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SMALL PACKAGED PRODUCTS BRISTOL TO COPELAND COMPRESSOR CONVERSION KIT

Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.


NOTE: The following is a recommended procedure for compressor replacement. Always refer to the unit product installation instructions for detailed procedures.

SAFETY CONSIDERATIONS

Installation and servicing of this equipment can be hazardous due to mechanical and electrical components. Only trained and qualified personnel should install, repair, or service this equipment. Untrained personnel can perform basic maintenance functions such as cleaning and replacing air filters. All other operations must be performed by trained service personnel. When working on this equipment, observe precautions in the literature, on tags, and on labels attached to or shipped with the unit and other safety precautions that may apply.

Follow all safety codes. Installation must be in compliance with local and national building codes. Wear safety glasses, protective clothing, and work gloves. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes, the current editions of the National Electrical Code (NEC) NFPA 70.

In Canada refer to the current editions of the Canadian Electrical Code CSA C22.1.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words; DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before performing installation, service or maintenance operations on this system, turn off all main power to system. There may be more than one disconnect switch. Turn off accessory heater power switch if applicable. Discharge all capacitors before proceeding. Lockout and tag switch with a suitable warning label.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

All wiring and electrical connections shall comply with all local and national electrical codes.

CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate clothing, safety glasses and gloves when handling parts.

WARNING

ENVIRONMENTAL, FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death and/or property damage.

1. Follow recognized safety practices and wear protective goggles when checking or servicing refrigerant system.
2. Relieve and recover all refrigerant from system before touching or disturbing compressor plug if refrigerant leak is suspected around compressor terminals.
3. Never attempt to repair soldered connection while refrigerant system is under pressure.
4. Do not use torch to remove any component. System contains oil and refrigerant under pressure.
5. To remove a component, wear protective goggles and proceed as follows:
 - a. Shut off electrical power to unit and install lockout tag.
 - b. Relieve and reclaim all refrigerant from system using both high-- and low--pressure ports.
 - c. Cut component connecting tubing with tubing cutter and remove component from unit.
 - d. Carefully unsweat remaining tubing stubs when necessary. Oil can ignite when exposed to torch flame.

⚠ WARNING

PERSONAL INJURY HAZARD

Failure to follow this warning could result in personal injury.
Do not disassemble bolts, plugs, fittings, etc. until all pressure has been relieved from compressor.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.
Only suction line filter driers should be used for refrigerant and oil clean up.
Use of non approved products could limit system life and void unit warranty.

Table 1 – Kit Usage

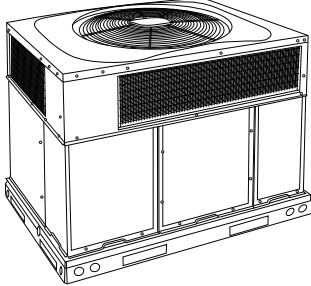
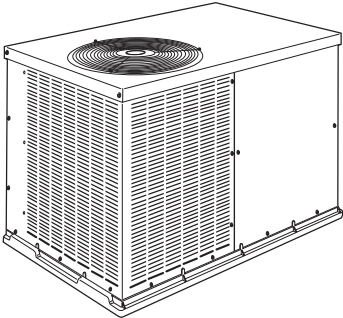
| MODEL | KIT PART NUMBER | KIT CONTENTS |
|--|-----------------------------|---|
|  | 030 YAC - 344544-701 | HY07MP274 - Compressor Plug 344368-701 - Discharge Tube Assembly 344370-701 - Suction Tube Assembly Also required: ZP25K6E-PFV-830 - Compressor Note: New Charge Value = 6.4 lbs |
|  | 024 PAC - 344541-701 | 50ZP400931 - Discharge Tube Assembly 50ZP400934 - Suction Tube Assembly 324091-404 - Plug, Compressor Also required: ZP21K6E-PFV-830 - Compressor Note: New Charge Value = 4.5 lbs |
| | 030 PAC - 344542-701 | HK42AR240 - Control Module 50ZP400931 - Discharge Tube Assembly 50ZP400935 - Suction Tube Assembly 324091-405 - Compressor Plug Also required: ZP25K6E-PFV-830 - Compressor Note: New Charge Value 4.8 lbs |
| | 036 PAC - 344543-701 | 50ZP400931 - Discharge Tube Assembly 50ZP400935 - Suction Tube Assembly 321094-406 - Compressor Plug HC98KA046 - Capacitor Also required: ZP29K5E-PFV-830 - Compressor Note: New Charge Value 6.8 lbs |

Table 2 – Replacement Classification Process

| MECHANICAL FAILURES | ELECTRICAL BURNOUT |
|--|--|
| 1. No damage to windings as indicated by electrical check. | 1. Windings of compressor open or grounded. |
| 2. Oil clean and odor free. | 2. Oil dark with burn odor. |
| 3. Symptoms: Excessive noise Won't pump Excessively hot | 3. Symptoms: Blows fuses or circuit breaker Draws abnormal amount of current |

⚠ WARNING

PERSONAL INJURY HAZARD

Failure to follow this warning could result in personal injury.

Do not operate compressor or provide any electrical power to the compressor unless the terminal box cover is in place and secured. Measurements of amps and volts during running conditions must be taken at other points in the power supply.

Do not provide any power to the compressor unless suction and discharge service valves are open.

Before Changing the Compressor

Check compressor and associated controls to be sure compressor replacement is necessary.

Failure Classification

The replacement procedure is dependent on the type of failure. The following describes the classification process.

REPLACEMENT PROCEDURE FOR MECHANICAL FAILURE

1. Follow safety warnings and notices.
2. Precautions must be taken when servicing components within the control box of this unit. The technician performing the service must determine that it is safe to work on the unit. The electrical disconnect that provides power to the unit must be turned off, locked and tagged out. This will insure that no damage will occur to the controls or other equipment and will prevent injury if contact is made with the electrical equipment. Wait a minimum of two minutes before servicing the unit to allow capacitors to discharge. Follow safety instructions located on unit control box cover.
3. Remove and recover all refrigerant from system until pressure gauges read 0 psi. Use all service ports. Never open a system under a vacuum to atmosphere. Break vacuum with dry nitrogen holding charge first. Do not exceed 5 psig.
4. Remove the control box cover.
5. Remove service panel to gain access to unit wiring and compressor compartment.
6. Cut any wire ties securing the compressor power harness to tubing or the control box. Remove compressor power harness and discard.
7. Remove compressor mounting hardware.
8. Cut both suction and discharge lines with tubing cutter. Do not use brazing torch for compressor removal as oil vapor may ignite when compressor is disconnected.
9. Using caution and the appropriate lifting devices, remove compressor from the unit.
10. Use torch to remove suction and discharge tubes from unit.
11. Using caution and the appropriate lifting device, place replacement compressor in unit and secure with new mounting hardware.

NOTE: Use of new OEM mounting hardware is recommended.

12. Install new suction and discharge tubes into unit.
13. Replace existing capacitor with new capacitor from kit.
14. Remove and discard liquid line strainer and filter drier. Replace with filter drier one size larger in capacity than the

unit being worked on (use bi-flow) type on heat pump. See Table 3 for appropriate size.

15. Reinstall compressor sound blanket making sure compressor power harness is routed as it was from the factory.
16. Install new compressor power harness and route as it was originally to make sure it will not contact fan blade or discharge tubing and then route into control box.
17. Reinstall service panel.
18. Triple evacuate the system below 1,000 microns.
19. Recharge unit, compensating for larger liquid line filter. Charge compensation for oversize filter drier is listed in Table 3.
20. Check system for normal operation. If unit is a heat pump, switch from heating to cooling a few times to verify component operation

REPLACEMENT PROCEDURE FOR ELECTRICAL BURNOUT (SYSTEM CLEAN-UP)

Mild Burnout

Perform steps 1 – 20 as specified in the Replacement Procedure for Mechanical Failure and then perform steps as follows:

1. Run unit a minimum of 2 hours and replace liquid line filter drier.
2. Use a test kit to determine whether acceptable acid and moisture levels have been attained. If system is still contaminated, repeat step 14. Continue this process until the test kit indicates “clean” system.
3. Check system for normal operation. If unit is a heat pump, switch from heating to cooling a few times to verify component operation.

Severe Burnout

Perform steps 1 – 20 as specified in the Replacement Procedure for Mechanical Failure and then perform steps as follows:

1. Clean or replace TXV if used.
2. Drain any trapped oil from the accumulator if used.
3. Add suction line filter drier for appropriate unit size as indicated in Table 3. Mount vertical with pressure taps on both inlet and outlet.

NOTE: On heat pumps, install suction line drier between compressor and accumulator.

4. Triple evacuate the system below 1,000 microns.
5. Recharge unit, compensating for larger liquid line filter. Charge compensation for oversize filter drier is listed in Table 3.
6. Run 1 hour minimum and change liquid line drier and suction filter.
7. Run a minimum of 2 or more hours and change liquid filter drier again. Remove suction line filter from system (do not replace suction line filter).
8. Use a test kit to determine whether acceptable acid and moisture levels have been attained. If system is still contaminated, repeat Step 14. Continue this process until the test kit indicates “clean” system.
9. Check system for normal operation. If unit is a heat pump, switch from heating to cooling a few times to verify component operation.

Table 3 – Recommended Filter/Drier Sizes

| UNIT CAPACITY | QUANTITY | MINIMUM REQUIRED EFFECTIVE DESICCANT VOLUME | |
|----------------|----------|---|-----------------|
| | | LIQUID CU. IN. | SUCTION CU. IN. |
| 2, 3, 4, and 5 | 1 | 6.5 | 15 |

