

INSTALLATION INSTRUCTIONS

PACKAGED HEAT PUMPS FEATURING EARTH-FRIENDLY R-410A REFRIGERANT ECOLOGY R-410A

RHPBZR (2-5 TONS) 13.4 SEER2



DO NOT DESTROY THIS MANUAL
PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN



ISO 9001:2015



RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

▲ WARNING

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

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I. SAFETY INFORMATION

WARNING

PROPOSITION 65: THIS APPLIANCE CONTAINS FIBERGLASS INSULATION. RESPIRABLE PARTICLES OF FIBERGLASS ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

WARNING

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

WARNING

DISCONNECT ALL POWER TO THE UNIT BEFORE STARTING MAINTENANCE. FAILURE TO DO SO CAN RESULT IN SEVERE ELECTRICAL SHOCK OR DEATH.

WARNING

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

WARNING

TURN OFF ELECTRIC POWER AT THE FUSE BOX OR SERVICE PANEL BEFORE MAKING ANY ELECTRICAL CONNECTIONS.

ALSO, THE GROUND CONNECTION MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS. FAILURE TO DO SO CAN RESULT IN ELECTRICAL SHOCK, SEVERE PERSONAL INJURY OR DEATH.

WARNING

THE UNIT MUST BE PERMANENTLY GROUNDED. A GROUNDING LUG IS PROVIDED. FAILURE TO GROUND THIS UNIT CAN RESULT IN FIRE OR ELECTRICAL SHOCK CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

WARNING

ONLY ELECTRIC HEATER KITS SUPPLIED BY THIS MANUFACTURER AS DESCRIBED IN THIS PUBLICATION HAVE BEEN DESIGNED, TESTED, AND EVALUATED BY A NATIONALLY RECOGNIZED SAFETY TESTING AGENCY FOR USE WITH THIS UNIT. USE OF ANY OTHER MANUFACTURED ELECTRIC HEATERS INSTALLED WITHIN THIS UNIT MAY CAUSE HAZARDOUS CONDITIONS RESULTING IN PROPERTY DAMAGE, FIRE, BODILY INJURY OR DEATH.

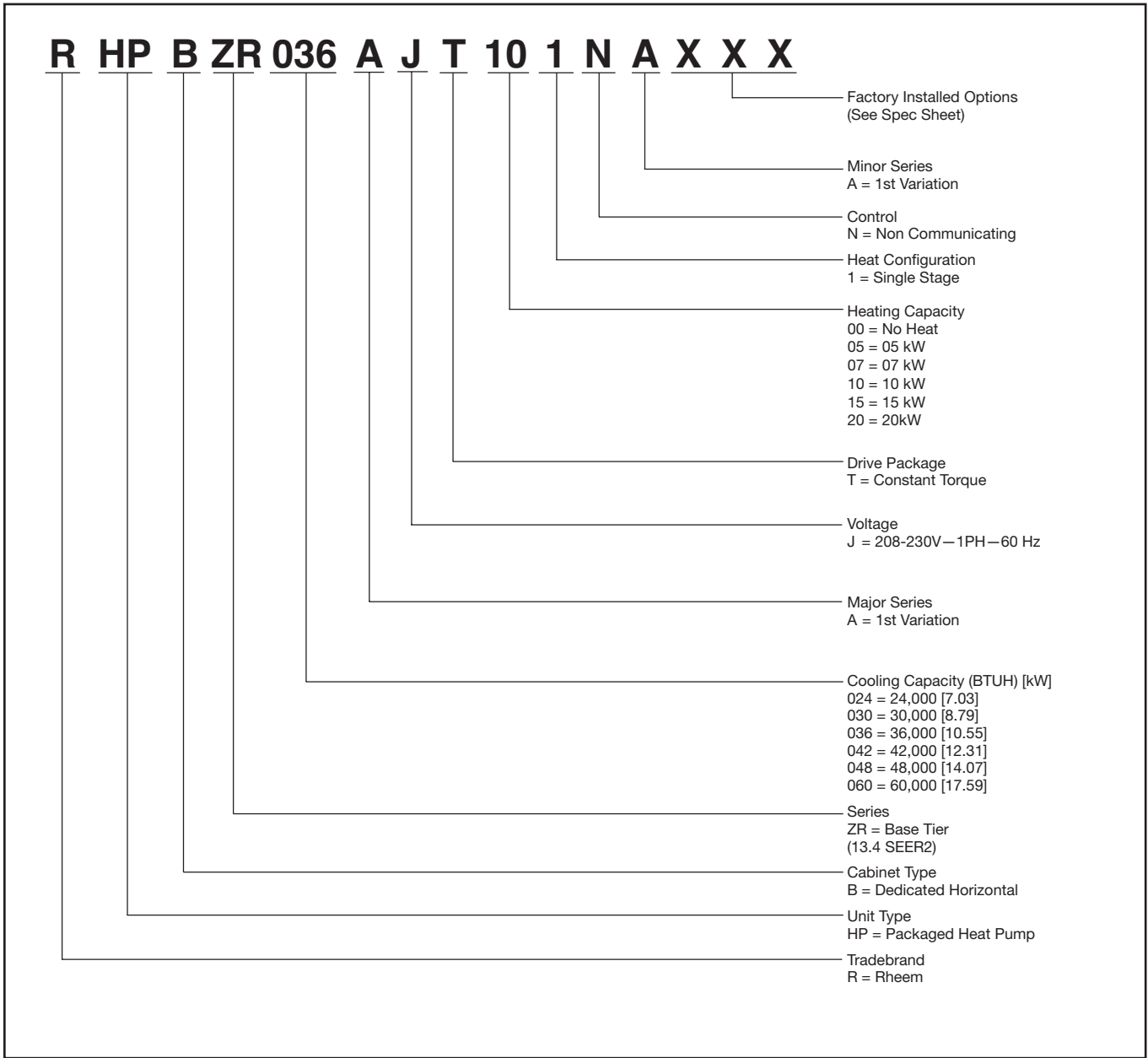
WARNING

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EFFICIENCY TESTING NOTICE

For purposes of verifying or testing efficiency ratings, the test procedure in Title 10 Part 431 Appendix A to Subpart F (Uniform Test Method for Measuring the Energy Consumption of Small Large and Very Large Commercial Packaged Air Conditioning and Heating Equipment), Title 10 Part 431.76 Subpart D (Uniform Test Method for Measuring Energy Consumption of Commercial Warm Air Furnaces), and the clarifying provisions provided in the AHRI Operations Manuals for Unitary Large Equipment 340/360, 365 and Commercial Furnaces that were applicable at the date of manufacture should be used for test set up and performance.

II. BREAKDOWN PAGE



III. INTRODUCTION

This booklet contains the installation and operating instructions for your packaged heat pump unit. There are some precautions that should be taken to ensure proper operation. Improper installation can result in unsatisfactory operation or dangerous conditions. Read this booklet and any instructions packaged with separate equipment required to make up the system prior to installation. Give this booklet to the owner and explain its provisions. The owner should retain this booklet for future reference.

▲ WARNING: The manufacturer's warranty does not cover any damage or defect to the heat pump caused by the attachment or use of any components, accessories or devices (other than those authorized by the manufacturer) into, onto or in conjunction with the air conditioner.

You should be aware that the use of unauthorized components, accessories or devices may adversely affect the operation of the air conditioner and may also endanger life and property. The manufacturer disclaims any responsibility for such loss or injury resulting from the use of such unauthorized components, accessories or devices.

IV. AGENCY PERFORMANCE AUDIT AND EFFICIENCY TESTING NOTICE

NOTICE: BREAK-IN PERIOD

Prior to agency testing, run the compressor for 16 hours at 115° outdoor ambient temperature and 80° dry bulb / 75° wet bulb indoor ambient temperature.

NOTICE: EFFICIENCY TESTING NOTICE

For purposes of verifying or testing efficiency ratings, the test procedure in Title 10 Appendix M to Subpart B of Part 430 (Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps), and the clarifying provisions provided in the standards listed below that were applicable at the date of manufacture should be used for test set up and performance.

SET UP

- ASHRAE 37 - 2009 (RA 2019)

PERFORMANCE

- ANSI/ASHRAE 90.1 - 2019
- ANSI/ASHRAE 103 (2017)
- AHRI Operations for Unitary Small AC
- Equipment 210/240 (2017) for 3-5T

SAFETY

- UL 1995 5th Edition

V. IMPORTANCE OF A QUALITY INSTALLATION

Optimal system performance and longevity depend upon a quality and proper installation. Failure to properly setup and commission this unit could result in undesirable operation and subsequent faults and potential failures.

Carefully follow all guidelines listed in the manual and industry best practices. Conform to all local code requirements. Contact your local technical representative with any questions or concerns.

VI. IMPORTANCE OF AIR FLOW AND SETUP

Optimal system performance is also dependent upon having the ideal airflow across the condensing and evaporating coils, and upon matching the charge weight to the manufacturer's spec for the unit. Improper or restricted air flow, and incorrect charge weight, will hinder the performance of the unit. Please refer to the manufacturer's recommended clearances for setting the unit and the included guide for setting air flow. Refer to the rating plate for the charge weight.

VII. CHECKING PRODUCT AND INSPECTION

Upon receiving the unit, inspect it for any damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company.

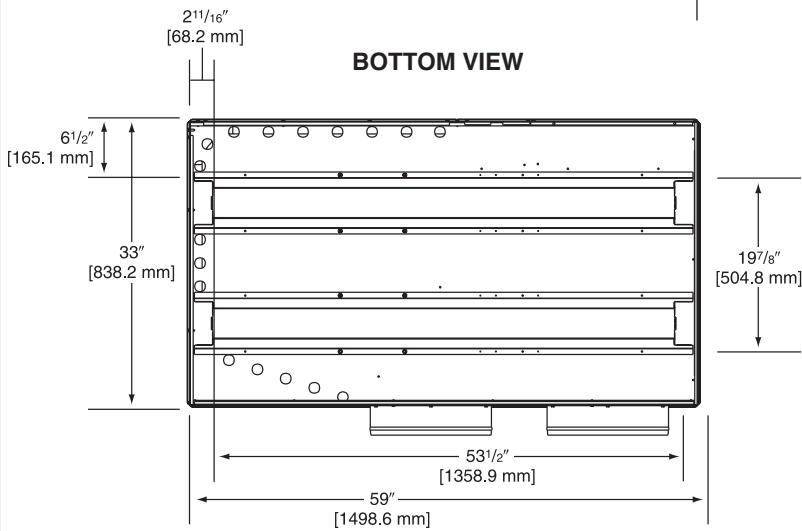
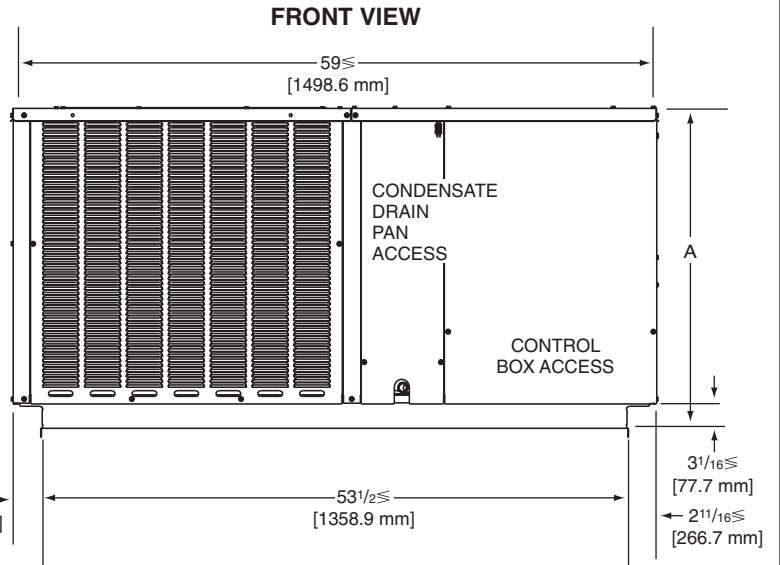
IMPORTANT: Check the unit model number, heating size, electrical characteristics, and accessories to determine if they are correct.

▲ CAUTION

R-410A systems operate at higher pressures than R-22 systems. Do not use R-22 service equipment or components on R-410A equipment.

FIGURE 1
UNIT DIMENSIONS AND ACCESS LOCATIONS

Model RHPBZR	Height "A"
024, 030	29 1/8"
036, 042, 048, 060	37 1/8"



ELECTRICAL CONNECTIONS

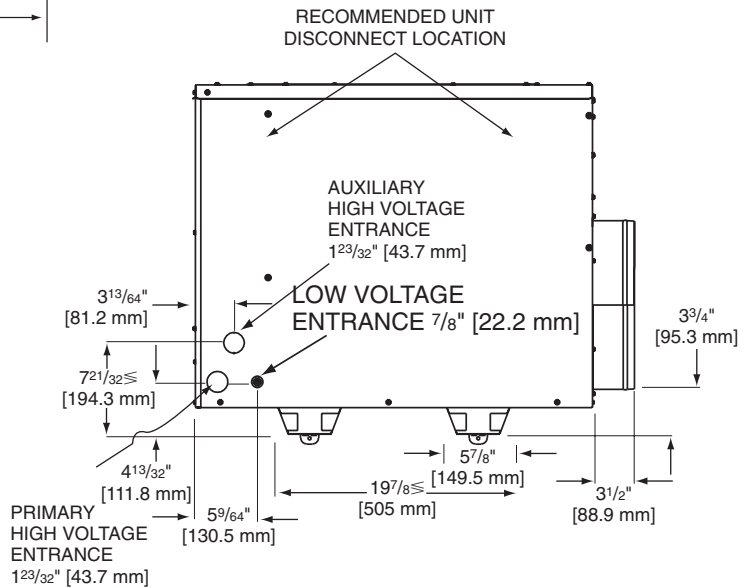
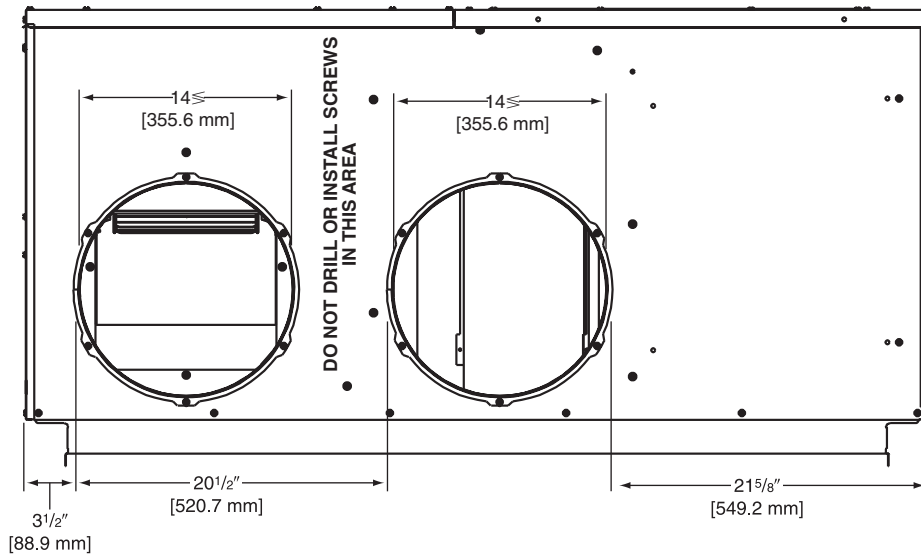
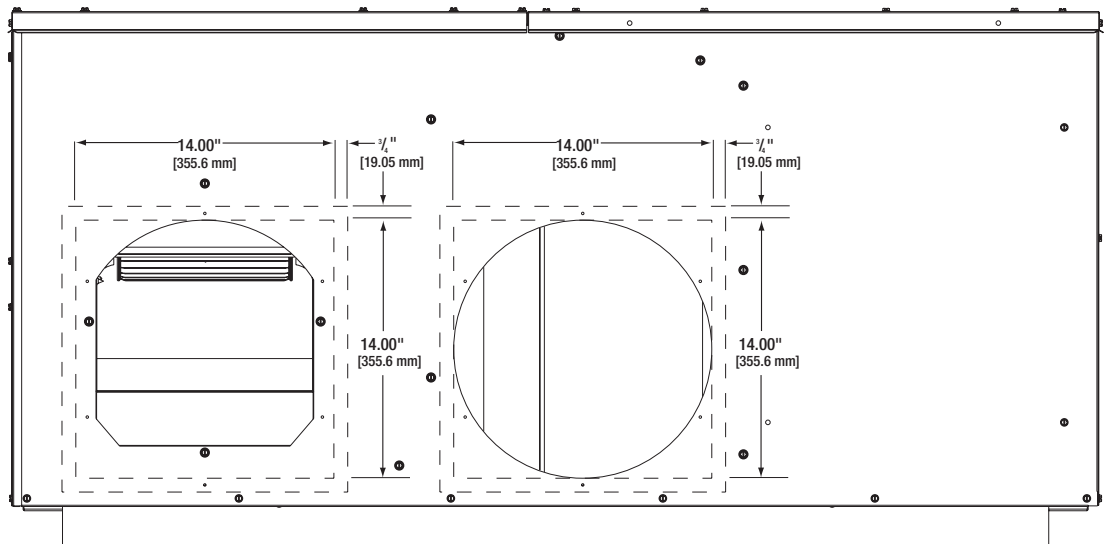


FIGURE 1 (Continued)
DUCT CONNECTIONS

ROUND DUCT CONNECTIONS



SQUARE DUCT CONNECTIONS



IMPORTANT: DO NOT SCREW OR DRILL OUTSIDE THE DESIGNATED AREAS.

IMPORTANT: This product is designed to be operated with 14" round supply and return air ducts. Square ducts may be used, provided that a minimum length of 24" of round duct is used on the supply and return connections. This requirement is necessary to maintain blower performance.

VIII. INSTALLATION

A. GENERAL

1. PRE-INSTALLATION CHECK-POINTS

Before attempting any installation, the following points should be carefully considered:

- Structural strength of supporting members. (rooftop installation)
- Clearances and provision for servicing.
- Power supply and wiring.
- Air duct connections.
- Drain facilities and connections.
- Location for minimum noise.

2. LOCATION CONSIDERATIONS (CORROSIVE ENVIRONMENT)

These units are designed for outdoor installations. They can be mounted on a slab or rooftop. They are not to be installed within any part of a structure such as an attic, crawl space, closet, or any other place where condenser air flow is restricted or other than outdoor ambient conditions prevail. Since the application of the units is of the outdoor type, it is important to consult your local code authorities at the time the first installation is made.

The metal parts of this unit may be subject to rust or deterioration in adverse environmental conditions. This oxidation could shorten the equipment's useful life. Salt spray, fog or mist in seacoast areas, sulphur or chlorine from lawn watering systems, and various chemical contaminants from industries such as paper mills and petroleum refineries are especially corrosive.

If the unit is to be installed in an area where contaminants are likely to be a problem, special attention should be given to the equipment location and exposure.

- Avoid having lawn sprinkler heads spray direction on the unit cabinet.
- In coastal areas, locate the unit on the side of the building away from the waterfront.
- Shielding provided by a fence or shrubs may give some protection.
 - Elevating the unit off its slab or base enough to allow air circulation will help avoid holding water against the basepan.
 - Frequent washing of the cabinet, fan blade and coil with fresh water will remove most of the salt or other contaminants that build up on the unit.
 - Regular cleaning and waxing of the cabinet with an automobile polish will provide some protection.
 - A liquid cleaner may be used several times a year to remove matter that will not wash off with water.

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

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

WARNING

DISCONNECT ALL POWER TO THE UNIT BEFORE STARTING MAINTENANCE. FAILURE TO DO SO CAN RESULT IN SEVERE ELECTRICAL SHOCK OR DEATH.

B. OUTSIDE SLAB INSTALLATION

(Typical outdoor slab installations are shown in Figure 2.)

- Select a location where external water drainage cannot collect around the unit.
- Provide a level concrete slab extending 3" beyond all four sides of the unit. The slab should be sufficient above grade to prevent ground water from entering the unit.

IMPORTANT: To prevent transmission of noise or vibration, slab should not be connected to building structure.

- The location of the unit should be such as to provide proper access for inspection and servicing.
- Locate unit where operating sounds will not disturb owner or neighbors.
- Locate unit so roof runoff water does not pour directly on the unit. Provide gutter or other shielding at roof level. Do not locate unit in an area where excessive snow drifting may occur or accumulate.

- It is essential that the unit be elevated above the base pad to allow for condensate drainage and possible refreezing of condensation. Provide a base pad which is slightly pitched away from the structure. Route condensate off base pad to an area which will not become slippery and result in personal injury.

IMPORTANT: Avoid blocking openings in bottom of unit.

- Where snowfall is anticipated, the height of the unit above the ground level must be considered. Mount unit high enough to be above average area snowfall and to allow for proper condensate drainage.

IMPORTANT: Avoid blocking openings in bottom of unit.

C. CLEARANCES

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

- Provide 30" minimum clearance at the front and 18" on the right side of the unit for service access. Provide 12" minimum clearance on the left side of the unit for air inlet.
- Provide 60" minimum clearance from top of unit.
- Unit is design certified for application on combustible flooring with 0" minimum clearance.
- See Figure 2 for illustration of minimum installation-service clearances.

D. ROOFTOP INSTALLATION

- Before locating the unit on the roof, make sure that the strength of the roof and beams is adequate at that point to support the weight involved. (See specification sheet for weight of unit.) This is very important and user's responsibility.
- The unit should be placed on a solid and level platform of adequate strength.

IMPORTANT: Avoid blocking openings in bottom of unit. (See Figure 3). Provision for disposal of outdoor coil defrost water runoff must be provided.

- The location of the unit on the roof should be such as to provide proper access for inspection and servicing.

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

FIGURE 2
PACKAGED HEAT PUMP
 OUTSIDE SLAB INSTALLATION, BASEMENT OR
 CRAWL SPACE DISTRIBUTION SYSTEM

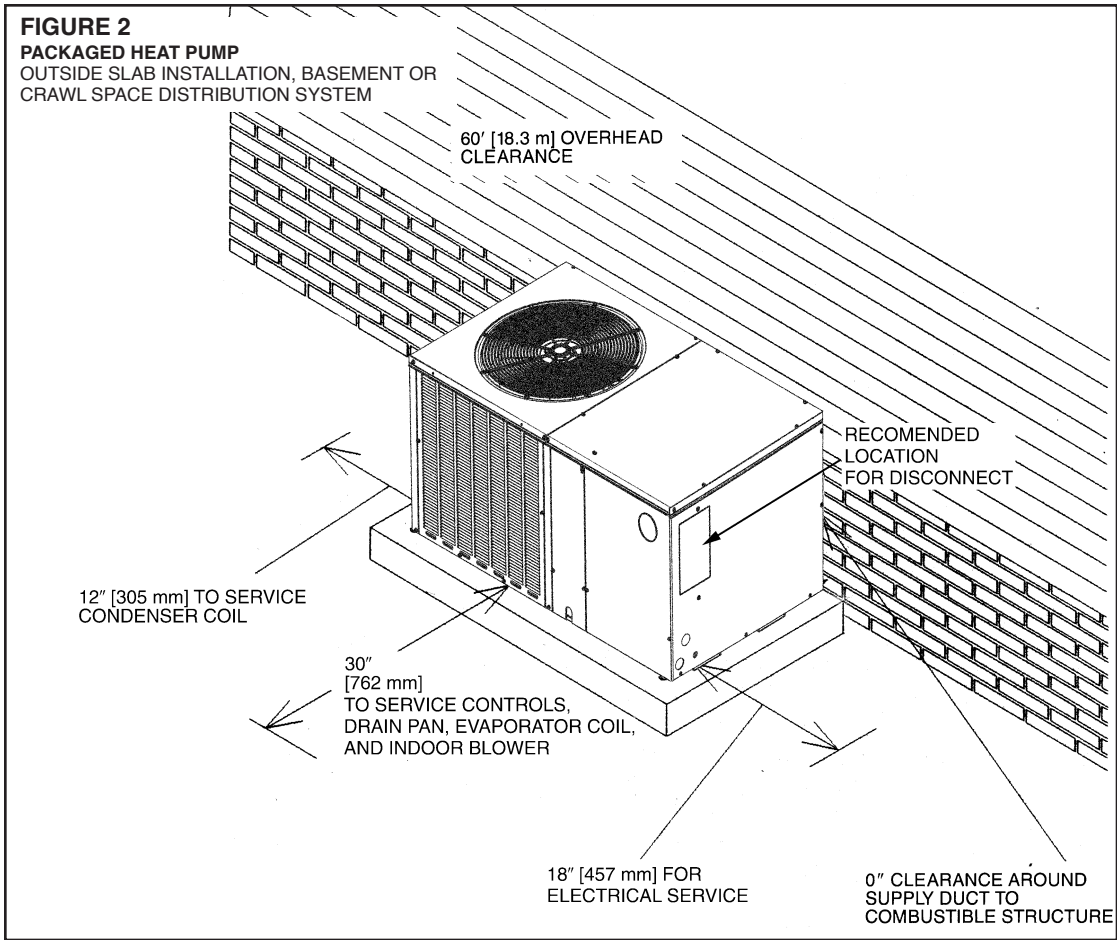
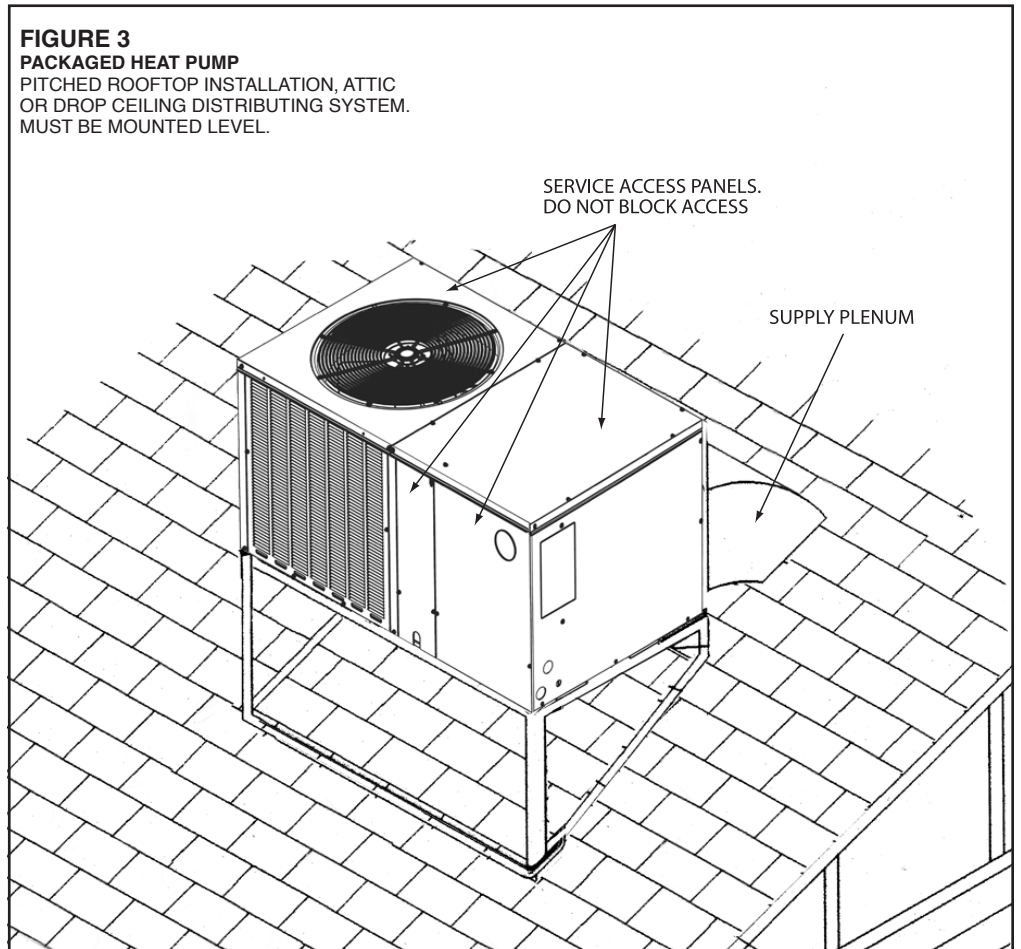


FIGURE 3
PACKAGED HEAT PUMP
 PITCHED ROOFTOP INSTALLATION, ATTIC
 OR DROP CEILING DISTRIBUTING SYSTEM.
 MUST BE MOUNTED LEVEL.



IX. DUCTWORK

Ductwork should be fabricated by the installing contractor in accordance with local codes and NFPA90A. Industry manuals may be used as a guide when sizing and designing the duct system - contact Air Conditioning Contractors of America, 1513 16th St. N.W., Washington, D.C. 20036.

▲ WARNING

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

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

It is preferable to install the unit on the roof of the structure if the registers or diffusers are located on the wall or in the ceiling. Consider a slab installation when the registers are low on a wall or in the floor.

On ductwork exposed to outside air conditions of temperature and humidity, use a minimum of 2" of insulation and a vapor barrier. Distribution system in attic, furred space or crawl space should be insulated with at least 2" of insulation with vapor barrier. One-half to 1" thickness of insulation is usually sufficient for ductwork inside the air conditioned space.

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

X. FILTERS

Filters are not provided with this unit. They must be supplied and installed in the return air duct by the installer. A field installed filter grille is recommended for easy and convenient access to the filters for periodic inspection and cleaning. Filters must have adequate face area for the rated air quantity of the unit. See General Database for recommended filter size.

XI. CONDENSATE DRAIN

The indoor coil condensate drain ends with a PVC stub. A trap is provided for proper condensate drainage and to prevent debris from being drawn into the unit. Do not connect drain to closed sewer line. It is not recommended that a PVC cement or other permanent installation be used so that the drain line and/or drain pan can be easily cleaned in the future. The drain trap is located in the control box during shipping. To install, slide clear plastic tube over drain pan connection. The white PVC trap can be oriented as required by installation.

XII. CONDENSATE DRAIN, OUTDOOR COIL

The outdoor coil during heating operation will sweat or run water off. The outdoor coil will also run water off during the defrost cycle. See Section V, Installation, for mounting precautions.

XIII. ELECTRICAL WIRING

Field wiring must comply with the National Electrical Code* and applicable local codes.

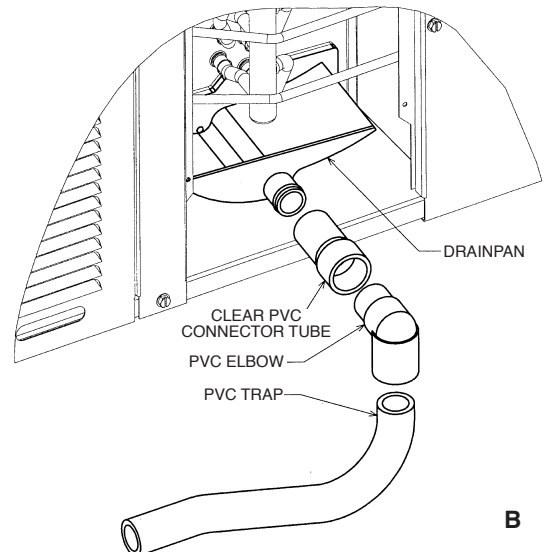
*C.E.C. in Canada

A. POWER WIRING

1. It is important that proper electrical power is available at the unit. Voltage should not vary more than 10% from that stamped on the unit rating plate. On three phase units, phases must be balanced within 3%.
2. Install a branch circuit disconnect within sight of the unit and of adequate size to handle the starting current. (See Heater Kit Tables.)
3. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size can be determined from the National Electrical Code or Canadian Electrical Code or nameplate or from Heater Kit Tables.
4. This unit supports both single and dual point electrical connection for unit and electric heat accessory.
5. Power wiring must be run in grounded rain-tight conduit.

FIGURE 4
REMOVABLE CONDENSATE
DRAIN PAN AND REMOVAL
PROCEDURE

A small side panel grants access to a removable, sloped drain pan (A), which helps to ensure indoor air quality (IAQ) throughout the life of the unit. A drain trap (B) assembly is provided for convenience.



"Patent 7,430,877"

B. POWER WIRING AND ELECTRIC HEATER KIT INSTRUCTIONS

▲ WARNING

TURN OFF ELECTRIC POWER AT THE FUSE BOX OR SERVICE PANEL BEFORE MAKING ANY ELECTRICAL CONNECTIONS.

ALSO, THE GROUND CONNECTION MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS. FAILURE TO DO SO CAN RESULT IN ELECTRICAL SHOCK, SEVERE PERSONAL INJURY OR DEATH.

1. Turn off power to unit.
2. Remove control box access panel.
3. Remove unit indoor section top cover.
4. Remove wire notch cover from control bulkhead and discard. Retain screw.
5. Remove heater element cover plate from blower outlet opening and discard. Retain screws.
6. Mount heater fuse block assembly in location indicated with the three included screws.
7. Route wire harness assembly through wire notch in control bulkhead and mount element assembly in blower outlet opening with screws previously retained.
8. Center wire routing plate over notch in blower bulkhead and secure with screw previously retained.
9. Route and tie wiring as shown in Figure 5. Wiring must not contact moving parts or uninsulated electrical connections.
10. Replace unit indoor top cover.
11. Connect power and control wiring as indicated below:
 - a. **Single-point wiring:** Connect high voltage field power leads to heater kit fuse block and connect included unit power pigtailed from heater kit fuse block to unit contactor L1 and L3 connections. Connect ground lead to ground lug on heater kit fuse block.
 - b. **Dual-circuit wiring:** Remove unit power pigtailed from heater kit fuse block and discard. Connect one set of

high voltage field power circuit leads to the heater kit fuse block and connect ground lead to ground lug on heater kit fuse block.

Connect the second set of high voltage field power leads to L1 and L3 on the unit contactor. Connect ground lead to ground lug on control box bulkhead.

- c. Connect heater kit control plug to receptacle in control box.

12. Replace control box access panel.
13. Restore power to unit and verify proper unit and heater kit operation.

C. CONTROL WIRING (Class II)

1. Do not run low voltage wiring in conduit with power wiring.
2. Control wiring is routed through the 7/8" hole corner adjacent to the control box. See Electrical Connections, Figure 1. Use a minimum #18 AWG thermostat wire. For wire lengths exceeding 50', use #16 AWG thermostat wire. The low voltage wires are connected to the unit pigtailed which are supplied with the unit in the low voltage connection box located within the unit control box. See Figure 5.
3. It is necessary that only heat pump thermostats be used.
4. Figure 6 shows representative low voltage connection diagrams. Read your thermostat installation instructions for any special requirements for your specific thermostat.

NOTE — Units installed in Canada require that an outdoor thermostat (30,000 min. cycles of endurance) be installed and be wired with C.E.C. Class I wiring.

D. INTERNAL WIRING

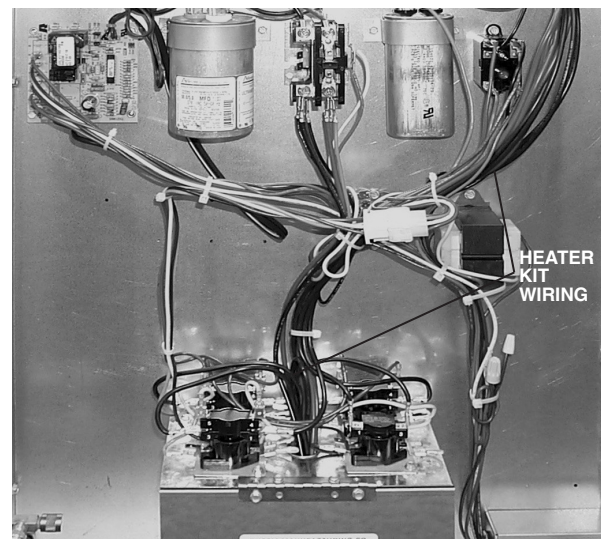
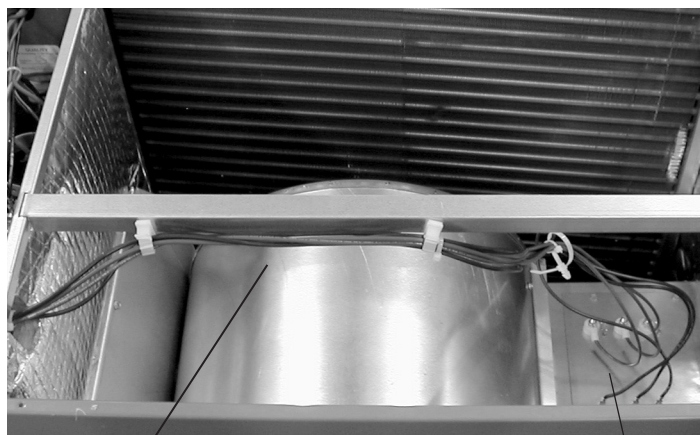
A diagram of the internal wiring of this unit is located on the electrical control box cover. If any of the original wire as supplied with the appliance must be replaced, the wire gauge and insulation must be the same as original wiring.

E. GROUNDING

▲ WARNING

THE UNIT MUST BE PERMANENTLY GROUNDED. A GROUNDING LUG IS PROVIDED. FAILURE TO GROUND THIS UNIT CAN RESULT IN FIRE OR ELECTRICAL SHOCK CAUSING PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

FIGURE 5
HEATER KIT INSTALLATION



F. THERMOSTAT

Mount the thermostat on an inside wall about five feet above the floor in a location where it will not be affected by unconditioned air, sun, or drafts from open doors or other sources. READ installation instructions in heat pump thermostat package CAREFULLY because each has some different wiring requirements.

XIV. INDOOR AIR FLOW DATA

All 208/230 volt units are equipped with multi-speed indoor blower motors. Each unit is shipped factory wired for the proper speed at a normal external static. See Airflow Performance Table for blower performance.

XV. PRE-START CHECK

1. Is unit properly located and level?
2. Is ductwork insulated, weatherproofed, with proper spacing to combustible materials?
3. Is air free to travel to and from outdoor coil? (See Figure 1.)
4. Is the wiring correct, tight, and according to unit wiring diagram?
5. Is unit grounded?
6. Are field supplied air filters in place and clean?
7. Do the outdoor fan and indoor blower turn freely without rubbing, and are they tight on the motor shafts?
8. Is unit elevated to allow for outdoor coil condensate drainage during heating operation and defrost?

XVI. STARTUP

1. Turn thermostat to "OFF," turn "on" power supply at disconnect switch.
2. Turn temperature setting as high as it will go.
3. Turn fan switch to "ON."
4. Indoor blower should run. Be sure it is running in the right direction.
5. Turn fan switch to "AUTO." Turn system switch to "COOL" and turn temperature setting below room temperature. Unit should run in cooling mode.
6. Is outdoor fan operating correctly in the right direction?
7. Is compressor running correctly.
8. Turn thermostat system switch to "HEAT." Unit should stop. Wait 5 minutes, then raise temperature setting to above room temperature. Unit should run in heating mode and after about 30 to 50 seconds auxiliary heaters, if installed, should come on.
9. Check the refrigerant charge using the instructions located on control box cover. Replace service port caps. Service port cores are for system access only and will leak if not tightly capped.
10. Turn thermostat system switch to proper mode "HEAT" or "COOL" and set thermostat to proper temperature setting. Record the following after the unit has run some time.
 - a. Operating Mode _____
 - b. Discharge Pressure (High) _____ PSIG
 - c. Vapor Pressure at Compressor (Low) _____ PSIG
 - d. Vapor Line Temperature at Compressor _____ °F.
 - e. Indoor Dry Bulb _____ °F.
 - f. Indoor Wet Bulb _____ °F.
 - g. Outdoor Dry Bulb _____ °F.
 - h. Outdoor Wet Bulb _____ °F.
 - i. Voltage at Contactor _____ Volts
 - j. Current at Contactor _____ Amps

- k. Model Number _____
- l. Serial Number _____
- m. Location _____
- n. Owner _____
- o. Date _____

11. Adjust discharge air grilles and balance system.
12. Check ducts for condensation and air leaks.
13. Check unit for tubing and sheet metal rattles.
14. Instruct the owner on operation and maintenance.
15. Leave "USE AND CARE" instructions with owner.

XVII. OPERATION

Most single phase units are not equipped with start relay or start capacitor. It is important that such systems be off for a minimum of 5 minutes before restarting to allow equalization of pressures. Do not move the thermostat to cycle unit without waiting five minutes. To do so may cause the compressor to stop on an automatic open overload device or blow a fuse. Poor electrical service can cause nuisance tripping in overloads or blow fuses.

IMPORTANT: The compressor has an internal overload protector. Under some conditions, it can take up to 2 hours for this overload to reset. Make sure overload has had time to reset before condemning the compressor.

These units may be equipped with a time delay control (TDC1). The control allows the blower to operate for 45 to 90 seconds after the thermostat is satisfied.

XVIII. AUXILIARY HEAT

The amount of auxiliary heat required depends on the heat loss of the structure to be heated and the capacity of the heat pump. It is good practice to install strip heat to maintain at least 60°F indoor temperatures in case of compressor failure. The auxiliary heat is energized by the first stage of the thermostat. The amount of elec-

WARNING

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tric heat that is allowed to come on, as determined by the output of the heat pump, may be controlled by an outdoor thermostat.

A. CONTROL SYSTEM OPERATION

1. In the cooling mode, the thermostat will, on a call for cooling, energize the compressor contactor and the indoor blower relay. The indoor blower can be operated continuously by setting the thermostat fan switch at the "ON" position.
2. In the heating mode, the first heat stage of the thermostat will energize one or more supplementary resistance heaters. If required or considered desirable, the resistance heat may also be controlled by outdoor thermostats. In the heating mode, the thermostat will, on a call for heating, energize the indoor blower relay.

XIX. DEMAND DEFROST CONTROL AND HIGH/LOW PRESSURE CONTROLS

The demand defrost control monitors the outdoor ambient temperature, outdoor coil temperature and the compressor run time to determine when a defrost cycle is required.

Enhanced Feature Demand Defrost Control: This defrost control has high and low pressure control inputs with unique pressure switch logic built into the microprocessor to provide compressor and system protection without nuisance lockouts. The control cycles the compressor off for 30 seconds at the beginning and the end of the defrost cycle to eliminate the increased compressor noise caused by rapidly changing system pressures when the reversing valve switches. See next page for diagnostic flash codes and sensor resistance values at various temperatures.

DEFROST INITIATION

A defrost will be initiated when the three conditions below are satisfied:

1. The outdoor coil temperature is below 35°F as measured by a good coil sensor,
2. The compressor has operated for at least 34 minutes with the outdoor coil temperature below 35°F and
3. The measured difference between the ambient temperature and the outdoor coil temperature is greater than the calculated difference determined by the defrost control microprocessor.

DEFROST TERMINATION

Once a defrost is initiated, the defrost will continue until fourteen minutes has elapsed or the coil temperature has reached the selected termination temperature. The factory setting is 70°F but can be changed to 50°F, 60°F, or 80°F by relocating the jumper on the control board.

TEMPERATURE SENSORS

The coil sensor is located on the outdoor coil near the point fed by the distribution tubes from the expansion device, on the top most cross-over tube. The ambient air sensor is located outside the control box so it can sense outdoor temperatures.

If the ambient sensor fails, the defrost control will initiate a defrost every 34 minutes of compressor run time with the coil temperature below 35°F.

If the coil sensor fails, the defrost control will not initiate a defrost.

TEST MODE

The test mode is initiated by shorting the TEST pins. The unit must have an active heat pump heating call to enter the test mode. In this mode of operation, the enable temperature is ignored and all timers are sped up. To initiate a manual defrost, short and hold the TEST pins. Remove the short when the system switches to defrost mode after the compressor noise abatement delay. The defrost will terminate on time (14 minutes) or when the termination temperature has been reached.

Test Sequence of Operation:

1. Provide a heating call to the heat pump.
2. Short test pins to bypass anti-short cycle timer. (If unit is running, this step is not necessary.)
3. Short test pins and hold them shorted to enter defrost mode.

4. Release test pins once control exits noise abatement delay.
5. Monitor coil temperature when control exits defrost.
6. Unit should return to heating mode.

TROUBLESHOOTING DEMAND DEFROST

During the test mode the coil temperature should be monitored. If the system exits defrost at approximately the termination temperature, the control is operating normally. If not, check the coil and ambient temperature sensor resistances, using the sensor temperature vs. resistance table at the end of this section.

Immerse the sensor in water and measure the resistance of the sensor. At 35°F the resistance of the sensor should be approximately 30,000 ohms.

Ensure that the coil sensor is properly installed, and that is not loose or touching the cabinet.

HIGH/LOW PRESSURE CONTROL MONITORING - ENHANCED DEFROST CONTROL

Status of high and low pressure controls is monitored by the enhanced feature demand defrost control and the following actions are taken.

High Pressure Control – Provides active protection in both cooling and heating modes at all outdoor ambient temperatures. The high pressure control is an automatic reset type and opens at approximately 610 psig and closes at approximately 420 psig. The compressor and fan motor will stop when the high pressure control opens and will start again if the high side pressure drops to approximately 420 psig where the automatic reset high pressure control resets. If the high pressure control opens 3 times within a particular call for heating or cooling operation, the defrost control will lock out compressor and outdoor fan operation.

Low Pressure Control – Provides active protection in both heating and cooling modes at all outdoor ambient temperatures. The low pressure control is an automatic reset type and opens at approximately 15 psig and closes at approximately 40 psig. Operation is slightly different between cooling and heating modes.

Cooling Mode: The compressor and fan motor will stop when the low pressure control opens and will start again when the low side pressure rises to approximately 40 psig after the low pressure control automatically resets. If the low pressure switch opens 3 times within a particular call for cooling operation, the defrost control will lock out compressor and outdoor fan operation.

Heating Mode: The compressor and outdoor fan motor will stop when the low pressure control opens and will start again when the low side pressure rises to approximately 40 psig when the low pressure control automatically resets. If the low pressure switch trips 3 times within 120 minutes of operation during a particular call for heating operation, the defrost control will lock out compressor and outdoor fan operation. If the lock-out due to low pressure occurs at an outdoor ambient temperature below 5°F, the defrost control will automatically exit the lock-out mode when the outdoor ambient temperature rises to 5°F. This feature is necessary since the low pressure control could possibly have opened due to the outdoor ambient being very low rather than an actual system fault.

Exiting Lock-Out Mode: To exit the lock-out mode, remove 24 volts to the defrost control by removing power to the unit or by shorting the two defrost control pins together.

**ENHANCED FEATURE DEFROST CONTROL
DIAGNOSTIC CODES
SENSOR TEMPERATURE VS. RESISTANCE TABLE**

LED 1	LED 2	Control Board Status
OFF	OFF	No Power
ON	ON	Coil Sensor Failure
OFF	ON	Ambient Sensor Failure
FLASH	FLASH	Normal
OFF	FLASH	Low Pressure Lockout (short test pins to reset)
FLASH	OFF	High Pressure Lockout (short test pins to reset)
ON	FLASH	Low Pressure Control Open
FLASH	ON	High Pressure Control Open
Alternate Flashing		5 Minute Time Delay

Degrees C	Degrees F	Ohms
-20	-4	96,974
-10	14	55,298
0	32	32,650
10	50	19,903
20	68	12,493
25	77	10,000
30	86	8,056
40	104	5,324

XX. GENERAL DATA - RHPB

NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RHPBZR Series	024AJT	030AJT	036AJT	042AJT
Cooling Performance¹				Continued ->
Gross Cooling Capacity Btu [kW]	24,000 [7.03]	29,000 [8.5]	36,200 [10.61]	41,000 [12.01]
EER2/SEER2	10.6/13.4	10.6/13.4	10.6/13.4	10.6/13.4
Nominal CFM/AHRI Rated CFM [L/s]	800/800 [378/378]	1000/1000 [472/472]	1200/1200 [566/566]	1400/1400 [661/661]
AHRI Net Cooling Capacity Btu [kW]	23,600 [6.91]	28,200 [8.26]	35,400 [10.37]	40,000 [11.72]
Net Sensible Capacity Btu [kW]	19,080 [5.59]	23,450 [6.87]	27,870 [8.17]	30,770 [9.02]
Net Latent Capacity Btu [kW]	4,520 [1.32]	4,750 [1.39]	7,530 [2.21]	9,230 [2.7]
Net System Power kW	2.03	2.35	3.15	3.54
Heating Performance (Heat Pumps)				
High Temp. Btuh [kW] Rating	22,400 [6.56]	27,000 [7.91]	36,000 [10.55]	37,400 [10.96]
System Power KW / COP	1.94/3.42	2.24/3.58	3.16/3.44	3.66/3.32
Low Temp. Btuh [kW] Rating	12,600 [3.69]	15,200 [4.45]	20,800 [6.09]	21,800 [6.39]
System Power KW / COP	1.79/2.08	2.01/2.3	2.72/2.24	2.98/2.2
HSPF2 (Btu/Watts-hr)	6.7	6.7	6.7	6.7
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)5	78	77	80	80
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	12.65 [1.18]	20.57 [1.91]	16.54 [1.54]	26.9 [2.5]
Rows / FPI [FPcm]	1 / 20 [8]	2 / 16 [6]	1 / 22 [9]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	4.33 [0.4]	4.33 [0.4]	5.78 [0.54]	5.78 [0.54]
Rows / FPI [FPcm]	2 / 15 [6]	3 / 13 [5]	2 / 15 [6]	3 / 13 [5]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/1 [25.4]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	3200 [1510]	3200 [1510]	3300 [1557]	4000 [1888]
No. Motors/HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP	1 at 1/3 HP
Motor RPM	825	825	825	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/10x9 [254x229]	1/10x9 [254x229]	1/12x9 [305x229]	1/12x9 [305x229]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	1/2	1/2	3/4	3/4
Motor RPM	1050	1050	1050	1050
Motor Frame Size	48	48	48	48
Filter - Type	Field Supplied	Field Supplied	Field Supplied	Field Supplied
Furnished	No	No	No	No
(NO.) Size Recommended in. [mm x mm x mm]	(1)1x20x20 [25x508x508]	(1)1x20x20 [25x508x508]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
Refrigerant Charge Oz. [g]	103.2 [2926]	155 [4394]	113 [3204]	202.4 [5738]
Weights				
Net Weight lbs. [kg]	302 [137]	329 [149]	350 [159]	400 [181]
Ship Weight lbs. [kg]	327 [148]	354 [161]	375 [170]	425 [193]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation in CFM range shown in airflow tables. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on AHRI Standard 210/240 or 360.
- EER2 and/or SEER2 are rated at AHRI conditions and in accordance with DOE test procedures.
- Heating Performance is rated at 47° F ambient, 70° F entering dry bulb for High Temp rating and 17° F ambient, 70° F entering dry bulb for Low Temp rating. Performance ratings do include the effect of fan motor heat.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

GENERAL DATA - RHPB

NOMINAL SIZES 2-5 TONS [7-17.6 kW]

Model RHPBZR Series	048AJT	060AJT
Cooling Performance¹		
Gross Cooling Capacity Btu [kW]	48,000 [14.06]	58,500 [17.14]
EER2/SEER2	10.6/13.4	10.6/13.4
Nominal CFM/AHRI Rated CFM [L/s]	1600/1600 [755/755]	2000/1900 [944/897]
AHRI Net Cooling Capacity Btu [kW]	46,500 [13.62]	56,500 [16.55]
Net Sensible Capacity Btu [kW]	36,250 [10.62]	45,090 [13.21]
Net Latent Capacity Btu [kW]	10,250 [3]	11,410 [3.34]
Net System Power kW	4	5.09
Heating Performance (Heat Pumps)		
High Temp. Btuh [kW] Rating	46,500 [13.62]	57,500 [16.85]
System Power KW / COP	4.14/3.3	4.95/3
Low Temp. Btuh [kW] Rating	26,800 [7.85]	31,400 [9.2]
System Power KW / COP	3.62/2.1	4.26/2.16
HSPF2 (Btu/Watts-hr)	6.7	6.7
Compressor		
No./Type	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵		
	77	80
Outdoor Coil - Fin Type		
Tube Type	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	2690 [249.91]	32.39 [3.01]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves
Indoor Coil - Fin Type		
Tube Type	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	5.78 [0.54]	5.78 [0.54]
Rows / FPI [FPcm]	3 / 13 [5]	4 / 13 [5]
Refrigerant Control	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]
Outdoor Fan - Type		
No. Used/Diameter in. [mm]	1/24 [609.6]	1/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1
CFM [L/s]	4000 [1888]	4000 [1888]
No. Motors/HP	1 at 1/3 HP	1 at 1/2 HP
Motor RPM	1075	1075
Indoor Fan - Type		
No. Used/Diameter in. [mm]	1/12x9 [305x229]	1/12x9 [305x229]
Drive Type	Direct	Direct
No. Speeds	Multiple	Multiple
No. Motors	1	1
Motor HP	3/4	1
Motor RPM	1050	1050
Motor Frame Size	48	48
Filter - Type		
Furnished	Field Supplied	Field Supplied
(NO.) Size Recommended in. [mm x mm x mm]	(1)1x24x24 [25x610x610]	(1)1x24x24 [25x610x610]
Refrigerant Charge Oz. [g]		
	175 [4961]	212 [6010]
Weights		
Net Weight lbs. [kg]	397 [180]	429 [195]
Ship Weight lbs. [kg]	422 [191]	454 [206]

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation in CFM range shown in airflow tables. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on AHRI Standard 210/240 or 360.
- EER2 and/or SEER2 are rated at AHRI conditions and in accordance with DOE test procedures.
- Heating Performance is rated at 47° F ambient, 70° F entering dry bulb for High Temp rating and 17° F ambient, 70° F entering dry bulb for Low Temp rating. Performance ratings do include the effect of fan motor heat.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

XXI. ELECTRICAL DATA

ELECTRICAL DATA – RQPM- SERIES							
		024AJT	030AJT	036AJT	042AJT	048AJT	060AJT
Unit Information	Unit Operating Voltage Range	187-253	187-253	187-253	187-253	187-253	187-253
	Volts	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1
	Hz	60	60	60	60	60	60
	Minimum Circuit Ampacity	20	21	27	28	31	40
	Minimum Overcurrent Protection Device Size	25	30	40	40	45	60
	Maximum Overcurrent Protection Device Size	25	30	40	40	45	60
Compressor Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1
	RPM	0	0	0	0	0	0
	HP, Compressor 1	0	0	0	0	0	0
	Amps (RLA), Comp. 1	10.8	11.7	15.4	15.9	18.3	23.5
	Amps (LRA), Comp. 1	55	71.3	92.1	112.3	108	118
	HP, Compressor 2						
Amps (RLA), Comp. 2							
Amps (LRA), Comp. 2							
Condenser Motor	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/2
	Amps (FLA, each)	1.5	1.5	1.5	1.8	1.8	2.3
	Amps (LRA, each)						
Evaporator Fan	No.	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1
	HP	1/2	1/2	3/4	3/4	3/4	1
	Amps (FLA, each)	4.1	4.1	6	6	6	7.6
	Amps (LRA, each)						

XXII. AIRFLOW PERFORMANCE

INDOOR AIRFLOW PERFORMANCE FOR 2-5 TON PACKAGED HEAT PUMPS – 230V RHPB SERIES

Indoor Airflow Performance RHPBZR - 208/230V																
Nominal Cooling Capacity Tons [kW]	Motor Speed from Factory		Manufacturer Recommended Cooling Airflow (Min/Max)	Blower Size/ Motor HP [W] & # of Speeds	Motor Speed / Tap	External Static Pressure - Inches W.C. [kPa] (Side Discharge-Dry Coil)										
	Cool	Heat				0.1 [0.02]	0.2 [0.05]	0.3 [0.07]	0.4 [0.10]	0.5 [0.12]	0.6 [0.15]	0.7 [0.17]	0.8 [0.20]	0.9 [0.22]	1.0 [0.25]	
2.0 [7.03]	Tap 2	Tap 1	700 CFM / 950 CFM	10X9 Blower 1/2 HP [372] 2 Speed (Constant Torque)	Low Speed Tap 1	CFM	882	818	759	650	577	512	433	368	304	241
						RPM	457	533	600	693	750	818	876	931	972	1015
						Watts	63	71	78	89	94	102	109	115	120	124
2.5 [2.79]	Tap 2	Tap 1	1000 CFM / 1400 CFM	10X9 Blower 1/2 HP [372] 2 Speed (Constant Torque)	High Speed Tap 2	CFM	1217	1165	1113	1067	1021	920	859	830	780	728
						RPM	538	597	657	715	772	864	909	946	996	1040
						Watts	122	132	143	154	165	181	189	196	205	213
3.0 [10.55]	Tap 2	Tap 1	1000 CFM / 1400 CFM	10X9 Blower 3/4 HP [559] 2 Speed (Constant Torque)	Low Speed Tap 1	CFM	1143	1088	1043	989	878	836	798	750	706	656
						RPM	519	591	657	721	818	857	898	952	998	1049
						Watts	107	119	129	140	156	162	169	178	186	194
3.5 [12.31]	Tap 2	Tap 1	1000 CFM / 1400 CFM	12X9 Blower 3/4 HP [559] 2 Speed (Constant Torque)	High Speed Tap 2	CFM	1354	1309	1265	1224	1182	1122	1028	989	957	922
						RPM	577	635	689	749	806	871	954	990	1026	1062
						Watts	160	173	186	199	211	226	244	252	260	269
4.0 [14.07]	Tap 2	Tap 1	1200 CFM / 1600 CFM	12X9 Blower 3/4 HP [559] 2 Speed (Constant Torque)	Low Speed Tap 1	CFM	1287	1212	1136	1080	1011	945	882	826	776	726
						RPM	451	504	572	623	681	733	775	838	877	941
						Watts	121	135	151	162	174	185	193	209	219	233
5.0 [17.59]	Tap 2	Tap 1	1600 CFM / 2100 CFM	12X9 Blower 1 HP [746] 2 Speed (Constant Torque)	High Speed Tap 2	CFM	1595	1522	1454	1387	1337	1286	1233	1186	1139	1103
						RPM	524	564	612	673	715	763	808	852	889	914
						Watts	206	219	235	254	268	283	298	313	324	334
4.0 [14.07]	Tap 2	Tap 1	1350 CFM / 1850 CFM	12X9 Blower 3/4 HP [559] 2 Speed (Constant Torque)	Low Speed Tap 1	CFM	1858	1704	1655	1603	1543	1495	1446	1392	1328	1304
						RPM	584	593	633	675	718	764	805	876	905	926
						Watts	301	269	284	299	315	332	346	372	384	391
4.0 [14.07]	Tap 2	Tap 1	1350 CFM / 1850 CFM	12X9 Blower 3/4 HP [559] 2 Speed (Constant Torque)	High Speed Tap 2	CFM	1592	1526	1479	1426	1361	1307	1250	1202	1147	1101
						RPM	514	561	598	640	693	744	798	835	873	911
						Watts	197	212	223	236	253	269	286	297	309	321
4.0 [14.07]	Tap 2	Tap 1	1350 CFM / 1850 CFM	12X9 Blower 3/4 HP [559] 2 Speed (Constant Torque)	Low Speed Tap 1	CFM	1871	1818	1766	1720	1673	1614	1573	1535	1498	1456
						RPM	591	613	657	702	742	787	826	859	896	934
						Watts	309	313	330	348	365	383	400	413	429	445
5.0 [17.59]	Tap 2	Tap 1	1600 CFM / 2100 CFM	12X9 Blower 1 HP [746] 2 Speed (Constant Torque)	High Speed Tap 2	CFM	1871	1818	1766	1720	1673	1614	1573	1535	1498	1456
						RPM	591	613	657	702	742	787	826	859	896	934
						Watts	309	313	330	348	365	383	400	413	429	445
5.0 [17.59]	Tap 2	Tap 1	1600 CFM / 2100 CFM	12X9 Blower 1 HP [746] 2 Speed (Constant Torque)	1st Stage Low Speed (Tap 1)	CFM	1704	1574	1467	1422	1371	1326	1285	1225	1181	1136
						RPM	586	589	617	659	710	758	809	847	883	923
						Watts	255	224	221	232	247	260	276	288	300	311
5.0 [17.59]	Tap 2	Tap 1	1600 CFM / 2100 CFM	12X9 Blower 1 HP [746] 2 Speed (Constant Torque)	2nd Stage High Speed (Tap 2)	CFM	2189	2170	2144	2114	2083	2048	2014	1978	1947	1908
						RPM	722	740	757	779	809	844	874	906	941	977
						Watts	522	532	540	553	569	589	608	626	647	663

Notes: (1) For Constant Torque Motors: Use motor taps 3-5 to achieve rated airflow at AHRl minimum external static pressure.

Down Discharge Pressure Drop (Add to External Static Pressure)							
CFM [L/s]	800 [378]	1000 [472]	1200 [566]	1400 [661]	1600 [755]	1800 [849]	2000 [944]
Pressure Drop - Inches W.C. [kPa]	.02 [.005]	.05 [.012]	.07 [.017]	.1 [.025]	.12 [.030]	.15 [.037]	.17 [.042]

XXIII. HEATER KIT CHARACTERSTICS

ELECTRIC HEATER KIT – 1 PHASE

RHPB

208/240 VOLT, SINGLE PHASE, 60 Hz, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Single Power Supply for Both Unit and Heater Kit										Separate Power Supply for Both Unit and Heater Kit			
RHEEM Model Number	Heater Kit					Heat Pump			Heater Kit		Heat Pump		
	RXQJ-Heater Kit Nominal kW	No. of Sequence Steps	Rated Heater kW @ 208/240 V	Heater KBTU/Hr @ 208/240 V	Heater Amp. @ 208/240 V	Unit Min. Ckt. Ampacity @ 208/240 V	Over Current Protective Device Size		Min. Ckt. Ampacity 208/240V	Max. Fuse Size 208/240V	Min. Circuit Ampacity 208/240V	Over Current Protective Device Size	
							Min./Max. @ 208 V	Min./Max. @ 240 V				Min./Max. @ 208 V	Min./Max. @ 240 V
RHPBZR024AJT	No Heat	-----	-----	-----	-----	20/20	25/25	25/25	-----	-----	20/20	25/25	25/25
	C05J	1	3.6/4.8	12.28/16.38	17.3/20.0	41/45	45/45	50/50	22/25	25/25	20/20	25/25	25/25
	C07J	1	5.4/7.2	18.43/24.57	26.0/30.0	52/57	60/60	60/60	33/38	35/40	20/20	25/25	25/25
	C10J	1	7.2/9.6	24.57/32.76	34.7/40.0	63/70	70/70	80/80	44/50	45/50	20/20	25/25	25/25
RHPBZR030AJT	No Heat	-----	-----	-----	-----	21/21	30/30	30/30	-----	-----	21/21	30/30	30/30
	C05J	1	3.6/4.8	12.28/16.38	17.3/20.0	42/46	45/45	50/50	22/25	25/25	21/21	30/30	30/30
	C07J	1	5.4/7.2	18.43/24.57	26.0/30.0	53/58	60/60	60/60	33/38	35/40	21/21	30/30	30/30
	C10J	1	7.2/9.6	24.57/32.76	34.7/40.0	64/71	70/70	80/80	44/50	45/50	21/21	30/30	30/30
	C15J	1	10.8/14.4	36.85/49.13	52.0/60.0	86/96	90/90	100/100	65/75	70/80	21/21	30/30	30/30
RHPBZR036AJT	No Heat	-----	-----	-----	-----	27/27	40/40	40/40	-----	-----	27/27	40/40	40/40
	C05J	1	3.6/4.8	12.28/16.38	17.3/20.0	49/52	60/60	60/60	22/25	25/25	27/27	40/40	40/40
	C07J	1	5.4/7.2	18.43/24.57	26.0/30.0	60/65	70/70	70/70	33/38	35/40	27/27	40/40	40/40
	C10J	1	7.2/9.6	24.57/32.76	34.7/40.0	71/77	80/80	80/80	44/50	45/50	27/27	40/40	40/40
	C15J	1	10.8/14.4	36.85/49.13	52.0/60.0	92/102	100/100	110/110	65/75	70/80	27/27	40/40	40/40
RHPBZR042AJT	No Heat	-----	-----	-----	-----	28/28	40/40	40/40	-----	-----	28/28	40/40	40/40
	C05J	1	3.6/4.8	12.28/16.38	17.3/20.0	50/53	60/60	60/60	22/25	25/25	28/28	40/40	40/40
	C07J	1	5.4/7.2	18.43/24.57	26.0/30.0	61/66	70/70	70/70	33/38	35/40	28/28	40/40	40/40
	C10J	1	7.2/9.6	24.57/32.76	34.7/40.0	72/78	80/80	80/80	44/50	45/50	28/28	40/40	40/40
	C15J	1	10.8/14.4	36.85/49.13	52.0/60.0	93/103	100/100	110/110	65/75	70/80	28/28	40/40	40/40
RHPBZR048AJT	No Heat	-----	-----	-----	-----	31/31	45/45	45/45	-----	-----	31/31	45/45	45/45
	C05J	1	3.6/4.8	12.28/16.38	17.3/20.0	53/56	60/60	60/60	22/25	25/25	31/31	45/45	45/45
	C07J	1	5.4/7.2	18.43/24.57	26.0/30.0	64/69	70/70	80/80	33/38	35/40	31/31	45/45	45/45
	C10J	1	7.2/9.6	24.57/32.76	34.7/40.0	75/81	80/80	90/90	44/50	45/50	31/31	45/45	45/45
	C15J	1	10.8/14.4	36.85/49.13	52.0/60.0	96/106	100/100	110/110	65/75	70/80	31/31	45/45	45/45
	C20J	1	14.4/19.2	49.13/65.51	69.3/80.0	118/131	125/125	150/150	87/100	90/100	31/31	45/45	45/45
RHPBZR060AJT	No Heat	-----	-----	-----	-----	40/40	60/60	60/60	-----	-----	40/40	60/60	60/60
	C05J	1	3.6/4.8	12.28/16.38	17.3/20.0	61/65	70/80	70/80	22/25	25/25	40/40	60/60	60/60
	C07J	1	5.4/7.2	18.43/24.57	26.0/30.0	72/77	80/80	80/90	33/38	35/40	40/40	60/60	60/60
	C10J	1	7.2/9.6	24.57/32.76	34.7/40.0	83/90	90/90	100/100	44/50	45/50	40/40	60/60	60/60
	C15J	1	10.8/14.4	36.85/49.13	52.0/60.0	105/115	110/110	125/125	65/75	70/80	40/40	60/60	60/60
	C20J	1	14.4/19.2	49.13/65.51	69.3/80.0	126/140	150/150	150/150	87/100	90/100	40/40	60/60	60/60

XXIV. WIRING DIAGRAMS

FIGURE 7
WIRING DIAGRAM

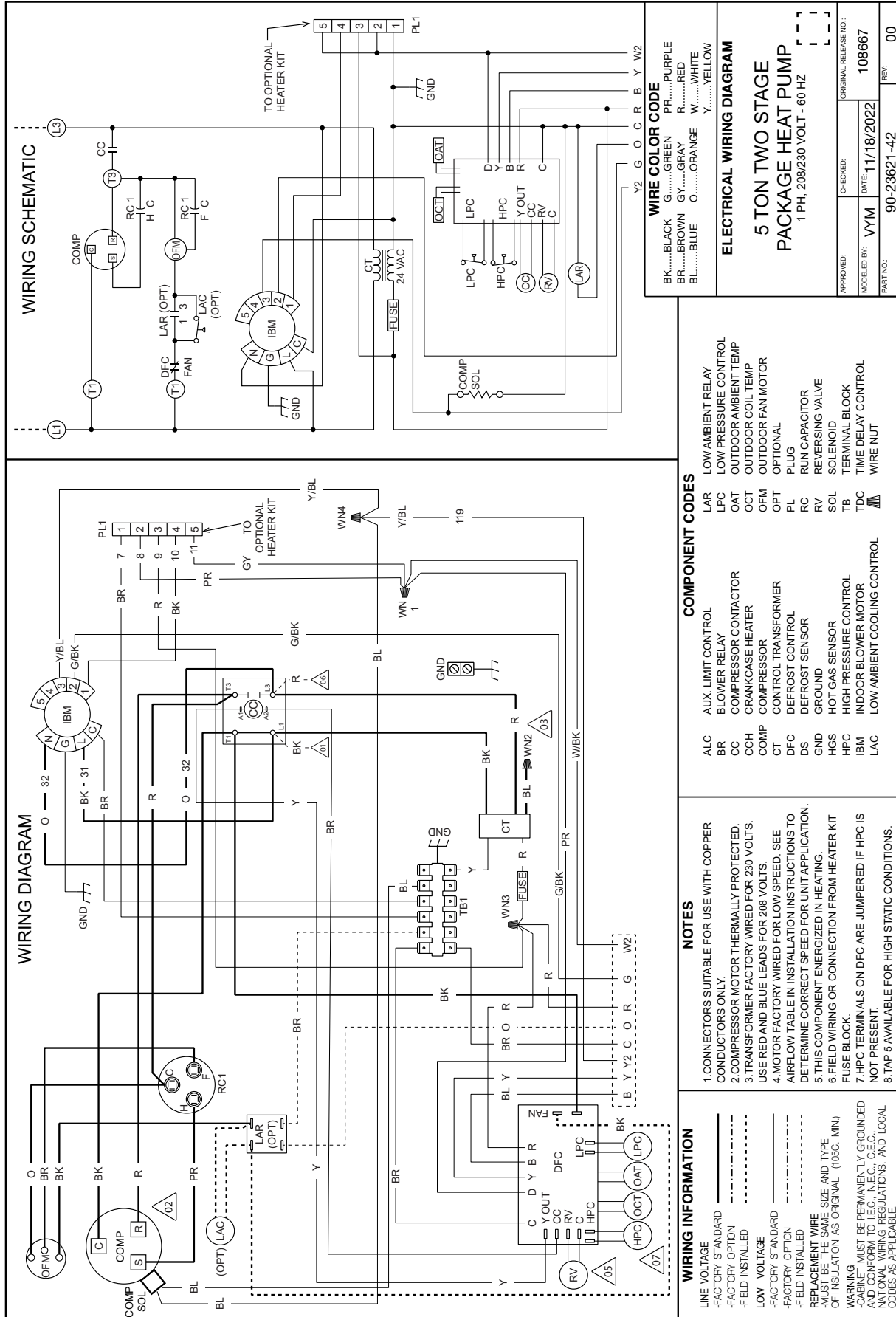
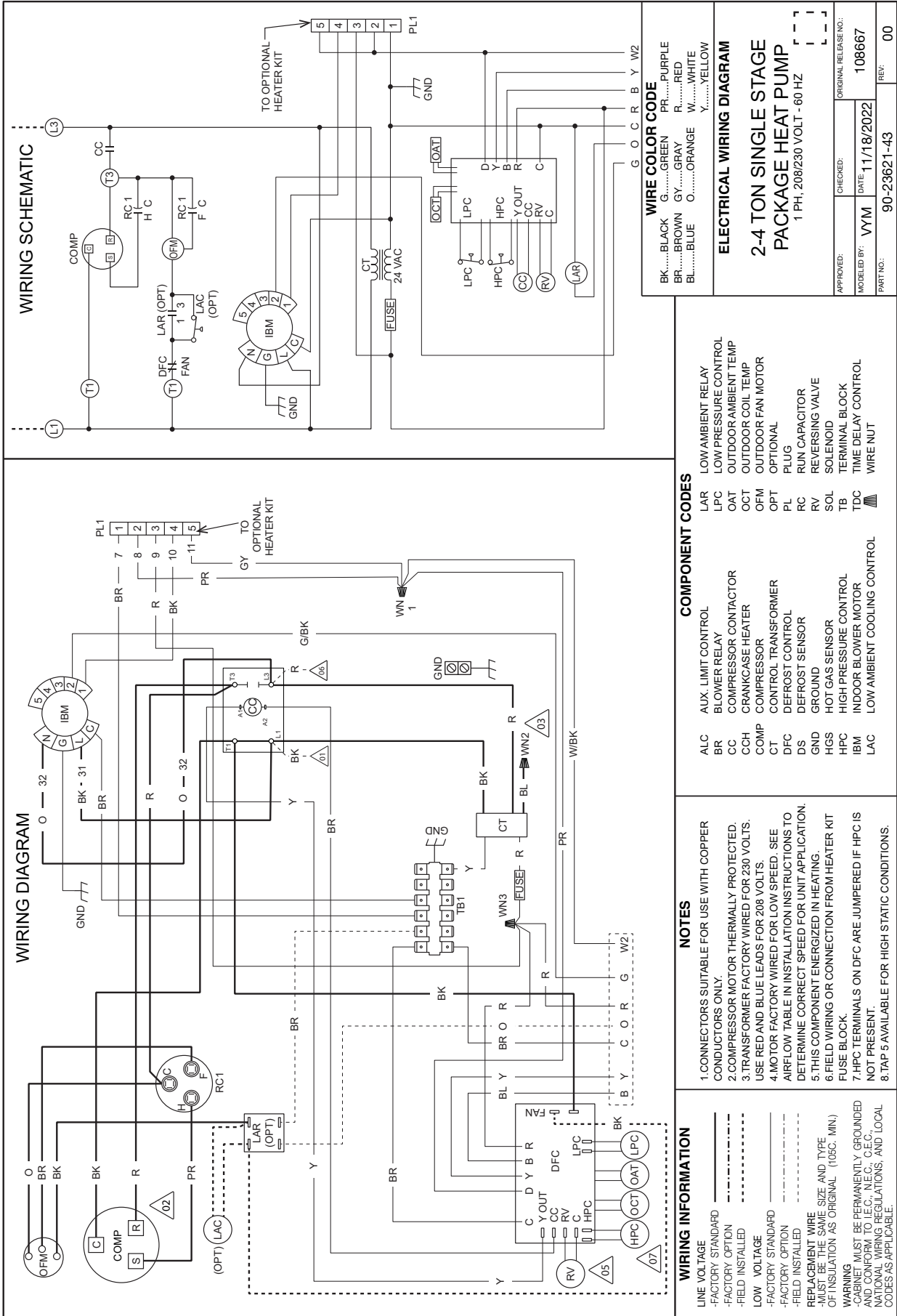


FIGURE 8
WIRING DIAGRAM



WIRE COLOR CODE

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

ELECTRICAL WIRING DIAGRAM
2-4 TON SINGLE STAGE
PACKAGE HEAT PUMP
1 PH, 208/230 VOLT - 60 HZ

APPROVED:	CHECKED:	ORIGINAL RELEASE NO.:
MODELED BY: VYM	DATE: 11/18/2022	108667
PART NO.:	90-23621-43	REV: 00

COMPONENT CODES

LAR	LOW AMBIENT RELAY
LPC	LOW PRESSURE CONTROL
OAT	OUTDOOR AMBIENT TEMP
OCT	OUTDOOR COIL TEMP
OFM	OUTDOOR FAN MOTOR
OPT	OPTIONAL
PL	PLUG
RC	RUN CAPACITOR
RV	REVERSING VALVE
SOL	SOLENOID
TB	TERMINAL BLOCK
TDC	TIME DELAY CONTROL
WIRE NUT	WIRE NUT

NOTES

- CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
- COMPRESSOR MOTOR THERMALLY PROTECTED.
- TRANSFORMER FACTORY WIRE FOR 230 VOLTS. USE RED AND BLUE LEADS FOR 208 VOLTS.
- MOTOR FACTORY WIRE FOR LOW SPEED. SEE AIRFLOW TABLE IN INSTALLATION INSTRUCTIONS TO DETERMINE CORRECT SPEED FOR UNIT APPLICATION.
- THIS COMPONENT ENERGIZED IN HEATING.
- FIELD WIRING OR CONNECTION FROM HEATER KIT FUSE BLOCK.
- HPC TERMINALS ON DFC ARE JUMPED IF HPC IS NOT PRESENT.
- TAP 5-AVAILABLE FOR HIGH STATIC CONDITIONS.

WIRING INFORMATION

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

