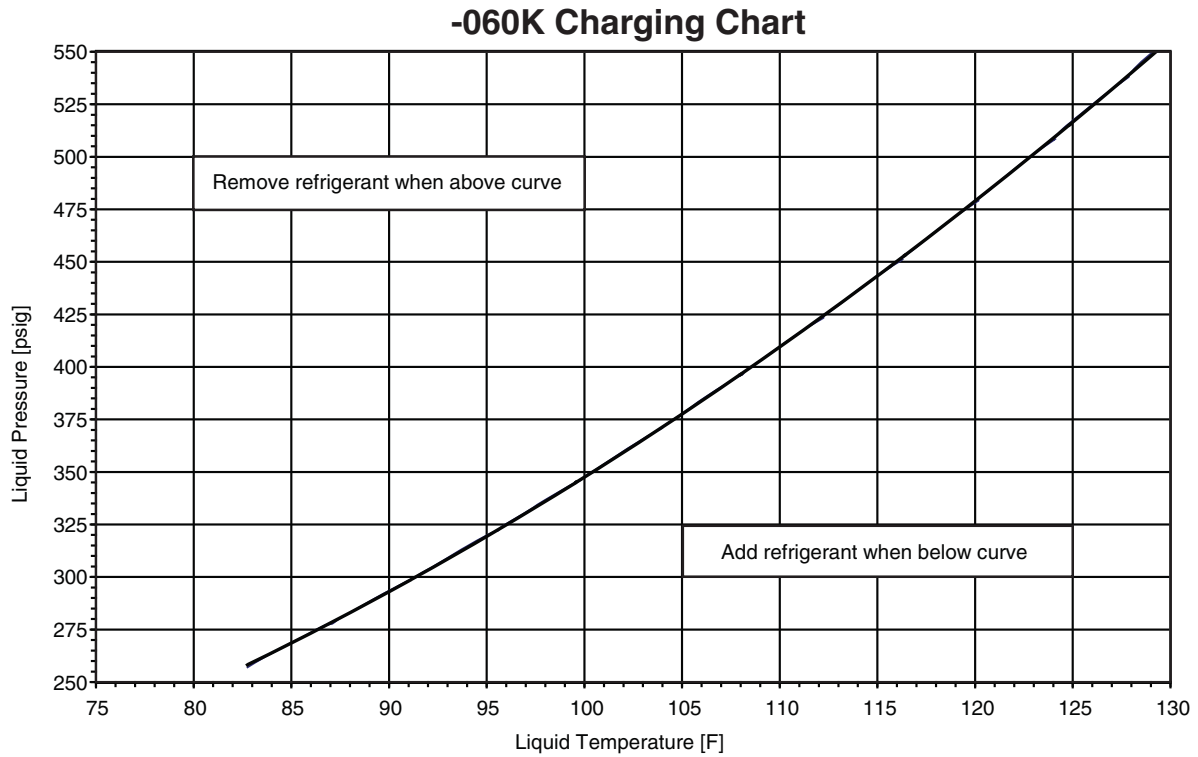
### -042K Charging Chart



### -048K Charging Chart



# Refrigerant Charging Charts for Cooling Mode of Operation 13 SEER Split System Matched with TXV Equipped Indoor Coils (Continued)



# Refrigerant Charging Charts for Heating Mode of Operation

## 13 SEER Split System Heating Charts

| 018K OUTDOOR TEMPERATURE (DEG. F) |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |
|-----------------------------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|
| 0                                 |               |              | 10          |               |              | 20          |               |              | 30          |               |              | 40          |               |              | 50          |               |              | 60          |               |              |
| Suc. Press                        | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. |
| 37                                | 212           | 108          | 52          | 232           | 111          | 66          | 252           | 114          | 81          | 273           | 117          | 96          | 285           | 125          | 114         | 311           | 139          | 131         | 338           | 153          |
| 38                                | 219           | 106          | 53          | 238           | 109          | 67          | 257           | 112          | 82          | 276           | 115          | 97          | 292           | 123          | 115         | 318           | 135          | 132         | 345           | 147          |
| 39                                | 226           | 104          | 54          | 244           | 107          | 68          | 262           | 110          | 83          | 280           | 113          | 98          | 299           | 120          | 116         | 325           | 130          | 133         | 352           | 141          |
| 40                                | 233           | 102          | 55          | 250           | 105          | 69          | 267           | 108          | 84          | 284           | 111          | 99          | 306           | 117          | 117         | 332           | 126          | 134         | 359           | 134          |
| 41                                | 240           | 100          | 56          | 256           | 103          | 70          | 271           | 106          | 85          | 287           | 109          | 100         | 313           | 114          | 118         | 339           | 121          | 135         | 366           | 128          |
| 42                                | 247           | 98           | 57          | 261           | 101          | 71          | 276           | 104          | 86          | 291           | 107          | 101         | 320           | 111          | 119         | 346           | 117          | 136         | 373           | 122          |
| 43                                | 254           | 96           | 58          | 267           | 99           | 72          | 281           | 102          | 87          | 295           | 105          | 102         | 327           | 108          | 120         | 353           | 112          | 137         | 380           | 116          |

# Refrigerant Charging Charts for Heating Mode of Operation

## 13 SEER Split System Heating Charts

| 030K OUTDOOR TEMPERATURE (DEG. F) |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |
|-----------------------------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|
| 0                                 |               |              | 10          |               |              | 20          |               |              | 30          |               |              | 40          |               |              | 50          |               |              | 60          |               |              |
| Suc. Press.                       | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. |
| 35                                | 209           | 105          | 49          | 238           | 114          | 63          | 267           | 123          | 77          | 296           | 131          | 92          | 315           | 146          | 109         | 347           | 167          | 126         | 380           | 189          |
| 36                                | 216           | 103          | 50          | 244           | 112          | 64          | 272           | 121          | 78          | 299           | 129          | 93          | 322           | 143          | 110         | 354           | 163          | 127         | 387           | 182          |
| 37                                | 223           | 101          | 51          | 250           | 110          | 65          | 276           | 119          | 79          | 303           | 127          | 94          | 329           | 140          | 111         | 361           | 158          | 128         | 394           | 176          |
| 38                                | 230           | 99           | 52          | 256           | 108          | 66          | 281           | 117          | 80          | 307           | 125          | 95          | 336           | 138          | 112         | 368           | 154          | 129         | 401           | 170          |
| 39                                | 237           | 97           | 53          | 261           | 106          | 67          | 286           | 115          | 81          | 310           | 123          | 96          | 343           | 135          | 113         | 375           | 149          | 130         | 408           | 164          |
| 40                                | 244           | 95           | 54          | 267           | 104          | 68          | 291           | 113          | 82          | 314           | 121          | 97          | 350           | 132          | 114         | 382           | 145          | 131         | 415           | 158          |
| 41                                | 251           | 93           | 55          | 273           | 102          | 69          | 296           | 111          | 83          | 318           | 119          | 98          | 357           | 129          | 115         | 389           | 140          | 132         | 422           | 152          |

| 036K OUTDOOR TEMPERATURE (DEG. F) |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |
|-----------------------------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|
| 0                                 |               |              | 10          |               |              | 20          |               |              | 30          |               |              | 40          |               |              | 50          |               |              | 60          |               |              |
| Suc. Press.                       | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. |
| 34                                | 204           | 108          | 49          | 238           | 116          | 64          | 271           | 125          | 79          | 305           | 134          | 95          | 329           | 148          | 111         | 367           | 167          | 128         | 405           | 186          |
| 35                                | 211           | 106          | 50          | 244           | 114          | 65          | 276           | 123          | 80          | 309           | 132          | 96          | 336           | 145          | 112         | 374           | 162          | 129         | 412           | 180          |
| 36                                | 218           | 104          | 51          | 249           | 112          | 66          | 281           | 121          | 81          | 312           | 130          | 97          | 343           | 142          | 113         | 381           | 158          | 130         | 419           | 174          |
| 37                                | 225           | 102          | 52          | 255           | 110          | 67          | 286           | 119          | 82          | 316           | 128          | 98          | 350           | 139          | 114         | 388           | 153          | 131         | 426           | 167          |
| 38                                | 232           | 100          | 53          | 261           | 108          | 68          | 290           | 117          | 83          | 320           | 126          | 99          | 357           | 136          | 115         | 395           | 149          | 132         | 433           | 161          |
| 39                                | 239           | 98           | 54          | 267           | 106          | 69          | 295           | 115          | 84          | 323           | 124          | 100         | 364           | 133          | 116         | 402           | 144          | 133         | 440           | 155          |
| 40                                | 246           | 96           | 55          | 273           | 104          | 70          | 300           | 113          | 85          | 327           | 122          | 101         | 371           | 131          | 117         | 409           | 140          | 134         | 447           | 149          |

## Refrigerant Charging Charts for Heating Mode of Operation

### 13 SEER Split System Heating Charts

| 042K OUTDOOR TEMPERATURE (DEG. F) |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|--|--|--|--|--|----|--|--|--|--|--|
| 0                                 |        |        |        |        |        | 10     |        |        |        |        |        | 20     |        |        |        |        |        | 30     |        |        |        |        |        | 40     |        |        |        |        |        | 50 |  |  |  |  |  | 60 |  |  |  |  |  |
| Suc.                              | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. | Suc.   | Liquid | Disch. |    |  |  |  |  |  |    |  |  |  |  |  |
| Press                             | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  | Press. | Press. | Temp.  |    |  |  |  |  |  |    |  |  |  |  |  |
| 36                                | 212    | 106    | 50     | 235    | 114    | 64     | 259    | 123    | 78     | 282    | 131    | 93     | 297    | 144    | 109    | 328    | 162    | 125    | 358    | 181    |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |
| 37                                | 219    | 104    | 51     | 241    | 112    | 65     | 263    | 121    | 79     | 286    | 129    | 94     | 304    | 141    | 110    | 335    | 158    | 126    | 365    | 175    |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |
| 38                                | 226    | 102    | 52     | 247    | 110    | 66     | 268    | 119    | 80     | 289    | 127    | 95     | 311    | 138    | 111    | 342    | 153    | 127    | 372    | 168    |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |
| 39                                | 233    | 100    | 53     | 253    | 108    | 67     | 273    | 117    | 81     | 293    | 125    | 96     | 318    | 136    | 112    | 349    | 149    | 128    | 379    | 162    |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |
| 40                                | 240    | 98     | 54     | 259    | 106    | 68     | 278    | 115    | 82     | 297    | 123    | 97     | 325    | 133    | 113    | 356    | 145    | 129    | 386    | 156    |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |
| 41                                | 247    | 96     | 55     | 265    | 104    | 69     | 283    | 113    | 83     | 300    | 121    | 98     | 332    | 130    | 114    | 363    | 140    | 130    | 393    | 150    |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |
| 42                                | 254    | 94     | 56     | 271    | 102    | 70     | 287    | 111    | 84     | 304    | 119    | 99     | 339    | 127    | 115    | 370    | 136    | 131    | 400    | 144    |        |        |        |        |        |        |        |        |        |    |  |  |  |  |  |    |  |  |  |  |  |

| 048K                         |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |  |
|------------------------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|--|
| OUTDOOR TEMPERATURE (DEG. F) |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |  |
| 0                            |               |              | 10          |               |              | 20          |               |              | 30          |               |              | 40          |               |              | 50          |               |              | 60          |               |              |             |               |              |             |               |              |  |
| Suc. Press                   | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. |  |
| 35                           | 218           | 133          | 49          | 246           | 142          | 62          | 274           | 151          | 75          | 302           | 160          | 88          | 317           | 169          | 100         | 343           | 180          | 112         | 369           | 191          |             |               |              |             |               |              |  |
| 36                           | 225           | 131          | 50          | 252           | 140          | 63          | 279           | 149          | 76          | 306           | 158          | 89          | 324           | 167          | 101         | 350           | 176          | 113         | 376           | 185          |             |               |              |             |               |              |  |
| 37                           | 232           | 129          | 51          | 258           | 138          | 64          | 283           | 147          | 77          | 309           | 156          | 90          | 331           | 164          | 102         | 357           | 171          | 114         | 383           | 179          |             |               |              |             |               |              |  |
| 38                           | 239           | 127          | 52          | 263           | 136          | 65          | 288           | 145          | 78          | 313           | 154          | 91          | 338           | 161          | 103         | 364           | 167          | 115         | 390           | 173          |             |               |              |             |               |              |  |
| 39                           | 246           | 125          | 53          | 269           | 134          | 66          | 293           | 143          | 79          | 317           | 152          | 92          | 345           | 158          | 104         | 371           | 162          | 116         | 397           | 166          |             |               |              |             |               |              |  |
| 40                           | 253           | 123          | 54          | 275           | 132          | 67          | 298           | 141          | 80          | 320           | 150          | 93          | 352           | 155          | 105         | 378           | 158          | 117         | 404           | 160          |             |               |              |             |               |              |  |
| 41                           | 260           | 121          | 55          | 281           | 130          | 68          | 303           | 139          | 81          | 324           | 148          | 94          | 359           | 152          | 106         | 385           | 153          | 118         | 411           | 154          |             |               |              |             |               |              |  |



# Refrigerant Charging Charts for Heating Mode of Operation

## 13 SEER Split System Heating Charts

| 060K OUTDOOR TEMPERATURE (DEG. F) |               |              |             |               |              |             |               |              |             |               |              |             |               |              |             |               |              |    |  |
|-----------------------------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|----|--|
| 0                                 |               |              | 10          |               |              | 20          |               |              | 30          |               |              | 40          |               |              | 50          |               |              | 60 |  |
| Suc. Press.                       | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. | Suc. Press. | Liquid Press. | Disch. Temp. |    |  |
| 31                                | 223           | 131          | 44          | 253           | 143          | 57          | 283           | 155          | 70          | 313           | 166          | 82          | 329           | 179          | 95          | 355           | 193          |    |  |
| 32                                | 230           | 129          | 45          | 259           | 141          | 58          | 288           | 153          | 71          | 316           | 164          | 83          | 336           | 176          | 96          | 362           | 188          |    |  |
| 33                                | 237           | 127          | 46          | 265           | 139          | 59          | 292           | 151          | 72          | 320           | 162          | 84          | 343           | 173          | 97          | 369           | 184          |    |  |
| 34                                | 244           | 125          | 47          | 271           | 137          | 60          | 297           | 149          | 73          | 324           | 160          | 85          | 350           | 171          | 98          | 376           | 179          |    |  |
| 35                                | 251           | 123          | 48          | 277           | 135          | 61          | 302           | 147          | 74          | 327           | 158          | 86          | 357           | 168          | 99          | 383           | 175          |    |  |
| 36                                | 258           | 121          | 49          | 282           | 133          | 62          | 307           | 145          | 75          | 331           | 156          | 87          | 364           | 165          | 100         | 390           | 170          |    |  |
| 37                                | 265           | 119          | 50          | 288           | 131          | 63          | 312           | 143          | 76          | 335           | 154          | 88          | 371           | 162          | 101         | 397           | 166          |    |  |

**INSTALLER: PLEASE LEAVE  
THESE INSTALLATION  
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HOMEOWNER.**

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