We manufacture, test and certify 100% of our wine cooling units in the USA. By sourcing the best components and closely controlling our manufacturing processes, we can assure the highest-quality, lowest defect manufacturing rates in the industry.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Quick Start Guide</td>
<td>4</td>
</tr>
<tr>
<td>Before You Start</td>
<td>5</td>
</tr>
<tr>
<td>Receiving &amp; Inspecting the System</td>
<td>6</td>
</tr>
<tr>
<td><strong>Quick Reference Guide</strong></td>
<td></td>
</tr>
<tr>
<td>Knockout Locations</td>
<td>8</td>
</tr>
<tr>
<td>Unit Specifications</td>
<td>9</td>
</tr>
<tr>
<td><strong>Evaporator Unit Installation</strong></td>
<td></td>
</tr>
<tr>
<td>24V Wiring Connections</td>
<td>12</td>
</tr>
<tr>
<td>Selecting Mounting Option</td>
<td>13</td>
</tr>
<tr>
<td>Mounting the Evaporator Unit</td>
<td>14</td>
</tr>
<tr>
<td>Evaporator Unit Preparation</td>
<td>15</td>
</tr>
<tr>
<td>Installing the Evaporator Unit</td>
<td>16</td>
</tr>
<tr>
<td>Insulation Blanket Installation</td>
<td>18</td>
</tr>
<tr>
<td><strong>Drain Line</strong></td>
<td>20</td>
</tr>
<tr>
<td><strong>Wiring Diagrams</strong></td>
<td></td>
</tr>
<tr>
<td>Ceiling Mount</td>
<td>21</td>
</tr>
<tr>
<td>Ceiling Mount 4000/8000 Condensing Unit</td>
<td>22</td>
</tr>
<tr>
<td><strong>Preparing the Condensing Unit</strong></td>
<td>23</td>
</tr>
<tr>
<td><strong>Line Set Piping Diagrams</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Installing the Condensing Unit</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>System Operation</strong></td>
<td>32</td>
</tr>
<tr>
<td><strong>WhisperKOOL Troubleshooting Guide</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>Maintenance Schedule</strong></td>
<td>38</td>
</tr>
<tr>
<td><strong>Bypass Test Procedure</strong></td>
<td>40</td>
</tr>
<tr>
<td><strong>Technical Assistance &amp; Accessories</strong></td>
<td>41</td>
</tr>
<tr>
<td><strong>Installation Terms &amp; Conditions</strong></td>
<td>42</td>
</tr>
</tbody>
</table>
WARNING

The evaporator unit (fan coil unit) must be insulated using the insulation blanket provided in accordance with this manual. Refer to the insulation blanket installation instructions.

Failure to follow the instructions provided will result in a poor vapor barrier, water damage, rust, and system corrosion which will void the warranty on your unit.

The evaporator unit (fan coil unit) must be insulated using fiberglass insulation (R19 or higher) in addition to the provided insulation blanket. This includes the cavity between the ceiling joists. A warm attic environment will reduce the capacity of the cooling system, as the system will absorb heat from the attic in addition to the heat load from the wine cellar. This, in effect, will significantly reduce the cooling system’s ability to cool the wine cellar.

Failure to properly insulate the evaporator unit may cause condensation to form on the surface of the housing and water damage to the surrounding structure, the cooling unit, and possibly the wine cellar.

To avoid these issues, install the insulation kit and insulate the surface of the evaporator unit that is located outside of the wine cellar using fiberglass insulation.

*Additional insulation is required!"
INTRODUCTION

Customer Service
Thank you for purchasing a WhisperKOOL cooling system. We strive to provide the highest-quality products and the best possible customer service. If you have any questions about your system, please call us at 1-800-343-9463 or visit WhisperKOOL.com.

Using the Manual
This manual is intended to assist in the proper maintenance of the cooling system. In order to ensure the longevity of your cooling unit, the equipment should be installed as outlined in the technician’s manual. It is also vital to establish a proper care and maintenance schedule. Please read and review this manual carefully and keep it for future reference.

What is the WhisperKOOL Cooling System?
The WhisperKOOL cooling system is a specialized refrigeration system designed for one purpose only: to maintain the optimal temperature and humidity levels conducive to the proper storage and aging of fine wines. This system produces minimal in-cellar noise and has the most lenient exhaust requirements. An exterior housing is required for outdoor condensing unit installations.

How Does the Cooling System Work?
Similar to the air conditioning systems used for homes, the evaporator unit and condensing units are installed in separate locations and are connected by a refrigerant line set. The evaporator portion is commonly installed in the wine cellar, with the condensing unit is located either outside or in a remote indoor location that is ventilated. An exterior housing is required for outdoor condensing unit installations.

Temperature Setting
The system is designed to maintain a cellar temperature of 55°F as long as the ambient temperature does not exceed 110°F.

WARRANTY REGISTRATION

In order to activate the warranty of your system, the verification and operational documentation must be completed by the certified refrigeration technician installing your system and submitted via mail, fax, or e-mail.

Mail to: WhisperKOOL
ATTN: Warranty Registration
1738 E. Alpine Avenue
Stockton, CA 95205-2505
USA
Fax to: 209-466-4606
Scan and email to: warranty@whisperkool.com
Pump Down Cycle

WhisperKOOL's split systems operate on a pump down cycle different from traditional air conditioners. As such, there is no wiring between the condensing unit and evaporator unit.

WhisperKOOL units utilize a solenoid valve on the liquid line and a low-pressure switch on the suction line. When the thermostat calls for cooling, the solenoid valve opens, permitting the flow of refrigerant. The low-pressure switch then signals the compressor to cycle on.

When the cellar reaches the desired temperature and the thermostat is satisfied, the solenoid will close, stopping the liquid refrigerant flow to the TXV valve. The compressor will continue to operate until most of the refrigerant on the low side boils off and is pumped through the compressor into the condenser coil and receiver. As the suction pressure falls below the pressure control setting, the low-pressure switch will signal the compressor to cycle off. Most of the refrigerant is now stored between the condensing unit and receiver.

---

**WARNING:** Do not utilize a ground fault interrupter, as it will prevent the unit from drawing the necessary amperage to start the unit.

**TXV Adjustments**

A. A TXV adjustment may be necessary based on ambient temperatures in the cellar and at the condensing unit.
B. Adjust the TXV until the total superheat measured at the suction line service valve is 20-30°F.
C. Under normal operation, with the wine cellar at 55°F and the ambient temperature at 85°F, the low side pressure should be between 28-32 PSI and the high side should be between 145-155 PSI.

---

**Liquid Line King Valve**

This location is used to charge the system with liquid refrigerant and identify the high side pressure of the system.

**Calculating Subcooling**

To determine the subcooling of the system, calculate the difference between the **high side pressure of the system (converted to temperature)** and the **temperature of the liquid line**. The temperature of the liquid line will be taken at the outlet of the receiver.

*Saturation temp — liquid line temp

**4-6°F SUBCOOLING REQUIRED FOR WARRANTY APPROVAL**

*Further system operation information is available on page 32.*
BEFORE YOU START

1. Inspect all components prior to installation. If damage is found, please contact your distributor or WhisperKOOL Customer Service at 1-800-343-9463.

2. The evaporator unit requires a dedicated 115V, 15-amp circuit. The 4000 condenser requires a dedicated 115V, 15-amp circuit. The 8000 condenser requires a dedicated 115V, 20-amp circuit. Use a surge protector with the unit. Do not use a GFI (ground fault interrupter) line.

3. No communication cable is required between the evaporator and condensing unit.

4. A standard 18-5 thermostat wire must be run from the evaporator unit to the thermostat.

5. You are REQUIRED to install a drain line to remove condensation from the evaporator unit.

6. The warranty is not active until a warranty checklist has been received, reviewed, and approved.

7. The system is intended for use in properly designed and constructed wine cellars. Hire a professional wine storage consultant with a valid contractor’s license to build your wine cellar.

8. WhisperKOOL requires that all split systems be installed by a certified HVAC-R technician only. NATE or equivalent is recommended.

If you encounter a problem with your WhisperKOOL system, please refer to the Troubleshooting Guide. If you have any further questions or concerns, or need assistance, please contact WhisperKOOL’s Customer Service at 1-800-343-9463. Please be sure all testing has been completed prior to contacting Customer Service. Please have your results ready for your representative.
RECEIVING & INSPECTING THE SYSTEM

• Use caution when lifting and check package for damage.
• Lift only at the designated hand-hold locations on the shipping container, or fully support the unit from underneath. A shipment may include one or more boxes containing accessories.
• Before opening the container, inspect the packaging for any obvious signs of damage or mishandling.
• Write any discrepancy or visual damage on the bill of lading before signing.
• Allow the condensing unit to sit for 24 hours prior to start-up. The condensing unit can be placed in the installation location, piped and evacuated during this time.

Note: WhisperKOOL units are manufactured in the USA and tested prior to shipment.
• Review the packing slip to verify contents.
• Check the model number to ensure it is correct.
• Check that all factory options ordered are listed.

If any items listed on the packing slip do not match your order information, contact WhisperKOOL Customer Service immediately.

Check all shipped boxes for the following contents:

Evaporator Unit Box

(1) Ceiling Mount evaporator unit

Documentation bag:
• Ceiling Mount Version 2 owner’s manual
• Ceiling Mount Version 2 technician’s manual
• R-134a split system warranty checklist

Accessory kit bag:
• Evaporator installation hardware bag

Ceiling Mount insulation blanket bag:
• Ceiling Mount insulation blanket

Condensing Unit Box

(1) Ceiling Mount condensing unit

Evaporator installation hardware bag:
• (12) 2½” Phillips wood screws
• (12) #8 ¾” Phillips pan-head screws
• (1) Bypass plug
• (1) ¼” barbed coupling
• (2) ⅛” L ½” conduit connectors

Condensing unit accessory kit:
• (1) Filter drier
• (1) Sight glass

Please leave the unit in its original box until you are ready for installation. This will allow you to move the product safely without damaging it. When you are ready to remove the product from the box, refer to the installation instructions.

TIP: Save your box and all packaging materials. They provide the only safe means of transporting/shipping the unit.
**Note:** The unit comes in black. The mounting bracket and front grille are paintable, enabling you to match your desired color.
KNOCKOUT LOCATIONS

Top View of Evaporator Unit

Side View of Evaporator Unit

Front View of Evaporator Unit
# Ceiling Mount 4000 Specifications

**Evaporator Unit**

- **Mounting Bracket** *(Paintable)*
- **Line Set Knockout (x6)*
- **Electrical Knockouts*
- **Supply and Return Grille** *(Paintable)*

## CEILING MOUNT 4000 SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>4000 Evaporator (Fan Coil Unit)</th>
<th>4000 Condenser (Air-Cooled Condensing Unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cellar Size</strong></td>
<td>Approx. 1000 cu. ft. when cellar is fully insulated and sealed with a proper vapor barrier*</td>
<td></td>
</tr>
<tr>
<td><strong>BTU/h w/85°F air entering condenser coil</strong></td>
<td>4000</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>35.75”L x 14.5”W x 12.75”H</td>
<td>16.08”L x 16.23”W x 12.61”H</td>
</tr>
<tr>
<td><strong>Refrigerant</strong></td>
<td>R-134a</td>
<td></td>
</tr>
<tr>
<td><strong>HP</strong></td>
<td>1/3</td>
<td></td>
</tr>
<tr>
<td><strong>Voltage Rating</strong></td>
<td>115V (15-amp dedicated circuit required)</td>
<td>115V (15-amp dedicated circuit required)</td>
</tr>
<tr>
<td><strong>Weight (lbs)</strong></td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td><strong>Amps</strong></td>
<td>Evaporator: 1 (running amps), compressor: LRA 43, RLA 8</td>
<td></td>
</tr>
<tr>
<td><strong>Line Set</strong></td>
<td>Liquid line: ¼” liquid line; suction line ½” (less than 50 ft.), ¾” (more than 50 ft.)</td>
<td></td>
</tr>
<tr>
<td><strong>Drain Line</strong></td>
<td>¼”ID clear plastic tubing (not provided)</td>
<td></td>
</tr>
<tr>
<td><strong>Installation</strong></td>
<td>Evaporator is installed in the cellar. Condensing unit can be installed up to 100 line feet from evaporator unit.</td>
<td></td>
</tr>
<tr>
<td><strong>Thermostat</strong></td>
<td>Aftermarket (24V thermostat not included)</td>
<td></td>
</tr>
<tr>
<td><strong>Temp. Delta</strong></td>
<td>Can maintain a 55°F cellar temperature with up to 110°F condenser air intake temperature</td>
<td></td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td>Two-year limited warranty (parts and labor)</td>
<td></td>
</tr>
</tbody>
</table>
## CEILING MOUNT 8000 SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>8000 Evaporator (Fan Coil Unit)</th>
<th>8000 Condenser (Air-Cooled Condensing Unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellar Size</td>
<td>Approx. 2000 cu. ft. when cellar is fully insulated and sealed with a proper vapor barrier*</td>
<td></td>
</tr>
<tr>
<td>BTU/h w/85°F air entering condenser coil</td>
<td>5245</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>35.75”L x 14.5”W x 12.75”H</td>
<td>16.08”L x 16.23”W x 12.61”H</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>R-134a</td>
<td></td>
</tr>
<tr>
<td>HP</td>
<td>1/3+</td>
<td></td>
</tr>
<tr>
<td>Voltage Rating</td>
<td>115V (15-amp dedicated circuit required)</td>
<td>115V (15-amp dedicated circuit required)</td>
</tr>
<tr>
<td>Weight (lbs)</td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>Amps</td>
<td>Evaporator: 1 (running amps), compressor: LRA 50, RLA 9.3</td>
<td></td>
</tr>
<tr>
<td>Line Set</td>
<td>Liquid line: ¼” liquid line; suction line ½” (less than 50 ft.), ⅝” (more than 50 ft.)</td>
<td></td>
</tr>
<tr>
<td>Drain Line</td>
<td>¼” ID clear plastic tubing (not provided)</td>
<td></td>
</tr>
<tr>
<td>Installation</td>
<td>Evaporator is installed in the cellar. Condensing unit can be installed up to 100 line feet from evaporator unit.</td>
<td></td>
</tr>
<tr>
<td>Thermostat</td>
<td>Aftermarket (24V thermostat not included)</td>
<td></td>
</tr>
<tr>
<td>Temp. Delta</td>
<td>Can maintain a 55°F cellar temperature with up to 110°F condenser air intake temperature</td>
<td></td>
</tr>
<tr>
<td>Warranty</td>
<td>Two-year limited warranty (parts and labor)</td>
<td></td>
</tr>
</tbody>
</table>

* Sizing the Unit to the Room

The specification chart will provide information on the unit’s cooling capacity. There are circumstances in which a cellar design may require a larger unit due to preexisting design restrictions. Certain building materials such as glass, stone, or concrete may seem adequate but do not offer the insulation capacity required to maintain the optimum temperature for storing wine. We recommend purchasing a unit with a larger capacity to compensate for these design limitations. Undersized cooling units can lead to premature failure and/or prevent the system from reaching the desired set temperature. As a result, they are not covered under warranty.
SPLIT SYSTEM CHECKLIST

In order to activate the warranty for this product, the information here must be complete and accurate. Any incorrect or omitted information will result in a return trip by the installing technician at their cost.

DATA RECORDINGS

Note: All readings need to be taken while the compressor is running.

Line Set Information
A. Line set length:
B. Suction line OD:
C. Liquid Line OD:

Charging the System
A. Fill system until bubbles dissipate from sight glass.
   NOTE: Be careful not to overcharge the system.

Temperature Differential at the Evaporator
A. Measure return air and supply air temperatures at the evaporator to ensure adequate cooling of air in cellar.

Sub Cooling
A. Measure head pressure at liquid line king valve. Convert pressure to temp using conversion chart.
B. Temp of liquid line at king valve:
C. Complete sub cooling calculation: A – B =

Superheat
A. Measure suction pressure at the suction line service valve, convert to temp.
B. Measure the temperature of the suction line at the outlet of the evaporator.
C. Complete superheat calculation: A – B =
   NOTE: There may be a need to adjust the TXV to get the correct superheat levels.

Compressor Temperature
A. Measure temperature at bottom of compressor.
   NOTE: Cool temp may indicate liquid in the compressor.

Voltage and Amp Draw
A. Measure voltage to compressor and amp draw.

Condensation Drain Test
A. Pour water into the drain pan to assure it drains properly.
24V WIRING CONNECTIONS (EVAPORATOR UNIT)

If the system is equipped with a cold weather start kit, a standard 18-2 thermostat wire must be run between the evaporator unit and the condensing unit.

24V Wiring Connections (Evaporator Unit)
1. Route a standard 18-5 thermostat wire into the evaporator unit.
2. Locate the wire thermostat connection cable inside of the evaporator unit.
3. Connect the wires according to color (yellow to yellow, red to red, green to green, and blue to blue).
4. If the system is equipped with a cold weather start kit, connect one wire from the 18-2 thermostat wire to the low-voltage yellow wires (2). Then connect the other 18-2 wire to the blue low-voltage wires (2).

Thermostat Wiring Connections
Follow the thermostat installation instructions. NOTE: The white wire will not be used, as there is no heating function.

NOTE: To ensure correct system operation, the 24V thermostat must be placed inside the wine cellar, preferably in a central location away from any airflow.
SELECTING MOUNTING OPTION

Minimum Tools Needed:

- Hammer
- T-square
- #2 Phillips-head screwdriver
- Saw

1. Locate the desired installation location. Using a stud finder, locate the ceiling joists on either side of the center point. Cut and frame an opening in the ceiling measuring 14.5” x 36”. Make sure the framing is sufficient to support the weight of the cooling unit. Use only the mounting locations provided. These locations ensure that the installer will not drill into any critical components within the system.

2. Determine which orientation the evaporator unit will be installed in (inside the cellar or with attic access). Mounting options are listed below:

   **Flush mount option**
   - 12.65”

   **Partially recessed mounting option**
   - 6.9”
   - 5.75”

   **Fully exposed mounting option**
   - 12.65”

Choose a mounting option suitable for the installation location.
MOUNTING THE EVAPORATOR UNIT

NOTE: If installing the unit without attic access, perform steps 5-23 prior to steps 3-4.

3. Secure the mounting bracket to the unit using the twelve (12) supplied 3/8” Phillips pan-head screws.

   NOTE: You are REQUIRED to use only the mounting locations provided. These locations ensure that the installer will not drill into any copper or electrical wiring within the system.

4. Secure the unit’s mounting bracket to the opening using the twelve (12) supplied 2½” Phillips-head screws.

   Routed Items:
   1. Power wires
   2. Drain line
   3. Line set

   Power Wires
   Line Set / Drain Line
EVAPORATOR UNIT PREPARATION

5. Unscrew the twenty-two (22) screws and remove the top and electrical access panels.

6. Remove the knockout(s) that you will be using to route the line set, power wires, and drain line. For ease of installation, see Figure 2 for recommended orientation (with attic access).

7. Locate the white zip tie securing the drain line tube to the suction line and cut it. Direct the end of the drain line away from refrigerant lines.

8. Pull tubing out of housing to allow room for brazing. Make sure tubing protrudes out of the housing and the drain line is moved out of the way as shown.

NOTE: If installing the unit with attic access, perform steps 5-8 after the unit has been mounted.
9. Remove the protective caps from the liquid and suction line connection tubes.
10. Using copper tubing per line set sizing chart, route the liquid and suction lines to the tubing coming from the unit.
11. Place a wet rag around the suction and liquid lines approximately 4" from the braze joints. This will prevent excess heat from damaging components.
12. To prevent oxidation, purge the system with nitrogen.
13. Braze the copper tubing to the connections on the evaporator unit.
14. Insulate the suction line using Armaflex or similar insulation.
15. Route the drain line out of the evaporator unit with the line set. Connect using the supplied ¼" barb coupling.
16. Route the power wire through the knockouts in the electrical panel as shown below.

**NOTE:** You are **REQUIRED** to use only the mounting locations provided. These locations ensure that the installer will not drill into any copper or electrical wiring within the system.
17. Slide the electrical panel up and out of the unit.

18. Connect the green wire to the green wire, the black wire to the black wire, and the white wire to the white wire.

19. Slide the electrical panel back down into the unit.

20. Reinstall the top access panel and fasten the twenty-two (22) screws into place.

21. Install the supplied three-inch pieces of cork tape around the power wires.

**NOTE:** The unit comes in black. The mounting bracket and front grille are paintable, enabling you to match your desired color.
INSULATION BLANKET INSTALLATION

*Tools required: spray adhesive, utility knife, cork tape, foil tape

1. Once mounting bracket location has been selected and installed, proceed to the insulation blanket installation.

2. Spray adhesive onto the sides of the portions of the evaporator unit and mounting bracket which protrude into the attic. See spray adhesive directions for proper tack time before proceeding to step 3 (see illustration).

3. Wrap insulation piece (A) around the sides of the evaporator unit. Make sure the bottom edge of the insulation is flush with the top edge of the mounting bracket (see illustration).

   If needed, trim excess insulation around all edges.

4. Set insulation in place by pressing firmly on all surfaces of the insulation that come in contact with the sides of the evaporator unit (see illustration).

5. Using a utility knife, cut holes in the insulation for the line set, wiring, and drain line if needed.

6. If necessary, cut the insulation to size using the top edge of the evaporator unit as a template. Remove excess insulation. Proceed to piece (B) installation.
INSULATION BLANKET INSTALLATION, CONTINUED

7. Spray the top of the evaporator unit with spray adhesive. (See spray adhesive directions for proper tack time before proceeding to step 8.)

8. Set piece (B) in place by pressing firmly on all surfaces of the insulation that come in contact with the top of the evaporator unit (see illustration).

9. Using a utility knife, cut holes in the insulation for line set, wiring, and drain line if needed.

   If needed, trim excess insulation around all edges.

10. Once insulation is installed, apply foil tape to all seams, covering them completely.

11. Inspect insulation for damage/defects. If damaged, repair with foil tape.

12. Apply cork tape or equivalent to areas where the line set, wiring, and drain line enter the unit.
DRAIN LINE

Condensation Drain Line
The condensation drain line tube is used to remove excess condensation from the unit to a proper discharge location. It is important that the drain line tube is properly connected.

**Failure to use the condensation drain line tube will void the warranty on the unit.**

Drain Line
The Ceiling Mount evaporator unit features a drain line pump system that removes excessive condensate build up in the drain pan. During operation, the drain pan collects water that drips from the coil. The drain line pump system will prevent overflow and leaking by allowing for discharge of the additional condensate.

Connecting the Drain Line
Route the drain line to an appropriate discharge location and connect the opposite end to the tubing that was routed out with the line set using the provided barbed coupler side of the condensate pump. Do not route the drain line more than 15 vertical ft.

**WRONG:** Drain line is under water.

To prevent mold from growing, allow the drain line to hang above the water line.
CEILING MOUNT WIRING DIAGRAM WITH 24V CONVERSION KIT

LEGEND
Field Installed
Factory Installed

24V Thermostat
- R
- RC
- Y
- N

Fan Relay
Solenoid or Compressor

Reservoir
Condensate Pump

115V Line
115V Neutral
Ground

Control Panel
Ground Stud

Unit Ground
Stud

Capacitor

146mm AFL
Blower

115V Line
115V Neutral
Green
White
Black

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow

Black
White
Yellow
CEILING MOUNT 4000/8000 CONDENSING UNIT WIRING DIAGRAM

USE 75°C WIRE FOR AMPACITY DETERMINATION

TO SUCTION TRANSUDER

WHEN PUMP DOWN IS NOT REQUIRED AND T-STAT IS BEING USED CONNECT T-STAT TO TERMINALS 14 AND 17

CONTROLLER

EXT. PROTECTOR

RELAY

FAN (WHEN REQ'D)

START CAPACITOR

INTERNAL/EXTERNAL MOTOR PROTECTION PROVIDED — ALLOW TIME FOR RESET.

FIXED HP (WHEN REQ'D)

RED

BLACK

BLUE

GREEN

BLACK (230V)/WHITE (115V)

CONNECTION WHEN REQUIRED

USE THIS EQUIPMENT ON A GROUNDED SYSTEM ONLY.
USE COPPER CONDUCTORS ONLY.

07/16

052-7278-46

ROUND OR SQUARE CORNERS
COPELAND COLD WEATHER START KIT WIRING DIAGRAM
For systems manufactured after October 31, 2018

COPELAND CWSK

N H

Black Black

TS

HEATER
PREPARING THE CONDENSING UNIT

Electrical Needs
The 4000 condensing unit requires a dedicated 115V, 15-amp circuit.
The 8000 condensing unit requires a dedicated 115V, 20-amp circuit.
The unit draws a large inrush current for about 1 second the instant the compressor starts. With a dedicated circuit and circuit breaker, the condensing unit will have sufficient power for effective operation. (The compressor is controlled by a low-pressure transducer mounted on the condensing unit. This feature eliminates the need for wiring between the evaporator unit/fan coil unit and the condensing unit.)

• Ensure the voltage supplied matches the rating specified on the unit spec label.
• Provide a non-GFI dedicated circuit and an appropriate outlet for the evaporator unit.
• Provide a dedicated circuit and circuit breaker for the condensing unit.
• Provide a weatherproof disconnect for the condensing unit if it is located outside.

Power surges and spikes can damage sensitive electrical equipment. WhisperKOOL recommends plugging the unit into a surge protector or power conditioner in order to protect your system. As outlined in our terms and conditions, power surges and spikes are not covered under warranty.

WE RECOMMEND THAT YOU DO NOT USE A GROUND FAULT INTERRUPTER (GFI) WITH THIS PRODUCT.

In case the system should lose power, check the home/main circuit breaker. If the system does not respond properly, refer to the Troubleshooting Guide on page 35.
PREPARING THE CONDENSING UNIT (continued)

The condensing unit can be installed inside a well-ventilated area of the home, but is typically installed outside. Exterior applications will require the use of a protective housing. The amount of sun exposure should be considered when selecting the placement of the condensing unit. The 4000 condensing unit requires a dedicated 15-amp circuit (non-GFI). The 8000 condensing unit requires a dedicated 20-amp circuit (non-GFI). Make sure there is a minimum of three (3) feet of horizontal clearance in every direction around the unit (five feet is ideal). The unit may either be hard-wired or plug-in, depending on local electrical codes.

Indoor condensing unit installations: Inside installations require special consideration, as there must be adequate ventilation to remove the heat created during normal operations. An exhaust port with fan may need to be installed to ensure that heat is effectively removed from the utility room. There must be a return grille or provision for 500-600 CFM of cool air to enter the room to replace the exhausted air. Unobstructed airflow to and from the unit is a critical factor in the unit's overall performance. Make sure there is a minimum of three (3) feet of horizontal clearance in every direction around the unit (five feet is ideal). This will assure that the unit can move the air around the room in an efficient manner.

Outdoor condensing unit installations: You must utilize the exterior condensing unit housing for outdoor installations. Place the condensing unit on a solid foundation in a location with adequate ventilation. Make sure there is a minimum of three (3) feet of horizontal clearance in every direction around the unit (five feet is ideal). The unit should be elevated 18 inches in order to avoid any possible flooding or damage by animals, and should be clear of leaves, dirt, and other debris.
INSTALLING THE CONDENSING UNIT

Wiring Procedures (Ceiling Mount)

1. Locate or install an electrical outlet near the condensing unit.
2. Follow the instructions listed below to wire the condensing unit.
3. Leave the circuit breaker off until the unit is ready to charge.

Note: Do not apply power to a system without refrigerant.

Copeland Wiring Procedure

Step # 0

Use a ¼” nut driver to remove the screw securing the cover to the compressor electrical compartment.
Ceiling Mount

Copeland Wiring Procedure

Step # 1
Remove the cover to expose the internal wires.

Step # 2
Route the required 115V power wires into the open clamp on the enclosure.
Copeland Wiring Procedure

Step # 3

Tighten the screws on the clamp to secure wire casing or conduit in place.

Copeland Wiring Procedure

Step # 4

Perform the following wire connections:

- Insert the Line 115V wire into the “H” lever connector
- Insert the Neutral 115V wire into the “N” lever connector
- Insert the Ground wire into the “G” lever connector
Copeland Wiring Procedure

Step # 5

Push wires back into enclosure.

Step # 6

Re-install cover.
LINE SET PIPING DIAGRAMS

These are two options for running the line set from the coil to the condensing unit. Option 1 applies when the system is installed with the condensing unit below or leveled to the coil. Option 2 applies when the system is installed with the condensing unit at a higher elevation than the coil.

### Option 1

![Diagram of Option 1]

### Option 2

![Diagram of Option 2]

**LEGEND**

- LLS: Liquid Line Solenoid
- TXV: Thermal Expansion Valve
- COMP: Compressor
- REC: Receiver
- EVAP.: Evaporator
- O.D.: Outer Diameter

**NOTE:** If the condensing unit is located above the fan coil unit, a P-trap must be used on the suction line at the base of the vertical lift and an inverted P-trap must be used at the top of the vertical lift to ensure proper oil return for the compressor.

---

**It is required to size the suction line tubing according to this chart.**

<table>
<thead>
<tr>
<th>Ceiling Mount 4000/8000</th>
<th>Line Set Length</th>
<th>&lt;25ft</th>
<th>26-50ft</th>
<th>50-100ft</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vertical Rise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suction Line</td>
<td></td>
<td>15ft</td>
<td>&lt;3ft</td>
<td>3-10ft</td>
</tr>
<tr>
<td>Liquid Line</td>
<td>Horizontal Tubing</td>
<td>½&quot;</td>
<td>½&quot;</td>
<td>⅜&quot;</td>
</tr>
<tr>
<td></td>
<td>Vertical Rise</td>
<td>½&quot;</td>
<td></td>
<td>⅜&quot;</td>
</tr>
<tr>
<td></td>
<td>Horizontal Tubing</td>
<td>¼&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vertical Rise</td>
<td>¼&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INSTALLING THE CONDENSING UNIT

Refrigerant Piping Overview
• Using the charts and illustrations found above, route the line set between the evaporator unit and condensing unit. Be sure to reference the chart for correct line set sizing. All horizontal suction piping should be pitched toward the condensing unit half an inch for every 10 feet of pipe. When installing and routing the line set, cap both ends of each tube to prevent debris from entering the tubing.
• Prior to connecting the piping to the evaporator and condensing units, loosely connect a refrigerant manifold to the suction and liquid line service valves.
  • Purge the hoses with dry nitrogen and tighten the hose connections.
  • Remove the service valve caps and turn the valve stem clockwise half a turn to unseat the valve and open the service port. Keep the piping ports sealed until ready to braze.
• Purge the fittings with dry nitrogen at a slow rate to prevent formation of highly abrasive copper oxide.
• Perform all brazes.
• Pressure test the system and check for leaks.
• Insulate the suction line using wall cellular insulation or equivalent. Seal all seams with Armaflex S20 foam insulation adhesive or equivalent. Wrap each seam using line set tape.

Liquid Line Piping Procedure
• Refer to the line set piping diagram for liquid line size requirements.
• Braze a short piece of copper tubing to the liquid line service valve.
• Connect the supplied refrigerant drier to the tubing.
• Downstream from the drier, connect the moisture-indicating sight glass in an easily visible location.
• Run the tubing to the evaporator unit and attach to the liquid line connection on the evaporator unit.

Suction Piping Procedure
• Connect an appropriately sized suction line to the suction line service valve on the condensing unit.
• Run the pre-insulated suction line to the evaporator unit and attach to the suction line connection on the evaporator unit.

Brazing Procedure
• Energize the evaporator unit and set the thermostat to call for cooling.
• Verify that the thermostat is set low enough to allow the unit to run for the entire length of the brazing, evacuation, and charging procedure.
• Remove the valve depressors from the gauge hoses on a four-valve manifold.
• Connect the manifold to the low-pressure service valve port on the condensing unit and a nitrogen tank.
• Open the suction line service valve and purge the system with nitrogen.
• Braze all connections and cool off quickly.
• Connect the high-pressure hose from the manifold to the liquid line service valve port.
• Pressure test the system at 150 psi for 20 minutes.
• Check all braze joints with leak detector or soap bubbles.
• Release the nitrogen once it is confirmed that there are no leaks.

Evacuation
• Remove the nitrogen tank from the manifold and attach the manifold to the refrigerant tank.
• Mid-seat both service valves.
• Install service caps on the valves.
• Energize the liquid line solenoid valve.
• After confirming that there is fresh oil in the vacuum pump, connect the ¾” hose from the manifold to the pump.
• Start the pump and run it until the micron gauge on the evaporator unit reads 500 microns or less.
• Disconnect the vacuum pump from the system.
INSTALLING THE CONDENSING UNIT (continued)

- Break the vacuum by pressurizing the system to approximately 5 PSI with R-134a refrigerant.
- Remove the micron gauge from the access valve.

Charging
- With the power off to the condensing unit, admit liquid refrigerant through the liquid line service valve until the refrigerant stops flowing.
- Turn on the circuit breaker for the condensing unit. The compressor should turn on if the pressure in the suction line is above 20 psi.
- Add refrigerant (in vapor form) to the low side of the system through the suction line service port.
- Observe the sight glass. If bubbles are present, add more refrigerant (in vapor form) to the low side.
- Once the sight glass is clear, check the superheat at the outlet of the evaporator unit. Adjust the TXV until the superheat is between 20-30°F degrees.
- Under normal operation, with the wine cellar at 55°F and the ambient temperature at 85°F, the low side pressure should be between 28-32 PSI and the high side should be between 145-155 PSI.

Finalizing the Installation
- Confirm that the entire suction line from the TXV to the suction line service valve is insulated using cellular insulation or equivalent. Seal all seams with Armaflex 520 foam insulation adhesive or equivalent.
- Confirm that the control is displaying the correct temperature.

FINALIZING THE INSTALLATION

1. Push the grille back into place. This will attach the grille to the ball studs.
2. Screw in the eight screws to secure the front access panel.
SYSTEM OPERATION
The cooling system is equipped with the hardware needed to support a 24-volt air conditioning thermostat (not included).

Initial Start-Up
Set the thermostat to COOL and fan switch to AUTO. Lower the setpoint to the desired cellar temperature. (A temperature of 55°F is the recommended setpoint.) See thermostat instructions for details.

Normal System Cycle
The thermostat should turn the cooling system on when it senses a temperature one (1) degree higher than the setpoint. See thermostat instructions for details.

Anti-Short Cycle
Most thermostats have a safety feature that will prevent the condensing unit from cycling on and off within a short period of time. During the anti-short cycle, the condensing unit will typically remain off for 5-7 minutes. See thermostat instructions for details.

Fan Operation
If the fan switch on the thermostat is in the AUTO position, it will run only during the cooling cycle. If the fan switch on the thermostat is in the ON position, the fan will continuously run until the switch is set back to the AUTO position.

Anti-Frost
Systems equipped with a 24V thermostat conversion kit do NOT have an anti-frost feature. To reduce the possibility of the evaporator coil icing up, avoid setting the thermostat lower than 55°F.

Operation in Low Ambient Temperatures
The condensing unit comes equipped with a LAC (Low Ambient Control). The LAC is a three-way modulating valve that responds to discharge pressure. When the discharge pressure falls below the valve’s dome pressure, the valve modulates open to the discharge port which allows discharge gas to bypass the condenser. Mixing the discharge gas with the liquid creates high pressure at the condenser outlet, reducing the flow and causing liquid to backup in the condenser. Flooding the condenser reduces the area available for condensing. This reduction in condenser surface area results in a rise in condensing pressure during cold ambient conditions.

The condensing unit controller comes preset from the factory with the cut-in pressure at 25psi and the cut-out pressure at 15psi. During low ambient temperatures (40°F or below), it will be necessary to adjust the cut-in pressure to 10-15psi (15psi preferred) and the cut-out to 5psi to ensure compressor startup. See page 33 for instructions on adjusting the cut-in and cut-out pressures of the condensing unit.

NOTE: To ensure correct system operation, the 24V thermostat must be placed inside the wine cellar, preferably in a central location away from any airflow.
Emerson™ Electronic Unit Controller
Quick setup and troubleshooting guide

Adjusting Low Pressure Settings
Hold DOWN and SET simultaneously for 3 seconds to enter menu (PSI light will flash)
Cycle through menu options – UP/DOWN
Select function – SET
Adjust value – UP/DOWN
Store function - SET
Exit menu - UP and SET

Accessing Alarm Code Information
Press and release ALARM
Cycle through menu options – UP/DOWN
Press SET to see number of alarms
Press SET again to return to menu options
Exit menu - UP and SET

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PoF</td>
<td>Keypad locked</td>
</tr>
<tr>
<td>Pon</td>
<td>Keypad unlocked</td>
</tr>
<tr>
<td>P1</td>
<td>Suction probe failure</td>
</tr>
<tr>
<td>P2</td>
<td>Condenser probe failure</td>
</tr>
<tr>
<td>P3</td>
<td>DLT probe failure</td>
</tr>
<tr>
<td>HA</td>
<td>High condenser temperature alarm</td>
</tr>
<tr>
<td>dLt</td>
<td>DLT temperature alarm</td>
</tr>
<tr>
<td>dLL</td>
<td>DLT lock alarm</td>
</tr>
<tr>
<td>HP</td>
<td>High pressure trip alarm</td>
</tr>
<tr>
<td>HPL</td>
<td>High pressure trip lock-out alarm</td>
</tr>
<tr>
<td>EE</td>
<td>Module Failure</td>
</tr>
<tr>
<td>LOC</td>
<td>Number of lock-outs</td>
</tr>
</tbody>
</table>

Book of Alarms – to enter alarm menu
Compressor
Fan light 1 & 2 (Fan cycle units only)
Module Restart – push to reset the HPL, DLL lock out faults (cycle power)
Set – Displays set point. In programming mode, it confirms an operation
Active alarm
Run time
Service menu
Alarm history
Service – to enter service menu

Accessing Service Menu
Hold SERVICE for 3 seconds
Cycle through menu options – UP/DOWN
Press SET to see number of alarms
Press SET again to return to menu options
Exit menu - UP and SET

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>StH</td>
<td>Compressor Starts –1000 -999999</td>
</tr>
<tr>
<td>StL</td>
<td>Compressor Starts –0 -999</td>
</tr>
<tr>
<td>CHH</td>
<td>Compressor Hours -1000 -999999</td>
</tr>
<tr>
<td>CHL</td>
<td>Compressor Hours -0 -999</td>
</tr>
<tr>
<td>F1H</td>
<td>Fan 1 Hours -1000 -999999</td>
</tr>
<tr>
<td>F1L</td>
<td>Fan 1 Hours -0 -999</td>
</tr>
<tr>
<td>F2H</td>
<td>Fan 2 Hours -1000 -999999</td>
</tr>
<tr>
<td>F2L</td>
<td>Fan 2 Hours -0 -999</td>
</tr>
</tbody>
</table>

Example: If StH=12 and StL=500, the total number of compressor starts=12,500

For more information visit EmersonClimate.com/ElectronicUnitController or call 1-888-367-9950

Note: After 15 seconds of inactivity the controller will revert to the default display.
<table>
<thead>
<tr>
<th>Display</th>
<th>Likely Causes</th>
<th>Other Possible Causes</th>
</tr>
</thead>
</table>
| Controller display remains blank after applying power | • Unit power not properly applied - check for proper applied voltage  
• Power cable harness not plugged in properly or securely into the back of the controller – check connections | • Power cable miswired – inspect cable, replace if needed  
• Electrical assembly miswired – trace wiring diagrams |
| Controller displays correctly, but the green compressor light is off and the compressor is not running | • Jumper cable not plugged in properly or securely into the back of the controller – check connections  
• Controller is currently above the cut-in setting – check cut-in and cut-out settings | • Jumper cable miswired – inspect cable, replace if needed |
| Controller displays correctly and the green compressor light is on and the compressor is not running | • Power cable harness not plugged in properly or securely into the back of the controller – check connections | • Power cable not wired to the contactor or compressor correctly, check wiring  
• Power cable miswired – inspect cable, replace if needed |
| Controller flashes "135" or "P1" | • Current system pressure is above 135 PSIG – wait for system to pull down  
• Green harness not plugged in properly or securely into the back of the controller – check connections  
• Cable not connected properly with the pressure transducer – check connections | • Transducer cable miswired – inspect cable, replace if needed  
• Damaged transducer – inspect transducer, replace if needed |
| Controller flashes "P2" on a unit with fan cycling | • Green harness not plugged in properly or securely into the back of the controller – check connections | • Transducer cable miswired – inspect cable, replace if needed  
• Check condenser temperature sensor resistance values against table in AE-1376, Section 8 |
| Controller flashes "P2" on a unit without fan cycling after replacing a controller | • Controller not programmed properly – check parameters in the advanced menu | |
| Controller flashes "P3" on a unit with DLT | • Jumper cable not plugged in properly or securely into the back of the controller – check connections | • Jumper cable miswired – inspect cable, replace if needed  
• Faulty DLT temperature sensor – check the discharge line temperature sensor resistance values against table in AE-1376, Section 8 |
| Controller flashes "P3" on a unit without DLT after replacing a controller | • Controller not programmed properly – check parameters in the advanced menu | |
| Fans not running on a fan cycling unit and the fan lights are not on | • Condensing temperature is currently below the fan cut-in  
• Condensing temperature sensor not properly installed – check installation | • Transducer cable miswired – inspect cable, replace if needed  
• Faulty temperature sensor - check condenser temperature sensor resistance values against table in AE-1376, Section 8 |
| Fans not running on a fan cycling unit and the fan lights are on | • Power cable harness not plugged in properly or securely into the back of the controller – check connections | • Power cable miswired – inspect cable, replace if needed  
• Electrical assembly miswired – trace wiring diagrams |
| Controller flashes "HP" at power-up | • Jumper cable not plugged in properly or securely into the back of the controller – check connections  
• High pressure switch is seeing above the cut-out pressure  
• For a replacing an -00 controller, ensure that the jumper cable is the latest revision. It should have a blue wire in the harness. See replacement instructions for more details | • Jumper cable miswired – inspect cable, replace if needed  
• Faulty fixed Hp switch – inspect switch, replace if needed |
| Controller flashes "HP" or "HPL" | • System operation causing high discharge pressures, check system operations | • Bad high pressure switch, verify system pressure when the pressure switch trips.  
• See AE-1376, Section 7.2 for more details |
| Controller flashes "DLT" or "DLL" | • System operation causing high discharge line temperatures, check system operations | • Faulty temperature sensor - check DLT sensor values against table in section 8  
• See AE-1376, Section 7.1 for more details |
| Controller flashing "HPL" or "DLL" | • System operation causing high discharge pressures (HPL) or high discharge line temperatures (DLL) repeatedly, check system operations  
• To clear an "HPL" or "DLL" lockout, you can hold the Restart button for 3 seconds twice, or cycle power to the unit. If using the reset button, the alarm condition will have to clear (DLL temperature drops or Hp switch resets), and any minimum off time will need to complete (5 minutes for the fixed Hp switch) | |
## Unit has ice forming on the evaporator unit

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporator filter or coil is dirty</td>
<td>Remove the filter and wash it, then clean the coil with a vacuum. If coil is very dirty, use a spray bottle with a small amount of liquid dish detergent or coil cleaner. Spray coil, let set for five minutes, then flush with fresh water.</td>
</tr>
<tr>
<td>There is something blocking the supply and/or return air</td>
<td>Remove blockage</td>
</tr>
<tr>
<td>The evaporator fan is not turning on</td>
<td>Call Customer Service for details on how to perform the bypass plug test. If all components run correctly, and the system cools during the bypass plug test, there is either an issue with the 24V thermostat conversion kit or the thermostat. Contact Customer Service for further action.</td>
</tr>
<tr>
<td>If evaporator unit continues to ice</td>
<td>Observe ice formation pattern. If only part way up the coil face, the system could be low on refrigerant. If all the way up, the coil may be dirty or airflow is blocked.</td>
</tr>
<tr>
<td>The set point is too low</td>
<td>Raise set point to recommended set point of 55°F</td>
</tr>
</tbody>
</table>

## Unit does not run/power up

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporator unit is not plugged in</td>
<td>Make sure the unit is plugged into an outlet</td>
</tr>
<tr>
<td>Line voltage rating is incorrect for the system</td>
<td>Check line voltage to make sure there is 110V-120V</td>
</tr>
<tr>
<td>Thermostat not calling for cooling</td>
<td>Lower set point</td>
</tr>
<tr>
<td>Faulty thermostat or wiring</td>
<td>Call Customer Service</td>
</tr>
</tbody>
</table>

## Cellar temperature is too warm

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The temperature of the room to which the condensing unit exhausts exceeds 110°F</td>
<td>Intake temperature needs to drop below 110°F</td>
</tr>
<tr>
<td>The system is undersized for the cellar</td>
<td>Order correct size system</td>
</tr>
<tr>
<td>There is something blocking the supply and/or return air on the evaporator unit or the condensing unit</td>
<td>Remove air flow obstruction</td>
</tr>
<tr>
<td>Evaporator unit is mounted too low in the cellar</td>
<td>Relocate unit so the distance from the ceiling and top of the unit is no more than 18”</td>
</tr>
<tr>
<td>One or more of the fans is not turning on</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
<tr>
<td>Compressor is not turning on</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
<tr>
<td>Compressor keeps cycling on overload</td>
<td>Make sure all fans are working and there is no airflow obstruction</td>
</tr>
<tr>
<td>Poor seal around door or other areas requiring a seal (around the unit, wall joints, etc.)</td>
<td>Make sure there are no air gaps around the door. If door seal is damaged, replace it.</td>
</tr>
<tr>
<td>Thermostat set too high</td>
<td>Adjust thermostat to lower temperature</td>
</tr>
<tr>
<td>Evaporator coil is frosted or iced up</td>
<td>Observe ice formation pattern. If only part way up the coil face, evaporator unit could be low on refrigerant. If so, contact your installing technician to assist with troubleshooting.</td>
</tr>
</tbody>
</table>

## System runs constantly

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaky door seal or poorly insulated cellar</td>
<td>Fix leaky door seal and insulate cellar</td>
</tr>
</tbody>
</table>
# Unit leaks water

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporator unit is not level</td>
<td>Evaporator unit should be level on the wall to prevent leaking</td>
</tr>
<tr>
<td>Drain line clogged or kinked</td>
<td>Check drain line to make sure water can flow freely</td>
</tr>
<tr>
<td>Drain is clogged, preventing water from escaping</td>
<td>Disconnect drain and clear it out, open access door and check drain for blockage</td>
</tr>
<tr>
<td>Drain line does not have a downward slope</td>
<td>Fix drain line so there is a downward slope from the unit to the drain</td>
</tr>
<tr>
<td>Coil is iced, causing drain pan to freeze and water to overflow</td>
<td>Melt ice with blow drier. Soak up with a towel.</td>
</tr>
</tbody>
</table>

# Unit runs but does not cool

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of air flow</td>
<td>Make sure fan is unobstructed and that the evaporator filter, evaporator coil, and condenser coil are clean and free of debris</td>
</tr>
<tr>
<td>System undersized</td>
<td>Contact Customer Service</td>
</tr>
<tr>
<td>Compressor is overheating</td>
<td>Shut system off for 1 hour to allow compressor to cool. Turn back on and check for cooler air flow out. If compressor runs, check for and clean condenser coil as possible cause of compressor overheating. If problem repeats, contact your installing technician to assist with troubleshooting.</td>
</tr>
</tbody>
</table>

# Evaporator fan runs but compressor does not

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor and/or starting components faulty</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
<tr>
<td>Compressor may have overheated</td>
<td>Shut system off for 1 hour to allow compressor to cool. Turn back on and check for cooler air flow out. If compressor runs, check for and clean condenser coil as possible cause of compressor overheating. If problem repeats, contact your installing technician to assist with troubleshooting.</td>
</tr>
</tbody>
</table>

# Compressor runs but evaporator fan does not

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faulty fan motor</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
<tr>
<td>Faulty thermostat</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
<tr>
<td>Fan switch on thermostat set to “on”</td>
<td>Set fan switch to the “auto” position</td>
</tr>
<tr>
<td>Fan relay in thermostat or 24V thermostat conversion kit stuck on</td>
<td>Call Customer Service for details on how to perform the bypass plug test</td>
</tr>
</tbody>
</table>

# Compressor short cycles

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporator unit thermostat location</td>
<td>Move thermostat out of airflow</td>
</tr>
<tr>
<td>System low on refrigerant charge</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
<tr>
<td>Condenser fan motor/capacitor faulty</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
<tr>
<td>Compressor and/or starting components faulty</td>
<td>Please contact the installing technician to troubleshoot</td>
</tr>
</tbody>
</table>

# Humidity in cellar too low

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough moisture</td>
<td>Purchase and place a humidifier (or a decorative fountain) in cellar</td>
</tr>
</tbody>
</table>
# Units equipped with the 24V Thermostat Conversion Kit:

## Does not power up or run

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batteries on thermostat have lost their charge</td>
<td>Change batteries</td>
</tr>
<tr>
<td>Thermostat wired incorrectly</td>
<td>Check wiring on 24V thermostat and correct</td>
</tr>
<tr>
<td>Wiring issue at evaporator unit</td>
<td>Contact Customer Service for troubleshooting</td>
</tr>
<tr>
<td>Condensation levels are critical and prevent the unit from running</td>
<td>Contact Customer Service for troubleshooting</td>
</tr>
<tr>
<td>24V transformer in evaporator unit has failed</td>
<td>Contact Customer Service for troubleshooting</td>
</tr>
</tbody>
</table>

## Evaporator fan runs continuously

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan switch on thermostat set to &quot;on&quot;</td>
<td>Set fan switch to the &quot;auto&quot; position</td>
</tr>
<tr>
<td>Fan relay in thermostat or 24V conversion kit stuck on</td>
<td>Call customer service for details on how to perform the bypass plug test</td>
</tr>
</tbody>
</table>
## MAINTENANCE SCHEDULE

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| **Monthly** | 1. Check coils  
2. Check for unusual noise or vibration  
3. Check the drain line to see if it is above the waterline (if draining into a vessel) |
| **Quarterly** | 1. Use a vacuum with brush attachment to clean coils; be careful not to crush coil fins when cleaning  
2. Change duct filter if the system is ducted |
| **Annually** | 1. Inspect for corrosion  
2. Check wiring connections and integrity of cords  
3. Pour a 50/50 bleach solution into the drain line every spring |
Introduction
Proper care is essential to assure good life of condensing units. Dirty or damaged condensers will reduce the efficiency and capacity of the system.

Care must be taken in choosing solutions to be used for cleaning condensers and condensate pans. Chlorinated cleaners and anti-bacterial cleaning agents can be damaging and should be avoided. Caustic and acidic cleaners should be avoided as well. Failure to do so may accelerate component corrosion and ultimately lead to component failure.

Condenser Coils
There are many commercially available condenser coil cleaners on the market. Coil cleaners should be designed to remove build-up on fins and coils. Coils should be thoroughly rinsed of the cleaners once cleaning has been completed. Follow the manufactures instruction for proper usage. Preventive maintenance and routine cleaning of coils is important to assure good life.

When cleaning the coil, an absorbent type material should be placed under the area to be cleaned in order to capture most of the cleaning compound, thus minimizing any type of chemical attack.

Condensate Pans
Condensing units with condensate pans and condensate tubes are designed to evaporate condensate water only. Other ingredients introduced into the condensate pan can accelerate pan and/or tube corrosion. As foreign agents are introduced into the condensate pan, condensate water will be evaporated leaving the foreign agent behind. This can lead to a high concentration of the agent and possible corrosion of the tubing and/or base.

Coil cleaning agents must not be allowed to drain into the condensate pan as this may cause damage. Upon completing the coil cleaning, be certain that all residue is removed from the condensate pan.

Only non corrosive cleaners should be used to assure good life of the condensing unit components. No hydrocarbon based cleaners should be used to clean the unit. Bleach solutions must be avoided due to its high corrosive nature.

Under no circumstances should cleaning agent ingredients contain any of the solutions listed below:

Unacceptable solutions are:
- Chlorinated Solvents
- Bleaches
- Vinegar
- Ammonia
- Anti-Bacterials
- Salts

Preventative Maintenance
Maintenance should be performed at regular intervals. Coils should be cleaned at least monthly, possibly more depending on the environment. Condensing units with condensate pans should also be checked and cleaned regularly to prevent damaging build up in the pan.

Safety
Please follow all safety recommendations listed by the manufacturer of the cleaning agent(s), these would include proper clothing, gloves and eye protection.
BYPASS TEST PROCEDURE

**NOTE:** If instructed by a WhisperKOOL representative, follow the directions below to test the cooling unit using the bypass plug provided in the accessory kit.

1. Disconnect power from the evaporator unit.
2. Loosen the two (2) screws on the front of the grille or duct plenum.
3. Pull the grille or duct plenum away from the evaporator unit.
4. Remove the screw securing the control panel in place.
5. Slide the control panel down, out of the evaporator housing. The control panel has two (2) hooks which allow it to attach to the evaporator unit for easy serviceability.
6. Disconnect the Molex connector.
7. Locate the bypass plug included in the accessory kit.
8. Plug the bypass plug into the male Molex connector.
9. Connect power to the evaporator unit. The unit should immediately turn on. If all the components are not operational, disconnect power immediately and contact customer service. If all components seem to be operating correctly, allow the unit to run for four (4) hours. Monitor the temperature of the cellar to determine if the unit is cooling properly.
10. Once the test is complete, remove the bypass plug. Plug the Molex connector back in to the unit’s wiring.
TECHNICAL ASSISTANCE

WhisperKOOL Customer Service is available Monday through Friday from 6:00 a.m. to 4:00 p.m. Pacific Standard Time.

The appointed customer service representative will be able to assist you with your questions and warranty information more effectively if you provide them with the following:

• The model and serial number of your WhisperKOOL system(s).
• Location of unit and installation details, such as ventilation, ducting, construction of your wine cellar, and room size.
• Photos of the cellar and installation location may be needed.

Contact WhisperKOOL Customer Service
1738 E. Alpine Ave
Stockton, CA, 95205
www.whisperkool.com

Email: support@whisperkool.com
Phone: 209-466-9463
US Toll Free: 1-800-343-9463
Fax: 209-466-4606

Visit www.emersonclimate.com/electronicunitcontroller for online brochures, bulletins, instruction videos, and general product information.

Download the Copeland Mobile App on your mobile device for additional troubleshooting and technical information.

ACCESSORIES FOR COOLING UNITS

WhisperKOOL offers accessories to enhance and customize your wine cooling unit:

Condensate Pump Kit
The condensate pump kit automatically removes water that drips out of the evaporator unit’s drain line. The pump is controlled by a float/switch mechanism that turns the pump on when approximately 2¼” of water collects in the tank, and automatically switches off when the tank drains to approximately 1¼”. The condensate pump kit allows the excess condensate to be pumped up to 20 feet away from the unit.

Exterior Housing
If the cooling unit is installed outside, it will need protection from sun, wind, and rain. The exterior housing protects the condensing unit portion of the split system from the elements when installed outdoors.

Accessories can be purchased at www.whisperkool.com
ATTENTION: PLEASE READ THESE TERMS OF USE CAREFULLY BEFORE INSTALLING YOUR WHISPERKOOL COOLING SYSTEM. INSTALLING YOUR WHISPERKOOL COOLING SYSTEM INDICATES THAT YOU ACCEPT AND AGREE TO EACH OF THE TERMS AND CONDITIONS SET FORTH HEREIN (“TERMS OF USE”). IF YOU DO NOT ACCEPT THESE TERMS OF USE, YOU RISK VOIDING YOUR WARRANTY AND ASSUMING ADDITIONAL REPAIR AND REPLACEMENT COSTS.

1. Purchase of a WhisperKOOL Cooling System assumes that the Purchaser (“End User”) fully accepts and agrees to the Terms and Conditions set forth in this document. The Terms and Conditions of Sale and Owner's Manual are shipped with each unit and, if another copy is needed, replacement copies can be downloaded from the company website (whisperkool.com) or by contacting WhisperKOOL directly for a new copy. WhisperKOOL reserves the right, in its sole discretion, to change its Terms and Conditions at any time, for any reason, without notice.

2. WhisperKOOL Product Installation and Limited Warranty
   A. Purchaser of the product must arrange for the product to be installed by a certified HVAC/R technician in accordance with procedures set forth by WhisperKOOL and described in the WhisperKOOL Owner's Manual.
   B. The HVAC/R technician installing the product must complete the designated portion of the Split Startup Checklist and provide licensing or certification identification number information to assist in the warranty registration process.
   C. Purchaser must return the completed Split Startup Checklist to WhisperKOOL within thirty (30) days of installation of Product. The Split Startup Checklist must be approved by WhisperKOOL to activate the Limited Warranty. If the Split Startup Checklist is approved, Purchaser will be sent activation approval documents and will start receiving the benefits of the Limited Warranty throughout the warranty period. If the Split Startup Checklist is incomplete, Purchaser will be informed they have five days to complete the Split Startup Checklist and re-submit to WhisperKOOL. The Split Startup Checklist will be reviewed again, and if denied, Purchaser will be informed that they have 10 business days for corrective action. Failure to register the Product may result in loss of warranty.
   D. Purchaser is responsible for the full costs of installation and any additional parts required for the proper and complete installation of the product.
   E. For Split Systems returned to WhisperKOOL in accordance with the terms and conditions of the Limited Warranty, WhisperKOOL warrants against defects in material and workmanship as follows:
      1. LABOR — For a period of two (2) years commencing on the date of purchase, WhisperKOOL will, at its option and discretion, reimburse up to $250 to the End User for cost incurred for servicing, repairing, removing or installing warranty parts. Invoice for service must be forwarded to WhisperKOOL for assessment and processing. The Split System warranty is invalid if there is attempted repair by anyone other than an HVAC/R technician approved by WhisperKOOL to service the Product.
      2. PARTS — For a period of two (2) years commencing on the date of purchase, WhisperKOOL will supply, at no charge, new or rebuilt replacement parts in exchange for defective parts. Replacement parts are warranted only for the remainder of the original warranty period.
      3. FREIGHT — For a period of two (2) years commencing on the date of purchase, if after WhisperKOOL approved evaluation the original Product failure is determined to be the cause of a manufacturers defect, and not the cause of an installation error or other cause, WhisperKOOL will cover at its option, freight for the replacement parts or Product.

The following part or cause of failure is not the responsibility of WhisperKOOL:
- Improper voltage supply
- Line set with screw connectors (high end and low end)
- Leaks found at the braze points when performing pressure check
- Unit that has been charged incorrectly
• Incorrect tubing diameter used on line set
• A unit that has been wired incorrectly
• Valve stem on condenser side
• Improper installation of P-Trap
• Lack of P-Trap (if required)
• Condensers that are installed outdoors or in elements that would affect operation without proper cover or housing. (Housing is available from Manufacturer).

Product Warranty Limitations and Exclusions.
1. This limited warranty does not cover cosmetic damage caused during installation, damage due to acts of God, commercial use, accident, misuse, abuse, negligence, or modification to any part of the Product. Delivery and installation of the Product, any additional parts required, as well as removal of the Product if warranty work is required, are all at the sole cost, risk and obligation of the End User.

2. This limited warranty does not cover damage due to improper installation or operation or lack of proper maintenance of the Product, connection of the Product to improper voltage supply, or attempted repair of the Product by anyone other than a technician approved by WhisperKOOL to service the Product.

3. This limited warranty does not cover any Product sold “AS IS” or “WITH ALL FAULTS.”

4. Product that has been replaced during warranty period does not extend the warranty period past the original date of purchase.

5. This limited warranty is valid only in the continental United States. Sales elsewhere are excluded from this warranty.

6. Proof of purchase of the Product in the form of a bill of sale, receipted invoice or serial number, which is evidence that the Product is within the Limited Warranty Period, must be presented by the End User to WhisperKOOL in order to obtain limited warranty service.

7. This limited warranty is void if the factory applied serial number has been altered or removed from the Product.

8. This limited warranty is voided if installed in an enclosure of insufficient design that does not follow the Product installation requirements stated herein and in the owner’s manual.

9. Removing the rivets from the Product’s unit housing without prior authorization from WhisperKOOL voids this limited warranty.

10. The End User must first contact WhisperKOOL Customer Service by telephone (at 1-800-343-9463) prior to attempting service on any Product still under the limited warranty; else the limited warranty is voided.

11. This limited warranty does not cover Product being concealed by, but not limited to, vegetation, fabric, shelving, mud, snow, or dirt. Product must not be painted or limited warranty will be void.

12. This limited warranty does not cover exposure to corroding environments such as, but not limited to, petroleum and gasoline products, cleaning solvents, caustic pool chemicals, and marine air.

13. This limited warranty does not cover any cause not relating to Product defect.

14. THE REPAIR OR REPLACEMENT OF THE PRODUCT AS PROVIDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF YOU, THE END USER, AS WELL AS ANYONE ELSE IN THE CHAIN OF TITLE OF THE PRODUCT, DOES NOT START A NEW LIMITED WARRANTY TIME PERIOD, AND IS IN LIEU OF ALL OTHER WARRANTIES (EXPRESS OR IMPLIED) WITH REGARD TO THE PRODUCT. IN NO EVENT SHALL WHISPERKOOL BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL OR CONTINGENT DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. THE IMPLIED WARRANTIES OF MERCHANTABILITY

15. AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXPRESSLY DISCLAIMED. Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This limited warranty gives you specific legal rights, and you may have other rights, which vary from state to state.

16. Failure of the End User to comply with all of the Product Installation Requirements, Maintenance Requirements and End User Requirements may, at WhisperKOOL’s sole discretion, void this limited warranty.

17. No one has any authority to add to or vary the limited warranty on this Product.
3. Maintenance Requirements

The End User is responsible for checking the coils on the condenser unit and vacuuming them every three months to maintain them free of debris. It is the End User’s responsibility to clean off any accumulated dust, lint, or other debris from the front and rear intake grills; failure to do this on a regular basis will restrict the airflow and may affect the Product’s ability to function properly. Periodically cleaning the Product’s vents will help assure maximum cooling efficiency. The drain tube must also be checked and kept clean and free of debris and mold to maintain proper performance.

Mold is a natural living organism in the environment. It exists in the air in the form of microscopic spores that move in and out of buildings through doors, windows, vents, HVAC systems and anywhere else that air enters. Once it is discovered, mold must be addressed quickly and appropriately. Delayed or improper treatment of mold issues can result in costly and reoccurring repairs. If the End User suspects a mold problem, it is always best to hire a qualified and experienced mold remediation specialist.

4. Additional End User Costs And Responsibilities

Terms and conditions for replacing the Product that is being evaluated for limited warranty.

1. After evaluation by a certified HVAC/R technician and the Product is found to be irreparable in the field, contact WhisperKOOL Customer Service to arrange for replacement under the warranty guidelines. When a claim for warranty is submitted for a condenser skid, the End User must purchase a new condenser skid from WhisperKOOL at retail price. Upon installation of the new condenser skid by a certified HVAC/R Technician, the HVAC/R Technician must complete the Installation Checklist and End User must submit the Installation Checklist to WhisperKOOL Customer Service for approval. The original condenser skid must be returned within 21 days to WhisperKOOL for failure analysis. If the Installation Checklist is approved and the failure is evaluated as defective and not installation error or other reason, the End User will be refunded for the cost of the replacement skid.

2. If the Product failure is evaluated and it is determined that it is an installation error or other reason, all costs, including shipping will be the responsibility of the End User.

The following items are not covered under any warranty and are the sole responsibility of the End User:

A. End Users should satisfy themselves that the Product they are purchasing is suitable for their particular needs and requirements, and thus no responsibility will be placed with WhisperKOOL for the End User’s decisions in this regard.

B. End Users must assure that the product is installed by a certified HVAC/R technician. Failure to do so will result in Voiding the Limited Warranty.

C. It is the End User’s responsibility to secure safe haven/storage for ANY AND ALL items that are being kept and stored in the End User’s wine cellar, including any Product. WhisperKOOL takes no responsibility for the safety and preservation of the aforementioned items in the event that the environment becomes unsuitable to maintain a proper storage environment.

D. End User is responsible for initial installation costs, including, but not limited to, labor costs and the cost of any additional parts necessary to complete the installation.

E. End User is responsible for all costs incurred for the installation and/or removal of the Product, or any part thereof, unless such cost has been agreed by WhisperKOOL to be a warranty repair prior to the work being performed.

5. Sales and Use Tax

WhisperKOOL only collects California sales tax for orders shipped within the State of California; WhisperKOOL does not collect sales tax for orders shipped to other states. However, the Purchaser and the End User may be liable to the taxing authority in their state for sales tax and/or use tax on the Product. The Purchaser and the End User should each check with their state’s taxing authority for sales and use tax regulations.

6. Customer Service and Troubleshooting

WhisperKOOL’s customer service department is available to answer any questions or inquiries for End Users regarding a WhisperKOOL Product, as well as to assist in performing basic troubleshooting, Monday through Friday, from 6:00 a.m. to 4:00 p.m. PST, at telephone number 1-800-343-9463. WhisperKOOL reserves the right to have a certified, WhisperKOOL-approved, HVAC/R technician go on site and inspect the product if the initial trouble shooting warrants further investigation. WhisperKOOL Corporation is located at 1738 East Alpine Avenue, Stockton, California 95205.
7. Request for Product Evaluation and Repair Under Warranty

**SPLIT SYSTEM FIELD SERVICE WARRANTY POLICY:** This Policy is to clarify what falls under Warranty Service and what becomes the responsibility of the Owner. WhisperKOOL (“manufacturer”) strives to provide our customers with a superior Product and we back our Product with a Two Year Limited Warranty. Please review the WhisperKOOL Product Terms and Conditions including Product Limited Warranty and Product Installation Requirements to ensure you have a complete understanding of our Policy and coverage of your Split System.

**ARBITRATION:** Any disputes arising out of or in connection with the installation and warranty of the Split System shall be referred to and finally resolved by a WhisperKOOL approved Independent Certified HVAC/R Technician. The evaluation of the Technician on all issues or matters of identifying the responsible party (WhisperKOOL or Installing Technician) shall be determined in a written report. This report will be made available to all concerned parties. If discovered under warranty, WhisperKOOL will assume the financial responsibility under their warranty guidelines. If the report finds the Owner’s Installer as the responsible party, WhisperKOOL will provide all documentation to the customer to substantiate the findings. This will include the Invoice from the Independent Certified HVAC/R Technician and the written report of the findings. The Owner will become responsible for payment directly to WhisperKOOL for all charges incurred for repairs (labor, parts and shipping costs) on the Split System.

8. Miscellaneous Terms and Conditions

A. **Return Policy.** All return inquiries must be made within thirty (30) calendar days of the original purchase of a Product and are subject to a twenty five percent (25%) restocking fee. Shipping costs are not refundable and the Purchaser is responsible for all return shipping costs (including customs fees and duties, if applicable).

B. **Security Interest.** WhisperKOOL retains a security interest in each Product until payment in full.

C. **Construction and Severability.** Every provision of these Terms and Conditions shall be construed, to the extent possible, so as to be valid and enforceable. If any provision of these Terms and Conditions is held by a court of competent jurisdiction to be invalid, illegal or otherwise unenforceable, such provision will, to the extent so held, be deemed severed from the contract of sale between Purchaser and WhisperKOOL, and all of the other non-severed provisions will remain in full force and effect.

D. **Governing Law/Choice of Forum.** The laws of the State of California (without regard for conflicts of law) shall govern the construction and enforcement of the these Terms and Conditions of Sale (Sections 1 through 9 inclusive, including Product Limited Warranty And Product Installation Requirements), and further these Terms and Conditions of Sale shall be interpreted as through drafted jointly by WhisperKOOL and Purchaser. Any dispute will be resolved by the courts in and for the County of San Joaquin, State of California, and all parties, WhisperKOOL, Purchaser and End User, hereby irrevocably submit to the personal jurisdiction of such courts for that purpose. No waiver by WhisperKOOL of any breach or default of the contract of sale (including these Terms and Conditions of Sale) concerning a Product will be deemed to be a waiver of any preceding or subsequent breach or default.

E. **Correction of Errors and Inaccuracies.** These Terms and Conditions may contain typographical errors or other errors or inaccuracies. WhisperKOOL reserves the right to correct any errors, inaccuracies or omissions, and to change or update these Terms and Conditions, at any time without prior notice.

9. Questions, Additional Information And Technical Assistance

A. **Questions.** If you have any questions regarding these Terms and Conditions or wish to obtain additional information, contact us via phone at 1-800-343-9463 or please send a letter via U.S. Mail to:

   Customer Service
   WhisperKOOL Corporation
   1738 E Alpine Ave
   Stockton, CA 95205

   E-mail: support@whisperkool.com
   Web: www.whisperkool.com

B. **Technical Assistance.** WhisperKOOL Customer Service is available Monday through Friday from 6:00 a.m. to 4:00 p.m. PST. The Customer Service representative will be able to assist you with your questions and warranty information more effectively if you provide them with the following:

   1. The model and serial number of your WhisperKOOL UNIT.
   2. The location of the system and installation details, such as ventilation, construction of your wine cellar, and room size.